10 May 2006

ecosystem services

status and summaries

The Nature Conservancy

SAVING THE LAST GREAT PLACES ON EARTH

Ecosystem Services: Status and Summaries

Cover: Chiquitano children living in one of the local communities just outside the border of Noel Kempff Mercado National Park in Bolivia. © Hermes Justiniano

Introduction

Hundreds of ecosystem services projects are currently being pursued worldwide, administered by a several conservation organizations. The Nature Conservancy is one such group. The following document is an effort to compile and summarize Nature Conservancy ecosystem services projects. We gathered this information through e-mail and phone by networking as thoroughly as possible with TNC project leaders throughout the world (see http://www.nature.org/wherewework/). We have certainly overlooked some projects, and there may be projects included that are only partially focused on ecosystem services. We anticipate continually updating this document in order to keep it useful as a portal to TNC's broad engagement with ecosystem services. Please refer to the contacts listed for each project to learn more about the particulars of that program. A more comprehensive list of contacts is provided at the end of this document. Contacts are listed with their job title and any specific project affiliations for which they are involved.

Information for this document was compiled between January and April 2006, with the last update occurring May 10, 2006. It will not be updated again until May of 2007. Things happen rapidly in our conservation world, and as a result some of this information may be out of date. If you wish to submit a project for inclusion in this compilation, please send an email to Peter Kareiva (pkareiva@tnc.org). Please indicate in the subject heading "ecosystem services compilation".

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Peter Kareiva

10 May 2006

Asia Pacific

Impacts of Climate Change on the Yangtze River Flood Regime

Start Date: awaiting approval

Countries/Locations:
China

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Ecosystem Services Focus:
water regulation, biodiversity conservation

Links/Documents:

Project Summary: To minimize loss of life and property, the government of China invests substantial resources in infrastructure to manage periodic floods in the Yangtze River basin, including for example the Three Gorges Dam. Chinese experts in climate and hydrology have not previously had access to climate models with sufficiently detailed time resolution to allow projections of future flood frequency and severity. Consequently, massive resource allocations for infrastructure with multi-decadal operational lifetimes have been made on the basis of historic river flow patterns. TNC is presently developing a collaborative project between the Sustainable Waters Program and TNC-China to investigate the siting and operation of dams to meet energy, irrigation and flood control needs while promoting run-of-river flows needed to support biodiversity conservation.

Current Activities: awaiting approval

Future Plans: This project will use fine temporal resolution climate change model outputs to drive climate/hydrology models for the Upper Yangtze basin under a range of climate scenarios. Changes in the projected severity and magnitude of floods and droughts will be identified by our academic in-country partners and utilized by Chinese management agency partners.

Partners: TNC – China, Wuhan University, Changjiang Water Resource Commission, Oak Ridge National Laboratory

Funding: TNC – China

Upper Yangtze River

Start Date: 2006

Countries/Locations:
China

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Mike Heiner
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Ecosystem Services Focus:
water regulation, erosion regulation, climate regulation (carbon sequestration), and biodiversity conservation.

Links/Documents:
contact Mike Heiner for summary document

Blueprint China (nature.org)

Project Summary: TNC pilot effort to incorporate ecosystem services into an ecoregional assessment for the Upper Yangtze River. Pilot project to be completed in 2007. Results will hopefully be integrated into a nation-wide identification of priority conservation areas and associated conservation strategies by the Chinese government.

Current Activities: The Chinese State Environmental Protection Agency (SEPA) is interested in delineating Ecosystem Function Conservation Areas (EFCAs) across China as a new form of protected area to provide multiple ecosystem service benefits, including water retention, soil retention, biodiversity conservation, and carbon sequestration. Designed to complement and inform the national level effort, this initial pilot work, as part of a $26 million United Nations Environment Programme (UNEP) – Global Environment Facility (GEF) project to reduce flooding in the Yangtze Basin, intends to establish an ecosystem function monitoring and early warning system and initiate two demonstration sites of how EFCAs serving multiple benefits might actually work. TNC is working with SEPA at one of the demonstration sites in northwest Yunnan (Laojunshan/Lashihai) to develop the monitoring system and track multiple benefits by providing biodiversity information, technical support on monitoring (framework, indicators), and support on methods/tools.

Future Plans: The government of China plans to use these methods to identify over 100 EFCAs across China. TNC will (1) assess correlation between areas of biodiversity significance identified by the assessment and the Ecosystem Function Conservation Areas, (2) use the correlation assessment to develop multi-site strategies that promote conservation of ecosystem services as a basis for biodiversity conservation

Partners: TNC, Chinese State Environmental Protection Agency (SEPA), United Nations Environment Programme (UNEP) – Global Environment Facility (GEF)

Funding: UNEP – GEF

Forest Restoration for Climate, Community, and Biodiversity

Start Date: 2005

Countries/Locations: China

Ecosystem Services Focus: water regulation, soil regulation, climate regulation (carbon sequestration), biodiversity conservation

Contacts: Zhang Shuang – TNC China Program shzhang@naturechina.org

Links/Documents:

Project Summary: This project experiments with "multiple benefits" of climate stabilization, community development, and biodiversity conservation in support of China's efforts to meet specified guidelines as a signatory to the Kyoto Protocol. The project is comprised of three components: field demonstrations in Yunnan and Sichuan of multiple benefits, influence on national level planning and policy to promote carbon sequestration (and other ecosystem services), and promotion of Climate, Community and Biodiversity Alliance standards in China.

Current Activities: Currently, the project is establishing formal relationships with key partners; supporting Yunnan Forestry Bureau to fully execute their first Clean Development Mechanism (CDM) project through development of appropriate analytical and information management tools, facilitating stakeholder engagement, and building technical and financial capacity of stakeholders; launching a pilot watershed project at the local scale to explore practical policies and finance mechanisms to account for and value carbon sequestration and watershed services; and conducting relevant policy and finance mechanism research to inform policy development.

Future Plans: Develop framework and capacity of Chinese government and partners to implement multiple-benefit ecosystem service projects, focusing on carbon sequestration. Continue to develop and refine geographic and spatial tools for project (parcel) identification. Use research to inform and infuse carbon and energy government policy development and decisions with biodiversity considerations.

Partners: Conservation International (CI)**,** TNC, State Forestry Administration (SFA), Winrock, State Environmental Protection Agency (SEPA), Lijiang Municipal government, China Forest Science Academy, Yunnan/Sichuan Forestry Bureau

Funding: TNC, CI, SFA

Benefits Beyond Boundaries

Start Date: July 1, 2005

Countries/Locations:
Indonesia

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Ecosystem Services Focus:
capture fisheries, wild plant and animal products, cultural diversity, recreation and ecotourism, biodiversity conservation

Links/Documents:
www.coraltrianglecenter.org

www.komodonationalpark.org

Project Summary: Research project demonstrating how no-take zones in Marine Protected Areas (MPAs) contribute to sustainability of commercial fisheries on Indonesia's coral reefs. Research area is Komodo National Park and surrounding waters, where TNC has implemented a marine conservation program in 1996. Indonesia's fish stocks are currently over-exploited by artisanal and industrial fisheries. Various studies have called upon the government to shift fisheries policy from further development to better management. MPAs that include no-take zones have shown benefits for commercial fisheries, ecotourism and biodiversity conservation. In Indonesia, no-take zones are increasingly considered a possible tool for management of marine natural resources. However, implementation of no-take zones is hampered by weak knowledge on design criteria and resistance from the fishing community, concerned about short-term losses from lost fishing opportunities in closed fishing grounds. Demonstrating beneficial effects of no-take zones will help generate stakeholder support.

