

2016 Natural Capital Symposium



This year's **Natural Capital Symposium**, March 21-24, at Stanford University, is fast approaching. Check out who's speaking and register to attend [here](#), or submit a poster [here](#).

Software Tools

InVEST

integrated valuation of ecosystem services and tradeoffs

[InVEST](#) is a free and open-source software suite developed by the Natural Capital Project. You can download the latest version of InVEST [here](#).



[OPAL](#) is NatCap's latest free and open-source software for mitigating development impacts. You can download the latest version of OPAL [here](#).

Q&A With WWF's Tom Dillon

AFTER YEARS OF BEHIND THE SCENES ADVISING, DILLON IS NOW A MEMBER OF THE GOVERNING COMMITTEE

When The Natural Capital Project was starting up, you worked with co-founder Taylor Ricketts to recommend pilot project locations, and picked Sumatra, Borneo, Colombia, and the Mekong, among others. How did you narrow the whole planet of options down to those few spots?

I was looking for opportunities where we could make policy change, through providing good information about the tradeoffs on ecosystem services. In Sumatra, for example, there was an ecological zoning process going on across the ten provinces of the island. Basically it was a land-use planning process, writ large, that the government was conducting. In the past 15 years, Sumatra has undergone the highest rates of deforestation. Trying to get land use zoning that could prevent further large-scale deforestation was really important. It was an opportune time, where a tool like InVEST could make a difference.



Tom Dillon, WWF Senior Vice President, Forest and Freshwater, and member of The Natural Capital Project Governing Committee

What difference did NatCap and using InVEST make in Sumatra?

It meant that there was a discussion based on better facts and better data and better forecasts, and so we were able to influence plans. One problem there—and in some other parts of the world—is governance and corruption. Even with the best plans, it doesn't mean that's what will be implemented, but better plans and more awareness of the benefits from ecosystems definitely was important. One reflection of that would be that the entity responsible for more deforestation than any other, Asia Pulp and Paper, committed to no longer converting natural forest into plantations. And Asia Pulp and Paper has promised to restore one million hectares. Those are huge commitments. NatCap wasn't the only agent involved in getting us there, but it was certainly one that was helpful...

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On Carbon & Travel

HENRY BORREBACH IS PROJECT MANAGER FOR OUTREACH & TRAINING



[RIOS](#) is a software tool that helps design cost-effective investments in watershed services. You can download the latest version of RIOS [here](#).



We developed [PyGeoProcessing](#) to create a programmable, open source, and free GIS processing library to support the ecosystem service software InVEST. The latest version 0.2.1 fixes several bugs. Users can pip install PyGeoProcessing, upgrade or download the package [here](#).

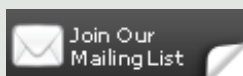
NatCap Forums

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

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*If my seatback map was correct, that is the equator, as seen from my flight from Dubai to Cape Town.
Photo credit: Henry Borrebach*

"Look here," said the Medical Man, "are you in earnest about this? Do you seriously believe that that machine has travelled into time?" "Certainly," said the Time Traveller...

--H.G. Wells, The Time

Machine

Every time I book a flight, whether it's to travel to Italy or South Africa for a NatCap workshop or back to Pennsylvania for a brother's wedding (the highlights of my 2015 travel year), my first and strongest feeling is a wince of guilt. My carbon footprint feels (and is) deepest when I travel by jetliner. At the same time, I am regularly astounded by taking flight, and brought into an intimacy not only with modern technology, but with what it means to be alive in a time when our worldview includes seeing the clouds from above.

Transcontinental flights strike me as more akin to time travel than any other form of transportation. To wit: I departed San Francisco on a Saturday afternoon, and when I landed in Cape Town, it was still the afternoon, but the calendar had moved ahead by two days. We are living in the future that minds like H.G. Wells predicted a century ago...

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NatCap Research Shows World Forest Carbon Stocks Overestimated

Forests provide many benefits, including regulating the climate by converting atmospheric carbon into living plant material like trees, shrubs, ground cover, and roots. Research by NatCap and collaborators published in *Nature Communications* shows that scientists have

been overestimating that benefit.

The new findings apply to tropical forests where people have cleared trees—usually for roads, timber, or agriculture. This fragmentation creates more dry, sparse forest vegetation, which holds less carbon.



*Fragmented forests in Myanmar suffer reduced carbon storage capacity following deforestation for roads, timber, or agriculture.
Photo credit: Lisa Mandle*

"This is the first predictive study of how exactly carbon storage changes with distance from forest edge," said lead author Becky Chaplin-Kramer, a researcher at The Natural Capital Project, at the Stanford Woods Institute for the Environment.

Co-author Paul West of the University of Minnesota's Institute on the Environment highlights a solution: "Targeting forest conservation and restoration efforts to fill in the gaps is a win-win for both the climate and natural habitat."

Co-authors include Richard Sharp and Lisa Mandle of The Natural Capital Project; Nick M. Haddad of North Carolina State University; Ivan Ramler of St. Lawrence University; James S. Gerber and Peder Engstrom of the University of Minnesota; Alessandro Baccini of Woods Hole Research Center; and Sarah Sim, Carina Mueller and Henry King of Unilever.

