



# SNAPPshot

SCIENCE FOR NATURE AND PEOPLE PARTNERSHIP





## DIRECTOR'S LETTER

### Dear Friends of SNAPP,

In just four years, the Science for Nature and People Partnership is showing what we can achieve when we bring together practitioners, governments, private industry, academics and other stakeholders to deliver rapid solutions to the most critical challenges facing humans and our planet.

Here we highlight some of the impacts of SNAPP, from guiding aquaculture development off the coast of California to investment in children's aid groups in the UK to influencing logging concessioners in Indonesia and Mexico.

Last summer I returned from a trip to Rwanda, where I saw nature playing a role in knitting peace after strident conflict. The agile leadership of the Wildlife Conservation Society's Rwanda Director led SNAPP's Natural Capital

Accounting working group to integrate nature and equity questions into the country's long-term economic recovery plan. Ensuring that conservation and humanitarian concerns, as well as sustainability and equity, are channeled forward in tandem is truly a global challenge that touches each of us.

I look forward to working with you all, SNAPP supporters and collaborators, to amplify this vision and strengthen our impact for improved conservation, sustainability and human well-being.

Kind regards,  
*Jensen Reitz Montambault, PhD.*  
*Director, Science for Nature and People Partnership*  
March 2018



## WHAT IS SNAPP

The world's biggest conservation and development challenges demand innovative solutions. But individual experts in these fields are busy and often very specialized; they rarely have the ability or the incentive to tackle a multi-dimensional challenge related to both conservation and development.

SNAPP solves this problem. SNAPP selects its multi-disciplinary teams through a rigorous proposal process,

and then provides them with funding, neutral meeting spaces, and comprehensive travel, computational and logistical support.

These tangible incentives are the “enabling conditions” that allow a team of experts from a diversity of disciplines to convene around a specific global challenge at the intersection of conservation and human well-being.

## SNAPP BY THE NUMBERS

- 33** Working groups SNAPP has convened since 2013
- 8** Working groups that have spun off into self-sustaining conservation initiatives
- 58** Peer-reviewed papers, and 298 total products
- >40** Countries represented by working groups
- >630** Participants in SNAPP working groups
- >300** Institutions represented by SNAPP
- ~990** Years of total experience from the team leaders
- 1,250** Miles traveled by a dorado catfish (Amazon Waters, page 6)
- 625** millions of U.S. dollars property value saved by coastal wetlands during Hurricane Sandy (Coastal Defenses, page 4)

SNAPP convenes working groups that bring together scientific expertise from non-profit conservation and human development organizations, academia and governmental agencies.





## THE ROLE OF COASTAL WETLANDS IN HURRICANES: **THE EXPANDING IMPACT OF SNAPP**

After the storms of September 2017—from the hurricane that hit Houston to the deadly monsoons in India and Pakistan—attention turned to how to reduce the impact of these weather events. And some asked: Could nature-based solutions, like wetlands and oyster reefs, play a role in protecting cities?

Just as the hurricane made landfall in Texas, a paper appeared that actually quantified how much protection coastal wetlands provided during another famous storm. Published in the journal *Scientific Reports*, the article was an extension of the work by SNAPP's Coastal Defenses working group.

This study, led by a team from the engineering, insurance and conservation sectors, found that coastal wetlands

in the northeastern USA prevented more than US \$625 million in direct property damages during Hurricane Sandy, reducing damages by an average of 22% in over half the affected areas.

The study found that even relatively degraded wetlands in highly urban areas like New York City provided hundreds of millions of dollars in flood protection.

As researchers Mike Beck and Siddharth Narayan wrote, “The implications of these findings are significant, both for risk reduction practice as well as conservation financing. Increasingly, the economic benefits of natural habitat for risk reduction are being recognized not just by conservationists but by engineers, governments, and most recently, the private insurance sector.”



# IMPACT

The Coastal Defenses working group launched in 2013, one of the first two working groups funded by the partnership. It recognized that little attention had been paid to measuring the costs and benefits of nature-based solutions, necessary if governments, the insurance industry and others are to increase spending for wetlands, coral reefs and other natural solutions.

During its working group cycle, Coastal Defenses published 9 papers and reports, providing a comprehensive look at coastal risks and associated environmental solutions. The working group's recommendations were included in the World Bank's guidelines, *Managing Coasts with Natural Solutions*.

But the SNAPP impact goes farther: the working group continued its work after SNAPP funding was complete, and the analysis of wetlands during Hurricane Sandy is an example of an 'extension' of a SNAPP project.

Since SNAPP's inception, 6 working groups have launched self-sustaining spin-off initiatives. Another 8 have solutions expected to change policy and/or practice.

SNAPP seeks to make the working group as impactful as possible—including having that impact expand well beyond the life cycle of the funding. Each working group focuses on the science, enabling conditions and other factors that lead to the most successful solutions.

