Biodiversity Conservation at the Landscape Scale

A Program of the Wildlife Conservation Society
Supported by the USAID/Global Conservation Program

Glover's Reef Living Seascape: Safeguarding Marine Resources and Rural Livelihoods in Belize

Implementation Plan
October 2007 – September 2008

Living Landscapes Program- Belize/Glover's Reef
Wildlife Conservation Society
30 September 2007

USAID EGAT/NRM/Biodiversity
Leader with Associates Cooperative Agreement Award LAG-A-00-99-00047-00

Biodiversity Conservation at the Landscape Scale

A Program of the Wildlife Conservation Society
Supported by the USAID/EGAT Global Conservation Program

Glover's Reef Living Seascape: Safeguarding Marine Resources and Rural Livelihoods in Belize

Implementation Plan FY2008
October 1, 2007 – September 30, 2008

Project Goal

To ensure conservation of biological diversity in regions of global biodiversity importance, using a species-based landscape or seascape approach.

The Wildlife Conservation Society believes that protected areas must remain at the core of all nations' biodiversity conservation plans. These areas typically contain a higher diversity and abundance of plants and animals than landscapes or seascapes managed primarily for economic use. Yet, parks and reserves are always embedded in larger, human-dominated landscapes or seascapes and are seldom sacrosanct. Regardless of how large or small a protected area may be, the plants and animals it contains are often threatened either directly or indirectly by human resource use activities.

Management of parks and reserves cannot, therefore, occur in isolation from the surrounding human-dominated landscape or seascape, but must take into account where and how human activities conflict with biodiversity conservation, and where conservation adversely impacts human welfare. As human populations continue to expand over the next 50 years, the incentive for over-exploiting natural resources within and outside of protected areas will likely increase and the need for biodiversity conservation tools that address human-wildlife conflict will become even more important.

The Living Landscapes Program promotes conservation of landscapes or seascapes by focusing efforts on key animal species that require large areas for their conservation, that are particularly at risk because they cross land use and jurisdictional borders, and that, when protected, will have the greatest positive impact on biodiversity as a whole. These landscape or seascape species are highly mobile, vulnerable animal species, and their conservation fosters a focused and cost-effective way to retain a full complement of biodiversity and overall ecological integrity. To conserve these species, parks and reserves must be integrated into the broader landscape or seascape, a landscape or seascape in which people exploit natural areas and wild species to meet their socio-economic needs.

The BCLS Program is designed to ensure biodiversity conservation in four core sites by identifying actions to conserve landscape or seascape species, and by increasing the capacity of local and national institutions to implement such actions. The four areas of global biodiversity importance for current WCS involvement and USAID activity are:

- Northwestern Bolivian Andes Landscape Conservation Area (Bolivia)
- Glover's Reef Living Seascape (Belize)
- Maya Biosphere Reserve Living Landscape (Guatemala)
- The Eastern Steppe Living Landscape (Mongolia)

The Glover's Reef Living Seascape Project

Goal: To conserve the outstanding biodiversity and natural beauty of Glover's Reef and, by synthesizing and disseminating lessons learned, promote the sustainable use of its marine resources through the adoption of best practices within WCS and throughout the conservation community.

Glover's Reef, Belize is one of six globally significant landscapes or seascapes included in WCS' overall GCPI & GCPII/USAID portfolio of conservation sites, and the first coral reef site to be adopted under the WCS Living Landscapes Program. This program seeks to develop and test wildlife-focused strategies that will identify and resolve conflicts between people and wildlife that threaten important wild places and the biodiversity they support. The approach is threats-based and highly participatory.

Although Glover's Reef Atoll has been established as a marine reserve, the protected area needs to be integrated into the surrounding region – to be managed within the realities of the regional social and economic context – if it is to prevail within an increasingly human-impacted seascape, as many of the threats originate beyond the boundaries of the reserve. One major means of integration is ensuring that the socio-economic requirements of the various stakeholders are openly considered and addressed.

The Atoll supports extraordinarily high biological diversity and possesses the greatest range of reef types in the Caribbean Sea. Located 30 miles off the coast of Belize, the Atoll's well-developed spur and groove outer reef structure encircles a shallow lagoon that is dotted with more than 800 patch reefs. The shallow protected waters of the Atoll's lagoon provide nursery and feeding habitats for at least three species of sea turtles, eight species of sharks and rays, more than twenty species of aggregating reef fish, and numerous species of coral. The northeastern corner of the Atoll is the site of one of the Caribbean's largest and last remaining Nassau grouper spawning aggregations, a spectacular biological phenomenon with cultural and economic importance that is severely threatened across the Caribbean. The benthic community of corals and sponges on the western wall of Glover's is among the most diverse and densely covered sites reported anywhere in the Caribbean, exhibiting 95% living cover and as many as 11 species per square meter.

Given its biological and ecological importance, its distance from the mainland, and its relatively pristine condition when compared with other Caribbean reef sites, Glover's Reef Atoll has emerged as a priority for long-term conservation. The Atoll is the third largest marine reserve in Belize with an area of almost 36,000 hectares, and was declared a World Heritage Site in 1996. Despite its protected status, Glover's Reef Atoll is threatened by human activities both on-site, from over-fishing and inappropriate tourism development, and off-site, from increased terrestrial runoff due to deforestation that can lead to increased turbidity and nutrification and from the effects of global climate change such as increasing sea temperatures. In general, coral reefs flourish in clear water that allows sunlight to penetrate and provides the energy required for photosynthesis by the corals' symbiotic algae, promoting optimum coral growth. Waters high in nutrients often lead to overgrowth of macro algae on corals and an ultimate decline in coral cover and diversity. Corals are particularly susceptible to high sea temperatures, which cause many corals to 'bleach' or lose their symbiotic algae, often resulting in coral mortality. The Wildlife Conservation Society seeks to ensure the long-term conservation of this world-class site by identifying specific threats to the Atoll, building and strengthening alliances with stakeholders to support long-term conservation, and strategically implementing conservation interventions.

Key threats to the Atoll's biodiversity include the following:

- Unsustainable fishing
- Lack of alternative activities for fishermen
- Impacts of global climate change
- Nutrification and high turbidity of the Atoll's lagoon
- Lack of support for the marine reserve by some stakeholders
- Insufficient information available for strategic conservation management
- Lack of long-term financing.

The objectives of the Glover's Reef Living Seascape (GRLS) project, and proposed associated activities, are specifically geared towards reducing these threats through the development and implementation of a multi-partner strategy.

