



**Biodiversity Conservation in Afghanistan,
A Program of the Wildlife Conservation
Society supported by USAID**

Annual Work Plan FY06
January 2006 – January 2007

OVERVIEW

WCS Biodiversity Conservation Program in Afghanistan, funded through a cooperative agreement with USAID, seeks to preserve biological diversity, and through that preservation achieve USAID's Strategic Objective SO 5: A Thriving *Licit* Economy Led by the Private Sector, Intermediate Result 5.1. Accelerated Growth in the Rural Economy, Sub IR 5.1.3. Natural Resources Management Improved.

This project contributes to current efforts for reconstruction and development in Afghanistan, and maintaining security. With over 80% of Afghans dependent on the country's natural resource base, long-term stability will be directly dependent on sustainable management of natural resources and provision of economic opportunities to rural sector. The continuing degradation of environmental conditions, in contrast, will lead to the spread of poverty, the dissolution of communities, and cultural practices, increased rural migrations, and further instability. This will negatively affect stability and security in Afghanistan and its neighbors.

MAJOR PROGRAM COMPONENTS

WCS, through its mandate to conserve biodiversity in Afghanistan, seeks to alleviate these problems through four interrelated strategies.

- (1) **Baseline Surveys and Data Analyses of Wildlife and Wildlands.** Data should form the foundation for management of natural resources. As much of the data that the international community is relying upon is over 30 years old, many management activities may actually have little impact to conserve biodiversity. WCS is carrying out on an extensive program of data collection from the local scale to the regional scale, and covering different disciplines from ecosystem valuation, infectious diseases, and ecology.
- (2) **Community-Based Initiatives.** WCS is contributing to USAID's goals and to the Government of Afghanistan policy in the Agriculture Master Plan of poverty reduction and economic development through promoting community conservation and ecotourism. For 2006, WCS will actively survey socioeconomic conditions in local Wakhi communities, will work with local communities to form community conservation committees, conduct conservation education workshops, and develop the foundation for ecotourism.
- (3) **Strengthening Laws, Policies, and Institutions.** Economic development through natural resource management and biodiversity conservation depends on the creation of effective institutions and policies that will mitigate existing threats and increase opportunities for conservation through better governance, enforcement, and support for the rule of law. WCS is working in 2006 with the Afghan government to draft effective laws and implementing regulations, to develop effective natural resource management policies, to support

Afghanistan's fledgling governance institutions regulating the environment, to create protected areas, and to coordinate activities for biodiversity conservation.

- (4) **Building Capacity within Afghanistan's Environmental Sector.** Any solution to biodiversity conservation in Afghanistan must begin with increasing Afghanistan's capacity to manage its biological resources. In 2006, WCS has implemented an intensive program of capacity building and training of both government counterparts as well as scientists in research and academic institutions. This capacity building is woven into all other project activities, and it is also specific to focused short course training, field-based practical training and mentoring, and study/travel tours to relevant international sites. Throughout this project, activities are designed to raise Afghanistan's capacity for self-management of its natural resource base through education, workshops, and training.

SITE DESCRIPTION

To achieve these four objectives, WCS is implementing its strategy in three areas in Afghanistan: the Wakhan District, the Hazarajat Plateau, and the Eastern Forest complex.

Wakhan

Wakhan has some of the last relatively pristine wildlife habitats and populations left in Afghanistan. It is strategically located. Wakhan borders Tajikistan to the north, Pakistan to the south, and China to the east. The Wakhan can be divided into three important regions for biodiversity conservation. These are the Big and Little Pamir Mountain ranges, and the Waghjir Valley. The Big Pamir Range extends over about 5,500 km² and is named after a mountain range containing peaks rising up to 6,900 meters. The Wakhi occupy the western Big Pamir, a considerable part of which was once included in the so-called Big Pamir Wildlife Reserve encompassing about 679 km², while the Kyrgyz occupy the eastern region of the Big Pamir Range. The Big Pamir Reserve, although designated as a reserve, was never legally established. Between 1968 and 1977, the Big Pamir Wildlife Reserve has functioned as a hunting reserve for foreigners, managed by the Afghan Tourist Organization, and before that, part of it served as a royal hunting reserve.

The eastern end of the Little Pamir is the eastern-most region of the Wakhan District and of Afghanistan. At present, this area may not be used by the Kyrgyz, and thus the habitat is purportedly in excellent condition and does not conflict with human use patterns. There is also no geographical barrier between it and the proposed Shaymak Reserve in Tajikistan, enabling Marco Polo sheep to move freely back and forth. Finally, the eastern tip of the Waghjir Valley (about 300 km²), east of 74°20'E, is uninhabited and used only for yak grazing in winter. Marco Polo sheep cross the Yuli Pass between China and Afghanistan at this point in winter. WCS is seeking to preserve all three areas as part of its biodiversity conservation project, as well as to provide benefits from this conservation to the entire Wakhan region.

Hazarajat Plateau

The Hazarajat Plateau holds some of the most important existing natural and cultural protected areas in Afghanistan. It is home to the destroyed Buddha statues, and two important proposed protected areas: The Ajar Valley Wildlife Reserve and Band-e-Amir National Park. Band-e-Amir is often described, and appropriately so, as one of the great wonders of the world. Consisting of six crystal blue lakes separated by a series of natural white travertine dams in a unique step-like lock system, Band-e-Amir deserves protection as a major source of future revenue from international ecotourism for the country of Afghanistan. Even today Band-e-Amir is regularly visited by groups of Afghans on holiday. Alongside the natural beauty of the lakes of Band-e-Amir there is also a shrine dedicated to the Caliph Ali, son-in-law to the prophet Mohammad. Band-e-Amir has been identified as containing appropriate components to qualify as a UNESCO World Heritage Site (UNEP 2003). While it was identified as a National Park in 1973 it still has no formal legal status for protection.

Ajar Valley is a spectacular long gorge created by the Ajar River and the sheer-sided Jawzari Canyon. The surrounding area was once home to robust populations of ibex, urial, Bactrian deer and other wildlife, and for many years it was a royal hunting reserve. Unfortunately, recent conflict-related events have resulted in a lack of protection for the area, with the result that wildlife populations have suffered dramatically – Bactrian deer are now be locally extinct, while ibex and urial numbers have most likely declined dramatically. Although Ajar was gazetted as a wildlife reserve in 1977, there is only a preliminary management plan that has never been implemented, and no recent accurate border assessment, wildlife surveys, socioeconomic surveys, or enforcement have taken place. There are also claims to lands in the reserve by the former King.

