

— AT A GLANCE —

Ecosystem Risk and Resiliency

Program 55



RESEARCH VALUE

- Multiple options to reduce environmental impacts and related costs for permitting, O&M, and capital investments associated with the changing generation and delivery footprint of the electric power industry
- Better understand and manage water risk through climate-specific adaptation strategies
- Quantitative inputs to inform decision making on ecosystem compliance and stewardship investments
- Insight on full suites of quantitative and monetary impacts from ecosystem activities
- Quantified nature-based solutions lead to more viable decarbonization options
- Regional research that addresses customized needs while leveraging collaboration
- Strong, grounded participation in the growing discussion about water and climate risk

MEMBER BENEFITS

- Access to over 20 years of expertise to find your biggest ecosystem opportunities and tackle your biggest challenges
- Innovative research and application rooted in scientific and economic analysis to help you meet challenges in managing risk, resiliency, and climate adaptation
- Highly leveraged research investment via collaboration with utilities, other leading researchers, and federal agencies
- Regional working groups, hot topics webcasts, and research reviews offer opportunities for peer learning
- Strong record of Tech Transfer awards highlight how P55 members benefit directly from research

The energy transition brings the potential of new ecosystem benefits—and also increased responsibilities. These include increased environmental costs associated with renewables and other infrastructure siting, attention from investors and credit agencies, and increased emphasis on resilience and environmental justice.

The Ecosystem Risk and Resiliency program focuses on four areas which provide a strategic, systematic framework to support evaluation of water, climate, and ecosystem-related risk to landscapes upon which power utilities depend. The four focus areas are:

- Climate Impacts, Opportunities, and ESG Disclosure
- Quantifying Value of Health Ecosystems for Communities
- Infrastructure Siting Optimization
- Regional Ecosystem Priorities

The results help utilities evaluate sites, understand economic implications of resource protection, and reduce risk for operations and regulations. The program collaborates on research projects with utilities across the lifecycle from development of new ideas to the design of research and case study applications of results to solve site-specific problems.

Ecosystem Risk and Resiliency also collaborates with other EPRI research areas to provide members with enhanced expertise and greater opportunities for technical impact, including Strategic Sustainability Science (Program 198), Energy, Environmental, and Climate Policy Analysis (Program 201), Water Quality and Effluent Guidelines (Program 240), and Aquatic Resource Protection (Program 239).

Key Activities for 2023

RESEARCH PORTFOLIO

Climate Impacts, Opportunities, and ESG Disclosure

This research area builds on recent climate-water research designed to address growing interest from reporting venues on climate issues. New work will leverage findings from externally funded research efforts and examine the evolving area of cost-effective and creative nature-based solutions. Research can be directly applied to model participating companies' potential flooding, drought, and other hydrological risk from climate impacts on ecosystems. It can also be used to understand decarbonization opportunities from nature-based solutions and enhance climate disclosures. Ecosystem Risk and Resiliency staff will be on hand to assist companies with application of various water risk planning tools to ensure results.

Quantifying Value of Healthy Ecosystems for Communities

Research analyzes ecosystem health and evaluates opportunities and methodologies for companies to quantify and/or monetize their watershed activities. Research is augmented to understand how stakeholder communities can benefit from healthy ecosystems through considerations of cultural resources and equity, and can apply context-specific metrics, evaluate impacts, and tie ecosystem activities to larger company initiatives including sustainability, benefit-stacking, and renewable energy goals. Outcomes of this research will provide quantitative inputs to inform decision-making on ecosystem compliance and stewardship investments, inclusive of a full suite of quantitative impacts historically challenging to monetize. It will also provide tangible examples of supporting research aligned with the UNSDGs that can be used to support ESG disclosure and stakeholder engagement.

Infrastructure Siting Optimization

Decarbonization of power systems presents significant opportunities to evaluate and improve ecosystems and cultural assets to support growing regulation, renewable energy, and equity issues. To more efficiently site these projects, which typically comprise substantial new construction and maintenance costs, research will quantify cost-savings through permitting costs, O&M costs, capital costs, and environmental costs associated with options to address environmental impacts. With more quantitative information about the conservation value and cost savings, companies will be better equipped to evaluate proposed activities and incorporate efforts into short- and long-term utility planning and execution.

Regional Ecosystem Priorities

Water and ecosystem impacts, and therefore research needs, are inherently regional. To best assess and identify unique water and environmental resources issues and engagement opportunities, research focuses on five regions of the U.S. (NE, SE, Midwest, SW, Northwest), and international regions (as appropriate) to define key localized ecosystem risk and resiliency priorities. Potential topics could include flooding, wildfire, ice storms, stormwater, climate resilience, environmental justice, and others. EPRI will facilitate focused conversations to share lessons learned and best practices, in addition to advancing technical research to help participating companies make decisions with a contextual understanding of their regional challenges and opportunities.

SUPPLEMENTAL PROJECTS

Current supplemental research beyond the annual portfolio include:

- [Corporate Strategic Landholding Analysis](#)
- [Fuel Removal for Wildfire Management: Evaluation and Options](#)
- [Fuel Removal for Wildfire Management: Performance Measurement](#)
- [Fuel Removal for Wildfire Management: Priority Research](#)

For more information, contact: Nalini Rao, Ph.D., Program Manager, 650.855.2044, nrao@epri.com.