With the support provided by USAID, we will have a sound management framework in place, in terms of a Conservation Strategy for the Atoll which we have developed in a participatory manner as we applied the Living Landscape/Seascape Approach. This strategy will be reinforced by the management tools of a newly revised management plan, a business plan and best practices guiding development of the cayes. Along with our partners, we will also implement several long-term monitoring programs to ensure that we can determine our progress in reaching our conservation targets, and, where, if necessary, we can change our management activities to adapt to newly available monitoring data. By the end of this project, we will have stronger community-based involvement in marine resources management through the work of the Glover's Reef Advisory Committee (GRAC), the Spawning Aggregation Working Group, and our collaborations with NGOs such as the Hopkins Fisherman Association and the Sarteneja Wildlife, Environment and Ecotourism Team (SWEET).

Total Anticipated Level of Effort in FY2008
Glover's Reef Living Seascape: $317,004 (USAID/EGAT: $126,504; WCS: $190,500)

IMPLEMENTATION PLAN: FY2008

OBJECTIVE 1: Develop and adopt a participatory strategy to reduce threats to marine life in the Glover's Reef Living Seascape

Level of Effort (Total Objective 1): $42,500 (USAID/EGAT $12,500; WCS $30,000)

We have completed the final seascapes and this year we will finalize the Seascape Conservation Strategy for Glover's Reef in consultation with the Glover's Reef Advisory Committee (GRAC). The results of our seascape planning approach have been incorporated into the newly revised management plan for the Glover's Reef Marine Reserve, and thus have informed the adaptive management process for the atoll.

Activity 1.1 Complete threats and stakeholder analyses through a series of focused meetings in consultation with the Glover's Reef Reserve Advisory Committee.

This activity was completed in FY04.

Level of Effort (Total Activity 1.1): $0 (USAID/EGAT: $0; WCS: $0)

Activity 1.2 Create a "roadmap" for conservation intervention by completing a Seascape Species Analysis.

With the Conservation Seascapes completed for our suite of Seascape Species, we now have all the components of an overall strategy for the Glover's Reef Atoll. The strategy document, which has been drafted, will be finalized in the first quarter of FY08. The draft Conservation Strategy includes our Conceptual Models, threats assessment, selection of Seascape Species, Conservation Seascapes, and the recommended management actions required to address the threats and maintain healthy populations of our Seascape Species; the final document will also include a section on the importance of monitoring and evaluation. We envision that the final version will be a 10 to 12 page document that will readily be adopted by the GRAC as its strategic plan, guiding management of the marine reserve. It will be reviewed by the GRAC and other key partners and organizations such as the Fisheries Department, Belize Tourist Board, the Department of Environment, the Forest Department and the University of Belize. Amendments and additions resulting from this review process will be incorporated in the final version. The report will then be printed and distributed to the many stakeholders of the Atoll reserve, who have contributed directly to the planning process and the development of the Strategy. We expect that the GRAC members and the reserve management team will adopt this Strategy as their guide, detailing the actions that need to be implemented to ensure the conservation of the Atoll into the future. We will also be sharing copies of the Conservation Strategy with our national and international partners who are involved in marine protected area management in Belize.

The Conservation Strategy will also serve as a case study that demonstrates the application of the Living Landscape Approach to a tropical marine site.

Level of Effort (Total Activity 1.2): $30,000 (USAID/EGAT: $10,000; WCS: $20,000)

Activity 1.3 Identify high priority interventions.

Our implementation of the high priority interventions indicated in our Conceptual Model and informed by the Conservation Seascapes will continue. These interventions include, primarily: advocating for restrictions on spear fishing; protection of parrotfish and the introduction of limited access to fishing at the atoll; training fishers in alternative livelihoods; strengthening enforcement and engaging fishers in catch data collection and patrols; involving stakeholders through the work of the GRAC and the Spawning Aggregation Working Group; strengthening management of the marine reserve by assisting in the implementation of the new management and business plans; finalizing the best practices for the development of the cayes; conducting an economic valuation of the atoll; monitoring the status of our Seascape Species, including the Nassau grouper spawning aggregation site; and continuing our ongoing training and public awareness activities.

As in previous years, investigations will continue to: (1) fill the gaps in our knowledge about the causes and the severity of the threats identified, and (2) show the success of our strategic interventions. The investigations will include: continued monitoring of coral health; the recovery of the Nassau grouper spawning aggregation site on the northeast corner of the Atoll that was closed to fishing in 2002; and the status of conch, hawksbill, Caribbean reef shark, osprey, and *Diadema* populations. Our Monitoring Framework (see Appendix 1), which is continually updated, supplies the guide for measuring our progress towards reaching the conservation objectives for our seven Seascape Species, as well as the reduction of threats and the implementation of our interventions. The Monitoring Framework is a living document that allows us to see changes in the status of our indicators over time, which provides us with an incredible sense of both the ongoing challenges we face and the progress we have made in conserving the Glover's Reef Living Seascape.

Threats addressed and results/outputs anticipated:
The Conservation Strategy will be finalized to include recommendations for changes in boundaries of management zones and changes in management practices. The Strategy will be adopted by the GRAC as its overall plan for the future management of the marine reserve.

Documented information on the poor status of the Nassau grouper spawning site and conch populations should encourage greater compliance and support for additional protective measures to be introduced. In general, addressing the threat of lack of information by providing the scientific and monitoring data should lead to better-informed managers and stakeholders. We expect that an informed group of managers and stakeholders will, in turn, lead to improved technical capacity and enhanced motivation to improve management.

Level of Effort (Total Activity 1.3): $12,500 (USAID/EGAT: $2,500; WCS: $10,000)

OBJECTIVE 2: Develop and implement sustainable and adaptive mechanisms to strategically address threats across the seascape

As mentioned above, we have been implementing many of the priority actions that will contribute to achieving our conservation objectives. During this implementation period, work will continue on finalizing the best practices for sound tourism and residential use of the Atoll's cayes, in consultation with the Advisory Committee and the landowners.

Technical support will continue to be provided on an ongoing basis to the Fisheries Department and NGOs in monitoring the status of the coral reefs, seascape species, water quality and general use of the Atoll. We expect to work with the Fisheries Department to gain formal approval of the newly revised management plan and the business plan. We plan to complete an economic valuation of the atoll, particularly in relation to fishing and tourism, based on the data collected from our socioeconomic surveys and our fisheries catch data program. Training will continue to be provided for marine reserve staff and fishermen in areas such as ecological monitoring methods and enforcement techniques.

We will continue to work towards the strengthening of the Glover's Reef Advisory Committee with a view to its assuming more management responsibility in the future. The GRAC will be focusing on the very important and difficult issue of limiting access to fishing at the atoll. We hope to strengthen our partnerships with atoll residents for the monitoring of hawksbill turtle nests, following up with those who are currently collecting data on nesting activity. We also plan to work with the Hopkins Fishermen Association to carry out an alternative livelihood activity that will help lead to more sustainable fishing.

