RIOS Resource Investment Optimization System

natural capital PROJECT

Designing cost-effective investments in watershed services

Water Scarcity

Water is one of the scarcest resources on the planet, and pressures on it will only grow as demands on water supplies grow and climate changes. Every year, $400 billion is spent on water infrastructure. People are starting to recognize that investments in nature, as part of a comprehensive approach for water management, are a cost-effective way to secure clean water for the future.

How RIOS can help

RIOS is a free and open source software tool that supports the design of cost-effective investments in watershed services. RIOS can help people optimize watershed investments to improve multiple water-related benefits such as sustaining water supplies, maintaining quality, and mitigating flood risks. It can also help direct investments to simultaneously maximize biodiversity or other social goals.

The Natural Capital Project designed RIOS to provide a standardized, science-based approach to watershed management in contexts throughout the world. It combines biophysical, social, and economic data to help users identify the best locations for protection and restoration activities in order to maximize the ecological return on investment, within the bounds of what is socially and politically feasible.

Generalized tool, flexible approach

RIOS was developed through an extensive stakeholder engagement process, including input from more than 11 water funds (watershed investment programs) across Latin America. The tool has been tested in diverse ecological, social and political contexts. Early tests of the RIOS approach in the Cauca Valley of Colombia resulted in watershed investments up to six times more effective than typical investment approaches. RIOS enables watershed investors to use a replicable, transparent, and stakeholder-driven approach to evaluate projects, making it easier to track the places where their investments are most needed and most effective.

What are Water Funds?

Water funds are conservation financing mechanisms that gather investments from water users and direct the funding toward the protection and restoration of key lands upstream that filter and regulate water supply. At the same time, water funds enable the preservation of habitat for native plants and wildlife. Water funds vary from place to place depending on local opportunities and regulations. Investors – primarily large businesses and government agencies – see the funds as a smart way to minimize treatment costs and reduce the chance of water shortages in the future.

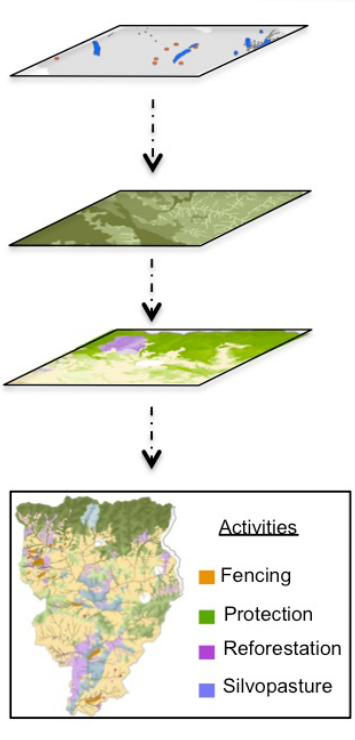
Questions RIOS can answer

1. Which set of investments (in which activities and where) will yield the greatest returns towards multiple objectives?
2. What change in ecosystem services can we expect from these investments?
3. How do the benefits of these investments compare to alternate investment strategies?

How RIOS works

RIOS designs investment portfolios that show where investments will be most cost-effective and feasible, then uses a suite of quantitative models (InVEST) to estimate how much benefit investors can expect to receive from those investments.

Results can be in biophysical terms, used to compare to regulatory standards, or in monetary terms to calculate investors' expected savings.



SOCIAL DATA

- Stakeholder preferences
- Restoration & protection activities
- Legal limitation

ECONOMIC DATA

- Cost of activities
- Budget

ECOLOGICAL DATA

- Physical setting
- Land use
- Demand for services

RIOS INVESTMENT PORTFOLIO

- Which activities to invest in
- Where to spend budget for the greatest returns on investment
- Single or multi-year plans

RIOS

RIOS is a simple, yet powerful tool that provides a standardized approach to designing natural infrastructure investments.

RIOS combines biophysical, social, and economic data to identify the most cost-effective places to invest in nature, within the bounds of what is socially and politically feasible.

RIOS was developed through an extensive stakeholder engagement process and has been tested in diverse ecological, social, and political contexts.

Download RIOS: naturalcapitalproject.org/RIOS.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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