Current Activities: Assessments of fish catches from traditional fisheries

Future Plans: (1) Drifter studies to assess spatial dispersal of larvae of commercial fish species, (2) interviews with local fishers to reconstruct pristine reef fish communities, (3) a simulation model to assess effects of no-take zones.

Partners: Fishery Center of the University of British Columbia, Komodo National Park Authority, PT Putri Naga Komodo

Funding: US$80,000 through RJ KOSE

Mesoamerica, South America, and Caribbean

Rio Bravo Carbon Sequestration Pilot Project

Start Date: 1995

Countries/Locations:
Belize

Ecosystem Services Focus:
Climate regulation (carbon sequestration), primary production (forests), timber, biodiversity conservation

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Links/Documents:
WE Energies

Rio Bravo Conservation and Management Area (nature.org)

Ecosystem Marketplace: Rio Bravo Climate Action Project Summary

Project Summary: The Rio Bravo Carbon Sequestration Project is a model project demonstrating how saving forests is part of the solution to climate change. This involves conservation and sustainable management of more than 153,000 acres of forest in Northwest Belize. The project will reduce, avoid, or mitigate atmospheric carbon dioxide over 40 years through prevention of deforestation and ensuring sustainable forest management. This is one of the first fully funded forest-sector projects implemented under the US Initiative on Joint Implementation and is taking place at the Rio Bravo Conservation and Management Area (260,000 acres). The project is managed by the Programme for Belize, TNC's partner organization.

Current Activities: Project activities include sustainable forest management and regeneration, combining improved timber operations and ecosystem management practices (creating undisturbed buffer areas, protection zones, reduced-impact harvesting techniques, enhanced fire and site security), providing jobs and training in forestry, forest management, and park security; improving road maintenance and other infrastructure improvements, forest resource and habitat conservation, monitoring and mitigation strategies to ensure no carbon leakage is attributable to the project.

Future Plans: Establish an endowment fund to secure long-term funding. Continue current activities.

Partners: WE Energies, Cinergy Services, Inc., DTE Energy, Pacificorp, Utilitree Carbon Company, TNC, Programme for Belize, Suncor Energy, Inc., Canadian Occidental Petroleum, Ltd. (Nexen, Inc.)

Funding: WE Energies, Cinergy Services, Inc., DTE Energy, Pacificorp, Utilitree Carbon Company, Suncor Energy, Inc., Canadian Occidental Petroleum, Ltd. (Nexen, Inc.)

Noel Kempff Mercado Climate Action Project

Start Date: March 1998

Countries/Locations: Bolivia

Ecosystem Services Focus: climate regulation (carbon sequestration), primary production (forests), timber, erosion regulation, water purification, ecotourism and recreation

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Links/Documents:
The Noel Kempff Climate Action Project Website,

Noel Kempff Climate Action Project (nature.org)

2001 Analysis of Leakage, Baselines, and Carbon Benefits for the Noel Kempff Climate Action Project

Noel Kempff News Release, December 2005

Parks in Peril (nature.org)

Bolivia: Noel Kempff Mercado National Park Award-Winning Project Keeps Earth Cooler and Trees Standing

Project Summary: Through a unique partnership, this TNC project is helping protect the 3.8 million acres of Noel Kempff Mercado National Park in NE Bolivia. The 1.6 million acre project within the park is expected to reduce, avoid, and mitigate up to 5.8 million tons of carbon dioxide over 30 years by avoiding logging and agricultural conversion. The project emissions were certified by SGS under CDM* standards for the 1997-2005 period, making it the first project of its kind to obtain such certification. Sustainable development is a primary goal of the project and local communities are central partners.

Current Activities: Four project components are currently taking place: (1) Protection: involving the implementation of an integrated control and security strategy and the strengthening of bi-national institutional coordination (Brazil-Bolivia); (2) Community Development: involving local community initiatives that focus on contributing to economic well-being and increasing environmental awareness of communities adjacent to the park. Activities include the implementation of a resource management plan, extending cashew production, establishing local forest production, and facilitating land title clarification; (3) Monitoring and Verification: involving capacity building for all actors involved in the extended monitoring scheme and carbon offsets commercialization; (4) Self-sustaining Programs: includes implementing an ecotourism strategy with the Noel Kempff Park administration and ongoing botanical research and development to the State University of Santa Cruz (UARGM).

Future Plans: (1) Protection: include new threats to protection strategy, incorporate control burning and continue ranger training; (2) Community Development: consolidate community land titles, strengthen community-based income generating projects and continue scholarship program; (3) Monitoring and Verification: provide technical assistance to market certified carbon offsets; (4) Self-sustaining Programs: transfer ecotourism to government of Bolivia in January 2006 and promote technology center for future research.

Partners: American Electric Power, PacifiCorp, British Petroleum, TNC, Government of Bolivia, Fundación Amigos de las Naturaleza (Friends of Nature Foundation, FAN)

Funding: American Electric Power, PacifiCorp, British Petroleum, TNC

* The Clean Development Mechanism (CDM) is a project-based initiative of the Kyoto Protocol mandated to assist developing countries achieves sustainable development.

Grassland Exchange Program

Start Date:

Countries/Locations:
Brazil

Ecosystem Services Focus:
erosion regulation, fresh water, biodiversity conservation

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Links/Documents:

Project Summary: Project is currently in early stages of pilot effort. The program (1) facilitates enforcement of federal law to establish legal reserves on private lands, and (2) develops framework for trading/restoring legal reserves.

Current Activities: Brazil program is focusing efforts in Taquari and Sao Lourenco watersheds. Coarse-scale models developed with the Institute for Hydrologic Science, and fine-scale soil loss models have been developed by ANA. The fine scale models are being used in the Payment for Ecosystem Services (PES) pilot being tested in Atlantic forest region near Sao Paulo. VISTA software developed by Nature Serve will support decision making process of trading legal reserves, taking into account ecological, economic and legal criteria. VISTA will work as a landscape planning tool in this case.

Future Plans: TNC will have a digital database of more than 1000 rural properties mapped and analyzed in terms of legislation compliance status. With support of VISTA, TNC and partners will decide where and how to trade legal reserves and to restore as necessary to ensure freshwater and terrestrial ecosystem protection.

Partners: TNC intends to collaborate with university partners in Brazil to prioritize restoration efforts. TNC has already signed an agreement with the Mato Grosso State Environmental Secretariat (SEMA) and the Association of rural producers of the Mato Grosso State (FAMATO)

Funding: Great Rivers Partnership

Guaraquecaba Environmental Protection Area

Start Date: March 2000

Countries/Locations:
Brazil

Ecosystem Services Focus:
climate regulation (carbon sequestration), primary production (forests), water regulation

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Links/Documents:
Guaraqueçaba Climate Action Project Website

American Electric Power News Release

Guaraqueçaba Environmental Protection Area (nature.org)

Project Summary: Guaraqueçaba Environmental Protection Area is the largest contiguous remnant of Atlantic Forest. After centuries of human use, the Atlantic Forest has been reduced to seven percent of its original range. Remaining areas, including the project area, are under imminent threat of deforestation. An analysis of the Environmental Protection Area identified Asian water buffalo ranching as the reserve's primary threat. The three projects involve removing Asian water buffalo from areas that have been converted to pasture, restoring forests to these areas, and preventing further deforestation. These projects seek to restore and protect approximately 50,000 acres of tropical forest within the Environmental Protection Area in southern Brazil. Over 40 years, these projects are expected to reduce, avoid or mitigate significant amounts of CO_2.

