

## Work with NatCap!

NatCap is looking for a few good software engineers. If you're a friendly, self-directed programmer who is passionate about working on collaborative software projects for the social good, [come work with us!](#)

## Software tools:



[InVEST](#) is a free and open-source software suite developed by the Natural Capital Project. [InVEST 3.0.1](#) was released on April 21st, 2014. The latest update fixes a few bugs and contains performance and usability updates across all the models. We recommend that users upgrade to this version which can be downloaded [here](#).



RIOS is a software tool that helps design cost-effective investments in watershed services. [RIOS 1.0.0b8](#) was released on November 6, 2013.

## Greetings!

There is arguably nothing more closely tied to human health and wellbeing than the need for good clean water. NatCap is working with partners in [Latin America](#) and [Southeast Asia](#) to help governments and other institutions take an ecosystem service approach to improving water quality and a diverse portfolio of other ecosystem benefits. Simultaneously, we are asking hard questions about the [outcomes](#)—for nature and people—of watershed conservation and restoration activities.

## Forests for Biodiversity, Freshwater, and Food

IMPROVING FOREST CONSERVATION AND GOVERNANCE IN CAMBODIA

With support from NatCap, [WWF-Cambodia](#) has embarked on an innovative partnership with government officials and researchers at the [Royal University of Phnom Penh \(RUPP\)](#) to improve forest conservation and land use planning in the [Eastern Plains Landscape](#) of Monduliri Province. The unique forests of this region have undergone substantial deforestation and degradation in the recent past; their ability to sustain biodiversity and to support local people who depend upon the forest for non-timber forest products, freshwater, and other ecosystem services is at risk. Our collaborative project aims to identify and quantify ecosystem services provided by the Eastern Plains Landscape and to use information about those services in land use planning and zoning decisions. NatCap's role in the project is primarily to build capacity and to support the efforts of the scientists, policy-makers, and WWF-Cambodia.



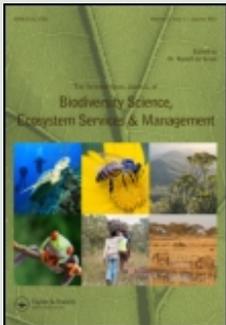
Funded by [USAID](#) under an agreement with [Winrock International](#), this multi-year project is well under way. Since 2013, WWF Cambodia has held a series of workshops to offer training to local stakeholders on ecosystem services, focusing particularly on NatCap's tools and their application to land use planning and policy. RUPP researchers already have produced initial results for several InVEST models (carbon, habitat quality, and hydrological services). Last month, Nasser Olwero and Nirmal Bhagabati traveled to Monduliri to participate in a capacity-building and outreach workshop for provincial government officials from departments of forestry, tourism, environment, land use planning, and agriculture, all of whom are formal partners on this project. RUPP scientists, WWF, and the government officials will next 1) synthesize the results into policy recommendations to inform land use plans, 2) conduct interviews to assess any changes in stakeholder attitudes, 3) and implement a communications strategy to publicize results locally and beyond. WWF plans to scale this work to other priority landscapes in Cambodia and the Greater Mekong region.

## Monitoring Water Funds in Latin America

MEASURING IMPACTS TO NATURE AND PEOPLE

For help using InVEST and RIOS, visit the [NatCap Forums](#), our online user community.

### Editor's Choice

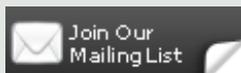


A paper by NatCap scientists has been selected as the 'Editor's Choice' for the International Journal of Biodiversity Science, Ecosystem Services & Management. [Modeling benefits from nature: using ecosystem services to inform coastal and marine spatial planning](#), which describes how our InVEST models can be used to inform marine spatial planning decisions, will be freely available online for a limited time.

### Newsletter Archive

Check out NatCap's previous newsletters in our [Newsletter Archive](#).

### Follow Us Online



At NatCap, we spend a lot of time modeling ecosystem services and using the results of our analyses to inform decisions. A critical question is: do we see the changes we expect in ecosystem services when conservation or restoration activities are implemented? NatCap is working with [The Nature Conservancy](#), the [Latin American Water Funds Partnership](#), Instituto de Ecología (INECOL), and a number of other local partners in Latin America to



strengthen monitoring and evaluation of the impacts of watershed conservation and restoration activities on ecosystem services and human well-being. This includes work with five emblematic Water Funds in Brazil, Ecuador, Colombia, Perú, and Mexico. We are working with our partners to design and implement on-the-ground monitoring in a robust and cost-effective manner for the five funds. We plan to use that work to provide guidance for other Water Funds and similar programs in Latin America and elsewhere.

