



BIODIVERSITY RETURN ON INVESTMENT

CENTER FOR BIODIVERSITY OUTCOMES
ARIZONA STATE UNIVERSITY



ASU Center for
Biodiversity Outcomes
Arizona State University



TABLE OF CONTENTS

Table of Contents.....	2
Introduction	3
Why Biodiversity Is Important.....	4
Research Partnerships	5
Corporate Partnerships.....	6
What We Offer	7
Our Work	8
Partner With Us	15

IT'S NICE TO MEET YOU!

OUR MISSION IS TO ENABLE THE DISCOVERIES AND SOLUTIONS NEEDED TO SUSTAIN EARTH'S BIODIVERSITY IN A TIME OF RAPID BIOPHYSICAL, INSTITUTIONAL AND CULTURAL CHANGE.

One million species worldwide face extinction within the next decade.

(IPBES, 2019)



Biodiverse ecosystems clean our water, purify our air, maintain our soil, regulate the climate, recycle nutrients and provide us with food.

The loss of biodiversity impacts the balance of our global ecosystem, pushing vulnerable species and habitats towards collapse.

WE ENVISION A WORLD WHERE THE DIVERSITY OF LIFE ON EARTH IS VALUED AND SUSTAINED FOR THE BENEFIT OF ALL.

WHY BIODIVERSITY IS IMPORTANT

The ASU Center for Biodiversity Outcomes (CBO) catalyzes implementable solutions to address global biodiversity challenges. CBO does this through fostering research, education and partnerships with institutions worldwide in collaboration with the innovative power of ASU.

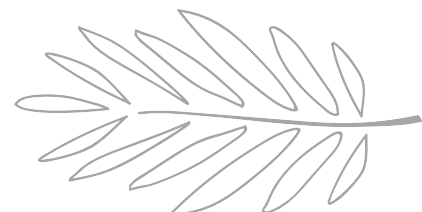
Earth has a growing biodiversity crisis. Policymakers, corporations, NGOs and other institutions on the front lines of biodiversity challenges are not getting the usable research and implementable solutions they need.

CBO catalyzes those solutions by connecting ASU's capacity for innovative, implementable research to biodiversity challenges faced by leading NGOs, corporations, policymakers and other institutions around the world. The result? Path-breaking, practical solutions to the biodiversity crisis that the whole world can use and adapt.

The corporate sector has shown an increasing commitment to considering sustainability issues over the past decade. However, many companies lack the data, expertise and incentive to rigorously consider biodiversity in operations. Biodiversity materiality represents an enormous risk for companies, but is difficult to quantify. Companies need access to data and support to ensure they have the expertise to implement effective biodiversity management plans across in their core operations and value chains. CBO fills this niche.



Learn more about our research [here](#).



RESEARCH PARTNERSHIPS

Example: Electric Power Research Institute (EPRI)

Problem: For the electric power industry, it is especially important to preemptively estimate the costs of compliance in regard to actions affecting endangered species and those under consideration for Endangered Species Act (ESA) listing. Critical to the success of the ESA is engaging with the private sector to understand how biodiversity conservation and business practices can be complementary and synergistic. Understanding these costs allows companies to make informed decisions around regulatory risk associated with the ESA.

Solution: We developed a tool to estimate the range of potential operational, reputational, legal and regulatory risks associated with ESA compliance for the electric power industry through our collaborations with EPRI. Our evidence-based framework facilitates assessments of pre-compliance and compliance costs. This tool provides critical value to decision-making in the private sector (e.g., providing cost-efficiencies, reduction of regulatory risk, enhanced stakeholder reputation), and also increases awareness of sustainable practices.



Learn more about our partnerships [here](#).

CORPORATE PARTNERSHIPS

Example: Bayer

Problem: Modern agriculture relies on pesticides to ensure crop productivity. Assessing potential impacts of pesticides on endangered species is stymied by uncertainty in data and lack of coordination between agencies. As a result, companies can be challenged to employ best practices for pesticide use that ensure the conservation of threatened species.