Central to our efforts to engage fishermen and gain their cooperation and trust, we will continue our fisheries catch data collection program and the promotion of their involvement in monitoring and enforcement. Simultaneously, working with the fishing communities to introduce alternative economic activities will, we hope, ultimately lead to more sustainable levels of fishing. This is a long-term goal, as any call for reductions in fishing effort needs to be approved by the authorities who are ultimately responsible for passing the necessary legal measures. The present culture of fishing is one of open access, and therefore limiting access, as we are advocating, is a major change. Identifying and implementing viable alternative livelihoods also takes considerable time, and these need to be successful before reductions in fishing effort can be expected. Nevertheless, we believe that we have made significant steps forward in both aspects, and will continue to push for these policy changes that should lead to more sustainable levels of fishing in the future.

Level of Effort (Total Objective 2): $205,000 (USAID/EGAT: $82,500; WCS $122,500)

Activity 2.1 Implement Seascape Conservation Strategy in cooperation with Glover's Reef Marine Reserve staff and Advisory Committee.

During the first quarter of FY08 we will be working with the Hopkins Fishermen Association (HFA) to decide on an alternative livelihood activity (Intervention 7[1]) that this group can implement that will help lead to more sustainable levels of fishing (Direct Threat 1– over-fishing). Over the past few months, the HFA has been carrying out a lobster shade project, funded by the GEF Small Grant Programme, as a less harmful fishing method in the South Water Caye Marine Reserve. A lobster shade is a type of aggregating device that has been used very successfully for many years in the Sian Kaan Biosphere Reserve in Mexico, and recently introduced to Belize. It provides a 'shade' when placed on sea grass flats that is attractive to lobsters, which are free to come and go. Fishermen dive down, check under the 'shades', which are made of concrete, and scoop up the legal-sized lobster with a hand net. Unlike spearing or hooking lobsters, the 'shades' allow fishermen to return any berried or undersized lobster unharmed to the sea. Divers often damage the reef as they look for lobsters, but with this fishing method, the pressure on the reef is avoided as the 'shades' are only placed in the sea grass areas. The idea behind this project is to encourage fishermen to stop diving for lobsters and use lobster shades, which is a more sustainable method of fishing. We have provided in-kind assistance, as part of the UNDP/GEF project, by providing training for fishers in the use of GPS units to assist them when placing and mapping the shades. In discussions with the HFA, several ideas for an alternative livelihood project have been proposed such as tour guide training, special training in fly fishing guiding, a computer literacy program, and small enterprise training. The group, however, needs to decide on one activity that it considers a high priority for their fisherman members. In deciding on a project, we must also bear in mind that the HFA is a very small and new organization, with limited management capacity.

As we have during the last four seasons, we will hire at least two fishermen from Hopkins to assist with the monitoring of the Nassau grouper spawning site at Glover's in December/January (Intervention 4), thus helping to offset some of their losses in foregoing fishing at this site.

We will continue to work closely with the National Spawning Aggregation Working Group[2] (Intervention 11) as its secretariat. During FY08 the Group will develop its second annual work plan, using it as a guide to focus on its main activities of monitoring, data analysis, training and outreach. A major activity this year will be the Group's submission to the Fisheries Administrator of its final recommendations for additional protective measures to reverse the dramatic decline in spawning Nassau groupers at the spawning sites. These measures include stronger enforcement, limiting fishing access, banning spear fishing in marine reserves, and at least a five year moratorium on the take of Nassau grouper (Intervention 2). The Working Group is also committed to spearheading the necessary consultations with the fishing community to garner support for these recommendations. To aid in these consultations we plan to develop a 10-minute documentary film on the Nassau grouper as well as a special Nassau grouper power-point presentation (Intervention 9). A Spawning Aggregation newsletter will be prepared by June 2008 in collaboration with the Working Group (Intervention 9 to address Indirect Threat 10). The newsletter will inform fishermen of the latest results of the monitoring data collected at the protected spawning sites. The TV and radio spots will also be broadcast during the Nassau grouper spawning

[1] Please refer to Appendix 2 for this and other numbered interventions or threats highlighted in the text that follows. This appendix details the general and Seascape Species-specific Conceptual Models for the Glover's Reef Living Seascape, showing the goal, conservation targets, the key threats militating against those targets and the strategic interventions that are being carried out to mitigate the threats. The conservation targets, threats (direct and indirect) and interventions are uniquely numbered and these numbers carry over between all four models.

[2] Members of the Group include representatives from the Fisheries Department, CZMAI, Belize Audubon Society, Green Reef, Toledo Institute for Development and Environment, Friends of Nature, Toledo Association for Sustainable Tourism and Empowerment, University of Belize, Belize Fishermen Co-operative Association, Hopkins Fishermen Association, Placencia Fishing Co-operative, WWF, TNC and WCS.

season, reminding fishers that 11 spawning sites are closed to fishing year-round and that there is a four-month closed season for Nassau grouper (Intervention 9).

Within the first quarter of FY08 we expect to receive approval from the Fisheries Department for the new Glover's Reef Marine Reserve management plan (addressing Indirect Threat 7). In addition, we hope to have finalized the Business Plan for the reserve (Intervention 14, addressing Indirect Threat 13), and to work with the marine reserve staff in implementing the provisions of both plans.

During the third and fourth quarters of FY08 we are planning to partner with the World Resources Institute (WRI) to conduct an economic valuation of the Glover's Reef Marine Reserve (Intervention 15). WRI will be developing an economic valuation methodology of coastal resources for application in Belize. They plan to conduct a nationwide evaluation of our coral reefs, with a focus on the importance of marine protected areas and their role in coral reef protection. As we have collected useful data on the value of fisheries and tourism within the Glover's Reef Marine Reserve, this protected area can serve as a good case study for evaluation. Putting a monetary value on the goods and services provided by the marine reserve should help to strengthen the case for investing in improving its management and securing its protection.

In addition, as mentioned below, other interventions include the collection of fish catch and effort data, training activities, and monitoring of reefs and seascape species. Involvement of fishermen, GRAC members and reserve staff in these activities, and sharing the data with these groups, will also help in raising awareness through increased knowledge (addressing Indirect Threats 9 and 10).

Threats addressed and results/outputs anticipated:
Training of fishermen in Hopkins in an alternative livelihood activity will help to reduce their dependence on fishing and, at the same time, help to reduce the unsustainably high fishing pressure which is the greatest threat to Glover's Reef. Educational and public awareness activities are geared towards informing users of the reserve of the relevant regulations, thus fostering compliance which will lead to conservation of many of the resources of the coral atoll. Having a management and business plan for the reserve will help guide the reserve staff and strengthen management of the reserve for the longer term. An economic valuation of the atoll should underline the value of the marine reserve to fisheries and tourism, and help demonstrate the need for its continued protection and sound management into the future.

