



# Biodiversity Conservation in Afghanistan

A Program of the Wildlife Conservation Society supported by  
USAID

## Annual Work Plan FY08

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## OVERVIEW

The 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 the 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 long-term 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. Much of the data that the international community is relying upon is over 30 years old, so many management activities may actually have little impact to conserve biodiversity. WCS is continuing an extensive program of data collection from the local scale to the regional scale, and covering different disciplines from socioeconomics and ecosystem valuation, prevalence of zoonotic diseases, rangeland health, forest cover change, and ecology. Much of this data is being used for creating protected areas, developing management plans, and designing conservation interventions.
- (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 2008, WCS will continue assessing socio-economic conditions in local Wakhi communities in the Little Pamir and Waghjir Valley, will work with local communities to continue the development of community conservation committees in Wakhan as well as expand such activities to Kyrgyz communities, Nuristan, and Hazarajat, expand conservation education activities on the local level, 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. In 2008 WCS will continue working with the Afghan government to finalize effective laws and implementing regulations on rangelands management, protected area regulations, laws governing the conservation, hunting, and trade of wildlife, 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 2008, WCS will continue an intensive program of capacity building and training of both government counterparts and scientists in research and academic institutions. This capacity building is woven into all other project activities, and includes short course training, field-based practical training and mentoring, and study/travel tours to relevant international sites. WCS will continue its close relationship with the Afghan government. 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 DESCRIPTIONS**

To achieve these four objectives, WCS is implementing its strategy in three areas in Afghanistan: the Wakhan region, the Hazarajat region, 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; the 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 km<sup>2</sup> 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 km<sup>2</sup>, 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.

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 local Kyrgyz communities, 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 km<sup>2</sup>), 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 Region**

The Hazarajat Region holds some of the most important existing natural and cultural protected areas in Afghanistan. It is home to the destroyed Bamiyan 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), and WCS is working with the Islamic Republic of Afghanistan to submit an application in February 2009. While Band-e-Amir was identified as a National Park in 1973 it still has no formal legal status for protection.

The Ajar Valley is a spectacular 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 locally extinct, while ibex and urial numbers have declined dramatically. Although Ajar was gazetted as a wildlife reserve in 1977, there is only a preliminary management plan that has never been implemented. In FY07, WCS undertook wildlife surveys, developed a draft management plan, and consulted extensively with local communities.

### **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 in the country. 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. Further, its location in the sensitive and conflict-prone border regions between Afghanistan and Pakistan makes monitoring of deforestation difficult, if not impossible. WCS surveys in FY06 and during FY07 indicate that the forests still contain important key species, including Persian leopard, snow leopard, ibex, and markhor. These surveys are the start of a larger

initiative in this region.

## **THREATS ANALYSIS AND PROGRAM RESPONSE**

Initial research conducted in FY06 and FY07 by WCS scientists suggests that Afghanistan's fragile environment is under threat. These threats directly affect the wildlife as well as degrade the wildlands on which they depend. Such degradation in turn impoverishes human communities that depend on natural resources for their survival.

Despite a presidential decree banning hunting and provisions in the environmental act against the illegal taking or possession of wildlife, there are few enforcement provisions in the law that may put these laws into practice. The hunting of major species of wildlife continues throughout much of the country, and in part has resulted in dramatic declines in wildlife populations. WCS FY06 surveys in Ajar Valley document a decline from 5,000 ibex (during the 1970s) to less than 100 today. Ibex and urial have most likely disappeared completely from Band-e-Amir, and the transboundary populations of Marco Polo sheep appear to have declined sharply.

Wildlife trade may also be a second source of direct pressure on wildlife populations. Birds of prey are a continued source of illegal 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. During FY07, WCS investigated animal markets in other parts of Afghanistan as well, including in the Eastern Forests (as there are reports of transboundary trade in wildlife) and Northern Afghanistan in Mazar-e-Sharif. A successful campaign to educate US military staff against the purchasing of illegal animal products at bases like Bagram was conducted during FY07 and will be pursued at other ISAF bases and bazaars frequented by the ex-pat community during 2008.

Afghanistan also has some of the highest rates of deforestation in the world. In the Eastern Forest 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. WCS is updating these studies to better gauge deforestation patterns. Residents predict similar losses for the forested regions in the provinces of Paktia, Khost 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, which have disappeared from 95% of their former range.

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. This may affect populations of ungulates and other mammals that are dependent on the grasslands, which in turn would lead to the

collapse of globally important carnivore populations that depend 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 potential of shared diseases between both populations. As some of these diseases are zoonotic, they pose economic and human health concerns for Afghanistan.

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.

## **EXPECTED ACCOMPLISHMENTS FOR FY08**

### **Baseline Science and Analysis**

In 2008, WCS will continue to conduct biological inventories of avifauna and mammals in the Little Pamir and Waghjir Valley sections of Wakhan, the Hazarajat Region, and in Nuristan and Northern Kunar. Coupled with these rapid assessments, WCS will also start more intensive scientific approaches to estimate population sizes and extinction proclivity by conducting genetic analysis of carnivore and ungulate scat samples, through use of remote sensing and gap analysis, occupancy surveys, and extensive camera trapping in remote sites. As rangelands are important for the human and wildlife that depend on them, WCS will expand its rangeland surveys to encompass the Little Pamir, Waghjir Valley, and the Hazarajat Region. WCS will also ground-truth forest imagery in Nuristan to be able to use satellite analysis to identify deforestation trends. As 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 continue extensive serological screening of livestock and wildlife to understand disease prevalence and transmission in both communities.

Livestock populations in Afghanistan are notoriously impacted by a number of destructive diseases, such as Foot and Mouth Disease (FMD). These diseases indirectly threaten the survival of rural communities. In the context of the Pamir ecosystem, where livestock may come into contact with populations of wild ungulates, assessing the demographic structure, health situation and movements of the former population will help evaluate the risk of disease spillover to wildlife. WCS will extend serological screening and clinical evaluations to livestock of the Kyrgyz community in the Little Pamir. Also in view of the results of range assessment and Marco Polo sheep surveys carried out in 2006 and 2007, WCS will dedicate more health investigations to target groups of livestock in the Big Pamir.

The WCS GIS and remote sensing program will conduct studies of the Eastern Forests, analyze rangeland quality and forecasting based on ground-truthing conducted in 2006 and 2007, and continue integration of field data and historical data with maps and remote sensing imagery for all three areas of interest. WCS has already put together a substantial

imagery, DEM, and topographic database that we will continue to augment through 2008. 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 and Economics**

WCS continued its work during 2007 to build broad-based constituencies for conservation to ensure the conservation of Afghanistan's magnificent biodiversity in the Wakhan as well as to survey local communities to better understand their dependence on natural resources in the Pamirs. WCS used these meetings to define and explain conservation committees and to make sure they are representative of community interests. The Community Development Committees (CDCs) though not formally established for conservation activities, have proved to be the best-suited engine for community interests and conservation since they are generally filled by the best leaders and higher educated members of the communities. These committees provided WCS and the communities with a formal structure with which to interact and discuss conservation and ecotourism issues, and will help increase local control over natural resources. Through WCS facilitation, these CDCs have agreed to also function as CCCs (Community Conservation Committees), using the existing institutional structure but revising their bylaws to include conservation issues and initiatives, for which they will take responsibility.

In 2007, WCS extended its socioeconomic studies to the Little Pamir to survey Wakhi and Kyrgyz communities. A WCS social anthropologist will continue to spend 2008 living with nomadic Kyrgyz communities. WCS also expanded its conservation education program, and adapted materials from Wakhi communities in Northern Pakistan for use in Afghanistan. During 2008, WCS will also be working to increase the evolution of power to local communities in the management of their natural resources by strengthening the community conservation committees (under the Environment Act, protected area committees). WCS will also continue to work on the national level to ensure that national legislation mirrors our work on the local level.

### **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 continue the development and revision of laws relating to biological conservation, rangelands, and wildlife hunting and trade; publish a national biodiversity related legislation compendium; and continue to review and identify priority legislative needs. WCS will continue negotiations on a transboundary park between the governments of Afghanistan, Pakistan, China, and Tajikistan in Dushanbe, Tajikistan in the early spring of 2008, and will work to create National Parks and Wildlife Reserves in Band-e-Amir, the Wakhan, Ajar Valley, and Nuristan, including seeking a World Heritage Convention listing for Band-e-Amir.

## **Coordination with NGOS and Government**

In 2008 WCS will continue its policy of close partnership and coordination with the Ministry of Agriculture, National Environmental Protection Agency (NEPA), Kabul Zoo, Afghan Tourist Organization (ATO), US Embassy, UNEP, Afghan Conservation Corps, ADB, Aga Khan, USAID Implementing Partners, as well as other relevant NGOs and development agencies working in conservation in Afghanistan. Working together we are able to achieve much more than we can working in isolation.

## **Training and Capacity Building**

The greatest limitation to development in Afghanistan, especially in terms of natural resource management, is a lack of human capacity to assess, monitor and implement initiatives that conserve and protect Afghanistan's diverse wildlife and habitat. In 2008, the training and capacity building program will provide further opportunities for a core group of research assistants and government counterparts that have participated in WCS field activities for the past two years. WCS aims to develop in this core group the independence and critical thinking ability essential to address complex conservation problems. In addition, WCS will seek motivated and talented people in provincial and national government, university systems and NGOs to build technical skills for conservation by sending them on study tours, participating in training courses in Afghanistan, and joining field teams for learning skills in practical research.

## **IMPLEMENTATION PLAN: FY08**

**Total Anticipated Level of Effort in FY08:** \$2,441,362

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

**FY08 Level of Effort (Total Objective 1):** \$542,516

#### **Activity 1.1. Conservation Science and Wildlife Surveys**

Without adequate baseline information, it is impossible to design and implement sensible conservation management. Because of the almost complete lack of biodiversity data existing for the country of Afghanistan, WCS continues to focus on collecting the kinds of baseline information that can inform our own recommendations and provide the Afghanistan government with the capacity to design and implement appropriate environmental management initiatives, ranging from sound environmental policy and legislation to protected area designations to shared management at the community level.

In 2008, WCS will expand its mammal and avifauna baseline surveys of Wakhan, the Hazarajat and the Eastern Forest Complex. These surveys provide estimates of the

incidence and population size of these species, and additional work is increasing the reliability of population estimates. WCS will continue to apply cutting-edge science to better understand the status of Afghanistan's biodiversity. In conjunction with the genetics laboratory of the American Museum of Natural History, WCS will use modern genetics tools to analyze carnivore and Marco Polo sheep scat samples for DNA to get a better understanding of population size, threats to species, migratory behavior, and inbreeding. Genetics analysis at the University of Vermont will determine taxonomic status of small mammals in the Hazarajat. As animal movements are frequently at night, when it is difficult to monitor them, WCS will continue to use remote camera traps in its study regions to better assess the presence and incidence of animal species.

#### *Activity 1.1.1 Mammal Surveys*

Monitoring surveys will be undertaken in Ajar Valley to establish trend in ibex populations. Small mammals will be trapped at Band-e-Amir and Ajar Valley to establish species presence. WCS may also survey small mammals in the Wakhan. These would be the first recorded surveys of small mammals ever conducted in the region. These surveys provide estimates of the incidence and population size of these species, and additional work is increasing the reliability of population estimates. As animal movements are frequently at night, when it is difficult to monitor them, WCS will also set up remote camera traps in its study regions to better assess the incidence of animal species as it did in Nuristan and Bamiyan during FY07. In conjunction with the genetics laboratory of the American Museum of Natural History, WCS will use modern genetics tools to analyze carnivore and ungulate scat samples for DNA to get a better understanding of population size, threats to species, migratory behavior, and inbreeding. Experts from the Wildlife Institute in India will also assist in the analysis of data.

#### *Activity 1.1.2 Avifauna Surveys In Wakhan and Hazarajat*

As with mammals, little is known about the occurrence and status of wild birds in Afghanistan. This is despite the fact that Afghanistan is an important breeding bird hotspot and migratory corridor for hundreds of species, and wild birds can function as excellent indicators of the health or degradation of the environment in the country. WCS will therefore continue to perform bird surveys in FY08, including breeding bird surveys in the Wakhan and the Bamiyan region. Internationally standardized Important Bird Area (IBA) methodologies will be used and taught to Afghan assistants to increase local capacity and provide long-term sustainability in bird monitoring, and new IBAs are expected to be determined from these efforts. WCS has already identified nearly 30 new species of birds for the Wakhan region and 11 new species for Hazarajat, and these numbers are expected to increase in 2008.

#### *Activity 1.1.3 Other Wildlife Surveys*

As with other taxa, almost nothing is known about the ichthyology of Afghanistan. Therefore, fish will be collected at Band-e-Amir and Ajar Valley to determine species present. Experts from the Canadian Museum of Nature will assist in identification of

fishes from the Hazarajat and Wakhan Regions.

#### *Activity 1.1.4 Collection of Baseline Data*

WCS efforts to create the first-ever bibliography of Afghan biodiversity and library of scanned information will be enhanced. WCS will also continue collection of 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 may have changed.

WCS will continue to apply cutting edge science to better understand the status of Afghanistan's biodiversity. WCS Kabul staff will integrate the field data with GIS and remote sensing data, and analyze the data in light of historical distribution patterns, with the assistance of WCS-NY staff.

Wildlife survey teams 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 scientific techniques, as well as take Afghan scientists to international scientific conferences, so that these surveys can be replicated to allow the Afghan government to monitor the status of biodiversity in future years.

#### **Expected Accomplishments:**

- Conduct assessments of mammal species incidence, population size, migratory patterns for species in the Little Pamir, Waghjir Valley, Nuristan, and Hazarajat for the development of management plans for the proposed protected areas.
- Survey of avifauna biodiversity in Band-e-Amir, Ajar Valley, Little Pamir, and Waghjir Valley.
- Collection and identification of fish species in the Ajar River, Band-i-Amir Lakes and the Wakhan.
- Camera trapping in Nuristan and Wakhan, to provide estimates of species that are mainly nocturnal or are located in remote and logistically challenging habitats.
- Extensive program of field-based training in modern best-practice scientific techniques and approaches to the monitoring of biodiversity in Afghanistan.
- Mentorship of the Ministry of Agriculture in its own monitoring and survey programs.

**Level of Effort (FY08):** \$121,600

#### **Activity 1.2 Marco Polo Sheep Research and Monitoring**

Preliminary information suggests that the argali population in the Big Pamir region is self-sustaining, at least in the near term, but that it is restricted to a very small region of the Big Pamirs. In the long term, this raises conservation concerns. Hypotheses that

explain this limited distribution include hunting, grassland degradation, displacement by livestock, and natural (e.g., bio-climatic) factors. At present, however, there are few reliable data to support various hypotheses over others.