Current Activities: Current work includes: conservation of biodiversity through the protection of forests; restoration of degraded forest areas; management of conservation units; implementation of scientific studies; absorption of CO_2 from the atmosphere through an increase in plant biomass (from tree planting); creation of income generating alternatives that are compatible with the conservation of the natural environment; environmental education for employees in the reserve, communities and visitors; supporting the empowerment of community in the Guaraqueçaba EPA through the creation of organizations such as cooperatives and associations of organic producers; protection of precious water resources; and dissemination of methodologies for replication of successful projects in other areas.

Future Plans: In addition to combating global warming, the project will continue to create benefits for local communities through: jobs for local residents, with formal workers rights assured; conservation and community development that promotes income-producing activities and raising the value of social and human capital; environmental education (SPVS Nucleus for Environmental Education) with local communities; protection of water supply within reserves; transformation of SPVS' reserves into Private Natural Reserves which guarantees payment to local municipalities, where reserves are located; support for research, e.g. biological diversity, developing technologies for Atlantic Forest conservation, and alternatives for income generation; reversing degradation trends in parts of the Guaraqueçaba EPA through SPVS environmental projects; continued biodiversity protection, encouraging forest regeneration, and restoration and protection of river margins.

Partners: Sociedade de Pesquisa e Vida Selvagen e Educação Ambiental (SPVS), Texaco, Central and Southwest Services (now American Electric Power), General Motors, TNC

Funding: Texaco, Central and Southwest Services (now American Electric Power), General Motors

Strengthening Payment for Ecosystem Services (PES) Schemes

Start Date: proposal awaiting funding

Countries/Locations:
Bahamas
Grenada
Jamaica
Mexico
Guatemala
Panama

Ecosystem Services Focus: payment for ecosystem services

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Links/Documents:

Project Summary: Proposal: This project would contribute to the scaling up and increased sustainability of PES in Mesoamerica and the Caribbean. The objective is to experiment on the ground implementation of PES schemes by building local capacity through multi-country experience sharing, integrating economic valuation of ecosystem services within the social, legal, and financial design of PES schemes. The project aims to create an environment for learning from practice and thus derive policies from these lessons learned. In relation to other projects in the region, the unique aspects of this project include (1) expansion of geographic coverage and number of participants through multi-country capacity building and training; (2) expanding the breadth of economic valuation to include economic valuation of ecosystem services with a view to design PES; (3) creating continuity in such training by integrating the curriculum into the regular programs of regional training institutions.

Current Activities: awaiting proposal approval/funding: *currently appears this will not receive funding (Feb. 2006)*, though effort is being made to integrate these activities into GEF project planning efforts with Caribbean governments.

Future Plans: Build capacity of practitioners in charge of developing and implementing PES. This could include training at host institutions over the short term and integration of such training into regular curriculum of regional training institutions over the medium term; expand scope of economic valuation training to include valuation of ecosystem services with a view to design PES; create conditions for learning from PES practice; derive explicit PES policies from lessons learned from practice; disseminate lessons and best practices through formation of a network of practitioners and field visits of practitioners to existing PES schemes; support on-the-ground design and implementation of PES; support development of an enabling environment for PES, including policies and regulations to sustain PES.

Partners: TNC, national and local governments, national and local civil society organizations, land owners, user groups

Funding: United Nations Environment Programme (UNEP) – Global Environment Facility (GEF), TNC

Large Scale Restoration of the Atlantic Forest

Start Date: 2005

Countries/Locations:
Brazil

Ecosystem Services Focus:
climate regulation (carbon sequestration); primary production (forests)

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Links/Documents:

Project Summary: A broad-based initiative to plant trees in the Atlantic Forest helps to "turn the tide" of environmental degradation and place these forests on a path to recovery, while also creating jobs, protecting critical watersheds, removing carbon from the atmosphere, and building a greater public awareness of the relationship between people and our environment.

Current Activities: Current activities include refining the AFCP ecoregional portfolios which will include protection of existing forest remnants and restoration, where appropriate, to connect remnants and repair riparian areas.

In addition, the team has identified two places and partners as focus areas for restoration: the Araucaria Region in partnership with the State Government of Parana, local NGOs, and an agricultural cooperative and the São Paulo Watersheds (Piracicaba and Paraiba do Sul) in partnership with the State Government of São Paulo. These places are consistent with the preliminary ecoregional portfolios, the State Government partners are both "first movers" within the Atlantic Forest for advancing restoration (São Paulo State has an $8 million GEF grant for this purpose), and both are focus areas for other key TNC strategies, with which restoration will play a complimentary role (for example, the PICUS project in the Araucaria, and the Great River Partnership in the São Paulo Watersheds).

In the Araucaria, TNC is assisting the State Government to expand their nursery capacity by 1.5 million seedlings per year (TNC investment of ~$50,000), monitor results, and improve and expand the program over time. The State Government has agreed to focus the bulk of its future restoration work in the Araucaria region.

In the São Paulo Watersheds, TNC and the State Government are jointly developing two demonstration projects. One will restore a 1,000 hectare riparian area around a reservoir with a water company and a second project with the National Water Authority and local watershed committees where water user fees will be used for the first time in Brazil for forest restoration.

Future Plans:

Partners:

Funding: water fees, State and Federal Government funding, international funding, carbon trading, and potential debt swap

Río Blanco Watershed Management Project

Start Date: Fall 2006

Countries/Locations:
Dominican Republic

Ecosystem Services Focus:
climate regulation (carbon sequestration), primary production (forests), erosion regulation, water purification, biodiversity protection

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Links/Documents:
The World Bank Carbon Finance Unit – BioCarbon Fund

Project Summary: The project aims to enable local communities to protect and restore native forest ecosystems within the Juan B. Perez Rancier/Valle Nuevo National Park and its buffer zone. This area includes 7 protected areas representing 7% of the nation's land mass, and is home to many rare, threatened, and endangered species. The project focuses on the rehabilitation of 6,071 hectares of the watershed of the Rio Blanco and Yuna Rivers through the implementation of natural and intensive reforestation, native forest protection and agroforestry activities. The project will concurrently improve land management practices with the active participation of local communities; help reduce rural poverty through payments for ecosystem services; and develop economic activities compatible with conservation goals.