The Coastal Defenses working group offers analyses that can help decision makers make intelligent choices that can save lives and property, and restore natural habitat.

Your investment in SNAPP makes a difference for the biggest environmental challenges the planet faces—and that impact continues to expand beyond the working group's life cycle.





## UNDERSTAND

To solve big conservation challenges, you first have to understand the problem. But many places and many issues have been poorly studied, or have not been analyzed in a manner that looks comprehensively at the factors affecting people and nature.

Whether quantifying the value of wetlands for storm protection (see previous page), or mapping the impacts of dams on the Amazon, SNAPP working groups provide a greater understanding of some of the biggest conservation challenges facing the world.

### MAPPING THE LONGEST FISH MIGRATION

The Amazon Waters working group developed a new scientific understanding of the Amazon based on an unprecedented basin-wide analysis of freshwater ecosystems. Among its most surprising findings? Confirming the world's longest known freshwater fish migration. The dorado catfish migrates from the Amazon estuary to breeding grounds near the Andes.

These findings will be used to inform more effective fisheries and integrated water basin management in the Amazon.

These results helped guide the Gordon and Betty Moore Foundation's \$50 million expansion of their Andes-Amazon Initiative.

### TREES PROTECT CORAL REEFS

To protect coral reef fisheries, conservationists typically look to underwater solutions. But maybe they should also look to the trees. What happens on land, it turns out, has dramatic affects on what happens at sea.

A new paper coauthored by Ridges to Reefs working group members found that, in the Solomon Islands, near-shore logging operations significantly reduce populations of juvenile bumphead parrotfish on their nursery grounds, threatening local livelihoods and reef health.

This project helped prevent logging in Isabel Province and Kolombangara Island in the Solomon Islands that would have damaged reef fish nursery habitat.





## INNOVATE

Everyone knows the old cliché: Great minds think alike. The SNAPP working group model offers a better version: **Great minds think together.**

With diverse perspectives and expertise from non-governmental organizations, universities, and agencies, a SNAPP working group can bring the best science and creative thinking to seemingly overwhelming issues. The results offer solutions that can be scaled and replicated at other projects globally.

## THE ROAD TO SUSTAINABLE FISHERIES IS PAVED WITH DATA

There's a lot of conservation news about declining global fisheries. But the reality is most fisheries aren't closely monitored. And what we can't measure, as the old saying goes, we can't manage.

"The good news is, there are methods to assess stocks with limited data at lower costs than traditional stock assessments," says Carmen Revenga, one of the Data-Limited Fisheries working group leads. "However, the complexity of choice can be challenging: how do managers choose between the hundreds of different ways to collect data, assess the status of the stock, select and implement management regulations?"

The Data-Limited Fisheries working group developed a

user-friendly application called "FishPath" so people in small-scale and data-limited fisheries around the world can make science-based management decisions.

FishPath is a decision-making software application that provides fisheries managers with a step-by-step guide to select monitoring, assessment, and management methods for their fishery. It is now the most comprehensive toolkit for data-limited fisheries and is being integrated into international sustainable fisheries certification standards.

As project co-leader Jono Wilson says: "We now know how to manage these data-limited fisheries, so the next task is to get the solutions in the hands of the people who need them."



## RETHINK

What are conservationists' biggest assumptions? Is it time to rethink them? Oftentimes, solutions are presented as either/or, but many SNAPP working groups find that better answers are much more complicated.

The latest models and on-the-ground science reveal nuance, and offer a better path for the future. But the real power in SNAPP working groups is in bringing together diverse perspectives—from different sectors, from academia, from non-profit organizations, from agencies.

## BEYOND FOREST SHARING OR FOREST SPARING?

To save tropical forests, conservationists often frame the issue as a choice between forest sharing or forest sparing. Sharing involves low-intensity use across most or all of the landscape, which often means some form of selective logging. Land sparing involves converting a small patch of land to a more intensive use, like oil palm or acacia plantations, and setting the rest aside as protected forest.

"Our SNAPP group is trying to step beyond this dichotomy," says Bronson Griscom, a team leader of the Forest Sharing or Forest Sparing working group. "It's probably not just one or the other, but a mix of both depending on where you are in the landscape."

In Indonesian Borneo, the SNAPP analysis will model what combinations of sharing & sparing are needed to maintain target wood production while also prioritizing four major forest services: biodiversity conservation, hydrological services, carbon sequestration, and human well-being.

"People are part of the equation, and if we want to transform larger systems then we have to get into the messy world of commodity production systems and make them better," says Griscom. "That brings us to a simple question: how do we achieve the greatest conservation and other human well-being outcomes while maintaining the fundamental commodity products from this landscape?"





## REIMAGINE

For much of conservation history, the response to development projects has been simple: No. Turn wildlife habitat into farmland? Develop energy? Farm fish? No, no, no.

Unfortunately, this response often pits the needs of people against the needs of nature. From its start, SNAPP has fundamentally reimagined what conservation can be, and the questions we should be asking.