In FY08, WCS scientists will use presence and relative abundance data obtained primarily from fecal samples (supplemented by direct observations during both summer and winter seasons) as the dependent variable in a suite of models that explore the various hypotheses. Independent variables will include information on vegetation condition and livestock distribution (obtained by direct field work and use of GPS data-loggers), hunting pressure (obtained from interviews), and various geographic factors (obtained via remote sensing and interpreted through GIS analyses). Patch occupancy and other non-linear models will be employed as part of this effort. As part of this work, population estimates in the former Big Pamir Wildlife Reserve will be generated, both through direct observation, and through capture-recapture methods based on individual genetic markers from fecal samples.

Building on field work accomplished during November-December 2007, WCS scientists will conduct additional field work during May-August 2008. Objectives of the summer 2008 field work will be to: i) document habitat use by Marco Polo sheep during early late spring and summer months, using both direct observations and collection of fecal pellets; ii) obtain a 2<sup>nd</sup> summer season estimate of population size (based on sightings only), for comparison with DNA mark-recapture-based estimates to be done later; iii) obtain a 2<sup>nd</sup> estimate of early lamb production (to compare with that obtained during summer 2007; iv) document range use and levels of disturbance by domestic livestock on summer range; v) document range condition in areas used by domestic livestock and argali on winter range as well as nearby areas lacking Marco Polo sheep and/or domestic livestock; and vi) collect additional fecal pellets for population size (as well as contributing data for sub-component 1, above). In the course of field work, WCS scientists will continuously look for situations that might lead to successful capture of Marco Polo sheep for fitting with radio-collars. If such a situation is found, this work plan will be revised to allow for capture activities.

As part of this work, WCS scientists will also quantify dietary habits of Marco Polo sheep and nearby livestock during summer and winter seasons. This work is expected to form part of a MS thesis by Afghan student Zalmai Mohreb at Aligarh University in India, which will be completed in 2009 (and will be the first graduate degree in wildlife biology by an Afghan national in decades).

Also as part of this work, WCS will create a small, mobile team of ethnic Wakhis who will not only assist WCS scientists in these efforts, but will also collect data and patrol the Big Pamir area during times of year when there are otherwise no scientists present.

In FY08, WCS scientists will also address issues of connectivity, corridors, isolation, loss of genetic diversity, and possible barriers to movement among sub-populations of Marco Polo sheep throughout the four-country transboundary region. Raw data will consist of genetic markers (both mtDNA and nuclear micro-satellites) extracted from fecal samples

from both Big and Little Pamir ranges. Results of this study constitute critical background data in understanding and resolving transboundary conservation issues.

This study will involve substantial WCS staff time to collect and analyze the behavioral data, assess health of animals through assessments in the field and laboratory, train government counterparts and veterinary faculty post-graduates, and the integration of data into a GIS and remote sensing database.

**Expected accomplishments:**

- A population estimate for Marco Polo sheep in the Big Pamir, using genetic as well as observation methods.
- Information on the reasons that Marco Polo sheep distribution in the Big Pamir is limited (or new information that it is less limited than earlier believed, if applicable), with management implications for research and conservation planning.
- A landscape genetics assessment of Marco Polo argali in the four-country region, including consideration of population subdivision, gene flow among demes, gene flow across national borders, and geographic areas of concern from a genetic standpoint (e.g., corridors, barriers to gene flow).
- A genetic status of Marco Polo sheep in the four-country region, including consideration of past population bottle-necks, effective population size, and genetic diversity.
- One Afghan student trained to the MS level, working on Marco Polo sheep ecology.
- At least one Afghan (Wakhi), trained to do field assistance on Marco Polo sheep ecology.

**Level of Effort (FY08):** \$149,244

**Activity 1.3 Assessment of Rangelands**

Rangelands support both livestock and wildlife in the Pamirs. Therefore, having a good understanding of the health of the rangelands is an essential element for looking at causality between human activities and wildlife declines, as well as for managing natural resources. In FY08, WCS intends to continue to develop a range inventory and analysis of rangelands critical for biodiversity conservation areas in several areas in Afghanistan, i.e., Little Pamir, Waghjir Valley, and the Hazarajat Region. Dr. Don Bedunah will oversee the WCS rangeland assessment component and act as liaison with government agency staff, international organizations, and other experts as related to rangelands. Included will be an assessment of the types of rangelands (vegetation types and values including information on species composition and productivity levels), uses of these rangeland by pastoralists (season of use, importance for different livestock use), conditions/concerns regarding rangeland health (where applicable), an analysis of current rangeland management practices and user rights; an assessment of the sustainability of such practices relative to rangeland productivity levels and identification of the key rangeland management issues and possible options for their resolution. All data will be

collected so as to be included within a GIS database. For example, plant communities will be “drawn” onto satellite images. GPS units will be used to record geographic location of monitoring sites and all plots where vegetation is measured.

During FY08 the Rangeland component will undertake the following activities:

- Teach a seminar on range inventory and analysis procedures. Including the need to document the value of rangelands for multiple resource values (e.g., water, wildlife, carbon sequestration) and lessons learned from previous years’ analyses.
- Identify/select and train a team of Afghan assistants or provide a “refresher” course for a field team for rangeland inventory.
- Continuation of the rangeland inventory and analysis of the Wakhan Corridor. This will include the identification and characteristics of major plant communities (composition, coverage, production, elevation, aspect, slope, etc.), description and photos of major species of plants to develop a guide on rangeland plants of the area, development of indicators of site degradation, values of plant communities for pastoral production.
- Completed rapid rangeland vegetation assessment of the region around Band-e-Amir and Ajar Valley. This will include a description of major rangeland concerns/issues for Band-e-Amir and Ajar Valley.
- Develop reports and other required documents on schedule with explicitly stated links between activities. This will include a final report and documentation of voucher specimens.

#### *Schedule/Timing Field Work and Training Components*

Field work will commence in June and be completed by mid August. Training seminars will be planned for the spring (April) before personnel of the Ministry of Agriculture are in the field for their work.

#### **Expected Accomplishments**

- 1) Completed rangeland assessment of important areas of the Wakhan Corridor for biodiversity conservation.
- 2) Completed rapid rangeland vegetation assessment of the region around Band-e-Amir and Ajar Valley.
- 3) Description of major rangeland concerns/issues for Band-e-Amir and Ajar Valley.
- 4) Documentation of major rangeland communities of the Wakhan Corridor.
- 5) Spatial description of rangeland types of the Wakhan Corridor.
- 6) Spatially “tied” monitoring stations to data and pictures and GIS.
- 7) Completion of plant guide and voucher plant collection for the Wakhan study area.

8) Final report.

**Level of Effort (FY08):** \$92,160

**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. Monitoring disease prevalence in livestock will allow us to better understand and evaluate a potential impact on wild ungulate populations in Afghanistan. As human pastoralists attempt to maximize resource use on increasingly fragile habitats, they bring their livestock into contact with wildlife. Competition for limited and depleted food resources between domestic and wild herbivores means that both populations may be directly or indirectly cross-exposed to the disease agents they carry. The risk of a disease spillover between these two populations can only be understood by studying the patterns of contacts, their respective susceptibilities to infectious agents, and their prevalence in both populations. In a natural context, reducing the opportunities of direct and indirect contacts between domestic and wild ungulates may prove the most sustainable mean of limiting disease transmission between these two populations.

In Afghanistan, although a large percentage of the populace is directly dependent on livestock health for their livelihood, very little is known about the prevalence of most diseases affecting domestic animals. The pilot study which WCS has carried out in Pamirs since 2006 has brought a unique set of original information concerning exposure of livestock to diseases rarely or never evaluated in Afghanistan, such as chlamydia, Q fever and brucellosis. The potential impact of these diseases goes beyond affecting livestock, or biodiversity conservation, but impairs the health of human populations. There needs to be a better understanding of the nature of the interface between wildlife, domestic animals, and human beings, where animals may compete for food resources, interact via predation, transmit infectious agents to each other but also contribute to the emergence of new diseases in human beings. Early warning of predisposing conditions for disease outbreaks in both domestic and/or wild species would allow for more strategic use of tools such as vaccination, with consequent benefits for livestock production, wildlife conservation and human health.

*Activity 1.4.1 Surveys, Clinical Examinations, and Blood Sampling*

For FY08, WCS will identify abundance, distribution, range use, herd composition, clinical health status and serological exposure to selected diseases of Kyrgyz livestock in Little Pamir and Waghjir Valley. Screening the population of nomadic Kyrgyz livestock will also contribute to clarify its role in the context of trans-boundary disease surveillance. Following surveys carried out by the range assessment, Marco Polo sheep, and ecosystem health missions in Big Pamir during 2006 and 2007, WCS identified the groups of livestock in Big Pamir pastures that pose the highest risk of disease transmission to wild ungulates. WCS will conduct in-depth surveys of the health status

and movements of these target herds of livestock in Big Pamir. Throughout all these missions WCS will continue collecting data on past (oral reports) and present (direct observation) occurrence of enzootic and epizootic diseases in livestock and wildlife and understand and learn local and traditional veterinary practices through surveys and questionnaires.

In FY08 WCS will achieve serological testing of blood samples collected from livestock in the Wakhan in 2006 and 2007, and extend serological screening to samples that will be collected in 2008. Samples will be tested for Foot and Mouth Disease, Peste des Petits Ruminants (PPR), brucellosis, Blue Tongue, Q-Fever, toxoplasmosis, and chlamydiae. As previously agreed with FAO, all collected samples will be tested for free for FMD and PPR at the Central Veterinary Laboratory (CVL) of Kabul under FAO supervision. Only a subset of 200-300 samples will be tested for Q-Fever, toxoplasmosis, chlamydiae, brucellosis and Blue Tongue. WCS has selected these agents because (1)-they are known to affect domestic and wild ungulates at large, (2)-they may cause abortion to livestock, a documented impairment affecting livestock in Pamirs, (3)-four of them are of zoonotic concern, (4)-detection tests available are reliable with reasonably good specificity and sensitivity. Instead of relying on external expertise, WCS will purchase, import and provide testing kits to CVL, contributing to the capacity building of this national structure. Should CVL could not accomplish the work in a reasonable time frame, WCS will hire a technician to test the samples at CVL. WCS staff will travel to New York to work on the analysis of data with the epidemiologist of the WCS Field Veterinary Program in New York.

#### *Activity 1.4.2 Remote Surveys of Range Patterns*

Observations of livestock husbandry practices, range use and disease prevalence in Big Pamir (described in the Ecosystem Health 2006 Annual Reports) speculated that the risk of disease spillover by direct transmission from sheep and goats to Marco Polo sheep was presumably low at least between spring and early autumn. Observations made by the Marco Polo sheep mission carried out in July 2007 in Big Pamir confirm these observations. However it is still undocumented whether (1)-the risk of contact between sheep/goats and wild ungulate is susceptible to be higher in winter when use of range is presumably constrained by limited forage resource (2)-range use of free-ranging domestic yaks and cattle put them in direct contact with wild ungulates. These cohabitation zones are obviously the areas of highest epidemiological risks but also those where conflicts between land users and conservation managers are most likely to crystallize. It is therefore a priority for us to delineate as accurately as possible the range used by livestock in the three main pastures of Big Pamir. As our knowledge on range use is largely based on what the herders have told us in interviews; to verify this information, WCS has provided 5 herders with hand-held GPS sets to precisely document range scale use during summer 2007. Because initial results appear promising the method will be expanded to a larger cohort of herders that will include those bringing their animals closest to the known Marco Polo sheep locations.

Disease spillover from cattle/yaks/camels is a different issue since these domestic species

are left unattended during summer. At that time most of them remain within 10 km of the main settlement and would therefore pose little risk of disease spillover by direct contact. However a small number of them, often young adults, stay unattended in altitude pastures for weeks to months at a time before receiving a visit by herders. To test whether this semi free-ranging practice may pose a risk of disease transmission to wildlife (and vice versa to livestock), WCS will equip multiple individuals in each of these herds with a GPS collar by the end of FY07 and data will be collected and analyzed in 2008.

#### *Activity 1.4.3 Ajar Valley Preliminary Assessment*

WCS will also start working to assess livestock numbers, locations, herd composition, herding systems and seasonal movements (through available documents, surveys, and extrapolation), evaluate overall mortality rates, including the major and minor causes, and typology and phenology of deaths through surveys and questionnaires. This assessment will also include data on past and present occurrences of enzootic and epizootic diseases in livestock and wildlife, as well as an attempt to understand and learn local and traditional veterinary practices in Bamiyan.

Information collected from both direct and indirect surveys, and interviews, will be added to the spatially explicit disease-specific GIS database to identify risk factors for disease emergence and help predict future disease outbreaks, as well as for protected area planning. 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.

#### **Expected Accomplishments:**

- Report with appended database identifying and understanding disease components and associated risk factors for disease emergence in Afghan protected areas.
- Evaluate overall livestock mortality rate, understand and learn local and traditional veterinary practices among Kyrgyz in Big and Little Pamir, Wakhi populations in Little Pamir, and Hazara populations in Ajar.
- Development of regulations or guidelines on reducing disease transmission between wildlife, people, and livestock in proposed protected areas.
- Continue to survey the Kabul Zoo, local wildlife product merchants, the Kabul bird market and the Mazar- e-Sharif falcon market to understand wildlife trade patterns.

**Level of Effort (FY08):** \$108,650

#### **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 FY08, WCS will continue training Afghan veterinarians in surveying wild and domestic population for disease outbreaks, how diseases move between these populations, and strategies to reduce the incidence of disease. In the Wakhan District, WCS will associate one or two Wakhi to each of their field trips. They will be trained in identifying broad categories of disease conditions, be provided with tools for description of symptoms to veterinarians, taught basic wound and lesion care, and animal husbandry. This training will be designed to complement and facilitate traditional veterinary care, and will be tailored for local communities based on the results of the FY07 serological screenings.

In FY07 WCS identified two local candidates from upper Wakhan who joined the USAID/DCA para-veterinarian training course in Kabul. In FY08 WCS will continue further training for these two trained para-veterinarians once they are deployed in the Wakhan. WCS will assist in the equipping of their field veterinary unit and generally assist them from a logistical point-of-view. Afghan veterinarians trained by WCS will supervise and monitor the progress of their work in the newly-created practices.

**Expected Accomplishments:**

- Develop disease-outbreak monitoring skills and response among local communities through trained para-veterinarians.
- Provide ongoing training for veterinary professions and para-veterinarians on livestock and wildlife disease.
- Engage para-veterinarians in prophylactic operations, including promoting actions to reduce the incidence of FMD and ectoparasite infestation in target groups of livestock.

**Level of Effort (FY08):** \$10,000

**Activity 1.6. Landscape Assessments and GIS Program**

For FY08, the GIS program will continue serving as an integrative service unit for the different components of the Afghanistan Biodiversity Conservation Project, primarily collecting, storing, spatially manipulating and analyzing data on wildlife (both historic and current distributions), rangelands, livestock, forest cover, ecosystem health, key indicator species, socioeconomics, and community dependence on shared natural resources, with the ultimate goal of contributing to effective biodiversity conservation in Afghanistan.

