Making Marine Science Matter

Attending the 3rd International Marine Conservation Conference, Making Marine Science Matter? NatCap will be running a focus group - Tricks for the Trade: Identifying and Overcoming Barriers to Spatial Planning - on August 16th at the conference in Glasgow, Scotland. This will be a great opportunity to discuss barriers to spatial planning, explore how tools might help overcome some of those, and envision novel solutions to remaining challenges.
One outcome from this workshop will be feedback from the international scientific and practitioner community on our marine spatial planning tool.

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

Ocean Planning in New England

LENDING SCIENCE SUPPORT TO REGIONAL COASTAL AND MARINE PLANNING

The Southeast Light, Block Island Rhode Island.
Photo credit: (cc) Paul-W, flickr.

As more people demand more resources from marine and coastal areas, comprehensive planning that sustainably balances multiple uses is becoming increasingly crucial. Large-scale marine spatial planning is underway in the United States, thanks to Obama's National Ocean Policy, which calls for the establishment of regional planning bodies to develop spatial plans for all US waters. NatCap is working with other scientists, policy makers, NGO's, and federal agencies in one of the first regional planning bodies--established in New England--to provide relevant ecosystem service information to support coastal and ocean planning.

New and emerging activities in a region can catalyze or paralyze efforts to manage multiple social benefits. Where, whether, and how to site offshore renewable energy in New England are questions at the forefront of spatial planning there it is our hope that new information and tools can inform these decisions. As part of the first phase of our work in the region, we conducted a case study on Block Island, Rhode Island, where the first offshore wind farm in the United States will likely be installed. In this important tourist region--where residents pay the highest electricity costs in the US and place high value on scenic views --balancing renewable energy and impacts to those views is critical. We used the InVEST wind energy, recreation, and scenic quality models to identify locations for siting offshore wind energy facilities that take into account the economics of energy, recreation, and aesthetic views. Be on the lookout for a paper in the near future detailing our results and how our approach and tools can be useful in this context and elsewhere.

The next stage of our work in New England involves providing scientific support to the Northeast Regional Planning Body (RPB). The RPB is responsible for coordinating marine spatial planning between federal, state, and tribal governments and the myriad stakeholders in the region. As part of this work, we are scoping methods and tools to estimate the effects of climate change on many benefits people care about: healthy habitats, fish, fisheries, and livelihoods. In addition, we are using our engagement in New England to inform our development of a marine spatial planning tool. NatCap modelers, economists, and fisheries scientists are in Cambridge, MA today to meet with other scientists also providing scientific support to the RPB and to attend the bi-annual RPB meeting. We continue to listen and learn how we can best support planning in the region. Our work in New England is being generously funded through a grant from the Gordon and Betty Moore Foundation.

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 1.0.0 beta was released on November 6, 2013.

For help using InVEST and RIOS, visit the NatCap Forums, our online user community.

Newsletter Archive

Check out NatCap's previous newsletters in our Newsletter Archive.

Scenic Quality

NEWLY IMPROVED InVEST MODEL

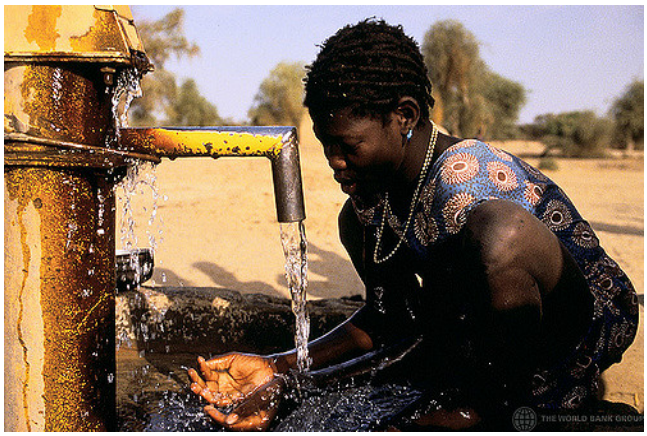
We are constantly working to improve the models within the InVEST toolbox so that they are more scientifically rigorous, easier to use, and more flexible. The Scenic Quality model is one tool that we have recently updated. The model assesses the visual quality of a landscape based on existing or planned features (landfills, wind turbines, open space, ocean views, etc.). For our techie readers, our model is similar to the viewshed tool in ArcGIS, but the InVEST Scenic Quality model has more features and, like all of our models, it is free and open source.

We are a visual species. The provision of unobstructed views of natural environments is a service that many people value. Photo credit: (cc) Albert de Bruijn, flikr.