The project is expected to sequester 0.24 Mt CO_2e (0.11 Mt Kyoto compliant and 0.13 Mt non-Kyoto compliant) by 2012 and 0.511 Mt CO_2e (0.285 Mt Kyoto compliant and 0.226 Mt non-Kyoto compliant) by 2017. The protection and restoration of forest habitat in critical watersheds will provide several environmental benefits while concurrently generating social remunerations through direct employment. Additional opportunities will also be developed for community members who will be involved in management of the agroforestry operations. The project will also facilitate a shift in the economic activities of the project site's rural poor from subsistence farming to ecological restoration. As they earn additional income from sequestering carbon and find an incentive to move to more sustainable land management, farmers and rural communities will find new value in their agricultural lands and forests. This incentive, along with capacity building and training in agroforestry activities brought by the project, will significantly reduce the risk of non-permanence and potential leakage for the project.

Current Activities: Philanthropic/conservation resources are currently too limited to develop the project, and the Conservancy and its partners would not be able to carry out the project activities without the financial support coming from the carbon sequestration. The Conservancy and its partners first designed this project in 2001, and since then the Conservancy has not been successful in identifying other sources of funding to carry out this project.

Future Plans: TNC and its partners intend to continue implementation of the project for an indefinite number of years into the future after the conclusion of the BioCarbon Fund's involvement, via the sale of future carbon credits. This will permit TNC and its partners to maintain and sustain the community benefits envisioned in this project.

Partners: TNC, Fundación Moscoso Puello, and Federación de Campesinos Hacia el Progreso

Funding: Through TNC donors and the sale of carbon offsets on the open market

Condor Bioreserve

Start Date: 2000

Countries/Locations:
Ecuador

Ecosystem Services Focus:
water regulation, water purification, primary production (forests), biodiversity protection

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Links/Documents:
www.bioreservedelcondor.org

www.parksinperil.org

Condor Bioreserve (nature.org)

The Condor Bioreserve: an Innovative Approach for Conservation on Montane Ecosystems

Ecuador: Condor Bioreserve Preventing Water Woes and Preserving Vital Habitat for At-Risk Bears and Birds

Project Summary: The high plateaus of the Condor Bioreserve, a 5.4 million acre protected area in northern Ecuador, are a water spigot for the more than 1.5 million people living in and near the capitol city, Quito. Some 28 rivers, forming six large watersheds, originate in the reserve. Water is used for drinking, irrigating crops and generating electricity.

The Condor Bioreserve encompasses six protected areas interspersed with private lands. Two indigenous communities, the Oyacachi and the Sinangóe, live inside the Bioreserve and depend on its natural resources for their livelihood. But newcomers and market forces are altering their traditional way of life. The area is readily accessible via the Pan-American Highway, and new roads cut increasingly deeper into the reserve. As new settlers strive to earn a living, forest is razed for agriculture, ranching, and timber, and hunters routinely burn the páramos to flush game.

Current Activities: In 2000, the Conservancy teamed up with the U.S. Agency for International Development and in-country partners to create a Quito-based water conservation fund. The aim is to collect payments from water users and channel the money to watershed protection. The Conservancy donated the initial $1,000 and invited major water users to the table. Regular contributions from the local water company, electric company and the National Brewery have boosted the fund to $1.4 million. The goal is to generate at least $350,000 in interest annually to pay for conservation measures.

Other conservation efforts focus on eliminating ecologically harmful activities on public parkland and establishing corridors for wildlife to travel between reserves. The Nature Conservancy has teamed up with local organizations to train residents to become park rangers and equip them with guard stations, two-way radios and patrol vehicles. The rangers work to reduce poaching, illegal logging and fire within the parks' boundaries. We are also using funds raised by schoolchildren through our "Adopt an Acre" program to purchase a pocket of privately owned land nestled between Cayambe-Coca and Antisana ecological reserves, a key step in consolidating protection of the Condor Bioreserve.

Future Plans:

Partners: Fundación Natura, Fundacion Antisana, EcoCiencia, Fundacion Ecologica Rumicocha, Ministerio Del Ambiente,the Ecuadoran National Park Service, the city of Quito and local communities

Funding: USAID, local water and electricity companies, the National Brewery, and TNC

Tourism-Based Income Generation Mechanisms for Protected Area Systems

Start Date: 2000

Countries/Locations:
Belize
Bolivia
Mexico

Ecosystem Services Focus:
tourism, ecotourism and recreation, biodiversity conservation

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Links/Documents:
Nature Ecotourism and Conservation (nature.org)

Project Summary: In collaboration with government, industry and NGO partners, we developed and implemented income generation mechanisms at three sites in Bolivia, Belize, and Mexico to realize the economic value of recreation in Protected Area Systems as a significant contribution to their financial sustainability. Now using lessons learned to go to scale to quantify economic value of tourism in protected area systems across South America.

Current Activities: Implementing the first tourism income generation system across Bolivian Park system. Conducting economic valuation of tourism in protected areas in Ecuador with three ministries and tourism private sector. Designing same with Peruvian government. Preparing South America-wide tourism valuation research with possible World Bank partnership. Developing tourism valuation policy and tourism concession models for UNESCO World Heritage Sites.

Future Plans: Prepare major proposal for funding protected area capacity to generate greater revenue from tourism to ensure sufficient management capacity to reduce the threat and create opportunities for local communities.
Develop further collaboration with Brazil's Ministry of Environment to develop tourism's economic value for protected area system. Work with private reserve network in Colombia.

Partners: USAID/PiP, UNESCO World Heritage Centre, Walker Foundation, Government protected area systems of Ecuador, Peru and Bolivia, PA managers, tourism industry locally and internationally, NGO partners, Conservancy OU staff, SACR External Affairs

Funding: USAID/PiP, UNESCO World Heritage Centre, Walker Foundation, Governments of Ecuador and Bolivia, PA managers, NGO partners, TNC Belize and Baja Mexico programs

Parks in Peril Program

Start Date: 1990

Countries/Locations: 17 countries in Latin America and the Caribbean

Ecosystem Services Focus: water regulation, water purification, timber, primary production (forests), genetic resources, ecotourism and recreation

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Links/Documents:
www.parksinperil.org

Project Summary: The Parks in Peril (PiP) program strengthens local capacity to manage Protected Areas (Pas) in Latin America and the Caribbean. Financial support and scientific expertise has been provided to aid in the protection and management of around 45 million acres of habitat in 45 national parks and nature reserves. PiP also works with local partner organizations to improve the management of additional protected areas through interventions at the level of systems of parks and reserves through Private Lands Conservation, strategic planning, and conservation policy and finance. PiP funds activities implemented by TNC's field programs and partner organizations.

Current Activities: Major strategies include site consolidation – currently focusing on 12 important protected areas, the program is building local capacity for management and consolidating the various technical, political, and financial resources needed to support management of these sites now and into the future. Multi-site strategies and international alliances of conservation organizations focus broadly on private lands conservation, marine conservation, ecoregional assessment/gap analysis, participatory approaches to managing systems of protected areas, and conservation finance. With respect to ecosystem services, this includes water funds (Condor BR, Ecuador; Guatemala), water valuation mechanisms (Sama Reserve, Bolivia), eco- and nature- tourism (many sites), park entrance fees (Eduardo Avaroa Reserve, Bolivia; Cuatro Cienegas National Wildlife Refuge, Mexico), sustainable forestry management (Central Selva, Peru), exchange of vigilance and management activities for permission to harvest and sell reserve products such as freshwater turtle eggs, palm products, and fish (Pacaya-Samiria, Peru), incentives for private lands management (Guatemala), a variety of private lands conservation activities (Bolivia, Colombia, Ecuador, Guatemala, and other Central American countries).