*Activity 1.6.1 Conservation GIS in Wakhan, Eastern Forests, and Hazarajat*

For FY08, WCS will continue the ongoing development of a comprehensive spatial

database for the Wakhan, Eastern Forests, and Hazarajat and management of collected, geo-referenced field data on wildlife species incidence, population abundance, home range, transboundary migration, and habitat for the key indicator species of mammals and birds. These data will be compared to historical data on species occurrences. In parallel, WCS will integrate wildlife data with data collected on rangeland health, forest cover, seasonal movements of livestock, herd composition, and disease transmission and disease prevalence among wildlife and livestock, upon a platform of high resolution imagery overlaid on digital elevation models.

In FY08, WCS will complete the Nuristan forest cover change assessment. This project will be important to update previous estimates of forest loss. WCS Nuristan teams will continue with some ground-truthing of satellite imagery, allowing for a more accurate forest cover change assessment than has been previously completed.

WCS will continue to acquire and program imagery as necessary for collection over the Eastern Forests, Bamiyan and Wakhan, especially where high quality archived imagery is not currently available. WCS will continue its relationship with USGS to access USG imagery and digital elevation models where available. WCS will use a GIS framework to analyze and integrate data on the landscape scale, create maps that reflect current state of knowledge, and for presentation and reporting requirements. Finally, WCS will also start working with the Ministry of Agriculture GIS laboratory to increase technical skills and available data necessary for its effective operation.

#### *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 – where they face different levels of protection. WCS staff will continue to work with counterparts in these neighboring countries, as well as collect our own data to be able to monitor seasonal movements of Marco Polo sheep across the borders. The Transboundary Park workshop in Urumchi has facilitated linkages with scientists from China, Afghanistan, Pakistan, and Tajikistan. In conjunction with genetic analysis of scat samples and direct observation of 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.

#### *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 collected through Activity 1.6.1 will continue to be incorporated into GIS data layers within the framework provided by the WCS Living Landscapes Approach. The ultimate aim of this

approach is to conduct a broader assessment at the landscape scale, to integrate and analyze the complex ethnic, socioeconomic, and ecological fabric and dynamics of the landscape in order to identify and prioritize conservation needs as part of a comprehensive management plan for protected areas and surrounding communities.

**Expected Accomplishments:**

- Collection and integration of remote sensing data with data on wildlife, forestry, ecosystem health, rangeland, livestock movement patterns, and socioeconomic data to better understand threats to biodiversity conservation and the human communities that depend on these natural resources.
- Completion of Nuristan forest cover change assessment, and forest classification.

**Level of Effort (FY08):** \$60,862

**OBJECTIVE 2: STRENGTHENING LAWS, POLICIES, AND INSTITUTIONS**

**FY08 Level of Effort (Total Objective 2):** \$517,964

**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 FY08 will continue the integration and analysis of data from other activities within a remote sensing framework to update protected area boundaries. The large quantity of data collected in 2006, and additional data collected during 2007, requires further analysis and integration before we may start gazetting reserves in the Wakhan. Further, data collected in FY07 on free ranging animals through observation, genetic analysis of carnivore scat samples, and studies of transboundary migratory behavior of Marco Polo sheep will provide additional data necessary for the development of these protected areas.

In FY08, WCS teams will work with village councils to bring in to existence a Wakhan Conservation Association (WCA). The WCA is envisioned as an umbrella organization for conservation activities in the Wakhan and as the agency for distribution of funds or income generated from conservation. The scope of its activities includes not only current management of environmental resources under the country’s existing Environment Law,

but also Rangeland Associations and Forestry Associations envisioned in the draft Rangeland and Forestry laws and community-based ecotourism enterprises. Protected Area Committees (PACs) envisioned in the draft Protected Area Regulations will also draw their community membership from the WCA – these PACs will then be the focal point for protected area management at the community level. In FY08 WCS will also begin training Wakhi men to serve as village wildlife conservators, who can eventually serve as protected area rangers upon the formal creation of protected areas in the Wakhan. They will be trained to survey wildlife, use navigation tools, and to serve as conservation agents.

The nomadic Kyrgyz communities are also an essential component to the creation and management of a protected area in the Wakhan. In May 2007, WCS started engaging these communities through studies of domestic livestock husbandry and economic systems and lives with these communities. WCS will also be working with the Kyrgyz communities through its rangelands, ecosystem health and community conservation programs. A WCS staff member will spend the months of January to May in the Little Pamir. Winter and spring provide an optimal time to conduct interviews and collect demographic data, as the Kyrgyz are relatively stationary then. During this five month period, we will concentrate our efforts on four activities: 1) gathering demographic data; 2) administering the household and range use surveys (which includes questions concerning number and kind of livestock owned); 3) explaining the basic concepts and benefits surrounding conservation and ecotourism; and 4) gathering qualitative information about Kyrgyz social, economic and political structure of relevance to community conservation efforts. In addition, by following the Little Pamir Kyrgyz throughout their annual migration cycle, WCS will acquire GPS locations for all seasonal camps and be able to map migration routes and the boundaries of privately owned pastures. These efforts provide crucial baseline data concerning the Kyrgyz of the Big and Little Pamir, about whom almost nothing is known. At present the scant information available on Kyrgyz population figures and structure, livestock numbers, trade patterns, and political organization is based on guesswork or unreliable older data. Without a sense of the Kyrgyz community it is trying to engage, WCS will have difficulty implementing any conservation initiatives in these areas. The presence of a WCS representative will facilitate the implementation of community conservation and natural resource conservation initiatives by informing and involving the main stakeholder in the Little Pamir.

**Expected Accomplishments:**

- Analysis of collected biological and socioecological data to define protected area boundaries in the Big Pamir, Little Pamir, and Waghjir Valley.
- Initiate discussions on protected area designation with the Afghan government, including potential World Heritage Natural Status.
- Continued collection and analysis of GIS and remote sensing data for these protected areas for landcover classification and the creation of a digital elevation model.
- Creation of a draft Wakhan Protected Area(s) Management Plan

**Level of Effort (FY08):** \$37,500

## **Activity 2.2 Assessment and Development of a Transboundary Protected Area**

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. Marco Polo sheep therefore can only be effectively protected and managed through trans-frontier cooperation and “the creation of one large reserve” that encompasses the four countries. The initial meeting was held in Urumqi, China in September, 2006, and the second conference scheduled for Dushanbe in early spring of 2008 is the second step to create a four-country International Protected Area that, in the words of the IUCN, is “formally dedicated to the protection and maintenance of biological diversity and of natural and associated cultural resources, and to the promotion of peace and cooperation.”

The purpose of formally establishing a four-country International Protected Area is to manage joint resources better on a solid scientific foundation, facilitate cooperation for mutual benefit, and encourage good neighborly relations. It is of note that much of the area under consideration for a transboundary protected area is already or may soon be in reserves and needs only minor additions and adjustments to become a formal and functional entity. The trans-frontier program began in 1975 when Pakistan established the Khunjerab National Park (6,150 km<sup>2</sup>) and in 1984 when China set up the contiguous Taxkorgan Nature Reserve (about 15,863 km<sup>2</sup>). Other reserves with Marco Polo sheep in this border region are the Zorkul Strictly Protected Area (870 km<sup>2</sup>) in Tajikistan and the proposed Big Pamir Wildlife Reserve (679 km<sup>2</sup>) in Afghanistan. In addition, there are two trophy hunting areas for Marco Polo sheep, one in Tajikistan and one in China, with a measure of protection, and recent surveys in Tajikistan and Afghanistan suggested further additions to the system. The establishment of this International Protected Area would also, as has been shown elsewhere, increase assistance from the international donor community for long-term management of the associated protected areas.

To promote trans-boundary cooperation on conservation in the Pamirs, the *International Workshop on Wildlife and Habitat Conservation in the Pamirs* was held on September 28<sup>th</sup>-29<sup>th</sup>, 2006 in Urumqi, Xinjiang, in China. The workshop was jointly hosted by the Department of Wildlife Conservation and Management of the State Forestry Administration of China and the Wildlife Conservation Society (WCS), and co-funded by USAID and SFA. Government representatives from each country, conservationists, and representatives of IUCN and WWF joined the workshop to exchange their experience and information regarding the Pamirs and to discuss the issues of conservation and trans-boundary cooperation in this region.

The Second Transboundary Workshop, to be held in Dushanbe, Tajikistan in March, 2008, and will involve ministerial-level government delegations from each country, as well as NGOs and observers from the international conservation community. The

meeting is being held in Dushanbe at the behest of the Tajik Government and to provide neutral ground for Afghanistan and Pakistan to meet. The goals for this conference include formally establishing a Transboundary Conservation Commission, establishing and beginning work with technical working groups, finalizing the Action Plan developed in the first conference, finalizing particular actions that need to be taken to address threats and improve conditions for the people and environment of the Pamirs, and raising awareness among key donors concerning the development and conservation of this regional protected area.

**Expected Accomplishments:**

- Implement the Second and Third Transboundary Protected Area Workshop with representatives from the governments of Tajikistan, Pakistan, China and Afghanistan during 2008.
- Establishment of an international Transboundary Conservation Commission and four working groups.
- Completion of a draft Action Plan for Transboundary Conservation.
- Develop an agreement for establishment of the transboundary park signed by, at least three governments: Pakistan, Tajikistan, and Afghanistan.

**Level of Effort (FY08):** \$142,218

**Activity 2.3 Central Hazarajat Conservation Initiatives**

Band-e-Amir and Ajar represent two of the greatest opportunities for Afghanistan to leverage ecotourism potential in support of biological conservation. The uniqueness, beauty, and accessibility of both sites make them attractive tourism destinations. Human populations in both areas are exceedingly poor. Proper development of ecotourism with economic benefits flowing back to the local communities will provide tangible incentives for conservation. However, both sites suffer from a variety of problems that threaten their integrity and suitability for tourism. Threats to Band-e-Amir include inappropriate development and undirected tourist activity, uncontrolled harvest of fish and wildlife, inappropriate grazing practices, and conversion of rangelands to dryland farming. Threats to Ajar include uncontrolled poaching, overgrazing, co-option of limited water sources, and uncontrolled juniper harvest. These threats can be alleviated through raising the awareness of local people, involving them in land use planning, channeling tourism monies back to the community, and achieving legal protected area status.

In FY2008, WCS project manager Dr. Chris Shank and the Hazarajat team will continue to catalog the mammals, birds, fish, and plants of Band-e-Amir. The draft management plan will be completed and presented to the Band-e-Amir Protected Area Committee (BAPAC) for approval. Completion of the management plan will allow designation of Band-e-Amir as a Provisional Protected Area under the provisions of the Environment Act. WCS will assist the BAPAC to make the decisions necessary to properly manage the protected area. WCS Legislation and Policy Manager Jim Wingard will assist in developing by-laws to govern the operations of the BAPAC and in facilitating an

approved revenue sharing approach. WCS will also assist the Islamic Republic of Afghanistan to prepare an initial application to UNESCO to list Band-e-Amir as a World Heritage Natural Site.

In the Ajar Valley during FY2008, the WCS team will continue to catalog the mammals, birds, fish and plants of the Ajar Valley. Systematic monitoring of ibex and urial populations will be continued. Community consultations will continue on the contents of the preliminary management plan. An Ajar Valley Protected Area Committee (AVPAC) will be instituted according to the provisions of the draft Protected Area Regulations. Because of the immediate threat to wildlife populations from uncontrolled hunting, rangers will be hired and equipped. WCS ecosystem health teams will conduct initial surveys into disease prevalence and local livestock movement patterns, and WCS rangeland teams will conduct a rapid survey of the rangelands of the Ajar Valley.

Both formal and opportunistic on-the-job training on aspects of biology and conservation will be provided to government counterparts, students, NGO partners and others as deemed appropriate.

**Expected Accomplishments:**

- BAPAC will approve the Band-e-Amir Provisional Management Plan; the BAPAC will develop sufficient capacity to make significant decisions regarding management of Band-e-Amir.
- Achieve formal designation of Band-e-Amir as a Provisional Protected Area.
- Assist the Islamic Republic of Afghanistan in nominating Band-e-Amir to UNESCO as a World Heritage Natural Area.
- Establish the Ajar Valley Protected Area Committee (AVPAC) and assist in its work.
- AVPAC will approve the Preliminary Management Plan for the Ajar Valley Wildlife Reserve; bylaws will be developed for BAPAC and AVPAC.
- Develop or supplement catalogs of fixed-point photographs for Band-e-Amir and the Ajar Valley.
- Add to the catalog of bird, mammal, and fish species known to occur at Band-e-Amir and in the Ajar Valley.
- Develop preliminary recommendations on grazing management for the Ajar Valley.
- Complete mapping and development of remote sensing products in support of planning efforts at Band-e-Amir and Ajar Valley.
- Rangers at Ajar Valley will be hired, equipped and effectively patrolling.

**Level of Effort (FY08):** \$112,150

## **Activity 2.4 Eastern Forests Initiative**

WCS activities in 2007 continued in spite of the extreme sensitivity of working in the eastern border regions and the withdrawal of the survey teams due to fighting in some areas. These regions, however, remain one of the most important centers of biodiversity in Afghanistan, and perhaps the one facing the greatest threat. During 2008 surveys will continue. WCS initiatives in 2008 will also expand on wildlife surveys to engage local communities and better understand the economics that are driving deforestation.

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, and markhor. It is under tremendous deforestation pressure. Further, its location in the sensitive and conflict-prone border regions between Afghanistan and Pakistan makes monitoring of deforestation difficult, if not impossible. WCS surveys in FY06-07 indicate that the forests still contain important key species, including potentially Persian leopard, snow leopard, ibex, Asiatic black bear, leopard cat, and markhor. These surveys are the start of a larger initiative in this region.

Afghanistan 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. WCS is updating these studies at higher resolution to better gauge deforestation patterns. Residents predict similar losses for the forested regions in the provinces of Paktia, Khost 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, which have disappeared from 95% of their former range.

Building on successful wildlife, socio-economic, and hunting surveys from 2006-07, WCS programs in 2008 will take a two-pronged approach to conservation of key threatened species: community institution building, education and outreach, and wildlife surveys to fully understand target areas for protection, while analyzing satellite imagery to gauge the extent of deforestation and remaining forest habitat in the region. All efforts to conduct activities on-the-ground will continue to be weighed against security concerns in the area. Since the drafting of the original proposal, security throughout the country has continued to deteriorate and will need to be monitored closely as activities develop.