Level of Effort (Total Activity 2.1): $62,500 (USAID/EGAT: $27,500; WCS: $35,000

Activity 2.2 Provide technical support and training to the Glover's Reef Marine Reserve staff, the Belize Fisheries Department, and the CZMAI to improve management of the reserve and enforcement of fisheries and land-use regulations

Support to the Glover's Reef Advisory Committee (GRAC) will continue over the course of the year (Intervention 11), and travel costs for members to attend the quarterly Committee meetings will be covered. Weather permitting, one of the meetings will be held on-site at Glover's Reef to give the members the opportunity to observe reserve management firsthand. By holding at least one meeting on-site each year we keep the members fully aware of the challenges on the ground and allow any new members of the GRAC to become familiar with the site. As Secretary of the Committee, WCS will provide assistance to the Marine Reserve staff in arranging Advisory Committee meetings and documenting and distributing the minutes of meetings. During FY08, the GRAC will be concentrating on the critical issue of limiting fishing access to the Glover's Reef Marine Reserve. The Committee will also be involved in reviewing the final draft of the best practices for the cayes of the atoll and the Conservation Strategy. This year we will discuss the possibility of transferring the costs associated with the Committee to the Fisheries Department as part of their new marine reserve project that will be supported by the Protected Areas Conservation Trust.

During the first quarter of FY08, we will be holding a meeting with the landowners of the atoll's islands to discuss and finalize the latest draft of the best practices for the development of the cayes (Intervention 17, addressing Direct Threats 2 and 3 and Indirect Threat 12). The final draft will then be presented, for feedback, to the relevant government agencies, such as the Fisheries Department, Department of the Environment, Lands Department, Forest Department, and the Belize Tourism Board. As mentioned above, the GRAC will also be requested to review this final draft. Once all comments have been incorporated, the final document will be printed and disseminated. We will also prepare a colorful pamphlet that summarizes the best practices, to provide an easy reference that will also be of interest to other caye owners and marine managers. The best practices address concerns such as habitat loss, waste disposal, energy and water use, coastal structures and impacts on nesting sea turtles. We expect that these best practices will be voluntarily adhered to by the caye landowners on Glover's Reef, as they will have helped to draft them.

Threats addressed and results/outputs anticipated:
Maintaining the work of the Advisory Committee, and improving the level of attendance and participation of members at meetings, will help to ensure that the main stakeholders continue to have a means of contributing to the reserve's management. With the guidance supplied to the Committee by the Conservation Strategy, the new reserve management and business plans, and the best practices for the cayes, members will have a sound framework of reference within which to ensure that the reserve management is effective and meets its objectives. The best practices prepared for the atoll cayes will help to guide future development and minimize the impacts of the current facilities – especially tourism infrastructure – on the atoll's marine environment.

Level of Effort (Total Activity 2.2): $27,500 (USAID/EGAT: $7,500; WCS: $20,000).

Activity 2.3 Strengthen and expand stakeholder support for the Seascape Conservation Strategy – e.g. fishermen (divers for lobster, conch and finfish, as well as handline fishers), Atoll residents, and tourism operators, as well as mainland communities that are highly dependent on the health of the reef (Hopkins, Sarteneja and Dangriga).

The fisheries catch data collection program for the Atoll will continue during FY08 (Intervention 8, addressing Indirect Threat 4). The FY08 data will contribute to a total of almost four years of data, a useful time period for which meaningful analyses can be carried out, including the development of sustainable fishing models for the Atoll. The results should reveal trends in the various fisheries, and provide a sound basis on which to make recommendations for improved management. We will continue using data collectors on-site at Glover's and at the landing beach in Hopkins, as well as the system of issuing fuel coupons, which has worked successfully in the past. During the first quarter of FY08 we will analyze the second year of data (February 2006 – January 2007) and we plan to prepare a second booklet of the results to distribute to fishermen. During the year, we will also work towards developing a simple logbook format that fishermen can use to record their individual catch data, thus helping to ensure the continuity of this very basic, but valuable, program.

We will also continue following up with the nine fishing captains who have received radio and GPS units, assisting them with the use of the equipment in monitoring and patrols for biodiversity protection, ensuring that they are reporting infractions and recording their reports in their logbooks (Intervention 6). Both this project and fisheries catch data collection program have been designed to involve fishermen in the management and protection of their resources.

During the 2008 four-month lobster closed season (from February to June), we will carry out the training for fishermen in the Reef Check monitoring technique[3] that we were unable to complete in FY07. As earlier

[3] Reef Check, which is the UN's official community-based reef monitoring program and also used by the International Coral Reef Action Network (ICRAN) project, is a globally-used method that is very user-friendly and thus easily taught to groups such as divers and fishermen. The data collected are fed into a global database.

envisioned, we will partner with the local NGO Green Reef who will conduct the training of selected fishermen. Green Reef is the focal contact in Belize for this technique and is involved in annual Reef Check monitoring at Glover's Reef. Trained fishermen would be invited to take part in this monitoring program during future Reef Check monitoring activities on the Atoll (Intervention 4). Reef Check monitoring will generate useful data on the health of the reef that will be accessible globally, and it will also give fishermen a better understanding of the marine system by directly involving them in the monitoring of their marine resources. Additionally, the annual monitoring program should provide an alternative economic activity for some fishers.

Threats addressed and results/outputs anticipated:
Involvement of fishermen in catch data collection, monitoring and patrols is intended to enhance their sense of ownership of the reserve and their appreciation of its benefits, and thus increase their support for its continued protection. Lack of their support has been a major indirect threat, leading to illegal fishing. Over time, the benefits of the reserve to fisheries production should be demonstrated through the results of these data collection and monitoring programs. In addition, the data should help to determine the sustainable level of fishing for the General Use Zone of the Atoll for the various commercial species and should lead to the introduction of new legislation such as protection for parrotfish and a ban on spear fishing in the reserve.

Level of Effort (Total Activity 2.3): $30,000 (USAID/EGAT: $10,000; WCS: $20,000)

Activity 2.4 Introduce innovative co-management arrangements with stakeholders to foster buy-in for conservation action.

Although the National Protected Area Policy and System Plan, which has been endorsed by the Government, recommends co-management as the most favorable form of management for protected areas, a Government moratorium on co-management agreements for protected areas is still in effect. Within the time-frame of this project, we therefore do not expect any further progress to be made on securing an agreement with a local NGO for the management of the Glover's Reef Marine Reserve. Nevertheless, over the past few years we have helped to ensure stakeholder involvement in the management of the marine reserve through the active participation of the GRAC. We will continue to foster this mechanism for the time being (Intervention 12). The GRAC has successfully managed to persuade the Fisheries Department of the need for an enforcement policy, and the Department is presently finalizing its enforcement policy document The Committee also brought the concept of limited access to the fore, and we hope that this issue will be addressed in the coming year, with the Glover's Reef Marine Reserve being used as a test case to implement a program of only allowing traditional fishers to use the atoll.

In terms of more informal co-management arrangements, the resort owners have provided the salary of one of the reserve rangers from January to June 2007. The participation of fishermen in collecting catch data, assisting with patrols, and hopefully in coral reef monitoring in the future, are examples of stakeholders providing direct management assistance to the marine reserve.

