

Capacity Statement for Corporations

Who we are

Founded in 2014, the Center for Biodiversity Outcomes (CBO) at ASU is driven by the understanding that biodiversity is essential for ecosystem health, human well-being, global prosperity, and resilience in the face of climate change. Together with our partners, we aim to **achieve common goals of biodiversity conservation and sustainable management of natural resources**.

CBO works to **center the conservation of biodiversity in individual, social, and institutional decisions that balance environmental and social goals**. We embrace **transdisciplinary approaches** that assess **how decisions impact biodiversity** and how investment action in conservation can **support biodiversity goals**. Our work **empowers stakeholders to engage in informed action**, based on the knowledge that shared challenges are best solved when communities work together.

Our resources

- **Conservation Science:** With several decades of combined experience in the field, we conduct high-impact research to inform policies that preserve biodiversity and ecosystems.
- **Decision-Support Tools:** We develop innovative, tailored tools that identify biodiversity impacts of varied actions and relative expected costs for your company. We do this by integrating economic, ecological, and social data to account for the full suite of specific risks, including applications in marine fisheries, oil and gas exploration and platform decommissioning, agriculture and supply chain management, and fresh water supply.
- **Stakeholder-Driven Research:** CBO partners closely with companies to design research that directly addresses gaps in knowledge or pressing challenges in biodiversity management. Our work is shaped by ongoing feedback, ensuring that we address the specific needs of stakeholders.
- **Transdisciplinary Expertise:** We leverage ASU's extensive faculty network, diverse student body, and global partnerships to provide transdisciplinary expertise in ecology, economics, policy, remote sensing, data science, and the social sciences. This enables us to offer comprehensive, cross-sectoral solutions that integrate environmental, economic, and social considerations.
- **Cutting-Edge Tools & Technologies:** ASU offers access to state-of-the-art technologies, including advanced remote sensing, GIS mapping, and data analytics platforms. We help companies utilize these tools to monitor biodiversity, track environmental changes, and forecast potential outcomes of policy decisions.
- **Global Partnerships:** CBO is embedded within ASU's Global Futures Laboratory, which includes over 500 experts in sustainability from across the university. Our global reach connects us to a network of scientists, policymakers, NGOs, and corporate stakeholders in over 160 countries, giving us the scale and expertise to address the global biodiversity crisis.

Our impact

Salt River Project

Context: Our new project with the Arizona utility company [Salt River Project](#) (SRP) provides an opportunity to test and validate theories on how investments made by the private sector have potential to significantly transform biodiversity outcomes in specific contexts.

Problem: Approaches that enable decision-makers to estimate the conservation return on investment (CROI) are essential for achieving both corporate and conservation goals, but robust data and tools needed for such an approach are lacking. Further, there is no generally accepted approach to quantifying the biodiversity impacts of actions.

Solution: We are working to develop techniques to understand, predict, quantify, and monitor biodiversity outcomes resulting from forest thinning interventions to enable corporations to accurately report on their biodiversity impacts. This will build from CBO's broad [approach](#) to quantify the potential biodiversity benefits of various land-use choices to estimate CROI enabling firms to measure the biodiversity and monetary costs and benefits of various actions. Unlike previous frameworks, our approach goes a step further by integrating costing data so that users can identify actions that are high impact and cost-efficient.

USAID Amazon Business Alliance

Context: In partnership with Conservation International's [Amazon Business Alliance](#) initiative in Peru, we are assessing the public, private, and non-profit landscape for green economic development potential to help CI build local capacity. Additionally, we have built a biodiversity restoration decision support tool to help CI find focal regions where financial and conservation outcomes are optimized.

Problem: Peru has a wealth of natural resources, but these are under threat from land-use change, rapid development, global demands, and poor land stewardship. This project seeks to support stakeholders' ability to make science-based decisions that maximize environmentally sustainable economic growth while reducing impacts associated with deforestation and land use change.

Solution: CBO has developed a web-based decision support tool for optimizing pilot scenarios based on data that disaggregates agricultural threat abatement in the region. The models are supported by peer-reviewed global, regional, and local biodiversity data, and can be used to estimate the return on investment of different conservation interventions, allowing stakeholders to explore prospective resource decisions, and generate biodiversity cost-benefit analyses. Additionally, alongside ASU's [Walton Sustainability Solutions Services](#) (WSSS), CBO developed a customized green entrepreneurship assessment specific to the region.

Pesticide Risk Assessment

Context: We worked with [Bayer](#), a life sciences company with expertise in health sciences and agriculture, to develop a prioritization-based decision support framework to assess potential risk from exposure to pesticides and enable confident assessment of how agricultural pesticides impact endangered species.

Problem: Pesticides used to ensure crop productivity and protection can have negative impacts on non-target plants and animals. The U.S. Endangered Species Act requires that potential pesticide impacts on threatened and endangered species be minimal, but historically this process has been opaque and time intensive, without evidence that endangered species are being effectively protected.

Solution: Decision science and value-of-information analysis can increase efficiency and transparency, reduce the number of species requiring specialized consultation, and create confidence that registered pesticides do not hinder the recovery of listed endangered species. This work detailed drastic efficiency improvements in species risk assessments by using high-resolution pesticide usage data in the risk assessment process. We developed a ranking metric that (1) identifies the species most at risk from pesticide exposure and (2) supports decisions about prioritizing pesticide review efforts.

Contact us

Center for Biodiversity Outcomes
Arizona State University
P.O. Box 875402
Tempe, AZ 85287

Email: biodiversity@asu.edu
Website: biodiversity.asu.edu