### *Activity 2.4.1 Wildlife Surveys*

Petocz and Larsson conducted an assessment of markhor in the Waygal Valley in 1977 to evaluate the feasibility of establishing a trophy hunting program. Doing point-count surveys they were not able to assess the total population of markhor, but counted 350 individuals (FAO 1977). Several members of WCS wildlife survey teams were with Petocz and Larsson on the 1977 markhor survey. WCS will use similar methods to assess changes in markhor and ibex range and abundance from the same area over the past thirty years.

In combination with the above, camera trap surveys will be continued to determine presence-absence of target felid species such as Persian leopard and leopard cat. Coupling this data with ungulate occurrence from point count surveys will give WCS a better understanding of predator-prey ecology in Central Nuristan, and target areas for future conservation and protection measures.

Nuristan wildlife teams will continue to collect scat samples for genetic analysis. Afghanistan harbors one of the most speciose, but least known, carnivore assemblages in the world (at least 27 species, Habibi 2003). The taxonomic and ecological diversity among carnivore species makes them an excellent focal group for ecological and conservation studies. Carnivores are also an important component of the rangeland environments on which many pastoralists rely, and have a special cultural resonance among several segments of Afghan society. However, the elusive behavior of carnivores and difficult terrain they inhabit present special challenges to researchers. WCS is collecting scat samples to examine carnivore species incidence in E/NE Afghanistan through noninvasive faecal DNA monitoring in partnership with the American Museum of Natural History.

The biggest threat to wildlife in Nuristan is uncontrolled hunting, which is deeply rooted in cultural and societal tradition. Building on recent successes, WCS will use the village shura, the regional environmental shura and local mullahs to bring awareness and education, based on principles of Islam and conservation and the Environment Act, to reduce the incidence of hunting in the region. Several key predator species, such as wolves, black bears, snow leopards and leopards are targeted in retaliation for crop and livestock losses. WCS will also investigate strategies, based on international best practices, to reduce the frequency of human-wildlife conflict.

A security and capacity assessment will be undertaken to determine if wildlife surveys could be expanded to other parts of the Eastern Forest, such as Laghman, Kunar or other parts of Nuristan.

#### *Activity 2.4.2 Timber & Hunting Surveys*

WCS surveys of the timber and firewood market in Kabul through 2006 and 2007 suggest three preliminary findings: (1) the illegal timber trade in the Eastern Forests is highly lucrative, with strong vested interests; (2) preliminary analysis of the timber products coming out of the Eastern Forests obtain higher prices in Pakistan than prices obtained in the Kabul market, and (3) most timber from the East flows directly to Pakistan as a result. Additional work is necessary to reinforce or clarify these findings.

WCS will explore the feasibility of pursuing further timber surveys in 2008 in other locations in Afghanistan. Quantifying the demand for and source of timber will help WCS work with the government to prioritize areas for intervention to prevent deforestation. However, the scope of the problem is well beyond the capacity of WCS to solve due to entrenched corruption, politics and lack of clear policy and local enforcement.

The results of these and other socio-economic studies will inform WCS's efforts to draft a concept for community-based forest management consistent with the draft Forestry Law. All efforts to conduct activities on-the-ground will continue to be weighed against security concerns in the area. Since the drafting of the original proposal, security throughout the country has continued to deteriorate will need to be monitored closely as activities develop. The WCS Nuristan teams – made up of academics from Nahgrahar University, provincial staff of the Ministry of Agriculture and NEPA, and local community members – have provided WCS with initial access to the local communities in Nuristan.

#### **Expected Accomplishments:**

- Establishment and training of regional environmental shura.
- Completed assessment of key wildlife populations in Central Nuristan.
- Education and outreach to local villages in Central Nuristan regarding biodiversity conservation and the importance of wildlife.
- Completion of updated estimates of forest cover change in Nuristan.
- Completion of final report on timber trade and wildlife trade data.
- Dependent on security, possible formation of community conservation associations in selected communities.

**Level of Effort (FY08):** \$69,570

#### **Activity 2.5 Ranger Training and Enforcement**

WCS will train potential 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, 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.

In 2008, WCS will continue working with the government to strengthen the enforcement of laws for protected areas and wildlife conservation. WCS has already facilitated the hiring and training of four Band-e-Amir rangers who now work under the Afghan Ministry of Agriculture. WCS will continue to examine opportunities to provide training for government officials involved with regulating trade and customs, as well as border police, once the existing legal framework has been clarified. WCS will start with preliminary training in ecotourism and natural history for community members identified and proposed in meetings with community conservation committees in the Wakhan in FY07. The majority of ranger training will primarily occur through a series of workshops in 2008. 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 and build capacity in management of protected areas and enforcement of wildlife laws.

**Expected Accomplishments:**

- Offer initial training in ecotourism, natural history, and current Afghan regulations on the protection of biodiversity for identified community members.
- Protected Area Management Study Tours for members of the Afghan government.
- Develop ranger training program tailored for Afghanistan.
- Train rangers at Ajar Valley and Band-e-Amir.

**Level of Effort (FY08):** \$61,900

**Activity 2.6. Review of Wildlife and Protected Areas Legislation and Policies**

In FY07, WCS continued its review of existing legislation and policy, and the development of new laws, regulations, and policies for endangered species, protected areas, and community based conservation initiatives. These laws have been worked on with relevant government agencies and submitted for approval.

*2.6.1 Legislative Review*

In FY08, WCS will continue dialogue on laws drafted in FY06 and FY07 including the Forest Law, Protected Areas Regulation, Rangeland Law, and Hunting and Wildlife Conservation Law. It is envisioned that for each law there will be a field-level consultation process and a national stakeholder consultation workshop. To the extent possible these activities will be coordinated with the National Environmental Policy Agency as the primary government body, and those ministries directly involved in the development of the legislation. It must be cautioned however, that the number of laws already drafted in this and other sectors has already exceeded the capacity of the Afghan government to respond. It is therefore proposed to supplement any continued work on national legislation with a stronger focus on the development of local legal mechanisms intended to implement the proposed national laws.

None of the laws drafted, with the exception of the Environment Law, have been approved. This is not a function of the quality of the proposals, but the limited capacity of the reviewers and the lengthy process for approval. It is also unlikely that many of these laws will be passed in the near term without some unanticipated change. Therefore, continued monitoring and assessment of this process and their eventual application will be required. Results of these assessments will be incorporated into the existing compendium of environmental law and practice and an update provided as feasible.

**Expected Accomplishments:**

- Continued monitoring and assessment of newly enacted environmental laws.
- Update Compendium of Environmental Law and Practice Guide as necessary and feasible
- Participate in lobbying efforts to secure passage of proposed legislation including Forestry Law, Protected Areas Regulation, and Rangeland Law.
- Assist with development of wildlife related legislation, including endangered species, hunting and trophy hunting, and wildlife trade.

*Activity 2.6.2 Trophy Hunting Program*

In FY07, WCS continued its efforts to determine the feasibility of instituting a trophy hunting program in Afghanistan. To this end, WCS drafted a set of Hunting and Wildlife Conservation Regulations that addresses the legal components necessary for the creation of such a program. The revenue-sharing concept previously drafted for use in Afghanistan's protected areas has been adapted for use by communities in the Wakhan where a trophy hunting program has the highest potential for being successful. This proposal is still being worked on and will form the basis of continued efforts into FY08.

**Expected Accomplishments:**

- Completion of final report on the status of a proposed trophy hunting program.
- A formal recommendation to the Ministry of Agriculture concerning trophy hunting.
- A concept for how and under what conditions trophy hunting should occur drafted and submitted to the Ministry of Agriculture.

**Level of Effort (FY08):** \$51,000

**Activity 2.7 Environmental Services Valuation**

Nuristan and the Eastern Forests will be the focus of the Ecosystem Services Evaluation. The Ecosystem Services Team has been developing survey methodologies based on a data gathering visit to Afghanistan. For FY08, the team will analyze the survey data collected in the central region of Nuristan. The survey is designed to address socioeconomic data including household's income, property holdings, land-use patterns, resource-use patterns, and resource management activities. In addition, the survey

acquired stated preference data so that we could understand local people's attitudes towards a hypothetical conservation measure and so we could identify socioeconomic factors influencing their attitudes.

### **Expected Accomplishments**

- Describe land-use and forest resource use patterns in the central region of Nuristan.
- Examine local people's willingness to accept the conservation measures.
- Complete the Nuristan survey data analysis.
- Identify socioeconomic factors influencing their WTAs.

**Level of Effort (FY08): \$43,626**

### **OBJECTIVE 3: FACILITATE COMMUNITY-BASED NATURAL RESOURCE MANAGEMENT IN WAKHAN DISTRICT**

**FY08 Level of Effort (Total Objective 3): \$133,080**

#### **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 FY08, WCS Community Conservation Program will continue to engage the Wakhi communities in the Wakhan, expand the scope of that engagement to include Kyrgyz communities, and potentially contribute to projects in other parts of Afghanistan, including Hazarajat and Nuristan.

#### **Activity 3.1. Socioeconomic Surveys of the Wakhan**

It is critical to understand the structure, political units, needs, wants, and insights of local communities and to gain their cooperation in any conservation initiatives. Accordingly, the WCS community conservation team will continue its socioeconomic surveys to determine aspects of civil society in Wakhan District and to inform parallel WCS conservation initiatives. Specifically, WCS will continue pasture use surveys among the Kyrgyz and Wakhi summer settlements in the Big Pamir and Little Pamir to gain data on location and seasonality of settlements, seasonal movement of humans and livestock, village affiliation, number of households, number and type of livestock, and GPS locations. Surveys conducted in Wakhi villages will measure fodder and fuelwood usage to understand the relationship of household consumption with biodiversity. Village surveys will also measure change in household socioeconomic conditions during the project period to provide data for causal analysis. Village surveys will also include delineation of accepted village boundaries, GPS recording of accepted boundaries, and

entry into a mediated process to resolve any inter-village boundary disputes.

**Expected Accomplishments:**

- Increased understanding of community use of natural resource base through survey data.
- Increased understanding of socioeconomic conditions of Wakhan communities and correlation with WCS efforts.
- Mapping of village boundaries in Wakhan and incorporation into GIS.

**Level of Effort (FY08):** \$ 12,500

**Activity 3.2 Conservation Awareness Workshops and Environmental Education**

Initial surveys conducted in 24 Wakhi villages indicate only a basic knowledge of the conservation status of wildlife in Wakhan and the factors affecting that status, and of principles of ecological interdependence. FY06 and FY07 workshops and education efforts have brought widespread awareness of the importance of these issues to Wakhan. Hence, in FY08, WCS will expand its program of conservation awareness workshops and environmental education in Wakhan District.

FY06 fieldwork demonstrated that school attendance in the Wakhan (among Wakhi; there are no schools for Kyrgyz in the Wakhan) is among the highest in Afghanistan, giving Wakhan District a comparative advantage. Schools therefore become the best means to reach a majority of the coming generation. In FY07 WCS began an environmental education program in six government schools in Wakhan District. In FY08 WCS will continue to work closely with teachers in these schools to provide them with contextually relevant techniques and materials and will expand this program to seven additional schools to cover all Wakhan District and to ensure a lasting impact from the project. The techniques and materials can be adapted for use throughout Afghanistan.

In FY07 WCS created a Community Conservation Facilitator position in Wakhan, with specific responsibilities including bringing conservation education materials into schools and training teachers. Mr. Aminuddin of Qila-e Panja village, who visited the WCS Cambodia program, is taking this position. In Q4 FY07 WCS is arranging a two-week study travel program for seven Wakhi community leaders, including Mr. Aminuddin, to visit northern Pakistan's Wakhi communities. The visit will include WWF-Pakistan, IUCN-Pakistan, several community-based conservation programs, Khunjerab National Park (KNP), and the Al-Amin Model School in Gulmit village to observe and learn innovative and appropriate conservation practices, including environmental education.

In FY08 WCS will seek to hire a short-term regional consultant on environmental education from the Wakhi community in northern Pakistan, with direct experience in school environmental education programs. The consultant will mentor teachers in each of the six schools and assist in preparation of a report, which will shape the training program

for the seven new schools. The cross-border dialogue between educated Wakhi counterparts enables more efficient transmission of conservation principles and local experience.

These types of transboundary cooperation will build capacity in the Wakhan and also support the development of the proposed transboundary park (Activity 2.2).

**Expected Accomplishments:**

- Development of awareness of conservation principles, sustainable activities, and alternative activities or management techniques among Wakhi and Kyrgyz utilizing the Big and Little Pamirs.
- Development of environmental education program for Wakhan District schools.
- Development of environmental monitoring capacity and competence of Wakhi villages in Wakhan.
- Development of cross-border conservation and information-sharing linkages between Wakhi communities in Afghanistan and Pakistan.

**Level of Effort (FY08): \$17,500**

**Activity 3.3. Facilitate Community Based Resource Management**

Community-based natural resource management offers communities greater opportunities to realize security over natural resources, actively contribute to natural resource management, sustainably use community-held natural resource rights to create community-wide benefits, and help them maintain their unique environment and identity.

In FY07, WCS held meetings with village councils (*shuras*) of villages in the Wakhan focal area, to discuss willingness of the community to partner with WCS to meet conservation objectives. Each council indicated its willingness to participate and named a focal person for conservation efforts. This effort will continue in FY08 and expand to include all 42 Wakhi villages in Wakhan District.

In FY07, WCS developed by-laws and an agreement covering all villages in the WCS focal area in the Wakhan. This includes a mechanism for funding that allows for distribution of income from future activities. In FY08 WCS teams will work with village councils to gain their approval for the agreement, which is intended to bring into existence a Wakhan Conservation Association (WCA). Initial seed money to support the establishment of the association, including its registration with the Ministry of Justice, is being sought through the USAID-funded ASMED (Afghanistan Small and Medium Enterprise Development) program. The association will strengthen abilities and authority to manage natural resources, and will parallel national legislation that will support the devolution of power over natural resources to local communities .

Recognizing the need to increase the capacity for governance in order to enable the association to function, WCS will send association officers and management to AKDN-operated training centers in Badakhshan Province.

Successful biodiversity conservation requires that local communities benefit from conservation efforts. Revenues that may be generated from tourism/ecotourism activities (entry fees, conservation fees, and hunting fees) can contribute to community funds. These funds can be initially established through donor contributions and sustained through a combination of contributions and shared revenues. Enabling national legislation will be an essential component of such efforts to grant power to local communities.

In FY08, WCS will begin training Wakhi men to serve as village wildlife conservators. They will be trained to census wildlife, conduct transect surveys, use navigation tools, and to serve as conservation agents. Building on successful training programs operated in buffer zone Wakhi communities of Khunjerab National Park (KNP) in northern Pakistan, two master trainers from Pakistan will come to Wakhan to work with trainees. The most successful trainees will then go to Pakistan for additional training in the KNP buffer zone. This builds capacity in the Wakhan, supports Activity 2.5 (Ranger Training) and supports the development of the proposed transboundary park.