The Sustainable Finance Strategy of the PiP Project is supporting the systematization of national sustainable finance plans and business plans at site level in Costa Rica, Jamaica, Ecuador and Peru. These financial plans comprise international, national and site level financial mechanisms, including the assessment of the financial potential and the strategic allocation of resources resulting from tourism-based PES, and the supportive environmental fiscal reform.

Future Plans: Continue to protect natural areas from damage/destruction caused by unsustainable forestry, uncontrolled tourism, and conversion to agricultural land. Parks in Peril ends in September, 2007.

Partners: TNC, USAID, foreign government organizations, local and international NGOs, communities

Funding: Major funding from USAID, with additional matching funds from TNC via a variety of donors

North America

Pawcatuck Borderlands

Start Date: 2006

Countries/Locations:
Connecticut
Rhode Island

Ecosystem Services Focus: timber, crops, livestock, water purification, water regulation, climate regulation (carbon sequestration), primary production (forests)

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Links/Documents:
http://www.eamarkets.com

Project Summary: EcoAsset Markets (EAM) is conducting market experiments and pilot studies toward development of a $100 million TIMO/REIT (Timberland Investment Management Organization/Real Estate Investment Trust) to purchase fee and/or easements and generate ecological services payments as income. Pawcatuck Borderlands is being considered for one of four pilot project sites. Properties would remain undeveloped (removing income potential but also reducing risk) yet generate resource-extraction income (e.g. farms, forestry) plus potential ecological services payments. The EAM team is eager to talk with Conservancy staff about their approach and a potential partnership. EAM developments regarding valuation techniques will be immensely valuable to TNC's broader engagement in this strategy.

Current Activities: awaiting approval as pilot project site.

Future Plans: A connection between EAM and TNC staff is being sought in EAM's target landscapes. This connection would help create a conduit of information exchange. EcoAssets is hoping to have the research funded this summer for four years of work, and then have the fund capitalized in the fifth year.

Partners: EcoAssets Markets, Natural Resources Conservation Service, EPA, University of Rhode Island, RI Economic Policy Council, Rhode Island Foundation, TNC

Funding: NRCS, EPA, RI Foundation, private investment

Kona Forest Initiative

Start Date: June 2004

Countries/Locations: Hawaii

Ecosystem Services Focus: climate regulation (carbon sequestration), timber, water regulation, erosion regulation, ecotourism and recreation

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Links/Documents:

Project Summary: As part of the Natural Capital Project, this project aims to collaboratively enhance the conservation value (for biodiversity and ecosystem services) of "human-dominated" lands in Hawaii. Several actions intended to enhancing recognition of ecosystem services provided by Kona's forest lands are being undertaken, or considered, to facilitate sustainable management and conservation.

Current Activities: Field research to determine biodiversity and ecosystem service value of alternative land covers and uses; Initial mapping of biodiversity and ecosystem services on Hawai'i Island; Assessment of economic viability of forestry, factors affecting landowners' mgmt decisions; Identifying policy incentives that could enable conservation mechanisms benefiting landowners and biodiversity.

Future Plans: Advance research and management studies; Address ecosystem services related issues with ongoing Community Development Planning process; Increase availability of tax incentives for forest protection and restoration; Work towards amendment of state statute to allow landowners to charge for recreational uses without losing liability protection; Explore mechanisms to compensate landowners for capture and infiltration of water; Promote sale of carbon credits for forest restoration projects.

Partners: TNC, Stanford University, USFS, Kamehameha Schools, State of Hawaii, USFWS, private ranchers

Funding: partners, state and federal grants and easements

Midwest Reforestation

Start Date: January 1999

Countries/Locations:
Indiana
Ohio

Ecosystem Services Focus: climate regulation (carbon sequestration), erosion regulation, primary production (forests)

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Links/Documents:
Midwest Forest Restoration (nature.org)

Project Summary: The Midwestern forest restoration project involves the restoration of almost 1,000 acres of forest in Indiana and Ohio. It is estimated that the project will reduce, avoid, or mitigate approximately 150,000 metric tons of CO_2 equivalent over 40 years by bringing back native forests to this area. The project is taking place on Nature Conservancy preserves and state government land in Ohio and Indiana. The reforested parcels reduce edge effects to core forest reserves and eliminate agricultural degradation to stream ecosystems. Without reforestation at these sites, most of the lands would have remained in agricultural production and continued to have negative impacts on aquatic and terrestrial biodiversity.

Current Activities: In Indiana, the Conservancy reforested parcels around the core conservation areas across much of the state. For example, critical forested buffers were added near old-growth hemlock stands at the Big Walnut Nature Preserve. At the Conservancy's 12,000 acre Edge of Appalachia Preserve system, the project will enable the Conservancy to plant 27,000 oak and walnut trees along the riparian corridor of Ohio Brush Creek.

Future Plans: The initial plantings in Indiana are complete and the state has acquired additional funding from Cinergy to reforest another 200 acres at key sites across the state.

Partners: TNC, Cinergy Services

Funding: Cinergy Services

Bayou Pierre Floodplain Climate Action Project

Start Date: April 2004

Countries/Locations: Louisiana

Ecosystem Services Focus: climate regulation (carbon sequestration), primary production (forests), water regulation

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Links/Documents:
Louisiana Bayou Pierre Floodplain, Spotlight (nature.org)

Project Summary: In Northwest Louisiana, TNC is working to bring a critical area of floodplain forest back to health after extensive clearing for agricultural production. With the support of PowerTree Carbon Company (a consortium of 25 power companies), 500 acres of farmland will be planted with bottomland hardwood seedlings and protected over the long term, creating an important connection between two existing natural refuges in the Bayou Pierre Floodplain.

Current Activities: Planting bottomland hardwood seedlings

Future Plans: Monitor forest growth, track carbon absorption

Partners: PowerTree Carbon Company, TNC

Funding: PowerTree Carbon Company, TNC

Catskill Mountains

Start Date: 2002

Countries/Locations:
New York

Ecosystem Services Focus:
primary production (forests), water regulation, water purification, fresh water

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Links/Documents:
Catskill Mountain Program (nature.org)

Project Summary: The Catskill Mountains, which provide 90% of New York City's drinking water, is under increasing development pressure from resort and second home development. The region has a strong regional conservation history and a network of conservation partners (The Catskill Mountain Program) with whom TNC is working to protect forest systems, inventory and control invasive species, develops education programs and builds conservation partnerships.

Current Activities: Prevention of forest system fragmentation through conservation easements; working to develop a base of scientifically gathered inventory data to inform restoration activities; building upon existing conservation history and partnerships in region

Future Plans: Develop education and outreach to influence decisions and actions in forest systems containing both public and private lands; exploring feasibility of conservation buyer program

Partners: TNC, Catskill Center for Conservation and Development, New York State Department of Environmental Conservation, New York City Department of Environmental Protection, Open Space Institute, private landowners

Funding: Private and New York State funding

Eastern Lake Ontario

Start Date: 2002

Countries/Locations:
New York

Ecosystem Services Focus:
water regulation

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Links/Documents:
Eastern Lake Ontario Dunes and Wetlands (nature.org)

Central and Western New York Chapter, Spring 2005 Newsletter

Project Summary: Beginning in 2002, TNC, New York State Department of Environmental Conservation, State Office of Parks, and New York Sea Grant have led a dune steward program to educate beachgoers on how to avoid impacting dunes and sensitive birds. Important shoreline property of native dunes (abutting TNC barrier beach) was acquired. That same year, appointment to two International Joint Commission technical committees to review environmental impacts of Lake Ontario water level regulation was gained. TNC is seeking to maintain lake levels for biodiversity reasons.