Solution: We work with Bayer to develop data-based approaches to enhance the efficiency of risk assessment for pesticides to threatened species. Our published research demonstrates significant gains in efficiency in the species risk assessment process. We are currently applying our approach with high-resolution pesticide usage data to identify compounds that are relatively safe for endangered species. Our database and novel risk assessment metric also helps to identify species that are most at risk from pesticide exposure.



Learn more about our partnerships [here](#).

WHAT WE OFFER

1

We offer executive education to ensure employees at all levels of the company are well-versed in the environmental issues that might affect their bottom line and how to address them.

2

We provide decision-making tools to assist corporations with measuring and valuing biodiversity. We do this by integrating disparate data to account for the full suite of specific risks sectors face, including applications in marine fisheries, oil and gas, agriculture and supply chain management.

3

We facilitate research driven by company needs on what they lack and what we know needs further exploration. We link CBO's capacity for innovative, implementable research to biodiversity challenges faced by leading NGOs, corporations, policymakers and other institutions around the world.

4

Our capacity is bolstered by our network of over 10,000 scientists representing hundreds of governmental, academic and conservation organizations in more than 160 countries across the globe.



OUR WORK ON
RETURN ON
INVESTMENT FOR
BIODIVERSITY



When we work with companies who want to improve their biodiversity impacts, we co-produce solutions at varying levels. These solutions are scalable, depending on the company's needs. Using our return on investment framework and web-based decision tool, we:

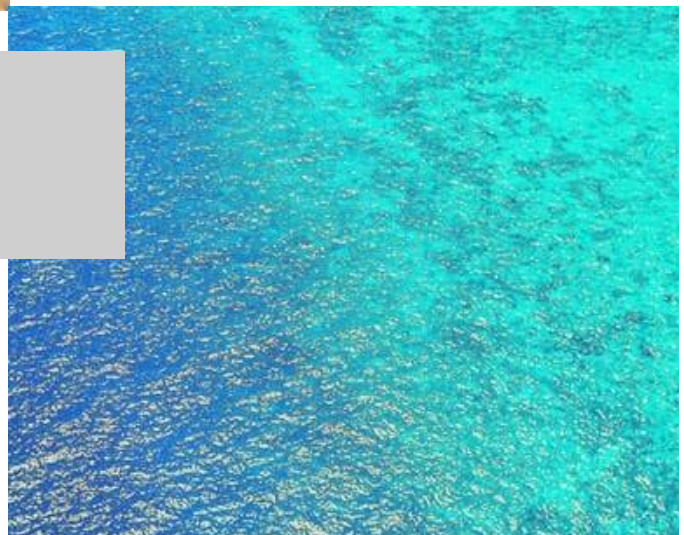


allow businesses to explore tradeoffs between investment choice and biodiversity loss and use this information to inform funding decisions

In partnership with the IUCN, we developed the Conservation Investment Tool, which allows users to explore how varying hypothetical conservation investment affects biodiversity decline in a given country.

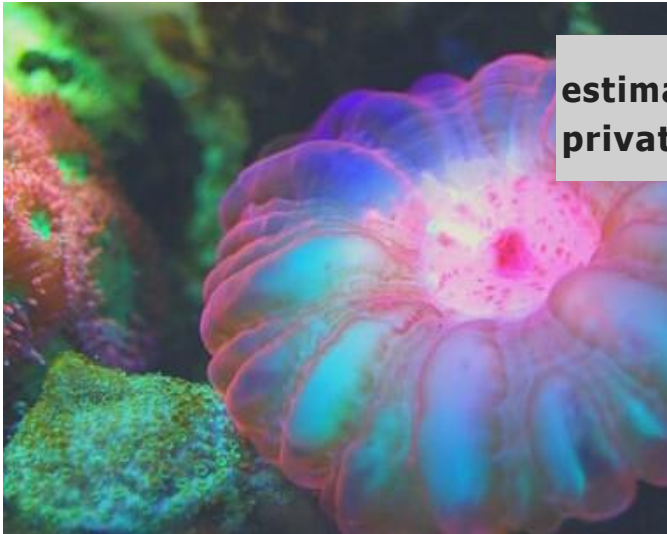
synthesize estimates of conservation investment to allow comparison of conservation budget needs with actual expenditure