**Expected Accomplishments:**

- Continued support of conservation at the district and community level with sufficient authority and community input to manage natural resources effectively for the entire community and without detriment to conservation goals.
- Association by-laws to be signed by representatives of all villages in WCS focal area in Wakhan, including establishment of a mechanism for funding that allows for distribution of income from future activities; in parallel, changes to national legislation and policies that will allow for financial benefits to flow to local communities.
- Trained village wildlife conservators to continue monitoring work in the Wakhan.

**Level of Effort (FY08):** \$10,000

### **Activity 3.4. Environmentally and Culturally Sensitive Tourism Development**

Community conservation initiatives (development of protected areas, conservation of biodiversity) must be closely linked with economic benefits in order to be sustained. Visitors drawn by the Wakhan's unique resources, whether for ecotourism or research, provide opportunities to directly link resource conservation to improvements in people's lives. WCS will work to ensure that economic benefits flow directly to local communities, to diversify and broaden the economic base providing these benefits, and to make clear the linkage between conservation and development.

To accomplish these goals, WCS in FY08 will focus on three areas: development and promotion of ecotourism products; building local capacity for ecotourism employment; and promoting tourism to Afghanistan.

#### *3.4.1 Continue development and promotion of primary ecotourism products in Wakhan*

Wakhan's tourism potential lies with the adventure travel and trekking market. Trekking routes have been reconnoitered, but mechanisms to transmit information to potential tourists are still lacking. Development of an ecotourist guidebook, map and website is crucial to disseminate information to tourists.

In FY08, WCS will seek to develop two key products - cross-border trekking, and the trekking route to Afghanistan's highest mountain. The greatest potential product to attract adventure tourists to Wakhan is to develop cross-border tourism by engaging the government and private sectors in neighboring Tajikistan and Pakistan in product and policy development. This endeavor will utilize the established international border crossing at Ishkashim with Tajikistan and will develop cross-border trekking routes with Pakistan. The economic and conservation importance of this endeavor will increase as the goal of a trans-border park is realized.

Afghanistan's highest mountain, Nushaq (7,492 meters), lies in the Hindu Kush Range and is accessible from Qazideh village in Wakhan District. A solid pre-war history of mountaineering expeditions to Nushaq and neighboring 7000-meter summits demonstrates the strong potential market. Trekking and mountaineering tourism to Nushaq is vital to stimulate overall tourism to Wakhan. An obstacle to launching this tourism product is the existence of landmines along the route to the base camp. WCS will work to facilitate the Halo Trust Afghanistan and their de-mining team to remove all landmines from the valley. The success of such a project could be considered a national success and source of pride.

Cultural tourism ranks second only to trekking in its importance. Exposure of Wakhan in existing multi-country cultural festivals in Pakistan would have an ancillary benefit to Wakhan by showcasing the cultural traditions of Wakhan and by having participants from Wakhan learn about such events. WCS will seek to facilitate participation of Wakhan in

two festivals in Pakistan: the Broghil festival held in Chitral in July; and the Silk Route festival held in the Northern Areas in September.

Utilizing the cultural landscape inventory of Wakhan that WCS conducted in 2007, WCS will work to develop a plan to protect the rich cultural landscape, which includes unprotected historical monuments (forts, tombs, petroglyphs), and to prepare interpretative materials for these sites.

WCS efforts in FY08 can be coordinated with those of the Aga Khan Development Network (AKDN) to effectively utilize the respective strengths and capacities of each organization. These efforts will also support a future World Heritage Site nomination and the appropriate designations for the three proposed protected areas in the Wakhan.

#### *3.4.2 Train more local people in Wakhan to work in ecotourism*

WCS will continue building capacity to work in ecotourism among local communities. The twenty-five trek guide and trek cook trainees from the 2006 training will be invited back for an advanced training course, and new trainees will be selected for a basic tourism training course. The advanced training course may include basic first aid and natural history components. The training courses will include spoken English language.

WCS will work to establish an association for trek guides and trek cooks to support their entrepreneurial efforts by facilitating the submission of an Association Development Grant application for seed money to the Afghanistan Small and Medium Enterprise Development (ASMED), a USAID-funded project.

#### *3.4.3 Support promotion of tourism to Afghanistan*

WCS will support efforts to promote tourism to Afghanistan as a country, which will also support tourism to provinces. WCS will seek to strengthen the government institutions working in tourism so that they can better understand principles and concepts of ecotourism in order to clarify and set policy. Particularly essential is developing capacity within and working closely with both the Ministry of Information, Culture and Tourism, and the Afghan Tourist Organization (ATO), which works under the ministry's supervision. WCS will look at and incorporate the "best practices" of regional national tourism associations as necessary. The process will attempt to address constraints on tourism to Afghanistan, such as security concerns and difficulty of access, by promoting dialog at the central, provincial and district level that seeks ways to ameliorate these constraints.

In Q3 2007, WCS coordinated the submission of an application by the Ministry of Information, Culture and Tourism to the Pacific Asia Travel Association (PATA) for Afghanistan to become a member destination. Participating in industry events sponsored by PATA will demonstrate Afghanistan's commitment to develop tourism and regional partnerships.

WCS will also continue working with the private sector to promote tourism and support their ecotourism efforts. A key first step is supporting the formation of the Tourism Association of Afghanistan (TAA) by facilitating their submitting an Association Development Grant application for seed money to the Afghanistan Small and Medium Enterprise Development (ASMED), a USAID-funded project. Obtaining such a grant will empower TAA's members to participate at international tourism trade fairs and promote the country of Afghanistan as well as their private businesses. Most of the world's top 50 adventure travel tour operators do not yet know about Afghanistan's tourism products or trekking potential. WCS will lead a personalized information campaign to invite them to bring business to Afghanistan, focusing on Wakhan in particular.

WCS will also facilitate distribution of voluntary Codes of Conduct for all tourism stakeholders (host communities, tourists, and private sector tourism industry) currently under development with input from the government and private sectors.

WCS will also support any media inquiries that promote tourism to Afghanistan.

**Expected Accomplishments:**

- Continue development and promotion of primary ecotourism products in Wakhan.
- Continue training local people in Wakhan to work in ecotourism.
- Develop additional informational materials for tourists to Afghanistan.
- Support international promotion of tourism to Afghanistan by government and private sectors.

**Level of Effort (FY08):** \$12,500

**OBJECTIVE 4: CAPACITY-BUILDING INITIATIVES**

Total Level of Effort (Objective 4): \$270,600

**Threats addressed by Objective 4:** The greatest limitation to development in Afghanistan, especially in terms of natural resource management, is a lack of human capacity to assess, monitor and implement initiatives that conserve and protect Afghanistan's diverse wildlife and habitat. This threat, if left unaddressed, will potentially lead to mismanagement, bad policy and environmental insecurity. In FY06-07, WCS has achieved great strides in educating and training Afghans in conservation biology and will work in FY08 to expand and enhance this program to improve biodiversity conservation in Afghanistan.

**Activity 4.1 Afghanistan Training Courses**

There is a wealth of international talent that can assist Afghanistan in training its present and future conservation scientists and managers. These international experts include professors, managers, field scientists, and technical experts across a range of fields, from wildlife fieldwork to rangeland and forestry science to watershed and protected areas

management. WCS will use its international expertise, program staff, and WCS scientists and experts that bring models from other countries, to enhance capacity through short training courses coupled with practical experience.

In FY07, over 400 community members, conservation professionals, provincial and national government staff and university professors and students were trained and educated in field techniques of wildlife monitoring, environmental law, avian influenza monitoring, wild bird ecology and handling, park management, wildlife conservation in Afghanistan, community conservation and GIS. In FY08, WCS will develop and expand on these efforts to build capacity for conservation in Afghanistan.

For example in the Wakhan Valley, WCS has begun environmental education projects in each school. The six schools have set up committees which monitor data collection by students for the amount of firewood collected per household and the number of livestock per household. The teachers need training to be able to assess this data with their students and continue to develop meaningful and sustainable projects related to conservation.

Tourism is a growing source of revenue for Afghanistan. More than 3,100 foreign tourists visited Afghanistan in the first quarter of the current year, compared to 9,000 sightseers who holidayed in the country in 2006 (Ministry of Information, Culture and Tourism). As this tourism develops around Afghanistan's proposed protected areas, it is essential that WCS guides and participates in the development of community-based ecotourism. In FY2007, WCS trained 25 guides and cooks in the Wakhan Valley and for FY2008 will continue to develop their skills as well as build capacity in the communities around Band-e-Amir for tourism services so they see benefit from living around and maintaining the national park.

The Mullahs and Ulema of Afghanistan hold considerable power and influence locally and nationally. This power can be used to spread a message of biodiversity conservation by providing training to the religious scholars on the relationship between Islam and Conservation. The Qur'an contains many references to the Islamic duty to protect nature and wildlife, such as: "*No creature is there crawling on the earth, no bird flying with its wings, but they are nations like unto yourselves. We have neglected nothing in the Book; then to their Lord they shall be mustered.*" *Qur'an 6:38*. Each month in Kabul, the provincial council of mullahs holds a meeting and this venue will be used to begin the training in Islam and Conservation. After an initial series of trainings, WCS will work with the council of mullahs to bring the message to radio and TV.

In addition, WCS will draw on each program manager's area of expertise to conduct seminars in each person's area of expertise. This will include training in ecotourism, wildlife management and monitoring, bird and mammal surveys, wildlife veterinary health, and community conservation among others.

**Expected Accomplishments:**

- Provide training for at least 400 people in the communities in and around WCS project areas, provincial and national government personnel, university staff and students in the fields of rangeland management, veterinary science, national park management, wildlife monitoring and science, among others.

*Level of Effort (FY08): \$33,050*

#### **Activity 4.2 Conservation Study Travel Program**

Training courses are an excellent way to bring international best-practice methods to Afghanistan's environmental sector, but direct exposure to how other countries use these methods is important to enable Afghan professionals the opportunity to understand management and implementation in the conservation field. This activity will identify teams of Afghan government, university staff and community members for exchanges to other countries. It will then arrange for study tours for specific training through visits to sites where innovative, site-appropriate practices are being implemented. For one to four 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. It is expected that not only will team members bring new ideas and technical expertise back to Afghanistan, but through connections made in other countries this initiative will create an international network, as well as an intra-Afghanistan network, that will foster long-term opportunities for information sharing.

Planned study tours for 2008 are detailed below:

##### *Afghan Kyrgyz in Kyrgyzstan*

The Afghan Kyrgyz are a nomadic group that lives in the farthest reaches of Afghanistan's Pamir Mountains. They have been mostly forgotten by the government and survive in the Pamirs without access to schools, health clinics or other basic services. They are an integral component of conservation in the Wakhan/Pamir and WCS and the government must work with them in order to establish a transboundary or other protected area in the region. The Kyrgyz see no benefit to establishing a protected area in their "backyard" and have little knowledge of conservation in general. To build awareness and appreciation for conservation, to offer training and education, and to demonstrate benefits from protected areas, WCS proposes a study tour for 6-7 Kyrgyz community members to Kyrgyzstan where WCS and the International Snow Leopard Trust have community managed wildlife monitoring programs. The study tour will highlight an introduction to mountain ecology, the value of wildlife, the benefits from conservation and protected areas and will provide a similar lingual and cultural setting for a group of people who have never left their Afghan mountain environment.

##### *Society for Conservation GIS*

The SCGIS Scholarship provides for two weeks of intense training in GIS in addition to attendance at the largest international conference for GIS in the world. WCS will support

two members of the Ministry of Agriculture, NEPA and/or conservation NGOs to submit the application, develop a project and attend this conference, held annually in the US. If the members succeed in obtaining the \$10,000 scholarship, they also receive GIS software, textbooks and other materials that will help to develop GIS capacity when they return to Afghanistan. The only cost borne to WCS is airfare.

#### *Smithsonian Conservation GIS Training*

Specialized training in conservation GIS is essential to build capacity in NEPA and Ministry of Agriculture GIS staff to address issues related to wildlife management. There are two world-renowned courses offered by the Smithsonian in Washington DC that provide wildlife managers with hands-on experience for the collection of data, GIS analysis of the data, and map-making using the latest ESRI and ERDAS software. In addition, the Advanced GIS course will allow participants to use the Internet, ArcMap, ArcMap Spatial Analyst, ERDAS Imagine, Fragstats, and other spatial analysis programs to determine critical conservation areas for an endangered species, acquire satellite imagery to quantify land cover change and to map the extent of the remaining habitat, and to use landscape analysis to determine optimal landscape configurations for conserving the endangered species. At least one participant from the Ministry of Agriculture, NEPA, or other GIS professional will be sponsored by WCS to attend these courses.

#### *Band-e-Amir Protected Area Committee Training*

The Band-e-Amir Protected Area Committee was formed in accordance with the Environment Law and the Band-e-Amir Management Plan to manage the proposed national park. The Committee consists of individuals from the community and local government, including the Governor of Bamyan Province and they held their first meeting in September of 2007. None of the members of the committee have ever visited a national park or have experience in the implementation of ecotourism. The Committee will be responsible for approving tourism development activities in the national park and for its proper management. For this reason WCS proposes to take the members of BAPAC on a study tour to expose them to the variety of revenues available to communities living around national parks from tourism and park related services. Also, the tour will highlight principles of park management including law enforcement, community management, wildlife monitoring, and government coordination.

#### *Nuristan Community Conservation Training*

The shura of each village of the Waygal Valley of Nuristan have placed a ban on hunting as a result of WCS teams outreach, education and research in the area. Although security in other parts of Nuristan is challenging, the Waygal Valley is relatively secure and hosts a wide diversity of important and threatened species, such as markhor, leopard cat, leopard, Asiatic black bear and others. To develop awareness and vision for conservation and national park development in Nuristan community leaders, WCS proposes a tour to a neighboring country, where community organization and management is an integral

component of national parks.

#### *Wildlife & Livestock Disease Interface*

WCS will send a small group of veterinarians to better understand the links between wild animal and domestic livestock disease transfer, as this is especially important in an area like the Wakhan where livestock is plentiful, free-roaming into wild ungulate habitat, and carrying diseases shared between the two. This is a novel subject in Afghanistan and is not covered in traditional veterinary education in the country, therefore international training opportunities are required. Building capacity and awareness in this field will reduce the risk of disease transmission to wild ungulates (Marco Polo sheep, ibex and urial) – a potential source of revenue for the country both in term of future game-viewing tourism activities and possible trophy hunting development. It will also help improve the survival rate of livestock, raise revenues of people and in time contribute to poverty reduction. Finally, it will build capacity for the national effort of epidemiological surveillance and prophylactic activities, which can help to control a number of economically important diseases (eg FMD, PPR).