Our Scenic Quality model is focused on people. New features allow users to value scenic quality in a variety of ways such as the number of "viewer days" per year or the monetary value of a change in scenic quality using valuation functions from peer-reviewed literature. With these new features, the tool can produce sophisticated impact assessments and inform the siting of new projects with minimal visual quality impacts on landscapes and seascapes.

Recent Press and Publications

Many applications of hydrological science in conservation and development contexts are engineering projects that aim to improve human wellbeing through pumps or water treatment plants that efficiently deliver water to people who need it. However, new approaches to water treatment and delivery that explicitly incorporate ecosystem services are becoming the new normal. In a thought-provoking new paper published this month in Water Resources Research, Dr. Drew Guswa, a senior hydrology advisor to NatCap and a professor at Smith College, led a group of NatCap hydrologists, ecosystem service scientists, and key collaborators in a paper encouraging the hydrologic-modeling community to contribute their knowledge and expertise to better inform land use decisions affecting the provision of water services.



Drinking water provided by a pump in Mali. Photo credit: (cc) Curt Carnemark, The World Bank.

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. May 2014, Vol. 50(5), pp 4535-4544.

Other Press and Publications:

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[Resilience by design: water funds for multifunctional landscapes]
CGIAR Agriculture and Ecosystems Blog
by Becky Chaplin-Kramer - June 6, 2014

[Key Lessons for Incorporating natural infrastructure into regional climate adaptation planning]
Langridge, Suzanne M.; Eric H. Hartge; Ross Clark; Katie Arkema; Gregory M. Verutes; Erin E. Prahler; Sarah Stoner-Duncan; David L. Revell; Margaret R. Caldwell; Anne D. Guerry; Mary Ruckelshaus; Adina Abeles; Chris Coburn; Kevin O'Connor.
Ocean & Coastal Management. July 2014, Vol. 95, pp 189-197. DOI: 10.1016/j.ocecoaman.2014.03.019

[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. June 2014, Vol. 8, pp 148-165.

[Human Health as a Judicious Conservation Opportunity]
Redford, K. H.; S. S. Myers; T.H. Ricketts; S.A. Osofsky.
Conservation Biology. June 2014, Vol 28(3), pp 627-629. doi: 10.1111/cobi.12290

[New Conservation: Setting the Record Straight and Finding Common Ground]
Kareiva, Peter.
Conservation Biology. June 2014, Vol. 28(3), pp 634-636.

[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; Derric Pennington; Volker C. Radeloff.
Proceedings of the National Academy of Sciences. May 2014, 11(20):7492-7. doi: 10.1073/pnas.1405557111.

[A tradeoff frontier for global nitrogen use and cereal production]
Mueller, Nathaniel D.; Paul C. West; James S. Gerber; Graham K. MacDonald; Stephen Polasky; Jonathan A. Foley.
Environmental Research Letters. May 2014. Issue 9, no. 5: 054002.

[The evolving linkage between conservation science and practice at The Nature Conservancy]
Kareiva, Peter; Craig Groves; Michelle Marvier
Journal of Applied Ecology. May 18, 2014. DOI: 10.1111/1365-2664.12259

[Reply to De Coster et al.: Exploring the complexity of ecosystem-human health relationships]
Myers, Samuel S.; Lynne Gaffikin; Christopher D. Golden; Richard S. Ostfeld; Kent H. Redford; Taylor H. Ricketts; Will R. Turner; Steven A. Osofsky.
PNAS. May 6, 2014, Vol. 111(18), E1816, doi: 10.1073/pnas.1402671111

[Implementing the optimal provision of ecosystem services]
Polasky, S.; D. Lewis; A. Plantinga; E. Nelson
Proceedings of the National Academy of Sciences. April 2014, Vol. 11, doi: 10.1073/pnas.1404484111.

[The physics of ocean undertow: Small forces make a big difference in beach erosion]
Phys.org May 13, 2014
By AIP News Staff

[Evaluating the Role of Amazon Region Protected Areas and Anti-Deforestation Policies for Supplying Hydropower, Avoiding Carbon Emissions, and Economic

Returns in the Brazilian Amazon
Pennington, Derric N.; Erik Nelson; Michael Anderson; Marcia Macedo; Michael Coe; Alexander Daniels; Daniel Schmoll; Meg Symington
In: Aguirre, A.A., Sukumar, R., Medellin, R.A. (eds) Tropical conservation: a view from the south on local and global priorities, Oxford University Press (invited)

A full list of news stories and publications are available on our website. Access to full articles may require library access.

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