Eastern Forest Complex

The Eastern Forests Complex in Afghanistan contains some of the last remaining arid conifer forest in the Greater Himalayan mountain chain. The Complex runs from the border of Badakhshan in the north to Paktika in the Southeast of Afghanistan, and contains mixed oak and coniferous forests. Tree cover tends naturally to be more continuous in this region where precipitation is far higher and less erratic than elsewhere. This habitat, a Global 2000 Ecoregion (Western Himalayan Temperate Forest), is rich in biodiversity, including historical populations of snow leopards, leopards, jungle cats, Himalayan lynx, leopard cats, wild cats, Pallas' cats, jackals, striped hyenas, martens, Asiatic black bears, Siberian ibex, markhor, urial sheep, and wild boar. It is under tremendous deforestation pressure (discussed below). Further, its location in the sensitive and conflict-prone border regions between Afghanistan and Pakistan makes monitoring of deforestation difficult, if not impossible.

THREATS ANALYSIS AND PROGRAM RESPONSE

Preliminary research conducted by WCS scientists suggests that Afghanistan's fragile environment is under threat from mismanagement and nonfeasance of its natural resources during three decades of war. These threats directly affect the wildlife and as well as degrade the wildlands, on which they depend, and may be interdependent, creating a vortex of population decline, collapse, and local extinction.

Despite a presidential decree banning hunting, the taking of major species of wildlife continues for major species throughout much of the country. In part, hunting is both opportunistic and a determinative source of pressure on species. Wildlife is coming into contact with humans more often as their habitats continue to degrade or even disappear. Extensive hunting exists in all three areas of interest – Wakhan, the Eastern Forests, and the Hazarajat plateau. Wildlife trade may also be a second source of direct pressure on wildlife populations. Birds of prey are a continued source of trade from Afghanistan to other parts of the Middle East. Animal components – such as snow leopard and wolf skins – are sold in large numbers to westerners in Kabul. The bird market facilitates trade in certain avian species for ornamentation or fighting.

Afghanistan also has some of the highest rates of deforestation in the world. In the Eastern Forests Complex, extensive logging is quickly reducing the forest cover wherever deodar cedar, pine, spruce, or juniper still exists. A UNEP (2003) Landsat analysis found that forest cover in Nuristan has decreased by 53 per cent and in Kunar by 29 per cent. Residents predict similar losses for the forested regions in the provinces of Paktia, Khowst and Paktika. If this rate of deforestation continues, estimates suggest that most of the remaining forested valleys could be completely stripped of trees within five to ten years. This has already occurred in the western dry forests of Afghanistan.

Finally, changing economic dynamics and potential cultural dissolution in the Wakhan may be leading to decreased incentives to protect community rangelands. Overgrazed rangelands put some wildlife in competition with domestic livestock for food sources, while other wildlife may actually prefer to avoid domestic animals and human contact, and therefore are forced onto marginal habitat (an “evolutionary trap”). This may affect populations of ungulates and other mammals that are dependent on the grasslands, which in turn would lead to the collapse of carnivore population which depends on them for their survival. Initial research by WCS suggests that this may be occurring. Overuse of rangelands also places wildlife and domestic wildlife in close proximity, leading to the spread of shared diseases between both populations. As some of these diseases are zoonotic, they impose significant human health concerns for the Afghan population.

WCS has created a multi-pronged program response to address these issues. First, resolving these issues requires having the data necessary to understand them. Most policymakers and donors are relying on scientific data that is now three decades old and not reflective of the current context on the ground. To understand the dynamics between humans and wildlife, WCS is surveying and assessing biodiversity, conducting economic surveys, and analyzing it within the landscape context through GIS. Second, WCS is seeking to support institutions on the national level, including the revision of laws, regulations, and policies, and the creation of protected areas, to protect and conserve Afghanistan’s biodiversity and natural resources. Third, WCS is working closely to build capacity among Afghans – both inside and outside the government – to provide them with the capacity to address these threats. Finally, WCS is working to empower local communities to manage their own natural resources for the long-term benefits of their communities. This includes developing economic alternatives to take the pressure off of short-term degradation of natural resources.

EXPECTED ACCOMPLISHMENTS FOR FY06

Baseline Science and Analysis

In 2006, WCS expects to complete surveys of avian and large mammal incidence and population size estimates in the Big Pamir proposed park in Wakhan, the Eastern Forest Complex, and the Hazarajat Plateau, completing the first comprehensive scientific surveys in almost 30 years in this region. This data will be the foundation of future activities, as well as providing comparative data for annual variation in population numbers, trends analysis, and measurement error on our surveys. We expect to complete a range inventory and analysis critical for biodiversity conservation in the Big Pamir and complete the first year of studies on ecosystem health (conducted in both the winter and the summer, which offer different disease ecologies). Birds and mammals will be completed for both the Ajar Valley and Band-e-Amir National Park. The dynamics between wildlife and domestic livestock affects the spread of emerging infectious diseases, and may have important ramifications for humans, their livestock, and wildlife.

WCS will set up a GIS lab and establish capacity to support change detection studies of the Eastern Forests, including acquisition of imagery, coordination of landcover classification with previous studies (UNEP, FAO), and integration of field data and historical data with maps and remote sensing imagery for all three areas of interest. We will also work to integrate data from scientific surveys into GIS databases – data from both the past and the present distributions of animals. This analysis will provide us with a way of determining processes based on multiple patterns stemming from mammals, birds, rangelands, political structures, socioecological studies, and the physical geography of the landscape.

Community Conservation & Economics

WCS seeks to build broad-based constituencies for conservation to ensure the conservation of Afghanistan's magnificent biodiversity. To do so, WCS field staff will meet with 24 separate shuras in the upper and lower Wakhan region to discuss conservation efforts in Wakhan. This will include 100% of the shuras (village councils) in the upper Wakhan region, and 25% in lower Wakhan. These 24 villages have the greatest impact on the Pamir ecosystems and will be the target of our activities. WCS will use these meetings to define and establish conservation committees, and to make sure they are representative of community interests. These committees will provide WCS with a formal structure with which to interact and discuss conservation and ecotourism issues, and will help increase local control over natural resources. WCS will also be conducting conservation awareness workshops in these villages and actively developing education materials for these villages to raise awareness of conservation issues. Finally, WCS expects to conduct detailed conservation surveys that would allow us to better understand the use of natural resources by the community as well as their needs.

Laws, Institutions, and Policies.

As the development of laws and institutions to enforce the rule of law is necessary to preserve conservation benefits for the future, WCS will commence the revision of laws relating to biological conservation, compile national biodiversity related legislation, and review and identify priority legislative needs. WCS will start and facilitate discussions on a transboundary peace park between the governments of Afghanistan, Pakistan, China, and Tajikistan in Urumchi,

China in late September and will work to create National Parks and Wildlife Reserves in Band-e-Amir, the Wakhan, Ajar Valley, and the Eastern Forests.