#### *International Grassland Conference*

In July 2008, the International Grassland Congress and the International Rangeland Congress will hold a joint meeting in Huhhot, China (Inner Mongolia). The International Grassland Congress promotes interchange of information on all aspects of natural and cultivated grasslands and forage crops for the benefit of mankind, including sustained development, food production and the maintenance of biodiversity. The Rangeland International Congress website stresses that rangeland occupies 50% of the world's land surface, is home to many indigenous communities, has varied ecosystems often characterized by multiple use upon which an important focus is the maintenance of the basic resource and the socio-economic outcomes. This is the first time that IGC and IRC have met together to allow an international exchange and discussion on the multi-function of grasslands and rangelands in a changing world. As such, it will be a significant milestone in the history of IGC and IRC, and in research and development of grasslands and rangelands. This is an excellent opportunity for 2 Afghan professionals to view multiple-use principles of rangeland use and build collaboration and dialogue with other government professionals and rangeland scientists across Asia.

## *Conservation Scholarships*

Almost all of the international staff working on the WCS program have achieved PhD level studies or other professional degrees. In building technical capacity, WCS is severely restricted by the lack of education available in Afghanistan beyond an undergraduate degree. For this reason, WCS plans to build scientific capacity in Afghans by investigating international opportunities for graduate and PhD study in fields related to wildlife conservation. Upon returning to Afghanistan, these individuals will be the future leaders of conservation within the country and will have the experience and expertise to contribute to the development and establishment of institutions managing natural resources in Afghanistan.

WCS will continue to fund Mr. Zalmai Moheb who is pursuing graduate studies in wildlife biology at Aligarh Muslim University in Aligarh, India. His Master's research will be focused on the Marco Polo sheep of the Pamirs and field work will take place in Afghanistan. This will be the first field research led, and hopefully published, by an Afghan national on the wildlife of Afghanistan.

Other scholarship programs, for example through Asian Institute of Technology or WCS' Graduate Fellowship Program will be pursued for exceptional members of universities, communities or government agencies in the fields of wildlife and conservation biology, forestry or rangeland science. Leveraging funding from this project will make candidates much more competitive for international scholarship opportunities.

### **Expected Accomplishments**

- Thirty-seven members of the government, universities, communities and conservation NGOs will become exposed to and receive training in park management, ecology, community conservation, GIS, and conservation biology through international study tour programs.

*Level of Effort (FY08): \$134,150*

### **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. In FY08, WCS will continue to 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 biology, agriculture 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 for further investment, including opportunities to obtain advanced degrees abroad.

The Wakhan Corridor and Pamir region hosts a human population of more than 12,000 and a livestock population several times this amount. However, there is only one trained veterinarian in the Lower Wakhan and he cannot service the entire region. In the last six months of 2007, WCS sponsored two Wakhi community members to attend the Dutch Committee for Afghanistan's (DCA) Para-Vet Training Course. As part of the sustainability and privatization agreement with DCA, WCS will be providing the initial start-up costs associated with establishing two Veterinary Field Units in the Wakhan. In addition to this, WCS will provide technical advice and further training to the nascent paravets to improve their ability to recognize potential risks and reduce likelihood of disease transmission between livestock and wild ungulate populations.

Community members of the Wakhan/Pamir will be trained in technical subjects, such as Marco Polo sheep monitoring, wildlife monitoring, and rangeland inventory to provide data throughout the year when WCS scientists cannot be in the field. This will allow us to build capacity within the community for conservation and scientific research, while at the same time collect crucial data about animal range and population.

### **Expected Accomplishments**

- WCS will train at least 15 government counterparts, university professors and graduate research assistants as part of the field training component. Each of the trainees will also be responsible for implementing a project after the field season that will build their professional autonomy and analytical skills.

*Level of Effort (FY08): \$13,000*

### **Activity 4.4 Public Diplomacy and Outreach**

The awareness of wildlife conservation issues in Afghanistan is quite low. WCS will continue to develop mass media, targeted outreach and educational campaigns to increase the level of awareness to specific groups and our key project areas, as well as the country as a whole.

In 2007, WCS translated a manual titled, *Wildlife Field Techniques and Conservation Training Manual*. This 286-page book describes with practical detail the methods for assessing populations of various wildlife species, data collection, writing management plans, managing national parks and many other conservation topics. It is the first book of its kind available in Dari and was originally written by WCS field biologist, Alan Rabinowitz. In 2008, WCS will print and distribute copies to the Ministry of Agriculture, NEPA, universities throughout the country and Save the Environment Afghanistan, among others.

With a national literacy rate of 28% (UNICEF), publishing posters and brochures is a

method for educating and raising awareness to a certain educated segment of the population in Afghanistan. However, radio programs reach almost every corner of the country, and are a common source of entertainment, news and information. WCS will work with NAI and other media organizations to develop content for the radio and will broadcast programming in key project areas, such as Bamyan, Nuristan and Badakhshan Provinces.

### **Expected Accomplishments**

- Thousands of people all over the country will be reached by WCS conservation messages through educational and awareness outreach in schools, radio, TV, government institutions, brochures, posters, magazine and newspaper articles and editorials.

*Level of Effort (FY08): \$16,400*

## **OBJECTIVE 5: OPERATIONS AND SECURITY**

**Level of Effort (FY08) (Total Operations): \$977,202**

Operations support all other project activities and permit the security and safety environment to enable WCS to operate in Afghanistan. Operational activities fall into five major divisions: (1) Security and medical expenses to be able to safely evacuate staff from remote locations; (2) Costs of maintaining an office and logistics costs of delivering teams into the field, including costs of rent, utilities, communications, supplies, books, printing, equipment, and maintenance; (3) Accommodation expenses; (4) Staff salaries; (5) Vehicles.

### **Operations 5.1 Security and Medical**

WCS will continue training for its staff (security/drivers) in IED and VBIED detection and avoidance, defensive driving, anti-surveillance operations, and driver training. WCS will provide refresher training for security staff in guard procedures, vehicle searches, personal searches, IED recognition, radio procedures, and emergency procedures; planning and procedures for contingency operations and quick reaction drills through CTG and Hart security companies. WCS will also provide first responder/first aid in remote location training for its field staff through Remote Medical Solutions Incorporated (RMSI). CTG will provide threat updates on a quarterly basis, and WCS continues to actively participate in the Afghan NGO Security Organization and receive detailed daily and weekly briefings. WCS has put together an operational plan and a security packet that will introduce staff to the security procedures. All new personnel are required to participate in indoctrination training focused on cultural awareness, mine awareness, and threat assessments. Hart security will be contracted to provide WCS with a Quick Reaction Force in case of emergencies.

WCS will continue to contract with RMSI to provide medical support and retrieval solutions in remote and hostile environments. As WCS teams work in areas that involve some risk (like Nuristan), or in areas that are extremely remote (Wakhan), RMSI will provide WCS with a country-wide medical evacuation service if one of its staff are injured and need to be evacuated. WCS has acquired personal locator beacons to assist staff location during search-and-rescue and medical evacuation exercises.

**Expected Accomplishments:**

- Continued developed of WCS staff that can respond to emergency or hostile conditions.
- Development of inherent capabilities to track, search, and rescue WCS staff in remote locations, stabilize them during transport, and evacuate them as necessary.
- Developing a common set of procedures and awareness for all individuals participating in our program.

**Level of Effort (FY08):** \$138,587

**Operations 5.2 Office, Logistics, and Communications**

*Operations 5.2.1 Office, Logistics, and Communications*

WCS will continue to maintain an office in Kabul as its base of operations, but may set up a secondary small office and guest house combination in Ishkashim. The Community Conservation office is sited in Kret in the Wakhan and serves as an educational center and base for community conservation efforts. The Ishkashim office would provide a gateway into the Wakhan from Tajikistan, a liaison to the provincial government nearby, and serve as a logistics hub for operating in the Wakhan. Communication systems through high frequency radio, satellite phones, and cell phones are necessary for maintaining safe operations in the field. It is anticipated that licensing of Codans through the Ministry of Communication will have been completed in 2007 Q4 and that these systems will be operational by Q1 of 2008.

*Operations 5.2.2. Guest house*

WCS provides accommodation for its consultants and its international staff on financial and security grounds, and as a matter of necessity for the conduct of business in Kabul. Notwithstanding this, WCS will continue to monitor the viability of maintaining this Guest House and may make application to USAID during 2008 to revert to alternative means of accommodation if it should appear that a cheaper alternative is available.

**Expected Accomplishments:**

- Maintenance of an office, field offices, and a guest house as necessary to support and carryout programmatic activities.
- WCS staff necessary to carryout programmatic activities securely and

productively.

**Level of Effort (FY08):** \$407,691

### **Operations 5.3 Vehicles**

WCS maintains three vehicles for field operations, and will supplement those vehicles with additional rentals as necessary to carry teams and equipment into the field, or for operations in Kabul. Alternatively, if necessary and cost beneficial, WCS may purchase a low profile (used or new), Toyota Hi-Ace minivan this year for use in Kabul to carry out programmatic operations in the city as its three vehicles will be deployed in the field for many months at a time. The purchase of the minivan would approximately equal the costs of rental of a van for one year. Application will be made to USAID to loan/rent an armoured vehicle level C or D if such vehicle is available for use mainly in Kabul or when security threats increase in areas of field activities.

#### **Expected Accomplishments:**

- Maintenance of sufficient transportation options to deliver WCS teams into the field in a safe and secure manner.

**Level of Effort (FY08):** \$37,000

### **Operations 5.4 Leadership and Staff**

These costs cover salary and benefits for key personnel and other office staff, a shared program manager in New York to assist with and liaison with New York programs, and programmatic contributions by the Assistant Asia Director.

**Level of Effort (FY08):** \$393,924

**Afghanistan Biodiversity Conservation Project  
USAID Performance Indicators & Milestones for FY08**

OBJECTIVES		INDICATORS	TASK PROGRESS (MILESTONES)					ANNUAL BENCHMARK	
Sub-Intermediate Result 5.1.3 Natural Resources Management Improvement			BASELINE FY08	Q1	Q2	Q3	Q4	YEAR 3	BENCHMARK
<b>OBJECTIVE 1: SURVEY AND MONITOR WILDLIFE SPECIES AND THE LANDSCAPE CONTEXT IN WHICH THEY ARE FOUND</b>	<b>INDICATOR 1.1: WILDLIFE ASSESSMENTS : (Number of hectares of proposed areas surveyed for birds and mammals in the Eastern Forests, Hazarajat Plateau and Wakhan)</b>	Surveys of birds and mammals in Band-e-Amir and Ajar	128,230 Hectares Surveyed during 2006; 189,500 Hectares surveyed during 2007	0% surveyed	Cica 40,000 ha surveyed in Band-e-Amir and Ajar Valley for birds and mammals	Cica 50,000 ha surveyed in Band-e-Amir and Ajar Valley for birds and mammals	0% surveyed	90,000 ha surveyed in Ajar Valley and Band-e-Amir for mammals and birds	Interim report on wildlife assessments
		Indicator 1.1.1 Marco Polo Sheep Conservation Research. Collect and extract DNA from fecal pellets from Big Pamir and Little Pamir regions for individual identification, population size estimation, geographic range,	96 samples in extraction stage	DNA extracted from 96 samples, 50 additional samples in extraction stage	Genotypes obtained from as many of 146 samples as possible.	Additional 100 samples obtained.	Genotypes obtained from as many of 100 new samples as possible	246 samples from Afghan Marco Polo sheep analyzed	Reports on population size, limitations to range expansion, and genetic connectivity (see below)
		Indicator 1.1.2 Marco Polo Sheep Conservation Research. Collect and analyze habitat use/non-use information for Marco Polo sheep in the Big Pamir, and produce preliminary report on limiting factors.	Summer surveys during 2006/2007, winter survey during 2007	Preliminary analyses of winter 2007 data	1 month of field surveys of Marco Polo sheep and livestock	2 months of field surveys of Marco Polo and livestock	GIS and statistical analyses of factors related to Marco Polo sheep presence in the Big Pamir	GIS and statistical analyses of factors related to Marco Polo sheep presence in the Big Pamir	Final report on factors limiting range distribution and population size of Marco Polo sheep in the Big Pamir
		Indicator 1.1.3 Marco Polo Sheep Conservation Research. Produce estimate of abundance for Marco Polo sheep in the Big Pamir region	Direct observation index only	Preliminary analyses of direct observations; structuring data from Program MARK	1 month of field surveys of Marco Polo sheep	2 months of field surveys of Marco Polo sheep	Statistically valid estimate using program MARK	Statistically valid estimate using program MARK	Report comparing population estimate with earlier indices of population abundance
		Indicator 1.1.4 Marco Polo Sheep Conservation. Assess population structure of Marco Polo sheep in Greater Pamir region.	Preliminary raw data collected	None	Genotypes on up to 146 individuals	Genotypes on up to 246 individuals	Analyses of $F_{st}$ , historic genetic bottleneck, $N_e$ , gene flow, putative geographic correlates to gene flow	Analyses of $F_{st}$ , historic genetic bottleneck, $N_e$ , gene flow, putative geographic correlates to gene flow	Report on geographic structure of Greater Pamir Marco Polo Sheep with recommendations for conservation actions
	<b>INDICATOR 1.2 : RANGELAND ASSESSMENTS (Number of hectares of rangeland in proposed protected areas surveyed)</b>		37,432 ha rangeland surveyed in 2006; 77,500 ha surveyed in 2007	0% surveyed	46,993 Ha surveyed in Little Pamir, Waghir Valley and Big Pamir	63,432 Ha surveyed in Little Pamir and Hazarajat	0% surveyed. Continued identification of voucher specimens; Completion of rangelands data base; Collection of plant community information for corellation with remotely-sensed vegetation data. Draft	110,424 Ha of rangeland surveyed	Final report that prioritizes threats to rangelands and wildlife, completion of identification guide to rageland species. Completion of GIS data base.