[Degradation in carbon stocks near tropical forest edges](#)

Chaplin-Kramer, Rebecca, Ivan Ramler, Richard Sharp, Nick M. Haddad, James S. Gerber, Paul C. West, Lisa Mandle, Peder Engstrom, Alessandro Baccini, Sarah Sim, Carina Mueller and Henry King
Nature Communications 6:10158. December 18, 2015. doi:10.1038/ncomms10158

[New study finds world forest carbon stocks overestimated](#)

Todd Reubold, UMN Institute on the Environment, December 21, 2015

[Stanford Researchers find world forest carbon stocks overestimated](#)

Stacey Solie, Stanford Report, December 18, 2015

[Carbon Storage Shortage? Tropical Forests Are Storing Less Greenhouse Gas Than Thought](#)

Catherine Arnold, Nature World News, January 5, 2016

RECENT PRESS & PUBLICATIONS:

[Global use of ecosystem service models](#)

Posner, Steven, Gregory Verutes, Insu Koh, Doug Denu and Taylor Ricketts
Ecosystem Services 17: 131-141. February 2016. doi: 10.1016/j.ecoser.2015.12.003

[New water scarcity map offers tool for better planning](#)

Monique Dubos, UMN Institute on the Environment, January 20, 2016

[Water depletion: An improved metric for incorporating seasonal and dry-year water scarcity into water risk assessments](#)

Brauman, Kate A., Brian D. Richter, Sandra Postel, Marcus Malsy and Martina Flörke
Elementa: Science of the Anthropocene. 4: 000083. January 20, 2016. doi: 10.12952/journal.elementa.000083

[Balancing hydropower and biodiversity in the Amazon, Congo, and Mekong](#)

Winemiller, K. O., P. B. McIntyre, L. Castello, E. Fluet-Chouinard, T. Giarrizzo, S. Nam, I. G. Baird, W. Darwall, N. K. Lujan, I. Harrison, M. L. J. Stiassny, R. A. M. Silvano, D. B. Fitzgerald, F. M. Pelicice, A. A. Agostinho, L. C. Gomes, J. S. Albert, E. Baran, M.

Petriere Jr., C. Zarfl, M. Mulligan, J. P. Sullivan, C. C. Arantes, L. M. Sousa, A. A. Koning, D. J. Hoeninghaus, M. Sabaj, J. G. Lundberg, J. Armbruster, M. L. Thieme, P. Petry, J. Zuanon, G. Torrente Vilara, J. Snoeks, C. Ou, W. Rainboth, C. S. Pavanelli, A. Akama, A. van Soesbergen and L. Sáenz
Science 351:128-129. January 8, 2016. doi:10.1126/science.aac7082

[Report: Wild Bee Decline Threatens U.S. Crop Production](#)

Eric Galatas, Public News Service - TX, January 5, 2016

[Modeling the status, trends, and impacts of wild bee abundance in the United States](#)

Koh, Insu, Eric V. Lonsdorf, Neal M. Williams, Claire Brittain, Rufus Isaacs, Jason Gibbs and Taylor H. Ricketts
PNAS 113:140-145. January 5, 2016. doi:10.1073/pnas.1517685113

[What is the future of clean water in Minnesota?](#)

Monique Dubos, UMN Institute on the Environment, December 23, 2015

[Bidder Behavior in a Common Value Simultaneous Ascending Auction](#)

Griffin, Robert and Christopher Anderson
Strategic Behavior and the Environment 5:215-253. December 22, 2015. doi: 10.1561/102.00000061

[Enlisting Ecosystem Services: Quantification and Valuation of Ecosystem Services to Inform Base Management](#)

Marc N. Conte, Gretchen C. Daily, Peter J. Dennedy-Frank, Bradley A. Eichelberger, Yonas B. Ghile, Gail M. Kaiser, Shan Ma, Brynn W. McNally, Elizabeth M. Rauer, Mary H. Ruckelshaus, Guy Ziv and Jennifer M. Duggan
ESTCP Project RC-201113. April 2015.

[Improving Tools for Quantifying the Effectiveness of Conservation](#)

Joanna Nelson, Cool Green Science, December 4, 2015

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Jobs In Natural Capital

OUR PARTNERS ARE HIRING

[Lead Scientist for the Nature Conservancy and Professor of Practice at the University of Washington](#)

The Nature Conservancy and the University of Washington seek an accomplished conservation leader to serve in a joint position as the Lead Scientist for the Nature Conservancy in Washington and Professor of Practice (#0120) in the University of Washington, College of The Environment's School of Environmental and Forest Sciences (SEFS) and Center for Creative Conservation.

[Assistant Professor, The School of Environmental and Forest Sciences at the University of Washington](#)

The School of Environmental and Forest Sciences (SEFS) at the University of Washington seeks to fill a tenure-track position at the Assistant Professor (#0116) level with specialization in the areas of nature, health, and recreation.

[Assistant Professor, The School of Environmental and Forest Sciences at the University of Washington](#)

The University of Washington's School of Environmental and Forest Sciences (SEFS) invites applications for a full-time (9-month; 100% FTE) tenure-track Assistant Professor (#0116) position to begin Autumn 2016. This position, with a focus on Forest Ecosystem Science and Services, is part of a University of Washington/College of the Environment initiative to strengthen its teaching and research capability in the areas of forest ecosystems, renewable energy, and sustainable technologies.

Thank you for your continued interest in The Natural Capital Project. If you have any questions, please feel free to contact us at contact@naturalcapitalproject.org.

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