Coordination with NGOs and Government

WCS seeks to develop close working relationships with the government to carry out the biodiversity conservation project, and to build capacity in the government to continue this work in the future. Specifically, WCS seeks to develop close working relationship with the National Environmental Protection Agency (NEPA), the Forests and Rangeland Department of the Ministry of Agriculture, the Ministry of Foreign Affairs, and the Afghan Tourist Organization at the national level. WCS will also build strong working relationships at the provincial level in Badakhshan Province, including the local offices of the Ministry of Agriculture, NEPA, Deputy Governor of Badakhshan, the Badakhshan Chief of Police, the Provincial Reconstruction Teams, and local USAID offices. Finally, WCS will carry out an active policy of collaboration with other NGO's and donors. WCS will closely coordinate its work with the Aga Khan Development Network, the Asian Development Bank, the United Nations Environment Program, the International Crane Foundation, and Save the Environment Afghanistan.

Training and Capacity Building

WCS is planning an active component of short courses, practical field training and mentorship, international training opportunities, and broad scale public diplomacy and education activities. We expect participants to come from the both government and academia. Specifically, WCS expects to train participants from the Department of Forest and Rangelands of the Ministry of Agriculture, the National Environmental Protection Agency, the Environmental Conservation Center for Afghanistan and the Veterinary School at Kabul University, and the Kabul Zoo. WCS expects to build capacity in natural history, rapid assessment survey methodologies, ecological data analysis, and basic ecological theory in 2006.

Management and Logistics

WCS will set up the infrastructure in FY06 necessary to carry out this work, including setting up fully staffed, furnished and equipped office and guesthouse facilities in Kabul, field bases in Wakhan (in the villages of Qila-e Panj and Kret), and initiate the establishment of a regional office in Ishkashim in lower Wakhan. WCS expects to set up the auditable financial accounting and inventory systems, complete its registration as an NGO within Afghanistan, and sign agreements with NEPA and the Department of Forests and Rangelands. Finally, WCS will develop logistics and security support systems for sites and field, including acquiring specially modified vehicles for working year-round at the off-road, high-altitude field sites within Wakhan.

IMPLEMENTATION PLAN: FY06

Total Anticipated Level of Effort in FY06: \$2,020,909 (Budget Attachment A)

OBJECTIVE 1: SURVEY AND MONITOR WILDLIFE SPECIES AND THE LANDSCAPE CONTEXT

FY06 Level of Effort (Total Objective 1): \$455,000

Activity 1.1. Wildlife Surveys

WCS is working with its partner organization, the International Snow Leopard Trust, to do preliminary biodiversity assessments in Wakhan over two months of continuous fieldwork (July – October). ISLT will survey large mammals and birds, and will be training government and academic counterparts through classroom lectures, and training in survey methodologies once in the field. The mammals (and wildlife health) teams will also return in the winter to repeat surveys as animal distributions change between seasons, and it may be easier to find certain species in the winter.

WCS Kabul Staff will be working to integrate field data with GIS and remote sensing data, and analyzing the data in light of historical distribution patterns through the end of the year. WCS scientists will also collect historical data on wildlife population abundance and incidence from natural history museums and academic institutes around the world. Obtaining a translated record of these historical articles, documents, and texts is necessary for understanding how wildlife and wildlands have changed. WCS will donate scanned copies of these materials to the legendary Afghan scholar Nancy Dupree for the Afghanistan Center at the University of Kabul. Wildlife surveys will include members of government agencies responsible for wildlife and/or park management, as well as university personnel and local community members. WCS will train these counterparts in international best practice survey methodologies so that these surveys can be replicated in future years to determine trends in wildlife.

Funded separately under Activity 2.3, WCS will also be conducting extensive surveys of birds and mammals in the Ajar Valley and the Hazarajat Plateau, particularly for Ibex and Urial, as well as of small mammals and birds. As part of its Eastern Forests program (Activity 2.4), WCS will train officials to survey the eastern forests for indicator species. These programs are discussed more fully under their respective sections.

Level of Effort (FY06): \$118,300.

Expected Accomplishments:

- Initial insights into the status of biodiversity within Wakhan through the collection and assessment of geo-referenced, presence/absence data, basic demographic data on group size, and population density, of important indicator species in birds and mammals in Wakhan.

Activity 1.2. Marco Polo Sheep Research and Monitoring

In FY06-FY07, WCS scientists initiate work to satellite collar up to 20 adult and young Marco Polo sheep in the Big Pamir to determine distribution, trends, habitat use, feeding ecology, migratory movements, survivorship, and causes of mortality. FY06 will focus on designing and order satellite collars that will be trackable from space to monitor the movements, health, and biology of Marco Polo sheep throughout the year. Further, WCS scientists will record observational data, collect fecal samples to study diet and parasite loads, take tissue samples for genetic analysis, and blood samples to assess disease ecology and health status of wild sheep. Graduate students from Afghanistan will be identified, trained, and mentored, to take lead roles for advanced degrees on as many of these studies as possible.

This study will involve substantial WCS staff time to dart animals over two months, to collect and analyze the behavioral data (winter and spring 2006-7), assess health of animals through assessments in the field and laboratory (summer 2007), train government counterparts and veterinary faculty post-graduates, integration of data into a GIS and remote sensing database, and substantial logistical support for the field teams.

Level of Effort (FY06): \$104,000.

Expected Accomplishments:

- Design and testing of satellite radio collars to be able to monitor Marco Polo sheep populations, including transboundary movements and the ability to monitor sheep populations.
- Ability to analyze behavioral, demographic, and health data on a key indicator species for biodiversity within Wakhan and assessing the state of the populations.

Activity 1.3 Assessment of Rangelands in Wakhan

Rangelands support both livestock and wildlife in the Pamirs. Therefore, having a good understanding of the health of the rangelands is essential element for looking at causality between human activities and wildlife declines, as well as for managing natural resources. For FY2006, WCS will conduct an assessment of the Big Pamir and the Little Pamir. The assessment will develop an initial set of indicators and quality standards and adopt a standardized and consistent definition of rangeland health and of measurable indicators of change. Collection of data will be standardized on the basis of a statistically valid sampling scheme to enable the data to be combined on a national level and to allow for periodic and consistent repetition of sampling to detect trends in the measures used to evaluate rangeland health. Data will be incorporated into a spatially explicit GIS database for analysis to couple results from the assessment with data on wildlife populations and socioeconomics. Next year, we hope to extend these surveys to the Hazarajat Plateau as well.

Level of Effort (FY06): \$68,000.

Expected Accomplishments:

- Initial insights into the impacts of local communities on rangelands, development of monitoring protocol, and initiation of voucher plant collection for future reference. Dr. Don Bedunah, with a team of government counterparts (Ministry of Agriculture, Department of Forests and Rangelands) and an Afghan graduate research assistant will work from July to August in Big Pamir region of Wakhan to assess rangelands.
- Conducting multiple transects, collecting voucher specimens for further identification and analysis at the University of Montana, and training the counterparts to continue the research through the fall.
- As WCS will be working separately on a rangelands law for Afghanistan, we will input science into the legal drafting process, and encourage collaboration between groups.