We work with industry partners to measure, assess cost, and report on the impacts of resource use and intervention strategies for biodiversity.



compile conservation cost and benefit data and develop standardized guidelines

In collaboration with our partners, we are refining our ROI framework so that it be applied across contexts and sectors. From businesses to governments to NGO's, our framework provides valuable insight into conservation costs and benefits of specified actions.



estimate the costs of interventions for private and public entities

Our prototype tool relates investments to biodiversity outcomes, allowing organizations to assess the cost and benefits associated with alternate interventions.

evaluate the biodiversity impacts of current and prospective actions

Our novel framework measures the biodiversity impacts of real and potential practices, providing critical guidance towards optimizing the biodiversity benefits of an organization's activities.



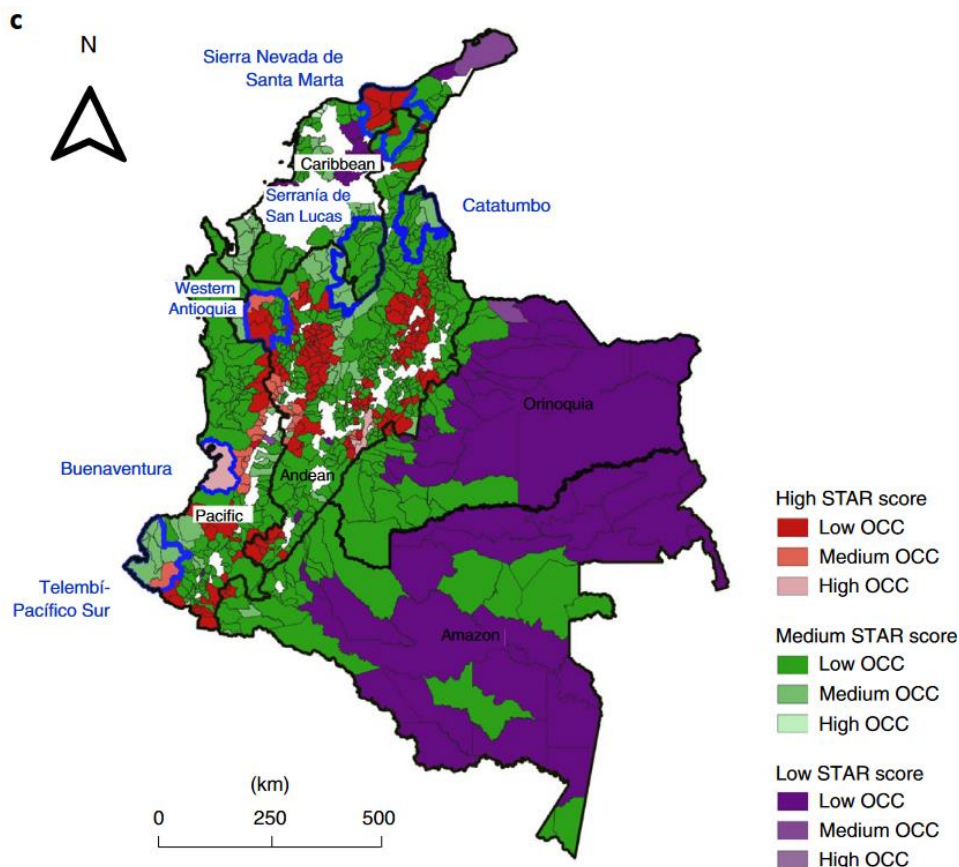
assess the effectiveness of partnerships

We use the best available research on knowledge partnerships to ensure that all our relationships operate efficiently and meet the needs of all partners.

RECENT WORK

Example: An investment strategy to address biodiversity loss from agricultural expansion by Guerrero-Pineda et al. 2022.