<p><b>INDICATOR 1.3: ECOSYSTEM HEALTH</b></p>	<p>Serological analysis of blood samples taken in FY07 (10%); Continued range use study in Big Pamir with gps units (30%); Supported of new paraveterinarians (50%) Surveys of health status in Kyrgyz of Little Pamir (70%); study of food requirements sheep (80%); investigation of Ajar / Hazarajat Plateau (90%); Development of disease database, reporting, and disease transmission models (100%)</p>	<p>Documentation of range use of livestock in Big Pamir and initial evaluation of risk of disease transmission to and from wildlife completed and used to develop FY08 research. Paravets will be deployed in January 2008 and actively trained in disease monitoring techniques at wildlife/livestock interface.</p>	<p>Serological screening of blood samples collected in FY07 for a range of diseases, and first visit to Wakhis of Big Pamir (20%)</p>	<p>Second visit to Wakhis of Big Pamir, gps units on yaks, and support of new paravets (50%)</p>	<p>Continue support new paravets, survey of livestock/wildlife health in Kyrgyz of Little Pamir and Wakhjir valley, study livestock food requirements (80%)</p>	<p>Survey of livestock health in Ajar valley, Hazarajat Plateau (90%); Development of disease database and transmission models (100%)</p>	<p>Analysis of health status, potential threats to wildlife, and input of data into GIS</p>	<p>Interim report and creation of zoonotic disease database delineating links between livestock and wildlife.</p>
<p><b>ACTIVITY 1.4: LANDSCAPE ANALYSES AND GIS PROGRAM (Acquisition and analysis of remotely sensed and GIS data completed for protected areas)</b></p>	<p>Wakhan feature datasets, Boundaries of Protected Areas, water bodies, roads, settlements (70% completed)</p> <p>Eastern Forest Complex(EFC) Change Detection 60% (30% is data acquisition, 15% imageries preprocessing &amp; 15% draft change detection).</p> <p>Hazarajat Plateau feature datasets &amp; imageries and DEM 70% (redefining PA boundaries, lakes, protection zones)</p>	<p>Standardizing map outputs/layers; Manage data layers, document datasets to standard GIS format in terms of projection and datum; Aster &amp; Landsat 2000s for Wakhan,</p>	<p>Display acquired &amp; analysed satellite images for rangeland assessment using ENVI/ERDAS Aster &amp; Landsat 2000s for Wakhan, Acquired Data Elevation Model (DEM) for all WCS AOIs (30m DEM for Hazarajat) and 90 m SRTM DEM for Wakhan and EFC. Refining protected area boundaries for Band-e-Amir and Ajar Valley</p>	<p>Satellite imageries for all time periods for Eastern Forest Complex (EFC) Landsat MSS 1970s, TM1990s, ETM 2000s and Aster &amp; Spot for 2004-2007. Acquired Data Elevation Model (DEM) for all WCS AOIs (30m DEM for Hazarajat) and 90 m SRTM DEM for Wakhan and EFC. Refining protected area boundaries for Band-e-Amir and Ajar Valley</p>	<p>Using satellite imagery to cover change detection for Nuristan and extended to whole EFC. Refining protected area boundaries for Band-e-Amir and Ajar Valley</p>	<p>Acquisition and analysis of GIS and remotely sensed data for 100% of protected areas</p>	<p>Report and GIS products</p>	

**Afghanistan Biodiversity Conservation Project  
USAID Performance Indicators & Milestones for FY08**

OBJECTIVES	INDICATORS	TASK PROGRESS (MILESTONES)				ANNUAL BENCHMARK	MOV		
Sub-Intermediate Result 5.1.3 Natural Resources Management Improvement		BASELINE FY08	Q1	Q2	Q3	Q4	YEAR 3	BENCHMARK	Means of Verification
	<b>INDICATOR 2.1: PARKS AND PROTECTED AREAS (Development of a Transboundary Peace Park between Afghanistan, Pakistan, Tajikistan and 2nd and 3rd Conference.)</b>	Initial determinations on appropriate protected area status and proposed boundaries for parks in the Hazarajat Plateau (Ajar Valley and Band-e-Amir National Park), Wakhan (Big Pamir, Little Pamir, and Waghijr Valley), and Nuristan; Draft preliminary Management Plan for Band-e-Amir completed. World Heritage Site nomination papers drafted. Initial consultations with Tajikistan, China, Pakistan and Afghanistan completed on the need for inter-country dialogue on a proposed trans boundary protected area in the Pamirs.	Submit draft Framework Agreement for Transboundary Protected Area for review and dialogue between countries; Approval of preliminary Management Plan for Band-e-Amir; Completion of 2nd draft of preliminary Management Plan for Ajar Valley.	Hold 2nd Transboundary Protected Area Conference in Dushanbe, Tajikistan; Submission of Preliminary Management Plan for Band-e-Amir to NEPA and approval as a Provisional National Park. Consultation on draft preliminary Management Plan for Ajar Valley	Consultation on draft provisional Management Plan for Ajar Valley, World Heritage Site nominations papers submitted to UNESCO (subj to Afg Govt approval)	Hold 3rd Transboundary Protected Area Conference, possibly in Pakistan	Continued collection of data and synthesis of existing data; Coordination of Afghan interagency and NGO's for the creation of a management plan based on analysis of collected biological and socioecological data to update existing protected area boundaries; Holding of 2nd and 3rd Trans Boundary Protected Area Workshop for Marco Polo Sheep.	Two provisional sets of management plans approved. At least one (possibly two) provisional protected areas legally recognized. World Heritage Site Nomination papers submitted to UNESCO for review. Two completed workshops on Trans Boundary cooperation for the protection of Marco Polo sheep.	Approved plans. Approved Provisional Protected Areas. Acknowledgement of receipt of World Heritage Site nomination papers by UNESCO. Second & third Transboundary Conference held.
	<b>INDICATOR 2.2 ANALYZE &amp; DRAFT LEGISLATION (Continued development of national level legislation as need indicated by GoA. Creation of legal instruments for local communities to engage in resource management. Continued mentorship for GOA on environmental laws and treaties)</b>	Review completed on international best practice recommendation for improvement of environmental policies and legislation; Drafting of Forestry, Rangeland, Wildlife Conservation and Hunting laws and Protected Area Regulations completed.	Continued work with partner organizations on all laws drafted prior on as needed basis, drafting of framework agreement for transboundary protected area (25%)	Draft legal instruments for use by local communities in Wakhan and Band-i-Amir (50%); Assistance to parliament as requested (60%)	Final publication and distribution of Compendium (80%)	Completion of interim report to Afghan government (100%)	Draft legislation on Forestry, Rangelands, Wildlife Conservation and Hunting, Protected Areas;	Legal instruments for local communities submitted to appropriate for a for approval; Framework Agreement for Transboundary Protected Area submitted to governments for approval	Completion of Instruments; Updated Environmental law practice guide.
	<b>INDICATOR 2.3: ECOSYSTEM SERVICES VALUATION (Survey completion, Data analysis)</b>	Completion of analysis of the pre-test data and revision of the questionnaire; started the main survey of 250 households in three village in Nuristan	Completion of the main survey of 250 households in Nuristan (25%)	Data coding (40%); Initial analysis of the main survey data (50%)	Completion of analyzing the main survey data (75%)	Completion of final report (100%)	Conduct household surveys in Nurisatan; Analyze the data; Final report	Survey completion and data analysis	Survey data and analysis

**Afghanistan Biodiversity Conservation Project  
USAID Performance Indicators & Milestones for FY08**

OBJECTIVES	INDICATORS	TASK PROGRESS (MILESTONES)				ANNUAL BENCHMARK	MOV			
Sub-Intermediate Result 5.1.3 Natural Resources Management Improvement		BASELINE FY08	Q1	Q2	Q3	Q4	YEAR 3	BENCHMARK	Means of Verification	
<b>OBJECTIVE 3: FACILITATE COMMUNITY- BASED NATURAL RESOURCE MANAGEMENT ACROSS THE LANDSCAPE</b>	<b>INDICATOR 3.1: COMMUNITY CONSERVATION COMMITTEES / PROTECTED AREA COMMITTEES (Percentage of Wakhi and Kyrgyz communities represented by recognised Community Conservation Committees)</b>	Conduct socio-economic survey work in the Big and Little Pamirs among the Krygiz and Wakhi; conduct conservation awareness workshops and environmental education programs; establish a conservation association that includes all communities in Wakhan to manage natural resources without detriment to conservation goals.	Surveyed 10 of 11 outstanding Wakhi summer pasture settlements in Little Pamir; surveyed historic and cultural landscape in Wakhan and Little Pamir; began survey of Wakhi household fuel wood usage; began recording existing community natural resource rules; and began pasture usage and household survey of Kyrgyz in Little Pamir. Worked with IUCN & WWF (Pakistan) to adapt Wakhi environmental and conservation education material for Wakhan; conducted environmental education workshops for Wakhan school teachers and established environmental education committees in 6 of 13 schools in Wakhan in coordination with District and Provincial education officials; developed materials; began teacher-supervised studies of Wakhan environmental factors by students; and held community-wide awareness workshops on protected areas. Reviewed existing Environmental Law, draft Rangeland and Forestry Laws and Protected Area Regulations; met with district head of village councils (shuras), district religious leader and village council presidents on conservation governance.	Record village boundaries using GPS (20%); survey village fuel wood and fodder usage (20%); Kyrgyz household and pasture surveys in Little Pamir (20%); continue school environmental education program (20%); complete ASMED application (100%).	Continue village boundary survey with GPS (40%); continue village fuel wood and fodder survey (40%); Kyrgyz household and pasture surveys in Little Pamir (40%); prepare report on school environmental education program (50%); teacher training for environmental education program in all 13 schools in Wakhan (100%); establish organizational structure for Wakhan Conservation Association (50%); conduct training on community-based wildlife monitoring and census for buffer zone villages (50%).	Record village boundaries using GPS (60%); survey village fuel wood and fodder usage (60%); re-survey household socio-economic status against 2006 baseline (50%); Kyrgyz household and pasture survey in Little Pamir (60%); establish environmental education program in district schools (100%); training for WCA officers in management skills (50%); community wildlife conservators trained and working with WCS teams (50%).	Complete village boundary GPS surveys (100%); complete fuel wood and fodder usage survey (100%); complete diachronic household socio-economic survey (100%); Kyrgyz household and pasture survey in Little Pamir (80%); train officers of WCA (100%); begin second round of ASMED funding application (50%); village wildlife conservators visit trans-boundary buffer zone communities in Pakistan (100%); draft final report (75%).	Analyze Wakhi and Kyrgyz survey data; analyze school environmental education program; create Wakhan Conservation Association; train village wildlife conservators; develop funding mechanism for sustainability of WCA.	GPS-referenced village boundaries; socio-economic survey of Wakhi and Kyrgyz household and pasture resource usage; environmental education programs for students led by trained teachers in all Wakhan schools; development of Wakhi capacity for environmental monitoring and wildlife census; establishment of trans-boundary linkages between Wakhi population; district and provincial capacity for community-based conservation management; WCA established with by-laws including mechanism for funding that allows distribution of income.	number of village boundaries mapped in Wakhan; number of households surveyed; number of trained teachers; number of schools participating; number of students participating; number of villages in WCA; number of trained officials in WCA; number of persons serving as village wildlife conservators
	<b>INDICATOR 3.2: ECOTOURISM ENTERPRISE (Number of people with increased economic benefits derived from ecotourism enterprises as a result of USG assistance?)</b>	Cash derived by Community during 2006 from ecotourism and conservation activities = USD 46,062(Wakhan) of which USD19,346 was directly attributed to WCS activities. (Info source AKDN organisation) Cash derived by community during 2007 estimated at \$145,000 of which \$45,000 was attributable to WCS activities.	Inform 50 international tour operators about Wakhan's tourism potential. Inform 65 member countries of the International Mountaineering and Climbing Federation (UIAA) about mountaineering opportunities in Wakhan.	Facilitate formation of one private-sector tourism association. Facilitate Wakhan delegation to attend one regional cultural festival. Hold basic- and advanced-level guide and cook training course in Wakhan.	Facilitate government delegation attending one regional tourism trade fair. Complete production of ecotourism informational material. Launch government tourism website.	Facilitate government delegation attending one international tourism trade fair.	Develop ecotourism guidelines accepted by Afghan Tourism Association (TAA), the Ministry of Culture and Tourism, and the Afghan Tourism Organization (ATO) supporting ecotourism partnerships with local inhabitants and raising awareness among tourists and private agencies for Afghanistan.	Interim reports on progress of promotional efforts and on production of informational materials	International mailings to tour operators and UIAA member countries, training course, informational materials, trade fair participation, regional cultural fair participation, website launch.	

**Afghanistan Biodiversity Conservation Project  
USAID Performance Indicators & Milestones for FY08**

OBJECTIVES	INDICATORS	TASKS	TASK PROGRESS (MILESTONES)				ANNUAL BENCHMARK	MOV		
Sub-Intermediate Result 5.1.3 Natural Resources Management Improvement			BASELINE FY08	Q1	Q2	Q3	Q4	YEAR 3	BENCHMARK	Means of Verification
<b>OBJECTIVE 4: TRAINING AND CAPACITY BUILDING</b>	<b>INDICATOR 4.1 and COMMON INDICATOR 204: NUMBER OF PEOPLE TRAINED IN NATURAL RESOURCES MANAGEMENT AND CONSERVATION AS A RESULT OF USG ASSISTANCE</b>	Identify appropriate international experts in wildlife, forestry, rangelands, and protected area management and conservation to teach short courses in these subjects in Afghanistan to university staff and students, NGO workers, and government agency officials; Arrange and implement group study tours and intensive training courses for Afghans working in the environmental sector to other countries for specific training through visits to sites where innovative, site-appropriate practices are being implemented; Practical training and mentoring in modern scientific methodologies for Afghan scientists and government officials in the field.	398 people trained by WCS in 2007 in a wide variety of topics related to biodiversity conservation. Have developed a core group of 20+ individuals from academia and government who continue to receive intensive training, scholarship, research opportunities and practical field-based training and mentorship. This will be continued into FY08.	50 people trained = 11%	150 people trained = 33%	200 people trained = 44%	55 people trained = 12%	Evaluating/Testing Training Materials; Continue training courses; Revise and adapt training courses as necessary, including develop new training materials.	Evaluation and adaptation of training and capacity building program; Continued training of 10-20 people trained in-depth through long-term practical field training, mentorship, and foreign training opportunities; One hundred people trained through intensive short courses and study tours (142); Three hundred individuals (300) trained at an introductory level in different scientific disciplines necessary for managing natural resources; Three people provided Master's or other professional studies	Training courses offered; Participant Lists; Total number trained = 455
	<b>INDICATOR 4.4: PUBLIC DIPLOMACY AND CONSERVATION EDUCATION INITIATIVE (Number of individuals reached from public diplomacy &amp; conservation education initiative)</b>	WCS will continue to reach out through its education and public diplomacy campaigns to local communities in Ajar Valley and Band-e-Amir, Wakhan, and Nuristan to promote biodiversity conservation.	In FY 2007, supplemental materials created to raise awareness of Afghanistan's wildlife in schools in Nuristan, Wakhan and Bamyan; awareness campaign directly targeting NGO and expatriate community to stop illegal trade in wildlife products	Wildlife Field Techniques Manual printed and distributed	Develop radio/oral communication programs	Radio/oral communication programming broadcast and use in project sites and other areas of Afghanistan	Interim Report (100%)	Utilize educational materials in field sites and schools; creation of media programs on radio; evaluation, adaptation, and continuation of advertising campaigns	Interim Report detailing the development and use of the materials in field sites and schools, as well as the types of media programs developed and the potential number of individuals reached through media campaigns. Report will also review how the materials have been received and how they will be adapted.	Creation of media and educational materials

**Afghanistan Biodiversity Conservation Project  
USAID Performance Indicators & Milestones for FY08**

OBJECTIVES	INDICATORS		TASK PROGRESS (MILESTONES)				ANNUAL BENCHMARK	MOV		
Sub-Intermediate Result 5.1.3 Natural Resources Management Improvement			BASELINE FY08	Q1	Q2	Q3	Q4	YEAR 3	BENCHMARK	Means of Verification
USAID COMMON BIODIVERSITY INDICATORS	<p><b>COMMON INDICATOR 203</b> Number of people with increased economic benefits derived from sustainable natural resources management and conservation as a result of USG assistance.</p>		Will be established retroactively during Q4 survey	0 people	15 (direct) 150 (indirect) in Wakhan	1650 in Wakhan (indirect)	Average estimated income in 2007 and 2008 in 30 families from 10 Band-e-Amir villages	100%	1819 Persons in Wakhan and in Hazarajat Region 30 families (direct and indirect) (Estimated income increases in Band-e-Amir villages from 2007 to end of 2008)	Surveys and ancillary source documents which can confirm increased financial benefit from resource management and conservation as result of USG assistance. Survey results of 30 families at band-e-Amir
	COMMON INDICATOR 204	Listed separately as Indicator 4.1								
	<p><b>COMMON INDICATOR 194</b> Number of areas under community management</p>		Wakhan under Community management Committees in the form of CDCs ; Protected area committee set up at Band-e-Amir	0 Areas. Continued work on rangelands law and protected area regulations with partner organizations to increase community management of natural resources. WCA formation through ASMED grant	By-laws of WCA adopted; continue developing environmental education capacity of Wakhan schools; continue capacity building for monitoring (survey) and evaluation of villages	Environmental education training and teaching capacity in Wakhan District schools; capacity building for WCA; continued capacity building in wildlife census and conservation monitoring and reporting. First meeting Ajar Valley Protected Area Committee	WCA officers trained and functioning; sustainable community conservation association for Wakhan district established; second-round funding process for support started; schools carrying out environmental education; village wildlife and conservation census and monitoring ongoing; intra and international support linkages established	Creation of Wakhan Conservation Association	All of Wakhan district under community management. Protected area committees functioning at both Band-e-Amir and Ajar Valley	Creation of functioning WCA; trained environmental education teachers capable of training new teachers in District schools; trained village wildlife conservators capable of training new conservators; successful application for funding and support by WCA. Minutes of protected areas committee meetings.