Activity 1.4. Promote the Development of Ecosystem Health Across the Human/Livestock/Wildlife Interface

Internationally, there is growing recognition of the importance of integrating the traditionally separate fields of livestock, wildlife and human health. Such an approach is urgently needed in Afghanistan, where a large percentage of the populace is directly dependent on livestock health for their livelihood, where virtually nothing is presently known about transmission of disease between livestock and wildlife, and where poor human medical care makes zoonotic disease issues especially dangerous.

For FY06, WCS will focus on data collection on disease issues related to livestock management in the Big Pamir region. At present, there are no programs that are surveying wildlife or domestic livestock health or diseases in the Wakhan. Dr. Stephan Ostrowski, DVM, PhD, and a team of Afghan veterinarian research assistants from the University of Kabul and a counterpart the Kabul Zoo, will be in the field from July 2006 until end of August 2006 conducting surveys in the Big Pamir region of the Wakhan District. Analysis of the data will be conducted in September / October 2006. As animal movements are seasonal (animals tend to migrate to the valley floors in the fall and winter, Dr. Ostrowski (and team) will repeat these surveys and conduct blood work in the fall and winter (mid-November until January). Analysis of the blood for disease pathogens is planned for the spring of 2007. The Ecosystem Health Team will also survey the Kabul Zoo, bird, and fur markets to get insight into wildlife trade patterns. We also expect to integrate these efforts with WCS' global program on Avian Influenza in Central Asia and programs on wildlife trade.

Information collected will be developed into a disease-specific database that is spatially explicit and that can be integrated into a Geographical Information System (GIS) to identify risk factors for disease emergence and help predict future disease outbreaks. This database will then enable both local stakeholders and government agencies to make informed management decisions to limit or control disease interactions within livestock populations and between livestock and wildlife. Finally, WCS will also conduct opportunistic surveys of wildlife trade patterns both in Wakhan and in markets for wildlife. Legal and illicit wildlife trade is an important influence on the spread of infectious disease and a potential threat that affects wildlife conservation issues.

Level of Effort (FY06): \$90,000.

Expected Accomplishments:

- Identify livestock and herd composition, understand herding system and seasonal movements,
- Evaluate overall livestock mortality rate, understand and learn local and traditional veterinary practices;
- Analyze data to explore potential effects on disease transmission; Survey the Kabul Zoo, local wildlife product merchants, and the Kabul Bird Market to understand wildlife trade patterns.

Activity 1.5 Community Based Livestock Health Training

Recent work by the USAID/DCA Nationwide Livestock Health Project (NLHP) to train veterinarians and para-veterinarians has improved access to veterinary care for domestic animals in many parts of Afghanistan. However, the remoteness of the Wakhan limits access to veterinary care. This has dramatic consequences for the health of livestock and consequently the livelihoods of herders, and increases the likelihood of disease transmission between livestock and wildlife such as Marco Polo sheep.

In FY06, WCS will train Afghan scientists in the surveying wild and domestic population for disease outbreaks, how disease moves between these populations, and strategies to reduce the incidence of disease. In the Wakhan District, WCS will provide staff and materials for training in identifying broad categories of disease conditions, tools for description of symptoms to veterinarians, basic wound and lesion care, and animal husbandry. This training would be designed to complement and facilitate traditional veterinary care. WCS will also work with wildlife veterinarians at the Kabul Zoo to increase capacity to care for the animal collection, and in collaboration with other institutions surveying emerging infectious diseases, such as the FAO.

Level of Effort (FY06): \$10,000.

Expected Accomplishments:

- Improve the understanding of disease at the ecological and landscape level, will develop monitoring skills for disease outbreaks, and
- Lay the foundation for improved rangeland management to reduce the risk of disease transmission among and between domestic and wild species.

Activity 1.6. Landscape Assessments and GIS Program

For FY06, efforts will focus on developing a GIS laboratory in Kabul, hiring and training staff to perform landscape-level analyses, purchasing or acquiring imagery (SPOT/IKONOS data, USGS Aerial Photos, Landsat TM and ETM imagery, Digital Elevation Models), and incorporating first-year field data, economic data, and historical species incidence data into GIS data layers for

analysis. WCS will create a conceptual conservation model through the WCS Living Landscapes Program based on the initial baseline data that will strategically focus future data collection and conservation activities. This model will be refined as data collection progresses.

Activity 1.6.1. Landscape Assessment of Pastoralist and Livestock Movement Patterns

Wakhi communities inhabit the western Pamirs and extend down the Wakhan District. They are basically agriculturalists, but they also have livestock, most of which they graze during summer, and now often all winter, in the Pamirs. The Kyrgyz are primarily livestock herders, keeping sheep, goats, yaks, horses, and a few Bactrian camels and donkeys. They shift these seasonally 2-3 times a year between summer and winter pastures. In FY06, WCS teams will collect data on local movements and seasonal use patterns of local pastoralists and their livestock from socioeconomic surveys, through the ecosystem health program, and indirectly through rangeland assessments. Data will then be incorporated into a spatial GIS database and combined with data from the rangeland assessment described above to assess carrying capacity and determine other management needs and objectives.

Activity 1.6.2. Landscape Assessment of Marco Polo Sheep Migratory Patterns

Marco Polo sheep are highly migratory. Herds of these animals move back and forth within Afghanistan and across the borders of all four countries in the Pamirs – Afghanistan, Pakistan, China, and Tajikistan. WCS staff will work with counterparts in these neighboring countries, as well as collect their own data to be able to monitor season movements of Marco Polo Sheep across the borders. The Transboundary Peace Park workshop will facilitate these interactions. Once WCS collars the Marco Polo sheep, we hope to identify seasonal timing and migratory corridor routes and map them in a spatial GIS database. This information can then be combined with rangeland data and human-livestock migratory patterns to help in determining areas of potential or existing human/wildlife conflict as well as areas of critical conservation importance, including areas that may be appropriate for gazetting as protected areas, in some cases at an appropriate multiple-use level. Information for this assessment will be collected from wildlife surveys and satellite collar tracking data, as well as indirect sources such as the ecosystem health program and rangelands assessments. This integration is essential to analyze and completely understand sheep migratory patterns and population threats.