Current Activities: Working toward agreement on water take from the lake for human uses with 8 states and two Canadian provinces. Research is being conducted on impacts that water level regulation in Lake Ontario has had on wetlands and dune systems. Other activities include environmental education to beachgoers and land protection/critical tract acquisition.

Future Plans: Agreement made in December 2005 limits water transfer from Lakes Erie, Huron, Michigan, Superior and Ontario to communities within local river basin. This is not yet approved by state legislatures and Congress.

Partners: State Department of Environmental Conservation, State Office of Parks, State Department of State, US EPA, US ACE, Oswego County, Hobart & William Smith Colleges, NY Sea Grant, Ontario Dune Coalition, Friends of Sandy Pond Beach, towns, John Ben Snow Foundation, Great Lakes Protection Fund, Rothenberg Family Foundation, TNC

Funding:

Neversink/Upper Delaware River

Start Date: 1993

Countries/Locations:
New York

Ecosystem Services Focus:
water regulation, water purification, fresh water

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Links/Documents:
Neversink River (nature.org)

Project Summary: TNC is working with local communities, state and federal agencies to apply best scientific methods, management, and monitoring techniques to mitigate primary threats to the 60 mile Neversink River. The Neversink River watershed is a primary headwater for the Delaware River and is considered the purest source of drinking water for New York City. Significant threats exist to water flow patterns, disrupted by dams and reservoirs.

Current Activities: In 2004 the Conservancy removed the inoperable Cuddebackville Dam complex which blocks migratory fish and freshwater mussel colonies from moving upstream; Discussions to develop model for science-based water resource mgmt to balance human and ecosystem needs with more ecologically suitable mgmt of water control and release throughout Delaware Basin; Building local initiatives with communities to impact land and water usage and development patterns; Restoration work on 1000 acres of bottomland and riparian corridor; Land protection through acquisition, conservation easements, voluntary agreements

Future Plans: Improve water resource management in four states and improve local resource usage and development patterns. Expand program to include NJ, PA, and DE in addition to bringing New York City to the table on their water management and use.

Partners: US ACE, USDA, USGS, USFWS, TNC, Trout Unlimited, Orange County, Sullivan County, towns, Orange County Land Trust, Baskakill Area Association, DE River Basin Commission

Funding: Private, federal, state

The Highlands

Start Date: 2001

Countries/Locations:
New York
New Jersey
Pennsylvania
Connecticut

Ecosystem Services Focus: water regulation, water purification, primary production (forests), sense of place, cultural heritage values, recreation and ecotourism

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Links/Documents:
Hudson Highlands Project Website

Project Summary: Project focuses on protection of 3 million acre Highlands region buffering major metropolitan areas from Hartford, Connecticut to Harrisburg, Pennsylvania. Annually, 14 million tourists visit the Highlands. The extensive forests supply and protect clean drinking water for over 15 million people, including half the population of New Jersey. These forests also protect major water supply watersheds for New York City. Recognized as a "landscape of national significance" by USFS, and a "special resources area" by New Jersey, the Highlands are being lost to suburban sprawl at an increasing rate. This project seeks to protect the Highlands and the crucial services the region provides.

Current Activities: The Highlands Conservation Act was passed by the US Congress in 2004. It authorizes $100 million over 10 years for land protection in the 4-state Highlands Region, and $10 million for studies and technical support to be provided by the US Forest Service. Also in 2004, the NJ legislature adopted the Highlands Water Protection and Planning Act, which set up a regional council to safeguard the 800,000 acres of land located in NJ's portion of the Highlands Region. The Act calls for a regional management plan, and includes strong land use regulatory provisions.

Future Plans: Most of the Highland efforts to date have focused on New York and New Jersey, but Connecticut and Pennsylvania are quickly becoming integrated as part of the Highlands preservation initiative. Preservation advocates in New York, Pennsylvania and Connecticut may, in the future, push for legislation with similar objectives to that which was adopted in New Jersey.

Partners: TNC, Environmental Defense, and numerous state and regional partners. Listed here

Funding: Federal, state, local, private

West Eugene Wetlands Partnership

Start Date: 1992

Countries/Locations:
Oregon

Ecosystem Services Focus:
water regulation, water purification, fresh water, genetic resources

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Links/Documents:
City of Eugene, West Eugene Wetlands Program Webpage

West Eugene Wetlands Area Map

Project Summary: Coalition of 8 organizations (outgrowth of the West Eugene Wetlands Plan) is seeking a balance between environmental protection and sound urban development. Protection of ecosystem services through implementation of policies in the aforementioned Plan. Numerous awards and recognition have been received for the project/city since 1992.

Current Activities: Fourteen years of work has resulted in collective investment of over $30 million to implement Plan. Guided by an integrated land use and public works plan, the partnership has protected and restored lands to provide water quality, storm water management, educational and recreation opportunities, endangered species and habitat protections, and simplified wetland regulation implementation for private landowners. Accomplishments include acquisition and protection of 3000 acres of wetlands and associated uplands to provide flood control and natural water purification; restoration/ enhancement of 800 acres wetlands as well as 12,000 linear feet of streams.

Future Plans: Partnership continues to seek opportunities to acquire more land. Goals include increasing ecological and hydrological connectivity to improve habitat management for long-term ecosystem viability. Partnership is in initial phases of developing $12 million wetlands education center.

Partners: City of Eugene, TNC, USBLM, USFWS, USACE, McKenzie River Trust, Willamette Resources and Educational Network, Oregon Youth Conservation Corps

Funding: $30 million to date from: City storm-water and Parks Bond funds, wetland mitigation payments and bond measure, State watershed enhancement board and youth corps, numerous Federal sources, land donations, TNC

Upper Mississippi River (UMR)

Start Date:

Countries/Locations:
Upper Mississippi River (UMR)

Ecosystem Services Focus:
water regulation, water purification

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Links/Documents:

Project Summary: This project will focus on finding opportunities to improve the ecological conditions of the UMR through provision of significant financial benefits to local and downstream communities. This will be based on aspects of watershed and river/floodplain function for which there are already mechanisms to develop financial accounts of real taxpayer and landowner costs and benefits (seeking to formalize the accounting of externalities within existing state and national institutions). One of the underlying theories is that if the political establishment is made aware of taxpayer burdens, bill (e.g. Farm Bill) and water quality legislation reformation would be made easier and could increase the efficient use of tax dollars.

Current Activities: Panel discussions focused on which ecosystem services to quantify (quantification of the social benefits from ecosystem restoration). A workshop will be held in March or April of 2006 to finalize the services to be quantified. TNC is supporting the Army Corps efforts to incorporate ecosystem services into the Navigation and Ecosystem Sustainability Program (NESP), a proposed restoration program for the UMR. This will target $1.4 billion for restoration efforts over the first fifteen years of the program. Army Corps would like to begin quantifying recreational benefits from restoration at that meeting. TNC influence is exerted through involvement with science panel supporting NESP.