Summary: This paper demonstrates an approach to maximize the biodiversity benefits from limited conservation funding while ensuring that landowners maintain economic returns equivalent to agriculture. This article focuses on Colombia due to the increase of agricultural expansion into biodiversity-rich forests as a result of the 2016 peace agreement. The authors found that, in the absence of intervention, agricultural expansion would increase national biodiversity loss by 38–52% by 2033, and that doubling investment is necessary to counteract this loss. This approach can be applied to other contexts to examine development and policy priorities to estimate financial needs for achieving biodiversity goals.



RECENT WORK

Example: Amazon Business Alliance

Partners: United States Agency for International Development (USAID), Conservation International (CI) and Walton Sustainability Solutions Service (WSSS)

Summary: We have partnered with USAID, CI and WSSS to develop a platform for promoting green growth in Peruvian Amazonian communities. With an emphasis on generating sustainable agriculture solutions, this project is designed to produce tangible results that stakeholders can use to decrease deforestation, natural resource degradation, and biodiversity loss, without compromising the livelihoods of the people living in these communities. Ultimately, this initiative will allow Peru to better meet the Sustainable Development Goals developed by the UN, while promoting investment in and improved economic outcomes for small-holder farmers and entrepreneurs in pilot communities. This project is also an opportunity for CBO to expand and refine our ROI approach, particularly in an agricultural context. Ultimately, the methodologies developed through this program will be transferrable across countries and contexts.



RECENT WORK



The marriage of business and ecology. *Frontiers in Ecology and the Environment*, 14(1):3. doi: 10.1002/1209 [\(link\)](#)



Conservation science needs new institutional models for achieving outcomes. *Frontiers in Ecology and the Environment*, 16(8):438-439. doi.org/10.1002/fee.1951 [\(link\)](#)



An investment strategy to address biodiversity loss from agricultural expansion. *Nature*, doi.org/10.1038/s41893-022-00871-2 [\(link\)](#)



Bringing sustainability to life: A framework to guide biodiversity indicator development for business performance management. *Business Strategy and the Environment*, 29(8), 3303–3313. <https://doi.org/10.1002/bse.2573> [\(link\)](#)



[It's time for a Project drawdown for conservation](#), Ensia



[Is the Endangered Species Act facing extinction?](#), The Christian Science Monitor



[Industry partnerships for biodiversity outcomes](#), United Nations Global Compact's Uniting Business LIVE



[Nature in Crisis](#), Politico Panelist



[Examining Biodiversity Loss: Drivers, Impacts, and Potential Solutions](#), Expert Witness for U.S. Senate Committee on Environment and Public Works



[Gone For Good: How A Species Is Declared Extinct](#), NPR 1A



[It's Time to Prioritize, Restructure Endangered Species Funding](#), NPR



FUTURE WORK

As part of VERGE 2022, we are unveiling the next step in our biodiversity return on investment framework. In partnership with IUCN, we will provide businesses with the tools they need to improve their biodiversity impacts in the most cost-effective ways possible.

Goal

Enable private sector entities to identify targeted actions that can reduce biodiversity loss associated with their operations and to quantify the impacts of implementing those actions.

How?

Operationalize a return-on-investment approach to understanding biodiversity outcomes using a spatially explicit decision support framework grounded in sound science and a proven set of metrics for the impact of conservation actions.

Project Needs

We seek 2-3 corporate partners to collaborate in developing and applying our ROI approach to your company biodiversity conservation priorities. Our fee for pilot partners is \$100,000 per year.

Why Invest?

Funding partners will receive premiere access to the tool, as well as technical assistance in evaluating business impacts and areas for improvement. Results of this work will allow companies to efficiently reach specified ESG goals, ensure alignment with environmental regulations, and generate documentable biodiversity improvements and sustainability leadership within their industry.

We need help from friends like you!

Your donations fund science-based solutions and help us train the next generation of conservation leaders. Learn more about our programs and initiatives, and contribute to our efforts at:

biodiversity.asu.edu



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