Activity 1.6.3. Assessments for Landscape Management

The WCS Living Landscapes Program provides a mechanism for developing, testing, and disseminating wildlife focused tools for effective site-based conservation of wildlife and wild places at a landscape scale. Biological and human land-use information will be collected in 2006 to be assembled as data-layers in a Geographic Information System. This information will be incorporated within the framework provided by the WCS Living Landscapes Approach to create biological and human landscapes that, when overlaid, will provide a spatially explicit representation of where within the vast regions under consideration the key needs of humans and of wildlife conflict with one another. As data collection continues, this will serve as a basis for a formal assessment involving government, donor, and local stakeholder to identify and prioritize needs and interventions, and review and refine management plans currently under development to reduce obstacles to their successful implementation.

Level of Effort (FY06): \$64,700.

Expected Accomplishments:

- Collection and integration of remote sensing data with data on forestry, ecosystem health, rangeland, and human movement data to better understand threats to biodiversity conservation and the human communities that depend on these natural resources.

OBJECTIVE 2: STRENGTHENING LAWS, POLICIES, AND INSTITUTIONS

FY06 Level of Effort (Total Objective 2): \$289,300.

Threats Addressed in Objective 2:

Protected areas are critical to the conservation of biological diversity in Afghanistan, yet protected areas still need to be appropriately identified through stakeholder input and biological analyses. At the same time, such designations will become ‘paper parks’ unless proper stakeholder involvement is encouraged and appropriate enforcement mechanisms are put into place. These enforcement mechanisms depend also on a clear set of non-conflicting legal norms that are integrated with community level mechanisms of ownership and management of natural resources.

Activity 2.1 Update Wakhan Protected Areas

Efforts in FY06 will focus on integration and analysis of data from other activities within a remote sensing framework to update protected area boundaries. WCS will start the development of a proposal and management plan for the Pamir protected areas, including reviewing the existing legal status of plans for the Big Pamir protected area and working with central government authorities, such as the Department of Forestry and Rangelands and the Dept. of Parks in the Ministry of Agriculture, to reach agreements on gazetting the Big Pamir. WCS Afghanistan staff will also initiate gazetting on Waghjir and Little Pamir based on landcover imagery and historical species incidence data as available.

Further, as the nomadic Kyrgyz communities are also an essential component to the creation and management of these protected areas, WCS will start engaging these communities through an anthropologist who will be studying domestic livestock husbandry and economic systems and will be living with these communities.

Level of Effort (FY06): \$43,000.

Expected Accomplishments:

- Analysis of collected biological and socioecological data to update existing protected area boundaries in the Big Pamir,
- Initiate discussions on gazetting in the Waghjir and Little Pamir Protected Area designation with the Afghan government and the donor and NGO community.
- Collection and analysis of GIS and remote sensing data for these protected areas for

landcover classification and the creation of a digital elevation model.

Activity 2.2 Assessment and Development of a Transboundary Peace Park

The Pamirs, flanked by the Hindu Kush, Himalayan, Karakoram, and Kunlun ranges, are one of the most spectacular mountain regions on earth. The borders of four countries—Afghanistan, Pakistan, China, and Tajikistan — meet at this knot of mountains. The spectacular and endangered Marco Polo sheep and snow leopard wander across the borders from one country to another. These species, and many others, therefore can only be effectively protected and managed through trans-frontier cooperation and “the creation of one large reserve” that encompasses the four countries. With fences, uncontrolled poaching, and differing levels of protection between countries, there is a critical need to have the four contiguous countries develop agreements for standardized and coordinated conservation efforts to ensure that transboundary migrations of Marco Polo sheep and other wildlife continue to be a critical part of the behavioral repertoire of these species. World-renowned WCS conservation biologist Dr. George Schaller will lead this effort to create a four-country International Peace Park to manage joint resources on a solid scientific foundation and stimulate cooperation between countries and thus help improve regional stability.

As formal endorsement of the International Peace Park initiative is needed from all four governments, WCS will organize a transboundary workshop in Urumchi in NW China, on September 28-29th, 2006, that will bring together the governments of China (the official host), Afghanistan, Tajikistan, and Pakistan. WCS programs in China and Pakistan, in coordination with the IUCN–World Conservation Union and the World Wildlife Fund, will also contribute to the facilitation of this conference. This workshop, the first of three planned, will be restricted to government officials from these countries. WCS Afghanistan Country Director will lead a delegation to Urumchi China, support Afghanistan delegates from the Ministries of Foreign Affairs (Asia Region), Defense (Borders), and Agriculture (Forests and Rangelands), and the National Environmental Policy Agency, and facilitate drafting results from the workshop. Follow-up activities include ratification and implementation of a framework agreement in Afghanistan, and the three other countries. WCS will also seek to engage these counties through official USG channels with the help of the U.S. Department of State.

WCS will use this workshop to share information, discuss problems and opportunities, have a policy dialogue, establish a cooperation structure, set priorities, and develop plans and mutual agreement on principles and action. Specific subjects may include the state of knowledge of wildlife and research needs, state of legislation and policy concerning reserves and other lands, management of wildlife and reserves, eco-tourism potential and development, trophy hunting, environmental education, community participation in resource management, community development, the identification and establishment of new or expanded reserves and buffer zones, and finally to achieve memoranda of understanding between governments for transboundary cooperation in management of a system of reserves dedicated to conservation of the greater Pamir region.

Level of Effort (FY06): \$47,000

Expected Accomplishments:

- Implement first Transboundary Peace Park Workshop with representatives from the governments of Tajikistan, Pakistan, China and Afghanistan on September 28-29.
- Develop draft agreement for establishment of the transboundary peace park. Initial negotiations on a framework agreement between the four governments (at a minimum, between three governments: Pakistan, Tajikistan, and Afghanistan).
- Commencement of a transboundary spatial database to bring together remote sensing imagery coupled with human and livestock use patterns, wildlife migration patterns, and existing protected area boundaries among the four countries.

Activity 2.3 Central Hazarajat Plateau Conservation Initiatives.

Band-e-Amir and Ajar are two of the greatest opportunities for Afghanistan to benefit from ecotourism, given the sites' central location and their inherent beauty and uniqueness. However, both sites suffer from a variety of problems that threaten their integrity and suitability for tourism. Threats to Band-e-Amir include uncontrolled tourism that is damaging the site's fragile land forms, uncontrolled fishing that may be impacting native fish populations (including use of explosives that threatens the integrity of the natural dams), and overhunting that may have already resulted in the extinction of urial and ibex from surrounding hills. Threats to Ajar include uncontrolled poaching that has caused apparent dramatic declines in wildlife species. Combining local community work with official gazettement of protected areas (that benefit local communities) will help to alleviate these threats.

For FY2006, WCS scientist Dr. Chris Shank will survey carnivores, ungulates, and small mammals and birds of Band-e-Amir, as well as wetlands areas that have greater potential as migratory waterfowl habitat than Band-e-Amir lakes proper. He will work to finalize the status of Band-e-Amir national park, in coordination with the other agencies working in this area, and review management plans that have been drafted by Asian Development Bank, develop recommendations for eliminating threats to the park, develop appropriate tourism controls in coordination with the Afghan government, and investigate the potential for international recognition for the area under World Heritage Site status (or other formal categories) to bring greater international attention to this globally unique area (and increase funding for improved and long-term management). An important part of this effort will be through coordinating the efforts of various donors and NGO's working on Band-e-Amir, and supporting government efforts in these areas.