Future Plans: Continue to assemble knowledge, connections, search for funding potential for research/studies, build strategies. Find funding to support assessments of downstream and local costs that communities/states currently absorb (1) to clean up water pollution from agricultural runoff, to make waters potable and/or swimmable and (2) to manage land drainage and manage risks/consequences of flood damage arising from changes in water hydrology.

Partners: TNC, Army Corps of Engineers, USFWS, USGS

Funding:

Natural Capital Project

Start Date: July 2006

Countries/Locations:
China
Eastern Africa
California Hawaii
4-6 additional sites to be selected and added

Ecosystem Services Focus:
climate regulation (carbon sequestration), pollination, water purification, water regulation, capture fisheries, recreation and ecotourism, cultural services, other services to be added

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Links/Documents:

Project Summary: The vision of the Natural Capital Project is a future in which people understand the value of nature and routinely act accordingly. Our unique partnership, comprising two of the world's leading conservation organizations and one of the world's finest research universities, will develop novel tools – applicable anywhere – for assessing ecosystem services and informing decisions. We will apply these tools in a strategic set of demonstration projects to achieve concrete results on the ground. By demonstrating the power of this approach, providing the tools needed to replicate it elsewhere, and communicating effectively to governments, the private sector, and the general public, we aim to magnify our work and improve ecosystem management practices worldwide.

Current Activities: In California and China we have begun to map ecosystem services, and the beneficiaries of those services.

We have just developed a work plan and hired staff to analyze the political and institutional relationships among stakeholders whose participation is critical in developing new markets or policy options.

Preliminary analyses for California show places with high overlap between biodiversity and ecosystem services. Conservation in these regions would thus both directly benefit people and protect biodiversity. We are in the process of extending these analyses to other places and include future scenarios of land use change.

Future Plans: After we have gained more experience and better developed the science, tools, and economic insight, we intend to broadly engage political, institutional, and private corporations. Our communication program will include scholarly articles, popular media, the internet, face-to-face meetings, and gatherings of leaders and innovators.

We envision our project to be a 10-year effort that moves from science and tool development, to on-the-ground projects, to lessons learned, to multiplying our projects and engaging a broad community. Towards the end of the project hope to promote a global change in business so that private industries, national governments, and international institutions incorporate ecosystem service values into investment and policy decisions.

Pending increased funding, we will extend our project beyond the initial four areas and include marine habitats. Expansion needs to be strategic so that each new project area forces us to develop new insights, and in the end creates a portfolio of demonstration projects that in total shows that ecosystem services is not just a boutique idea, but is a possibility everywhere in the world. At the same time the diversity of projects also has to teach us how to tailor efforts to local conditions and cultures, so that one does not end up forcing one model inappropriately on the whole world.

Partners: Stanford, WWF, TNC

Funding: MacArthur Foundation, NCEAS, Packard Foundation

Great Rivers Partnership

Start Date: October 2005

Countries/Locations:
Brazil
China
United States

Ecosystem Services Focus:
climate regulation (carbon sequestration), water regulation, water purification, fresh water, food

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Links/Documents:
Great Rivers Partnership (nature.org)

Project Summary: The Great Rivers Partnership (GRP) is a multi-project program within TNC that currently includes Upper Mississippi, Upper Paraguay-Parana and Upper Yangtze. Within the next three years, two more rivers are likely to be added to this partnership. GRP strategies include working with partners on both global scale analyses and local pilot projects.

Current Activities: (1) Mapping the distribution of a small set of services across 70-100 large river basins. This effort will (a) assess correlation between biodiversity and a few ecosystem services (food production, climate regulation, flood storage, potentially water quality); (b) identify important upland areas playing important functional roles for downstream freshwater biodiversity (runoff, water quality); (c) compare patterns across basins to build basic understanding of distribution of ecosystem services and develop a conceptual framework for working across multiple basins. Preliminary results expected June 2006. (2) Measure the impact of our conservation actions on biodiversity and ecosystem services within pilot projects on the Upper Paraguay, Parana, Yangtze and Mississippi Rivers.

Future Plans: (1) More in-depth modeling effort for a small number of basins (2-3) will follow. This effort will focus on the tradeoffs among services, such as what is the relationship between crop yield and flood regulation. (2) Synthesize lessons learned across three pilot projects, (3) Develop best practices for resource management and policy to facilitate transferring lessons learned to additional projects.

Partners: TNC, University of Wisconsin – Madison, local partners at pilot project level

Funding: TNC – Great Rivers Partnership, plus additional sources for pilot projects

Global Climate Change Initiative – Carbon Markets Program

Start Date: 1996

Countries/Locations:
Latin America and Caribbean
United States

Ecosystem Services Focus:
Climate regulation (carbon sequestration), primary production (forests), biodiversity conservation

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Links/Documents:
Global Climate Change Initiative (nature.org)

Project Summary: This program supports policies to create carbon markets at regional and international scales, analyzes carbon market opportunities and works with Conservancy operating units and partner organizations to access those opportunities, and works to ensure that Conservancy carbon sequestration projects provide real and measurable benefits to the climate and to biodiversity goals.

Current Activities: Supporting policy development in the Regional Greenhouse Gas Initiative (RGGI), supporting policy development in UNFCCC negotiations related to avoided deforestation, reporting greenhouse gas emissions benefits from Conservancy climate action projects, supporting design of a BioCarbon Fund project in the Dominican Republic, conducting feasibility studies for climate action projects, performing quality assurance and quality control checks on implemented climate action projects and climate action projects in design.

Future Plans: Support implementation of country-scale avoided deforestation pilot and ensure carbon monitoring systems to verify emissions reductions. Continue to facilitate organizational and partner access to carbon abatement markets to directly deliver habitat protection goals with high integrity.

Partners: Climate, Community and Biodiversity Alliance, Winrock International

Funding: TNC and U.S. Department of Energy

Tropical Marine Learning Partnership

Start Date:

Countries/Locations:
Latin America and Caribbean
Africa
Southeast Asia

Ecosystem Services Focus:
marine ecosystem services (i.e capture fisheries)

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Links/Documents:

Project Summary: This partnership brings together around 30 field based staff and partners to address key learning topics related to scaling up work to the level of Marine Protected Area (MPA) networks. One topic identified by the group for priority attention is, how a sound understanding of the economic and social benefits created by MPA networks can increase political support, and identify financing options, for these networks. Areas identified to address this question include how marine ecosystem valuations have been used and what impact they have had.

Current Activities: A subgroup of the partnership has been formed to carry out activities related to this question. The subgroup still in planning stages, developing work plan, budget, roles, responsibilities, and identifying resource contacts to engage in the process. A literature review has been started (by 4 George Washington University graduate students) in conjunction with a study on MPAs and poverty reduction being conducted by the Asia Pacific Region (Craig Leisher).

Future Plans: Based on this learning activity, identify priority actions the 4 partner organizations should take over the next 2-3 years to improve the assessment of ecosystem values and use valuations to increase support and funding for MPA networks.