[Water Funds](#) are conservation finance mechanisms where downstream users support upstream efforts to improve water quality. [The idea has taken off in Latin America](#), where 17 Water Funds are in operation and many more are planned. These programs hold great appeal for their potential to present 'win-win' opportunities for conservation and human well-being. However, we lack convincing scientific evidence of the social and ecological outcomes of Water Funds. A better understanding of their impacts on biodiversity, ecosystem services, and human well-being is essential for adaptive management and improvement of the programs.

This month Leah Bremer traveled to Perú, Ecuador, and Colombia to work with representatives from The Nature Conservancy, the Latin American Water Funds Partnership, [Forest Trends](#), and others to help design and implement hydrological and human well-being monitoring for Water Funds in the region. Leah is working closely with two funds to link water quality monitoring to human well-being outcomes for communities within the watersheds as well as for downstream users. Data generated through these programs also will be of great value in validating and improving InVEST and other ecosystem services models. Also, it is our hope that this information will both improve these initiatives and provide arguments for their proliferation in other systems where unique conservation financing can secure win-wins for people and nature.

## Ecosystem Services for Hydropower and Tigers

### CAPACITY BUILDING IN INDIA

Over the last year, NatCap has led a project to assess potential environmental and ecosystem service impacts of hydropower facilities in Himachal Pradesh, India, as part of technical assistance to the State for a World Bank loan. As part of their loan agreement with the World Bank, the state government of Himachal Pradesh is developing a system of payments for ecosystem services and working to incorporate the value of services provided by forests into their economic measures like GDP. Natcap has been asked to help with this effort.



Adrian Vogl and Stacie Wolny flew to India to present the results of our analysis of ecosystem services benefiting hydropower, and to conduct a technical training with government staff in Himachal Pradesh on May 21-23.

While in India, Adrian and Stacie traveled across the country to lead another workshop

and technical training for representatives from 6 tiger reserves across India. Local teams from various universities, research centers, and tiger reserves are undertaking valuation of the ecosystem services provided by the reserves to help showcase the multiple benefits these areas provide to the surrounding community. As the work progresses, locally trained scientists will conduct ongoing InVEST analyses, and NatCap will continue to advise as the team develops information and results to integrate ecosystem service information into the advocacy and policy agendas of the reserves.

## Recent Press and Publications

### [Ecosystem Services: Challenges and Opportunities for Hydrologic Modeling to Support Decision Making](#)

Guswa, A.J., K. Brauman, C. Brown, P. Hamel, B. Keeler, S. Stratton Sayre  
*Water Resources Research. In Press.*

### [Conservation and Livelihood Outcomes of Payment for Ecosystem Services in the Ecuadorian Andes: What is the Potential for 'Win-Win'?](#)

Bremer, L.L.; K.A. Farley; D. Lopez-Carr; J. Romero  
*Ecosystem Services. In Press.*

### [Go Minnesota NatCap!](#)

Eye on Earth May 2, 2014  
by Bonnie Keeler

### [Projected land-use change impacts on ecosystem services in the United States](#)

Lawler, Joshua J., David J. Lewis, Erik Nelson, Andrew J. Plantinga, Stephen Polasky, John C. Withey, David P. Helmers, Sebastián Martinuzzi, Deric Pennington, and Volker C. Radeloff.  
*Proceedings of the National Academy of Sciences. May 2014, 11(20):7492-7.*

### [A tradeoff frontier for global nitrogen use and cereal production](#)

Mueller, Nathaniel D., Paul C. West, James S. Gerber, Graham K. MacDonald, Stephen Polasky, and Jonathan A. Foley.  
*Environmental Research Letters. May 2014. Issue 9, no. 5.*

### [Implementing the optimal provision of ecosystem services](#)

Polasky, S., Lewis, D., Plantinga, A., & Nelson, E.  
*Proceedings of the National Academy of Sciences. April 2014, Vol. 11.*

### [Stanford researchers rethink 'natural' habitat for wildlife](#)

Stanford News April 16, 2014  
by Rob Jordan

### [What happens when there are 9 billion mouths to feed](#)

Marketplace April 16, 2014  
Interview by Kai Ryssdal

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Thank you for your continued interest in the Natural Capital Project. If you have any questions, please feel free to contact us at [invest@naturalcapitalproject.org](mailto:invest@naturalcapitalproject.org).