For Ajar Valley Wildlife Preserve in FY2006, WCS will conduct surveys of carnivores and ungulates, particularly, Ibex and Urial, to determine whether any populations of these once numerous ungulates are still surviving. Previously, Dr. Shank found in the 1970's that the Ajar Valley – a former royal hunting reserve – harbored as many as 5,000 Ibex. Current information will determine whether donors should proceed with a wildlife preserve, and the urgency of the situation. Dr. Shank will also survey small mammals and birds in the Ajar Valley.

Level of Effort (FY06): \$82,300

Expected Accomplishments (FY06):

- Recommendation on the suitability of Ajar Valley as a protected area.
- Development of understanding of community structure and issues at Ajar.
- Coordination of an interagency plan for developing Band-e-Amir as a legal and functioning protected area.
- Surveys for birds and small mammals.
- Development of recommended boundaries for Band-e-Amir and Ajar Valley.
- Delivery of training on wildlife and protected areas to government counterparts.

Activity 2.4 Eastern Forests Initiative

For FY06, WCS will concentrate on the remaining forests shared by Nuristan and Kunar. WCS will identify, hire, and train regional government counterparts and local university professors and students as proxies to conduct wildlife surveys for determining species incidence, and if possible, population size of indicator species (Asian Black Bear, Markhor, Snow Leopard, Leopard Cat, Flying Squirrels). WCS staff will hire a Nuristani field manager to carry out these activities, and will work closely with professors at Nangarhar University in Jalalabad to recruit scientists to carry out the research. WCS staff will also investigate current logging practices, and draft forestry legislation and policies. Through our GIS team (Activity 1.6), we will collect existing remote sensing data to estimate current rates of forest loss, classify remaining forest cover, and determine sample areas for wildlife surveys.

Level of Effort (FY06): \$32,000.

Expected Accomplishments (FY06):

- Collection of survey data on the status of wildlife and remote sensing data to update current estimates of deforestation,
- Calculate the rate of forest loss.

Activity 2.5 Ranger Training

WCS will train rangers to (a) survey and monitor wildlife populations; (b) build proficiency with navigation tools and maps; (c) to serve as community conservation agents to work with local communities; and (d) to learn skills as ecotourism guides for parks in the three areas of interest. First, surveying and monitoring wildlife requires making accurate identification of wildlife species and sign, implementing proper survey methodologies, and effectively recording and analyzing the data. WCS will train rangers on natural history of Afghanistan's wildlife, methods for surveying these species, and basic indicators for monitoring their status. At selected times, these wildlife rangers will go into the field with WCS scientists and survey wildlife species, focusing on species of concern such as Marco Polo sheep, but also collecting ancillary data on any other wildlife seen during the surveys. In the future, the parks may use this data to assess wildlife patterns and trends and develop recommendations for local and government-led management initiatives.

For FY06, WCS is seeking to identify individuals for training during fieldwork and through local consultations. The majority of ranger training will primarily occur through a series of workshops in 2007-2008 after the demarcation of protected areas and initiation of community conservation activities. WCS intends to draw most of the ranger-trainees from local communities where the Parks will be established; WCS will solicit individuals from the Wakhan, Hazarajat, and the Eastern Forest Complex. Further, through project fieldwork activities (wildlife surveys, community conservation activities), we will attempt to identify candidates based on their level of education, natural history knowledge, and enthusiasm.

WCS Afghanistan staff will work with WCS program staff in Pakistan and India, and through training and capacity building programs at WCS headquarters, to identify successful models for ranger training. This program ties into all project activities in the Wakhan, Hazarajat, and the Eastern Forests and will be developed through integration with the wildlife surveys and education activities. As this activity is partially dependent on the creation of the parks, most activities will occur after we have had the opportunity to analyze baseline data, meet with local and regional governments and other stakeholders, and define park boundaries.

Level of Effort (FY06): \$30,000.

Expected Accomplishments:

- Identify persons for wildlife training;
- Raise community awareness of the project;
- Develop ranger training program tailored for Afghanistan; Identify potential candidates through fieldwork

Activity 2.6 Review of Wildlife and Protected Areas Legislation and Policies

Activity 2.6.1. Legislative and Regulatory Review

There is still a strong need for focused review and international best-practice recommendations for improvement of environmental policies and legislation, especially in relation to the legal framework affecting biodiversity. This includes laws and regulations affecting wildlife, critical habitats, practices directly affecting biodiversity, and protected areas. A complete review of these issues is critical given the challenges this project faces in the areas of endangered species, protected areas, forestry, conservation education, and community based conservation initiatives. This review and its recommendations will also directly inform project activities described herein, and will also help the Government of Afghanistan better manage its resource base.

For FY06, WCS will compile available national laws, and regulations, policies relevant to biodiversity protection (subject to change but possibly including, protected areas, rangeland, forestry, wildlife, wildlife trade, water). WCS will establish a legislative drafting group (LDG) made up of Afghan government counterpart personnel (NEPA, Ministry of Agriculture, Ministry of Justice) as well as working agreements with other international organizations, including (UNEP, ADB, and World Bank). WCS will guide the LDG to establish an agreed-upon process for drafting work, review existing and identify needed policy/law/regulations pertaining to

biodiversity legislation, and establish priority drafting needs. WCS will lead a short course in relevant biodiversity law (national legislation, international conventions).

Activity 2.6.2 Trophy Hunting Program

There has been growing recognition from the international conservation community that conservation-hunting programs can provide the basis for successful sustainable use conservation.

Programs based in an ecosystem context can provide significant support for community based wildlife management if they are transparent and return a significant percentage of revenues to local communities for sustainable resource management. Trophy hunting can also be a strong economic incentive to protect wildlife and promote conservation. Such hunting generates a great deal of income for a country at little cost, while the killing of a few animals does not need to adversely affect a large population if the program is tightly controlled and scientifically managed, in conjunction with wildlife surveys to assess population size and growth rates.

As a hunting program will depend on the abundance of Marco Polo Sheep populations, which only can be determined after extensive surveys of both the Big and Little Pamirs, and Hazarajat Plateau have been conducted, WCS will focus in FY06 on designing and discussing the parameters of the program. WCS economists Dr. Ray Victurine, Associate Director of the Conservation Finance Program, and Dr. David Wilkie, Associate Director of the Living Landscapes Program, will contribute to the design the Trophy Hunting program based on WCS experiences in other countries.