Partners: TNC, WWF, CI, WCS

Funding: USAID Global Conservation Program, partners

Shellfish Restoration Network

Start Date: March 2004

Countries/Locations:
United States – coastal states
global locations to be added

Ecosystem Services Focus:
water purification; habitat provisioning; shoreline stabilization; capture fisheries

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Links/Documents:
Shellfish Conservation and Restoration

Conservation of Estuarine and Coastal Ecosystems Spotlight (nature.org)

Shellfish Restoration "Clamor" June 2005 (conserveonline)

Project Summary: Shellfish ecosystems are increasingly recognized by scientists as crucial elements in temperate coastal and marine habitats. Native bivalve shellfish may be seen as the "ecosystem engineers" in temperate waters, fulfilling crucial functions much like those of coral reefs in tropical waters. In addition to providing food and essential habitat for many recreationally and commercially important species of fish, bivalve shellfish can also control numerous environmental factors ranging from currents to water quality.

The Nature Conservancy established a Shellfish Restoration Network in 2004 to enhance the overall coordination of restoration around the Conservancy and to help restoration project staff and partners share lessons learned in a timely manner. In collaboration with NOAA's Community-based Restoration Program and other partners, we are working to: (1) define and publicize the scope, scale, and impacts of the loss of shellfish as a global conservation problem; (2) define best (or "better") practices in shellfish restoration and monitoring activities; and (3) increase the rate at which new information and new tools are applied to existing shellfish restoration work

Current Activities: The Network convenes workshops every 12–18 months with scientists, restoration practitioners and resource managers to exchange information on current projects and to sharpen the focus on future activities. An electronic newsletter, *Restoration Clamor*, is distributed quarterly to Network participants to provide timely updates on projects and new products. A publication "*Practitioners Guide to Design and Monitoring of Shellfish Restoration Projects: An Ecosystem Services Approach"* was published by TNC in April 2006.

Future Plans: No global assessment exists for shellfish, despite the fact that they have been the focus of intensive exploitation and occur near most of the major human population centers. In contrast, the global status of coral reefs and the relative risks they face have been rather well described in recent years, providing an impetus for new research and directed conservation efforts on an unprecedented scale. To bridge this gap, the Conservancy is developing a framework for a global "*Shellfish Reefs at Risk*" assessment with the hope of mobilizing similar research, conservation and restoration efforts.

Partners: TNC's Global Marine Initiative and State Programs; NOAA's Community-based Restoration Program; academic research institutions; state and local shellfish management agencies; U.S. Army Corps of Engineers; U.S. Fish and Wildlife Service; other non-governmental conservation organizations.

Funding: National Partnership between The Nature Conservancy and NOAA Community-based Restoration Program (CRP).

Climate, Community and Biodiversity Alliance

Start Date: 2002

Countries/Locations: Globally applicable for national and project level initiatives to generate emissions reductions from forestry and land-based activities.

Ecosystem Services Focus: Climate regulation (carbon sequestration), primary production (forests), timber, biodiversity conservation, community development

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Links/Documents:
The Climate, Community and Biodiveristy Alliance webpage

Project Summary: The Climate, Community and Biodiversity Alliance (CCBA) is a partnership between leading companies, NGOs and research institutes seeking to promote integrated solutions to land management around the world. With this goal in mind, the CCBA has developed voluntary standards to help design and identify land management projects that simultaneously minimize climate change, support sustainable development and conserve biodiversity.

Current Activities: The Climate, Community and Biodiversity Alliance (CCBA) has developed and is promoting rigorous standards for evaluating land-based carbon projects. The CCB Standards identify land-based climate change mitigation projects that simultaneously generate climate, biodiversity and sustainable-development benefits.

The two goals of the CCBA have been to:

(1) Develop standards that evaluate climate, community and biodiversity impacts of land-based climate change mitigation projects. The first draft was developed in June 2004 and public comments were solicited. The standards were then field-tested on projects in Indonesia, Tanzania, Peru, Bolivia Ecuador, Scotland, and Madagascar. Based on the public comment and field-testing, a second draft was released in February 2005. After more comments, the original authors and the three Advising Institutions created the final version. The final First Edition of the CCB Standards was launched on May 10, 2005.

(2) Promote the CCB Standards as a credible means for identifying projects that simultaneously counter multiple global problems. The CCB encourages carbon project developers to use the standards when designing, developing and implementing projects. CCB Standards certification can help projects garner international credibility and locate additional support and resources. In conjunction, the CCBA encourages governments, investors, carbon portfolios, development agencies and private entities to support projects that meet the standards.

Future Plans:

Partners: The Nature Conservancy, BP, Intel. SC Johnson, Weyerhaeuser, Pelangi, CI, The Hamburg Institute and GFA Terra Systems. The Alliance also has three advising institutions; CATIE, CIFOR and World Agroforestry Centre (formerly known as ICRAF).

Funding: BP, Intel, SC Johnson, Weyerhaeuser and GFA Terra Systems

Reef Resilience

Start Date: January 2004

Countries/Locations: Global/Tropical Country Programs and States

Ecosystem Services Focus: Fisheries, shoreline protection, trade, tourism, habitat provisioning, recreation

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Links/Documents:
www.reefresilience.org

Transforming Coral Reef Conservation (nature.org)

Transforming Coral Reef Conservation Fact Sheet

Project Summary: Coral reefs are one of the most vital, yet endangered ecosystems on Earth. The Nature Conservancy is working with partners to protect resilient, life-sustaining coral reefs and the array of ocean life in the tropics. Habitat destruction and alteration, over-fishing, invasive species and pollution are the primary threats to our oceans and coasts. While progress is being made, the effects of large-scale climate changes magnify these threats. An increase in ocean temperatures of just a few degrees can destroy huge areas of coral reefs through bleaching – a stress response that causes a coral's colorful and protective colony of nutrient-gathering algae to be lost. Facing these threats, we are challenged to take immediate action to protect these important marine communities.

In 2004, to help coral reef managers build resilience into their management strategies, The Nature Conservancy initiated it's Reef Resilience Program based on four fundamental components: (1) Provide training opportunities at regional and local level for coral reef managers for both TNC programs and those of our partners – based on the Reef Resilience (R^2) Toolkit; (2) Develop & test scientific underpinnings of resilience principles; (3) Translate results of science efforts into practical management actions and recommendations; (4) Support application of lessons learned and scientific findings in the field

Current Activities: The partnership has conducted four regional training workshops for marine park managers in the Caribbean, Western Pacific, Southeast Asia and Western Indian Ocean. The R2 Toolkit that the workshops are based on has recently been made available on the web and a practitioner's network is currently in development. A quarterly newsletter is also under development.

Future Plans: In addition to the final regional training workshop in South Asia to be held in 2006, the majority of future work will focus on implementing resilience principles on the ground. Several TNC country programs have already begun to build resilience into their management approach and design of MPAs and networks. This global program will focus on learning exchanges to ensure that lessons learned benefit coral reef managers around the world. A Resilience Users Forum will be developed and practitioners will have the opportunity to directly share the results and challenges of their work.

Partners: TNC's Global Marine Initiative and State and Country Programs; World Wildlife Fund, Wildlife Conservation Society, NOAA, World Conservation Union, and Great Barrier Reef Marine Park Authority.

Funding: MacArthur Foundation, partners, TNC donors

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