In addition, the resort owners on Long Caye and Northeast Caye are helping to co-manage through their assistance in collecting data on sea turtle nesting activity and by providing a boat to be used as a base for patrols during the Nassau grouper spawning season (Interventions 11 and 28).

Through the work of the GRAC and the reserve staff, we expect that assistance from the stakeholders will continue and increase.

Threats addressed and results/outputs anticipated:
The increased level of responsibility of the GRAC in the management of the reserve and the direct assistance of members in very tangible ways will result in improved day-to-day implementation of activities that will reduce illegal fishing, increase support from stakeholders, and strengthen enforcement. This will lead to overall improvement in the level of protection of the reserve's resources and biodiversity. In addition, monitoring data collected on turtles, fisheries catch, and reef health will supply basic data required to inform management (Indirect Threat 4).

Level of Effort (Total Activity 2.4): $10,000 (USAID/EGAT: $2,500; WCS: $7,500)

Activity 2.5 Develop new, and strengthen ongoing, sustainable long-term programs to track reef health (e.g. coral cover, algal abundance, and coral species diversity), water quality, and population status of commercially and ecologically important reef species (e.g. groupers, sharks, snappers) by Reserve staff and staff of key agencies such as the Fisheries Department, CZMAI, and other NGOs involved in reef management.

Each quarter during FY08, Glover's Reef Living Seascape staff will continue to work with marine reserve staff to collect monitoring data on commercially fished species of lobster, conch, five finfish species and ten species of parrotfish, using the LAMP (Long-term Atoll Monitoring Program) monitoring protocol (Interventions 18 and 23). The four datasets will be analyzed at the end of the year and the results, along with the results for the previous two years, will be presented to the marine reserve staff, the Fisheries Department and the GRAC. The datasets will also be shared with the Fisheries Department. As several of the marine reserves have received training in LAMP methodology and are implementing the monitoring, we plan to organize a training workshop for reserve biologists on the analysis of their LAMP data during the second or third quarter of FY08. The workshop will be organized in partnership with the Fisheries Department.

In collaboration with marine reserve staff, we will continue to monitor the Nassau grouper spawning aggregation site at Northeast Point, Glover's Reef during the December 2007 – February 2008 spawning season (Intervention 1). We need to determine whether numbers of aggregating groupers remain at the alarmingly low levels observed during the last season. Data collected will be entered in the new web-based database that is shared by members of the National Spawning Aggregation Working Group. We hope that, based on the recommendations of this Working Group, additional protective measures will be instituted before the start of the 2007/2008 spawning season.

Data collected on the conch and Nassau grouper, two of our Seascape Species[4], will help track their status over time and indicate whether population levels are increasing towards the target densities we have set as part of our Conservation Strategy. During FY08, we will continue to consult with the Fisheries Department and advocate for a new size limit for conch (as the current limit permits the harvesting of juveniles), a ban on spear fishing in marine reserves to help protect the Nassau grouper, and protection of parrotfish. Parrotfish are key herbivores in the reef community, contributing to the health of the reef by keeping algal growth in check and thus assisting in coral recruitment. A study conducted in the Bahamas has shown that protection of parrotfish resulted in a dramatic increase of large parrotfishes and doubled the amount of grazing, leading to a fourfold decrease in seaweed on the reef and a striking rise in the number of new corals.

[4] The Nassau grouper has been threatened by over-fishing and is now an endangered species, and grave concern has been expressed about the populations of conch, a species that is now included on Appendix II of CITES. Therefore our work is geared towards effecting policy changes that will help restore healthy populations of these species.

With the assistance of caye residents and reserve staff, we plan to monitor sea turtle nesting activity during the nesting season which generally runs from July to November. We will collect the completed data sheets from the participating caye residents on a regular basis, enter the data in a special database, carryout the analysis and produce a report for the 2007 nesting season. We also plan to conduct in-water surveys at four-month intervals according to the protocol that we are finalizing. The protocol will be shared not only with the Glover's Reef Marine Reserve staff but also with the reserve staff of the Bacalar Chico, Sapodilla Cayes, and South Water Caye marine reserves. WCS sea turtle expert Dr. Cathi Campbell will lead the first in-water survey in FY08, and will continue to train WCS and Glover's Marine Reserve staff in the survey and tagging techniques. The survey data will be entered in a special database designed by WIDECAST (Wider Caribbean Sea Turtle Conservation Network) that is used within the region. A preliminary analysis of the data for the May 2007 and September/October 2007 surveys will be conducted and a report produced. Both the in-water and nest survey reports will be submitted to the Fisheries Department and shared with the National Sea Turtle Conservation Network. This work will help us track the status of another of our Seascape Species, the hawksbill turtle (Intervention 26), which is very endangered and experiencing declining nesting activity in this region.

WCS, in partnership with Cornell University, will conduct a study during the first and second quarters of FY08 on the osprey population at Glover's Reef, as part of a larger project on ospreys in Belize. The non-migratory race of ospreys (*Pandion haliaetus ridgwayi*) in the Caribbean is believed to number only between 100 and 150 pairs of birds, and a quarter of these pairs occur off the coast of Belize. Very little is known, however, of their current status. This study will therefore provide us with information on the status of another of our Seascape Species at Glover's. The study will specifically provide data on the size of the breeding population, the nesting season and nest site characteristics, and the prey selection and habitat use by the birds. These data will help us refine our seascape model for this species (Intervention 27).

We plan to continue our collaboration with the University of Belize, monitoring the black, long-spined sea urchin, *Diadema antillarum* (Intervention 24). We expect to arrange at least two monitoring trips to Glover's for this program during FY08. This is a keystone species that is closely linked to coral reef health, as it is a very important herbivore in the coral reef community. We hope to track its recovery over time to the normal levels of density (>2 urchins/m^2) that were recorded prior to the disease that caused a die-off of the species in the mid-1980s. Since the work on *Diadema* monitoring will be carried out in partnership with the University of Belize, the main training elements involved in this activity will be for the participating students.

By gathering information on five of our Seascape Species (conch, Nassau grouper, hawksbill turtle, *Diadema*, and osprey), we will better understand how human activities influence their abundance and what conservation actions are needed to maintain their critical habitats, and to track the success of conservation interventions over time.

Last year we assisted in the collection of coral reef data for Glover's Reef during an Atlantic and Gulf Rapid Reef Assessment (AGRRA) survey, for which the data have now have been analyzed. We will synthesize and map the results of this survey, the results from the Mesoamerican Barrier Reef System Project synoptic monitoring program for 2004, a student's coral reef monitoring data collected during 2005, and if possible, earlier AGRRA data for 2000. We hope that this exercise will indicate which areas of the atoll are more resilient to bleaching and whether they coincide with our previously mapped resilient or resistant areas (Intervention 20). This information will also be crucial in the management of the star coral (a Seascape Species) and the other species on the reef for which it is an umbrella.

