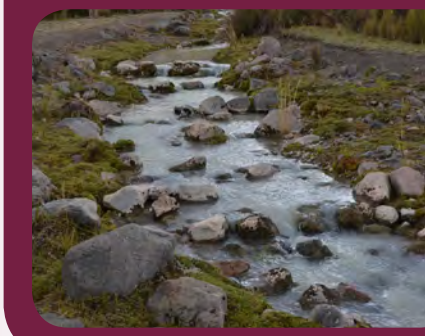
OPAL Offset Portfolio Analyzer & Locator

natural capital PROJECT

Making environmental offsets equitable and effective

Mitigating the environmental losses from development

Development projects can bring many important benefits to communitites. New roads, for example, can improve access to health care, education and markets, and create employment opportunities. However, the benefits of development also come with environmental costs. Biodiversity and open space can disappear, and critical ecosystem services can be expensive or impossible to replace. Recognizing the need to minimize the environmental impacts of development in order to protect biodiversity and sustain nature's contribution to human well-being, governments and lenders routinely require projects to quantify their environmental impacts and avoid, minimize and mitigate negative impacts. A growing number of governments and financial institutions are also requiring projects to account for ecosystem services in environmental impact assessments and mitigation plans. However, mitigation plans have often located restoration projects far from affected communities, leading to a loss or redistribution of ecosystem services.



How OPAL can help

OPAL is a free, open-source software tool that enables users to quantify the impacts of infrastructure development projects locally, and to assess the benefits of mitigation options for both ecosystem services and biodiversity.

The Natural Capital Project designed OPAL to be used by impact assessment practitioners, policy makers, developers and others to evaluate the consequences of development projects such as roads or mines , and to design offset portfolios that equitably mitigate development projects being considered within a region or to assess alternative options for a particular project.

A flexible tool

OPAL was developed to work with commonly available ecological and social data. It includes modules to incorporate the results from InVEST carbon, sediment and nutrient retention ecosystem service models, but can also use other ecosystem service models as inputs.

The global development and mitigation context

If economic growth continues on its current trajectory, global business analysts project that an estimated $57 trillion will be spent building new infrastructure projects by 2030. Roads and railways are expected to increase 60% by 2050. Much of this growth will occur in developing countries. Nearly 200 countires require environmental impact assessments, and the International Finance Corporation and Equator Principals Financial Institutions, which provide over 70% of international project finance debt in emerging markets, require ecosystem services to be addressed in environmental impact assessments and mitigation plans. OPAL can enhance these assessments by showing which communities will be affected under different development and mitigation scenarios, allowing for a more transparent process.

Questions OPAL can answer

1. How much habitat and ecosystem services will be lost with project development?
2. Which communities will lose ecosystem service benefits as a result?
3. Where and how much protection or restoration is needed to mitigate losses of habitat and ecosystem service benefits in a socially equitable way?

OPAL is a generalized and flexible version of MAFE-T, a tool that Natural Capital Project created to help developers and government agencies design mitigation activities to meet the requirements of Colombia's offset policy in a socially equitable way. Now, with OPAL, similar analyses can be completed in locations outside of Colombia.

How OPAL works

OPAL combines widely available ecological and social data along with Natural Capital Project's spatially explicit InVEST ecosystem service models to recommend offset parcels based on flexible, user-defined criteria.

PROJECT FOOTPRINT

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ECOLOGICAL DATA
- Land use
- Potential mitigation parcels

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SOCIAL DATA
- Population centers
- Servicesheds
- Prefered offset areas

RESULTS
- Suggested offset parcels
- Interactive table for selecting offsets
- Updating balance sheet of net benefits

OPAL

OPAL is a free, open-source tool for quantifying the impacts of development and the value of potential protection or restoration activities to biodiversity and ecosystem services.

OPAL helps identify mitigation options that can restore ecosystem service benefits back to the same people affected by a development project and tracks the amount of mitigation needed to meet biodiversity and ecosystem service mitigation targets.

Download OPAL: naturalcapitalproject.org/OPAL.html

The Natural Capital Project

The Natural Capital Project aims to align economic forces with conservation. We are an innovative partnership between Stanford University, The Nature Conservancy, World Wildlife Fund, and the University of Minnesota working together to value nature's benefits to society. We develop tools that make it easy to incorporate natural capital into decisions, apply these tools in select places around the world, and engage leaders to transform decision making by taking up this approach.

Contact us: invest@naturalcapitalproject.org

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