Activity 2.6.3 Snow Leopard Kill Reimbursement Scheme Study

Finally, WCS will research and design a pilot program to help compensate farmers for the market value of livestock losses that the farmer can demonstrate were due to snow leopards. Farmers would, in exchange for participating in this program, agree to ban all killing of snow leopards. FY06 will focus on collection of data on snow leopard kills in the winter to determine feasibility of this project. We will also consider how to link trophy hunting with predator protection in an ecosystem approach, and with community funds to allow communities to determine level and need for reimbursement from predation losses. This program could also be extended to other carnivores, and will be considered for all three project areas as appropriate.

Level of Effort (FY06): \$25,000

Expected Accomplishments:

- Collect and analyze regarding current and planned legislative action related to biodiversity conservation.
- Assist with development of the Forestry law (with FAO) and drafting additional laws and regulations (Rangelands) based on analysis of the existing legislative framework.
- Start collection of information related to historic, current, and planned initiatives related to trophy hunting coupled with data collected from other project activities related to Marco Polo sheep population and distribution,
- Review of international best practices on the subject to create a set of recommendations for Afghanistan.

Activity 2.7 Environmental Services Valuation

WCS will create an Afghanistan Environmental Valuation Advisors Group (WCS staff, environmental economists in academia, and others) consisting of a set of international experts in the field of environmental valuation. This group will meet once to create a set of guidelines for approaching the issue of developing a framework for valuation of environmental services, using one of the three priority regions (Wakhan, Eastern Forests, Hazarajat Plateau) as a model.

For FY06, Dr. Gary Bull, Assistant Professor of Environmental Economics at the University of British Columbia, WCS economists Dr. Ray Victorine, Associate Director of the Conservation Finance Program, and Dr. David Wilkie, Associate Director of the Living Landscapes Program, Peter Zahler, Associate Director of the WCS Asia Program, and Dr. Alex Dehgan, Afghanistan Country Director, will form the Afghanistan Environmental Valuation Advisory Group which will meet in June and July 2006. Dr. Gary Bull and KiJoo Han, a doctoral student at the University of British Columbia, will travel to Afghanistan to assess the feasibility of potential study areas and approaches, select a geographic area for study, and identify data sources and partners in July 2006. Mr. Han will develop survey methodologies from September 2006 until March 2007. Survey pretests will be conducted in April 2007. Training in data collection by Afghan counterparts will start in May 2007. The environmental valuation team will survey between 250-350 households in June-July 2007, and repeat the surveys to capture seasonal effects and assess reliability as necessary. Data compilation will occur in August-December 2007.

Level of Effort (FY06): \$30,000.

Expected Accomplishments:

- Form an advisory group,
- Select a region to model based on a review of the three biologically important regions and available data, and start developing survey methodologies,
- Assist the Government of Afghanistan to begin the process of estimating the contribution of ecosystem services to the national economy that could serve as a model for other nations in the region to incorporate ecosystem values into their national system of accounting.

OBJECTIVE 3: FACILITATE COMMUNITY-BASED NATURAL RESOURCE MANAGEMENT IN THE WAKHAN

FY06 Level of Effort (Total Objective 3): \$121,000

Threats Addressed by Objective 3:

Community-based natural resource management projects are critical for the long-term conservation of biodiversity within the landscape, as they promote the concept of natural resource conflict mediation at a local scale, improve the capacity of local people to design and

execute natural resource management projects and, most critically, promote community-based decision-making processes, with internal regulations and controls for natural resource management - including wildlife. For FY06, WCS' program will focus on data collection, developing capacity among local communities in the Wakhan to manage their natural resources, conservation education, build conservation management structures at the local level and laying the foundation for a community-based ecotourism enterprise.

Activity 3.1. Socioeconomic Surveys of the Wakhan

It is critical to identify local communities and understand their structure, political units, needs, wants, and insights, and to gain their complete cooperation in any conservation initiatives. Accordingly, the WCS community conservation team will conduct a socioeconomic survey to determine aspects of civil society in the Wakhan District and to inform future conservation initiatives. An assessment will also be made of the use of natural resources in this region by local populations, including as possible, illegal hunting, and the extent of local population dependence on these resources. Surveys will also discuss questions of ownership and access to natural resources as allocated to the people by the national government.

The WCS project team, lead by Dr. John Mock, will travel through Wakhan from July 2006 until August 2006 doing assessments of local community use of natural resources. Inayat Ali, the community conservation field manager, will continue these surveys through November 2006. Inayat Ali will complete detailed household surveys in 20 Wakhi villages that use Big and Little Pamir for grazing, spending 3-4 days per village, conducting 7-8 household interviews per day. For villages with more than 15 households, he will use random sampling, with minimum sample size of 50% of households. WCS will set up a field storehouse in Qila-e Panj, and establish a small satellite office in the village of Kret in the Wakhan to help manage the surveys.

Level of Effort (FY06): \$29,000

Expected Accomplishments:

- Increased understanding of local community use of the natural resource base through survey data.

Activity 3.2 Conservation Awareness Workshops and Environment Education

WCS scientists will organize conservation awareness workshops that will be held in each village that utilizes the Pamirs within the lower and upper Wakhan. Inayat Ali, the community conservation field manager, will conduct conservation awareness workshops in 24 villages in November, including meeting with teachers to discuss the conservation education program and student/teacher involvement, and to set up appropriate locations in Wakhan for these activities. Workshop participants will include a majority of both men and women from each village.

In the fall and winter of FY06 (and through FY07), the community conservation team and WCS educational division will be developing educational materials for Wakhan. These materials will be shaped from feedback from the workshops and created from materials developed for Wakhi communities in Pakistan (Wakhi model schools in northern Pakistan; IUCN-Pakistan; MACP;

and WWF-Pakistan) and utilize WCS' almost 90 years of experience in conservation education.

WCS is also working in partnership with Afghan Conservation Corps and UNEP to design supplemental materials with a conservation and environmental message to be used and distributed nationally by the Ministry of Education to schools in Afghanistan, including the Wakhan, to ensure that ecology, conservation and environmental topics have a place within the national curricula.

Level of Effort (FY06): \$29,000

Expected Accomplishments:

- Development of awareness of conservation principles, unsustainable activities, and alternative activities or management techniques among Wakhi utilizing the big and little Pamirs;
- Education and mentorship of local teachers in the curriculum;
- Development of educational curricula for community conservation.

Activity 3.3 Facilitate Community Conservation Committees

Community based natural resource management shifts natural resource tenure systems towards community management. Communities are provided opportunities to realize greater security over natural resources, actively contribute to natural resource management, and sustainably use community held natural resource rights to create community wide benefits. Finally, helping local communities initiate and maintain reforms for environmental sustainability and stability will help them maintain their unique environment and identity.