The LAMP, spawning aggregation, and sea turtle monitoring aspects described involve WCS partnering with the marine reserve staff to carry out the programs. As the reserve staff change on a frequent basis, on-the-job training is essential to ensure that the monitoring is accomplished in a consistent manner and on a timely basis. This joint monitoring is an important part of the ongoing program of capacity building and strengthening of the reserve staff, in particular the reserve biologist. Another important training component will be the workshop on data analysis for reserve biologists, which will be held on a national basis.

In addition, we will be working closely with the Fisheries Department to carry out a training workshop for reserve rangers. Last year, rangers were trained in enforcement and prosecution procedures. The Department has indicated, however, that follow-up training is required in the practical application of the theory covered in the previous training session and we plan to fulfill this identified need (Intervention 10).

Threats addressed and results/outputs anticipated:
Our activities are addressing a weakness identified by the National Protected Area Policy and System Plan: biodiversity monitoring. The training component built into our monitoring programs is addressing the need to strengthen national capacity in monitoring environmental health and the status of commercial species. Through this process we are helping to build a team of well-trained reserve staff and future marine biologists. The training of reserve rangers will address the widely acknowledged need for improved enforcement of the fisheries and reserve regulations. The data resulting from monitoring is critical to determining whether the status of the conservation targets is improving, whether the investment in management and reduction of specific threats is worthwhile, and whether additional management interventions are necessary.

Level of Effort (Total Activity 2.5): $75,000 (USAID/EGAT: $35,000; WCS: $40,000)

OBJECTIVE 3: Learn and teach best practices in the Glover's Reef Seascape and beyond.

Over the past four years of the project, we have shared many lessons learned and the methods that we have developed. Our Seascape Species Approach to planning has included a threats assessment, the selection process of the Seascape Species, building the Conservation Seascapes, and the development of a Monitoring Framework. Our Conservation Strategy summarizes the approach and it will also be shared more widely with our national and international partners. Aspects of these lessons have also been included in several LLP Bulletins and Technical Manuals that are being shared as guides to others using this planning approach at landscapes or seascapes around the world.

To date, we have documented lessons learned in applying the Seascape Species Approach to a tropical marine site, had our threats assessment methodology adopted on a national basis as part of the official protected area management planning process, shared our fisheries catch data collection methodology and LAMP monitoring protocol with local partners, and demonstrated the role of no-take areas in conserving commercially fished species. Some of our monitoring methods have been adopted by other marine reserves. We plan to share our in-water sea turtle survey protocol and the best practices for the development of the atoll cayes during FY08 with our local partners involved in sea turtle monitoring and marine protected area management. We also hope that our management plan and the economic valuation of the atoll will serve as models for other marine reserves.

As we implement the Conservation Strategy in the coming years, we expect that other best practices will be revealed in relation to the application of new types of partnerships and co-management arrangements, the importance of creating networks of marine reserves to enhance system resilience, and the introduction of innovative sustainable financing measures. The success of these practices will be monitored and shared with a wider audience within the country, the region and beyond.

Level of Effort (Total Objective 3): $25,000 (USAID/EGAT: $5,000; WCS: $20,000)

Activity 3.1 Document the lessons learned from the application of the Living Landscapes approach to priority setting within a marine site.
As we mentioned earlier, our Conservation Strategy will be used as a case study to document the planning approach used for this tropical marine site and to demonstrate the applicability and utility of the process. It will be included as part of a publication of case studies from other sites in a peer-reviewed journal or as a WCS

Working Paper. Summaries will also be published as LLP Bulletins. The benefits and limitations of the planning approach and various planning tools will be highlighted in a series of guidance briefs.

Our experiences applying the Landscape/Seascape Species Approach to the Glover's Reef Living Seascape will be included in the form of advice and examples in a series of guidance briefs that will be finalized during the coming reporting period. These guidance briefs, described in more detail in section 4.3.1, are designed to provide a concise overview of the various components and tools applied during the strategic conservation planning approach developed by the LLP. The guidance briefs provide information and examples illustrating when it is applicable to use the tool, what the benefits are, by whom it should be used and what skills are required.

Level of Effort (Total Activity 3.1): $12,500 (USAID/EGAT: $2,500; WCS: $10,000)

Activity 3.2 Extract and share best practices, in terms of management and monitoring.

We will continue to share our methodologies and monitoring program best practices with our partners and to provide them with assistance in their implementation. Recently, we shared our fisheries catch data collection methodology and data sheets, as well as our LAMP protocol, with The Nature Conservancy, who will in turn be sharing them with the Toledo Institute of Development and Environment (TIDE), the co-managers of the Port Honduras Marine Reserve. We also plan to follow-up with data analysis training for those partners who are implementing the LAMP protocol, such as Friends of Nature and the Belize Audubon Society. We will be sharing the best practices to guide development of the atoll cayes with the managers of marine reserves. We also plan to apply the experience we have gained in strengthening the GRAC to assisting the South Water Caye Advisory Committee, under another project.

The products we have produced during this project have been widely shared with our local partners in the form of reports, published papers, booklets, presentations, manuals and electronic files. We will continue to disseminate our results in these various forms.

Threats addressed and results/outputs anticipated:
During this final year of the project, we will share documentation of the best practices, such as those for the development of cayes, the management plan, and our Conservation Strategy. We hope that the LAMP monitoring protocol will be initiated by TIDE; four to five sites using the same methodology could form the basis for comparisons amongst the reserves and lead to improved information on which to base fisheries management decisions.

Level of Effort (Total Activity 3.2): $12,500 (USAID/EGAT: $2,500; WCS: $10,000)

OBJECTIVE 4: New York Coordination Unit Strategy: Guide the design and testing of wildlife-focused planning, implementation, and evaluation tools for effective conservation at a landscape scale, and promote learning across sites and beyond

The NY-based Coordination Unit (CU) of the Living Landscapes Program (LLP) is designed to develop and test wildlife-focused, landscape-scale approaches to biological conservation across multiple sites. To ensure the widespread utility of these new conservation approaches, the program is testing them within landscapes that encompass a diverse array of ecological features, land-uses, resource-use issues, and jurisdictional arrangements. The CU is charged with designing and managing the program to develop new approaches, to facilitate and harmonize testing and implementation among these core sites, and to capture the synergistic benefits of diverse experiences. This unit guides the development of landscape-scale conservation strategies, tools and techniques; assists in the design and development of cost-effective intervention and monitoring programs at these sites; promotes cross-site learning; and ensures communication among the sites, WCS staff (central and field), USAID (DC and missions), and the larger conservation community.

During FY08, the priority for the Coordination Unit will continue to be working with field sites to promote adoption of best practice tools for effective conservation at a landscape scale, consolidating lessons learned and focusing to an even greater extent on sustainability of key activities. We will also be working with our field staff to explore how best to integrate project strategic planning elements within annual financial management.