**Instead of just saying no, SNAPP asks “How can we do it better?”**

## SUSTAINABLE AQUACULTURE

Marine aquaculture could produce as much seafood as all of the world’s wild marine fisheries, using less than 0.015 percent of the space in the world’s oceans. But many consumers, particularly in developed countries like the United States, have a negative opinion of aquaculture. Both are findings of SNAPP’s Sustainable Aquaculture working group.

The skepticism of aquaculture was even on display at a SNAPP event featuring experts on the topic. Many in the audience expressed concern based on news and environmental reports they had read. Isn’t aquaculture bad for wild fisheries?

The working group finds that aquaculture can be done in ways more or less sustainable. Several studies have shown that siting fish and shellfish farms more than one nautical mile offshore, where water is deeper and currents are faster, can reduce pollution when compared to nearshore production of the same species in the same region.

According to a recent piece published in *The Conversation* by working group leaders, their analysis “found that 3 percent of the world’s oceans appears very suitable for marine aquaculture. This may sound small, but it is actually an extraordinary amount of area, spread across nearly every coastal country in the world—about four million square miles.”

# INSPIRE

SNAPP envisions a world where people and nature thrive. It is based in science, but it's also a vision of hope. Doom-and-gloom dominates the news. Even hard-core environmentalists feel weary at the onslaught of stories of loss and destruction.

But conservation science can chart a brighter future. And SNAPP working groups have demonstrated that even the most troubling stories can become bright spots.



## RWANDA LOOKS TO NATIONAL PARKS FOR A PEACEFUL, HOPEFUL FUTURE

For many, the mention of Rwanda evokes one of the most horrific stories of the past 50 years. In 1994, a rapid outbreak of violence resulted in the deaths of more than 800,000 of the Tutsi population. More than two decades later, the nation looks to a peaceful, hopeful future—and the role national parks could play.

National parks are a major tourism draw in Rwanda, particularly for the chance to see mountain gorillas and other charismatic wildlife, but how can these parks support both social equity and conservation outcomes?

The Natural Capital Accounting working group proposed restructuring national park fees (including a higher fee for international visitors) to achieve these goals.

As Dr. Emmanuel Nkurunziza, Director General of Rwanda Natural Resources Authority (RNRA), says: “The wildlife that teems on our beautiful land can only be a source of growth if we also protect them. Rwanda aims to become one of the first countries in Africa to quantify the benefits ecosystems bring. That will help us to more effectively manage our long-term growth.”

## THE ECONOMICS BEHIND THE IVORY TRADE

Elephant poaching is an issue that can elicit particular hopelessness among wildlife conservationists. Seemingly every day, there are more stories of dead elephants. The Chinese Ivory Trade working group focused on the economic implications of an ivory ban, crucial information for the Chinese government.

Work focused on the costs associated with the ban, including on the ivory industry and associated legal enforcement. The data changed the conversation by bringing economics into the feasibility of banning ivory.

The Chinese government banned ivory in 2017. Ivory prices have already declined in Asia.





## ADRIANA DINU SNAPP BOARD MEMBER



SNAPP Board Member Adriana Dinu serves as Executive Coordinator of the UNDP – Global Environmental Finance (GEF) Unit. She provides strategic leadership and management of a US \$4 billion portfolio with over 1,000 projects in 150 countries.

Earlier in Dinu's career, she worked for Flora and Fauna International. When she began, she says, "I came in with much enthusiasm to do biodiversity surveys and set up enforcement and train rangers. Alternative livelihoods were way down on my list."

But she quickly realized the futility of focusing on conservation without human development. After returning from a project in Central America, she realized nothing that she thought was going to happen actually happened. "Two days after I got back to Washington, DC, I heard there was poaching again."

It's why SNAPP's dual focus on conservation and community development is so important.

"We are not going to do ideal conservation without community development," Dinu says. "SNAPP is exactly that. What I love about SNAPP is that it is not pure academics. I love that it is always responding to a management question."

# HOW TO GIVE

## **The Science for Nature and People Partnership (SNAPP)**

is a collaboration between three partners: The Nature Conservancy (TNC), the Wildlife Conservation Society (WCS), and the National Center for Ecological Analysis and Synthesis (NCEAS) at the University of California, Santa Barbara.

Donations to SNAPP fund important and innovative solutions for people and nature. You can give online at **[snapppartnership.net/donate](http://snapppartnership.net/donate)**. The University of California Santa Barbara Foundation processes online contributions, subject to the UCSB Foundation gift acceptance policies.

If you prefer to donate through representatives at The Nature Conservancy or the Wildlife Conservation Society, please contact **[snapp@snapppartnership.net](mailto:snapp@snapppartnership.net)** to make an inquiry.

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For complete information on the impact of SNAPP working groups and our staff and board members, please visit: **[snapppartnership.net](http://snapppartnership.net)**



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