The WCS Community Conservation team will travel within the Wakhan from July 2006 until August 2006 to carry out these activities as part of the broader community conservation effort. The team will meet with government shuras in each of the communities to build support. All of the communities that use the Big Pamir and Little Pamir will be surveyed. Inayat Ali, the community conservation field manager, will hold follow-up meetings with shuras (councils) in each village to discuss community conservation capacity building and community governance structures from the beginning of September until the beginning of November. This activity will be followed up with conservation workshops.

Level of Effort (FY06): \$31,500

Expected Accomplishments:

- Development of conservation committees at the community level with sufficient authority and community input to manage natural resources effectively for the entire community and without detriment to conservation goals.
- Hold individual meetings with shuras (councils) in each Wakhi village using the Big and Little Pamirs to discuss community conservation capacity building and community governance structures.

Activity 3.4. Environmentally and Culturally Sensitive Tourism Development

Community conservation initiatives must be closely linked with economic benefits in order to be sustained. Wakhan has immense potential for adventure, culture, and eco-tourism. In FY06, to ensure that the benefits of our conservation efforts flow directly to local communities, and to diversify and broaden the economic base, WCS will work with local communities to incorporate tourism within the discussions on conservation during the community workshops and within the community committees. Specifically, WCS will work with villages to identify potential cultural and biological attractions in the area and to select two individuals from each village for WCS training courses on Ranger training and ecotourism.

WCS will also seek to encourage and facilitate responsible tourism to Wakhan by coordinating with Afghan governmental institutions, NGO's and donors that are seeking to build tourism in the Wakhan. Particularly essential is the Afghan Tourism Organization, which is seeking to develop ecotourism activities without harming the local environment, overwhelming fragile traditional communities, and ensuring that the benefits of tourism will reach more than a few individuals. WCS will facilitate a meeting on tourism under the auspices of the Afghan Tourism Organization in order to build a foundation for a tourism enterprise within Wakhan to: (a) facilitate the growth of tourism activities in Wakhan; (b) develop draft guidelines for environmentally and culturally sensitive tourism development; and (c) to identify potential ecotourism guides for future training.

Level of Effort (FY06-08): \$31,500

Expected Accomplishments:

- Link conservation initiatives (development of parks, preservation of wildlife) to economic benefits derived from those initiatives (ecotourism, scientific research);
- Development and acceptance of draft guidelines for tourism in the Wakhan by NGO's and donors, including but not limited to, the Aga Khan Foundation, the Aga Khan Development Network, the Asian Development Bank, PACTEC, and WCS.

OBJECTIVE 4: CAPACITY-BUILDING INITIATIVES.

Level of Effort (Total Objective 4): \$158,950.

Threats Addressed by Objective 4:

Afghanistan faces serious threats due to a lack of human and institutional capacity to plan, implement and evaluate conservation activities. This is a critical constraint on conservation efforts: Without increased capacity to manage Afghanistan's natural resources, we will see continued declines in poverty, desertification, health, security, and community stability (due to migration to urban areas from rural communities). Training and capacity building activities will help build Afghanistan's institutional and technical capacities in a range of subjects related to

conservation and management of wildlife and natural resources.

Activity 4.1 Afghanistan Training Courses

WCS is a world-leader in international conservation, with over 2,500 scientists working in over 50 countries on conservation, and over a hundred-and-ten years of experience in preserving wildlands and wildlife. Accordingly, for FY06, WCS program staff working in Afghanistan will provide expertise to present short courses in their fields to selected Afghanistan professionals (government counterparts, academics, and post-graduate researchers and professional students) during their stays in-country, coupled with practical experience and training in the field during data collection as appropriate (Activity 4.3). WCS will use this expertise to assist Afghanistan in training its present and future conservation scientists and managers. As necessary, WCS will also recruit international experts in wildlife, forestry, rangeland, and protected area management and conservation to teach short courses

Level of Effort (FY06): \$51,987

Expected Accomplishments:

- Conduct needs assessment,
- evaluate potential topics and partners,
- Implement 7-9 short courses/seminars to enhance scientific and conservation capacity in Afghanistan.

Activity 4.2 Conservation Study Travel Program

In FY06, WCS Training and Capacity Building Program will identify teams of Afghan government, academics and students, and NGO staff for exchanges to other countries. It will then identify and arrange for group study tours to other countries for specific training through visits to sites where innovative, site-appropriate practices are being implemented. For four to six weeks, team members will experience the host country's institutions, observe their own vocations as practiced abroad, develop personal and professional relationships, and exchange ideas.

Level of Effort (FY06): \$47,488

Expected Accomplishments:

- Exposure and training to appropriate conservation models in other countries to incubate ideas for new approaches to conservation in Afghanistan.
- Select Afghan participants,
- Implement two international study tours

Activity 4.3 Field Training and Scientific Mentoring

Building capacity for scientific research and conservation requires practical training and independent application, in addition to theoretical classroom training. For FY06, WCS will

partner scientific field teams surveying mammals, birds, rangelands, and ecosystem health and infectious diseases with appropriate government counterparts and provincial government staff, university graduates in conservation biology and veterinary sciences, or local community members. The teams will spend 1-2 months of intensive training learning scientific methodologies from international experts while in the field. This practical training will be followed by short-term small projects that will build upon skills learned during short courses and in the field, and be independently implemented by each team member. Trainees will learn data collection methodologies and analysis of scientific data, computer and reporting skills, technical knowledge, and professional responsibility. WCS scientists will select the most promising members of the team for further investment, including opportunities to obtain advanced degrees abroad (Activity 4.2).

Level of Effort (FY06): \$35,487

Expected Accomplishments:

- WCS scientists will provide practical training for approximately 20 government counterparts and scientists through fieldwork and mentorships.

Activity 4.4 Public Diplomacy and Outreach

In FY06, WCS will develop a public diplomacy strategy to increase awareness of conservation problems and increase support and goodwill for biodiversity conservation activities. Pursuant to this strategy, WCS will commence negotiations with Tolo Television to create two television series. The first would be show international wildlife films dubbed in Dari, available from a library of hundreds of films maintained by WCS and the International Wildlife Film Festival in Missoula, Montana. Second, WCS will negotiate to create a series documenting wildlife in wildlife in Afghanistan. If successful, this would be useful for tourism, environmental education, and public diplomacy.

Separately, WCS will work in partnership with UNEP and the ACC to increase awareness of environmental problems in Afghanistan through the creation of posters and supplementary materials for school curriculums. As the Kabul Zoo provides a natural partner for WCS (the Bronx Zoo lies at its core), WCS will work to improve opportunities for conservation messages in the Zoo.

Level of Effort (FY06): \$23,988

Expected Accomplishments (FY06):

- Assist Afghan media, tourist, and government institutions to develop content on Afghanistan's biodiversity and status to promote conservation