FY07 Level of Effort: (Total Objective 4): $ 44,504 (USAID/EGAT: $26,504; WCS: $18,000)

Activity 4.1 Provide technical assistance to site-based conservation

Members of the NY Coordination Unit will provide technical input to field site operations detailed in the previous sections of this implementation plan, some of which will involve consultation at sites, as previously noted. Drs. Karl Didier and Samantha Strindberg will assist the Mongolia team (especially Dr. Susan Townsend) in developing a spatial model of the distribution of Siberian marmots, a Landscape Species, in the Eastern Steppe. Observational data collected in the steppe over the last two years will be analyzed with statistical spatial modeling techniques to map the current distribution of marmots and examine the potential environmental and anthropogenic drivers of this distribution. The information will be used to refine our Biological and Human/Threat Landscapes and to produce a Conservation Landscape for marmots.

The results can be contrasted to marmot landscapes based on expert opinion and will be used to inform conservation action. Dr. Didier will also provide general technical support to the Mongolian team as they refine Biological, Human/Threat, and Conservation Landscapes for their other Landscape Species, and develop species-specific Conceptual Models and Monitoring Frameworks.

Dr. Samantha Strindberg will travel to Belize City to assist the Belize field team in finalizing their Conservation Strategy. She will also provide technical assistance for the evaluation of the effectiveness of conservation actions within the Glover's Reef Living Seascape (GRLS) by assisting with the analysis of fisheries catch data and other monitoring data. This evaluation process, by means of monitoring the seascape species, threats and interventions, is clearly defined in the GRLS monitoring framework. As the first coral reef marine site to apply the Seascape Species Approach, it is important to document the lessons learned and variations that have developed in applying the approach. In part, these lessons will be captured as part of a series of case studies that will be published together. Similarly, Dr. Didier will assist the Mongolia team in writing a case-study description of the Landscape Species Approach as it has been applied in the Eastern Steppe. The case study will either be published in a scientific journal or in a book. (See Activity 4.3.3).

Dr. Strindberg will also be assisting WCS-Guatemala team with the design and analysis of their monitoring programs. Specialized methods will be applied to meet the challenges of monitoring elusive wildlife over vast areas.

Results/Outputs:
Focused and timely technical assistance and collaboration provided to field sites based on needs, leading to conservation landscape strategies; targeted monitoring of effectiveness; and implementation of processes to increase participation of stakeholders.

Level of Effort (Total Activity 4.1): $8,000 (USAID/EGAT: $6,000; WCS: $2,000)

Activity 4.2 Design, implementation, and testing of decision support tools

Activity 4.2.1 Living Landscapes Program technical manuals

The Living Landscapes Program will continue to produce brief how-to guides, called Technical Manuals, after field testing and fine-tuning the methods at several WCS field sites. In FY08, Dr. Didier will complete two technical manuals on Landscape Species Approach (LSA) tools, one on creating Conservation Landscapes and one on using Conservation Landscapes to evaluate the spatial extent of conservation actions necessary to meet goals and to prioritize areas and interventions. The manuals are designed to provide clear and practical instructions to field practitioners on using a number of conservation tools. The manuals will be translated into Spanish and French and disseminated to WCS projects, partners (government, NGO and local), and other conservation colleagues.

Activity 4.2.2 Landscape Species Approach progress

In FY08, LLP-NY staff will design and lead a 2-week course on the Landscape Species Approach for interested staff from WCS projects around the world. The course will be designed to give a conceptual overview of all the LSA tools and to provide field staff with an opportunity to learn the details of the tools and apply them to their individual sites.

Activity 4.2.3 Integrating strategic planning and project management

LLP-NY staff will continue to work with our field sites and WCS NY operations (i.e., regional program and accounting staff) to roll out a process for integrating strategic planning with operations planning and reporting. In October or November 2007, a final decision will be made on the approach to integration so that it can be used by field projects for the WCS/FY09 budget cycle (i.e., December 2008). WCS will be the first international conservation NGO to integrate site-based strategic planning into annual operations planning. This fills a major gap in the adaptive management infrastructure that we need in order to truly measure our conservation effectiveness.

Results/Outputs:
Technical manuals designed, tested in the field and distributed in hard copy and electronically (on CDs and on-line) for wider distribution. A process for integrating project strategic planning with annual financial management will be developed and this draft approach piloted at several sites.

Level of Effort (Total Activity 4.2): $4,400 (USAID/EGAT: $2,400; WCS: $2,000)

Activity 4.3 Catalyze cross-site and cross-organizational learning, and communication

Activity 4.3.1 Annual meeting of WCS/LLP Staff: Follow Up

In FY08, LLP-NY staff will finish writing and producing a series of “Guidance Briefs” based on information gathered at the LLP Annual Meeting in May 2007 that brought together the 14 LLP sites, including the 4 currently funded by USAID. The Briefs are intended to be an accessible, user-friendly way to introduce new sites to the Landscape Species Approach and to guide users in when and how the LSA works best.

Activity 4.3.2 CMP: leadership, design, writing and audits

LLP-NY staff will continue to play a leadership role in the identification, design and implementation of Conservation Measures Partnership activities. We will work closely with all CMP members to identify best-practice tools to use as models for development of Miradi modules. We will provide CMP with ongoing lessons from our efforts to integrate project strategic planning and annual financial management, and offer recommendations as to how this experience can help guide the development of Miradi.

Activity 4.3.3 Development and dissemination of final reports for each site: showcasing and sharing lessons learned

LLP-NY staff will work closely with our field sites to develop a format for and the content of a final report for each site. These reports will likely comprise a series of brief and engaging "stand alone" documents that will showcase the WCS approach to threats-based conservation at a landscape scale while highlighting examples of the innovative ways that WCS field staff effect conservation in populated places outside of protected areas. Wide dissemination of these final reports will allow us to share lessons learned with the conservation and development communities. LLP-NY staff will share early drafts of the format and content with USAID and our GCP partners.

The CU will also lead an effort to produce case studies of how the LSA has been implemented in our various sites. We plan to produce case studies for 4-6 sites (likely Mongolia, Adirondacks, Glover's Reef, Lao PDR). By the end of FY08, the case studies will be submitted for publication in a peer reviewed journal or compiled into a book or WCS working paper.

Activity 4.3.4 Preliminary assessment of the human welfare impacts of establishing national parks

With funding provided by the John D. and Catherine T. MacArthur Foundation and the National Science Foundation, LLP staff, in collaboration with the WCS Gabon program, the Gabon National Parks Authority and Boston College, conducted a baseline household welfare survey of 1000 households with traditional claims to natural resources within 4 national parks in Gabon, and an additional 1000 control households living outside the influence of these parks. This survey is the first of three surveys planned over the next 5 years to assess the income, health, consumption, natural resource use, and family function impacts of establishing protected areas on local families. Data entry has now been completed, and results of the baseline survey will be analyzed during FY08. This analysis will allow us to assess the role that wild resources and market access play in the welfare status of families proximal to and distant from the parks.

