

TOOL TYPE & AVAILABILITY

A spatial modeling tool available for download online.

SPONSORING ORGANIZATION & DEVELOPERS

The [Natural Capital Project](#) (developer), in close collaboration with [The Nature Conservancy](#) (TNC) and the [Latin American Water Funds Partnership](#)—a partnership among TNC, the [Inter-American Development Bank](#) (IDB), [Global Environment Facility](#) (GEF), and the [FEMSA Foundation](#).

WEBSITE & CONTACT INFORMATION

The tool is available at <http://www.naturalcapitalproject.org/RIOS.html>; for additional information contact Dr. Adrian Vogl, Senior Scientist at the Natural Capital Project (avogl@stanford.edu).

TARGET USERS

Target users are businesses or public-private partnerships pursuing watershed investments, either with in-house expertise or in partnership with consultants, conservation NGOs, or other technical experts.

RELEASE YEAR & UPDATES

RIOS was first released in 2013 and is currently operating Version 1.1.8 (released August 2015).

COST

No cost.

Resource Investment Optimization System (RIOS)

PURPOSE AND OBJECTIVE

- RIOS is a spatial modelling tool that uses local data inputs to generate maps that inform the design of watershed-based natural infrastructure investments.
- The tool optimizes watershed investments for multiple benefits to protect clean water supplies, mitigate flood risk, and achieve additional biodiversity and social goals.

SOFTWARE AND DATA INPUT REQUIRED

- RIOS requires Microsoft Windows; an optional data pre-processing tool requires ArcGIS 9.3.1 or higher. Additionally, access to a GIS tool like ArcGIS or Quantum GIS is needed to prepare data and explore results.
- Users are required to provide the best locally available biophysical, economic, and social data inputs. The [User's Manual](#) suggests publicly available regional and global datasets.

INFORMATION GENERATED

- Maps, in the form of GIS raster files, show the optimal location for natural infrastructure investments to maximize ecological return on investment related to user-specified goals and constraints (e.g., erosion control, nutrient retention, flood mitigation, biodiversity).

EXPERTISE & TIME INVESTMENT REQUIRED

- The tool requires basic knowledge of ecosystem services and hydrology and an ability to prepare spatial data inputs and interpret outputs.
- 1–6 months required, depending upon complexity of analysis and time spent preparing data inputs.

EXAMPLES OF COMPANY USERS

- Public-private partnerships have explored scenarios of watershed investment with RIOS to improve water supplies for municipal use (Agua Tica, Costa Rica, and [Nairobi Water Fund, Kenya](#)); hydropower and [Nairobi Water Fund, Kenya](#); flood risk mitigation (Monterrey Water Fund, Mexico); and water supply replenishment (TNC with Coca-Cola and FEMSA, Ecuador and Colombia).