Results/Outputs:
Draft final reports for each site will be generated. The format for these reports and an outline of the content will be made available to GCP partners and USAID. Initial findings from the Gabon Parks and People will be published in a peer-review journal.

Level of Effort (Total Activity 4.3): $12,000 (USAID/EGAT: $10,000; WCS: $2,000)

Activity 4.4 Application of Living Landscapes Program tools beyond core sites

Activity 4.4.1 Training workshops and technical assistance in the use of LLP tools

Karl Didier will continue to give general technical support to the WCS sites pursuing the Landscape Species Approach, including especially the Eastern Steppe in Mongolia, the Adirondacks in New York State and the San Guillermo Biosphere Reserve in Argentina.

Samantha Strindberg will ensure that LLP monitoring tools (methods and frameworks) will be leveraged at our other design and demonstration sites, such as within the Nam Kading Landscape, Lao P.D.R., and the Western Forest Complex, Thailand.

Last year, the Living Landscapes Program tools were applied in central Lao, PDR to guide the conservation planning initiative for the Nam Kading National Protected Area in the Bolikhamxai province. This year, LLP-NY will assist WCS-Lao PDR program in writing up a technical manual to provide a detailed description of the development of Biological, Human and Conservation Landscapes for the Landscape Species. In addition, LLP-NY is planning on assisting the WCS-Lao PDR team with the publication of a peer reviewed article to share the lessons learned from applying the LLP tools in the development of a protected area management plan in Lao, PDR.

Last year, LLP-NY provided guidance to the WCS-Portland office on selection of candidate species for the newly defined Arctic-Alaska landscape, assistance with our Species Selection Software and review of a draft suite of Landscapes Species. This year, LLP-NY is planning on finalizing the suite of Landscape Species for the Arctic-Alaska landscape and providing technical support in the development of Biological, Human and Conservation Landscapes for the selected species.

LLP staff member Samantha Strindberg, together with WCS Brazil staff member Fernanda Marques, will conduct a WCS workshop on "Statistical Design and Analysis of Biological Monitoring Programs for Conservation Management" in Manaus, Brazil, for WCS and reserve staff of the Amazon Andes Conservation Program in Brazil, Peru, Ecuador, and Bolivia.

LLP staff will provide technical support to Madhu Rao, a part-time WCS staff member and part-time American Museum of Natural History (AMNH) staff member, in her work on the "Network of Conservation Educators and Practitioners" at the Centre for Biodiversity and Conservation, AMNH. One focus is the development of training materials for trainers of conservation professionals/practitioners and another is the collaboration with TNC staff on developing protected area tools. In both instances, tools developed within the framework of the LSA will be adapted for these wider applications.

LLP staff member David Wilkie will work with WCS-Cambodia staff Tom Clements and Tom Evans, and with the new regional monitoring specialist, Emma Stokes, to formulate a simple community-based monitoring system to track the conservation and livelihoods impacts of community ecotourism enterprises in the Northern Plains.

David Wilkie will also assist the WCS-Rwanda program with the development of a simple human welfare assessment tool that could be used to track household livelihoods in communities bordering protected areas. The tool will be developed following a national survey of social science data collection efforts, and will be designed to mesh easily with these past and ongoing initiatives.

Finally, LLP staff member David Wilkie will assist WCS and national staff in DRC in the use of LLP tools to further develop a national strategy for wildlife conservation.

Activity 4.4.2 Technical Manuals

We will continue to make our series of Technical Manuals available to conservation practitioners and decision makers on our website, as hard-copy booklets and on CD. Manuals are available in English, French and Spanish.

Results/Outputs:
Principles, practices, and tools distilled from implementation of the USAID/EGAT-funded sites to other site-based conservation projects around the world. Recent manuals translated into French and Spanish and distributed.

Level of Effort (Total Activity 4.4): $8,000 (USAID/EGAT: $0; WCS: $8,000)

Activity 4.5 Ensure coordination and communication services for the program

The program director and assistant director will meet with staff from the core sites and other WCS large-scale conservation sites to discuss the development of the program, on-the-ground implementation of the Landscape Species Approach, and further development of tools relevant to the approach. Program staff will also meet with collaborators, NGOs, governmental officers, and representatives of other stakeholder groups to promote the use of LLP strategies and tools.

Throughout the year, LLP-NY will assist field staff in completing annual Implementation Plans, reporting on Performance Monitoring forms, and submitting Annual Reports. The program director and/or assistant director and other members (as necessary) will attend quarterly USAID/EGAT meetings in Washington DC and will ensure regular reporting and updates to USAID.

Results/Outputs:
The Coordination Unit will serve as a hub for communication regarding the Program among WCS field staff, core sites, current and potential conservation partners and interested members of the general public. The CU will ensure timely preparation and submission of USAID reports.

Level of Effort (Total Activity 4.5): $8,104 (USAID/EGAT: $4,104; WCS: $4,000)

Activity 4.6 Coordinate participation in the design and implementation of the USAID GCP evaluation

The program director and assistant director will continue working with USAID, the ARD evaluation team and our field staff to ensure that the design and implementation of the end-of-program evaluation is consistent with the TOR, and minimizes the personnel and financial burden on field programs. The program director will discuss the evaluation with appropriate NY-based staff and will keep them apprised as design and implementation move ahead. The assistant director will liaise with site staff to make them aware of the purpose of the evaluation and to ensure they are able to participate fully in web surveys and any follow-up interviews. The director and assistant director will work closely with sites targeted by the evaluation team for a field visit, and will ensure that project staff and collaborators are ready to participate fully and that logistic requirements for the visits are not overly burdensome. The director will set aside time to participate in all visits to WCS sites planned by the evaluation team. The assistant director will ensure that the results of the evaluation are made available to all field site directors and to appropriate WCS staff in NY.

Level of Effort (Total Activity 4.6): $4,000 (USAID/EGAT: $4,000; WCS: 0)

TRAVEL SCHEDULE

The estimated travel schedule for FY08 is shown in the table below.

Name	Destination	Reason
Cathi Campbell	from Nicaragua to Belize	To assist with turtle monitoring program, training reserve staff and caye residents
Robin Coleman	From Belize to NY	To work with Samantha Strindberg on the fisheries catch data analysis
Samantha Strindberg	from NY to Belize	To help finalize the Conservation Strategy and provide statistical design & analysis support
NY Program Director or Assistant Director	From NY or Boston to Belize	Program oversight and management support

Appendices

1. Monitoring framework for the Glover's Reef Living Seascape
2. General and Seascape Species Specific Conceptual Models for Glover's Reef