**WILDLIFE CONSERVATION SOCIETY****2008 (Jan 14, 2008 - Jan 13, 2009)**

Budget by Activity (version 112007)

**OBJECTIVE 1: SURVEY AND MONITOR WILDLIFE SPECIES AND THE LANDSCAPE CONTEXT IN WHICH THEY ARE FOUND****1.1 Wakhan Wildlife Surveys**

<i>Activity</i>	<i>Project Code</i>		<b>Project Costs</b>
<i>Wakhan Wildlife Surveys</i>	<i>2AF04</i>	Repeat Year One & Two surveys of Big Pamir, Little Pamir, Waghjir Valley to determine trends; other areas as time permits	40,000
<i>International Flights</i>		3 International RT Flights@700/trip	2,100
<i>Subtotal</i>			42,100
<i>Wildlife Survey Manager</i>	<i>2AF04</i>	9 months@3000/mo	27,000
<i>Wildlife Survey Assistants</i>	<i>2AF04</i>	2 Field Scientists @ 750/month x 4 months	6,000
<i>Ornithology Survey</i>		2 Senior Researchers@7K/month@3 Months	42,000
<i>Int'l Flights</i>		2 International RT Flights	4,500
<i>Subtotal</i>			46,500
<i>1.1 Subtotal</i>			<b>121,600</b>

**1.2 Marco Polo Sheep Initiative**

<i>Marco Polo Sheep Initiative</i>	<i>2AF05</i>	Capture and satellite collar up to 10 Marco Polo sheep in Little Pamir; Continue taking samples for genetics and disease analyses; perform behavioral observations	57,037
<i>International Flights</i>		4 International RT Flights@3,000/trip	12,000
<i>Subtotal</i>			69,037
<i>Marco Polo Sheep Capture Manager</i>	<i>2AF05</i>	2.5 months@10,000/mo	25,000
<i>Marco Polo Sheep Capture Assistant</i>	<i>2AF05</i>	12 months	55,207
<i>1.2 Subtotal</i>			<b>149,244</b>

### 1.3 Rangeland Assessments

<i>Activity</i>	<i>Project Code</i>		<b>Project Costs</b>
<i>Assessment of Rangelands in the Wakhan</i>	2AF06	Repeat Year One & Two surveys of Big Pamir, Little Pamir, Waghjir Valley to determine trends; other areas as time permits	15,000
<i>Int'l Flights</i>		3 International RT Flights at 3,000 per trip	9,000
<i>Subtotal</i>			24,000
<i>Rangeland Assessment Manager</i>	2AF06	5 months@10,000/mo	50,000
<i>Rangeland Assessment Assistants</i>	2AF06	2 Assistants@10 months@908/month (10% increase)	18,160
<i>1.3 Subtotal</i>			<b>92,160</b>

### 1.4 Health Assessment of Livestock and Marco Polo Sheep

<i>Activity</i>	<i>Project Code</i>		<b>Project Costs</b>
<i>Health Assessment of Livestock</i>	2AF07	Perform a health assessment of livestock in remaining areas of Wakhan	34,500
<i>International Flights</i>		3 International RT Flights	8,000
<i>Subtotal</i>			42,500
<i>Health Project Manager</i>	2AF07	6 months@11,025/mo	66,150
<i>1.4 Subtotal</i>			<b>108,650</b>

### 1.5 Health Training

<i>Health Training</i>	2AF07	Conduct community based livestock health training in the Waghjir	10,000
<i>1.5 Subtotal</i>			<b>10,000</b>

### 1.6 Landscape Analyses and GIS Program

<i>Assessment and Creation of Landscape Analyses</i>	2AF14	Combine socioeconomic, rangeland, livestock, disease, wildlife, and Marco Polo sheep data into GIS layers; analyze for threats assessments, opportunities; inform management plans	5,000
<i>GIS Laboratory</i>	2AF14	Software licenses 1000, imagery@5000, training@2000	8,000
<i>International Flights</i>		3 International RT Flights at 2,000 per trip	6,000
<i>Subtotal</i>			14,000
<i>WCS GIS Technical Expert</i>	2AF14	20% of time	22,050
<i>GIS Kabul Staff</i>	2AF14	12 mo@\$1,815/mo	19,812
<i>1.6 Subtotal</i>			<b>60,862</b>

## OBJECTIVE 2: STRENGTHENING LAWS, POLICIES, AND INSTITUTIONS

### 2.1 Update Wakhan Protected Areas

<i>Activity</i>	<i>Project Code</i>		<b>Project Costs</b>
<i>Big Pamir PA Designation</i>	<i>2AF10</i>	Complete management plan for Big Pamir Wildlife Reserve; present plan to government for acceptance and implementation	5,000
<i>Little Pamir PA Designation</i>	<i>2AF10</i>	Develop management plan for Little Pamir; host workshop to present plan to government and stakeholders	5,000
<i>Waghjir PA Designation</i>	<i>2AF10</i>	Develop management plan for Waghjir PA; host workshop to present plan to government and stakeholders	10,000
<i>Wakhan Logistics Dir &amp; Krygiz Liason</i>	<i>2AF10</i>	Faciliates Field Logistics in Pamir Region / Mountaineering and Liason with Krygiz Communities (Stipend)	17,500
<i>2.1 Subtotal</i>			<i>37,500</i>

### 2.2 Transboundary Peace Park Development

<i>Activity</i>	<i>Project Code</i>		<b>Project Costs</b>
<i>Peace Park Database</i>	<i>2AF10</i>	Develop proposal to all relevant stakeholders, including governments of Afghanistan, Pakistan, Tajikistan, and China	5,000
<i>Peace Park Workshops</i>	<i>2AF10</i>	Hold transboundary four-country peace park workshop to discuss needs, opportunities; develop working group	65,000
<i>Int'l Flights</i>		49 Int'l Flights	34,500
<i>Subtotal</i>			<i>99,500</i>
<i>Manager</i>	<i>2AF10</i>	3 months @ 10,000/mo	30,000
<i>WCS Director of Science</i>	<i>2AF10</i>	5% of time	7,718
<i>2.2 Subtotal</i>			<i>142,218</i>

### 2.3 Central Hazarajat Plateau Conservation Initiatives

<i>Activity</i>	<i>Project Code</i>		<b>Project Costs</b>
<i>Bande Amir Assessment</i>	2AF02	Complete management plan for Band-e-Amir National Park; present plan to government for acceptance and implementation	4,000
<i>Ajar Valley Assessment</i>	2AF02	Complete management plan for Ajar Valley Wildlife Sanctuary; present plan to government and local stakeholders for acceptance and implementation	12,000
<i>Central Hazarat Project Manager</i>	2AF02	4 months@11,025/mo=44,100; 6 months@11,025/mo=66,150	66,150
<i>Central Hazarat Project Assistant</i>	2AF02	Assistant for 12 months@1750/mo	21,000
<i>International Flights</i>		3 Int'l Flights@3,000 per trip	9,000

*2.3 Subtotal*

*112,150*

### 2.4 Eastern Forests Complex Initiative

<i>Activity</i>	<i>Project Code</i>		<b>Project Costs</b>
<i>Eastern Forests Assessment</i>	2AF08	If feasible, continue assessments of forests and wildlife in southeast; develop recommendations to government and local communities for sustainable management	10,570
<i>Eastern Forest Field Biologists</i>	2AF08	4 x 12 months @750/mo	36,000
<i>Wildlife Trade Surveys</i>	2AF08	Continue studies of wildlife trade	11,750
<i>Wildlife Trade Survey Team</i>	2AF08	3 x 5 months @750/mo	11,250

*2.4 Subtotal*

*69,570*

## 2.5 Ranger Training

<i>Protected Area Ranger Training</i>	<i>2AF11</i>	Hold workshops and courses to train protected area rangers in navigation skills, wildlife identification, data collection, anti-poaching methods; develop materials for study; take ranger candidates into the field for scientific training	20,000
<i>Int'l Flights</i>		1 Int'l RT Flight @2,000 per trip; 1 Int'l RT Flight @\$3000 per trip	5,000
<i>Subtotal</i>			25,000
<i>Community Guard/Park Ranger Training Manager</i>	<i>2AF11</i>	2 months@11,025/mo	22,050
<i>Community Guard/Park Ranger Training Assistants</i>	<i>2AF11</i>	3 Assistants @ 6 months@825/mo	14,850
<i>2.5 Subtotal</i>			<i>61,900</i>

## 2.6 Policies and Legislation Review

<i>Activity</i>	<i>Project Code</i>		<b>Project Costs</b>
<i>Legislative and Regulatory Review</i>	<i>2AF09</i>	Work with the Government of Afghanistan to draft and approve recommended policies and legislation	5,000
<i>International Flights</i>		2 Int'l Flights@3,00 per trip	6,000
<i>Subtotal</i>			11,000
<i>Legislative Review Expert</i>	<i>2AF09</i>	4 months@\$10,000/month	40,000
<i>2.6 Subtotal</i>			<i>51,000</i>

## 2.7 Environmental Services Valuation

<i>Environmental Services Valuation</i>	<i>2AF13</i>	Complete collection and interpretation of data to determine potential benefits and costs of various management schemes at each project site	5,000
<i>International Flights</i>		2 Int'l Flights@3,000 per trip	6,000
<i>Subtotal</i>			11,000
<i>Environmental Services Valuation Consultant</i>	<i>2AF13</i>	Stipend	21,600
<i>Sustainable Finance Consultants</i>	<i>2AF13</i>	2 consultants@5,513/mo x 1 month	11,026
<i>2.7 Subtotal</i>			<i>43,626</i>

**OBJECTIVE 3: FACILITATE COMMUNITY-BASED NATURAL RESOURCE MANAGEMENT ACROSS THE LANDSCAPE**

**3.1 Socio-Economic Surveys**

<i>Activity</i>	<i>Project Code</i>		<b>Project Costs</b>
<i>Socio-economic surveys</i>	2AF03	Complete detailed socio-economic surveys for other areas of Wakhan	12,500

**3.2 Community Conservation Education**

<i>Community Conservation Education</i>	2AF03	Complete conservation education initiative throughout Wakhan region	17,500
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**3.3 Community Conservation Committees**

<i>Community Conservation Committees</i>	2AF03	Monitor conservation committee activities; develop management plans for communities	10,000
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**3.4 EcoTourism Initiative**

<i>Community Conservation Committees</i>	2AF03	Develop an ecotourism action plan for the Wakhan; continue guide training.	12,500
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**STAFF (Apportioned among all projects evenly)**

<i>Community Conservation Manager</i>	2AF03	2 Managers for 3 months@7,500/mo	45,000
<i>Community Conservation Field Manager</i>	2AF03	One Manager @ 1,815/month, 12 months	21,780
<i>International Flights</i>	2AF03	4 International RT Flights at 3,000 per trip; 3 Int'l RT Flights at 600 per trip	13,800

*Objective 3 Subtotal*

133,080

## OBJECTIVE 4: TRAINING AND CAPACITY BUILDING

### 4.1 Afghanistan Training Courses

<i>Activity</i>	<i>Project Code</i>		<b>Project Costs</b>
<i>Afghanistan Training Courses</i>	2AF12	Arrange for visits by experts in wildlife biology, forestry, and conservation to teach short courses in Afghanistan to university, NGO, and government staff	29,050
<i>International Flights</i>		2 flights@\$3,000 per trip	6,000
<i>Subtotal</i>			35,050

### 4.2 Conservation Study Travel Program

<i>Conservation Exchanges</i>	2AF12	Continue to provide exchanges for Afghani personnel to other countries	77,650
<i>International Flights</i>		43 flights	56,500
<i>Subtotal</i>			134,150

### 4.3 Field Training and Long-term Capacity Building

<i>Field Training and Long-term Capacity Building</i>	2AF12	Conduct practical field training for government counterparts and others. Build capacity throughout the year by working on small projects.	13,000
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### 4.4 Public Diplomacy and Conservation Education Initiative

<i>Public Diplomacy &amp; Conservation Ethics Initiative</i>	2AF12	Develop and promote conservation through the public media; Creation and development of a conservation education curriculum and program.	16,400
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### STAFF (Allocated Equally Among All Programs)

<i>Training and Capacity Manager</i>	2AF12	Salary 6 mo @ 9,000/mo	54,000
<i>Training and Capacity Officer</i>	2AF12	12 mo @ 1,000/mo	12,000
<i>International Flights</i>		2 flights@\$3,000 per trip	6,000
<i>Objective 4 Subtotal</i>			270,600

## OPERATIONS AND PROGRAM SUPPORT

These costs are normally apportioned among all the programs above (e.g., vehicles) but are separated for convenience below.

### 5.1 Security

<i>Activity</i>	<i>Project Code</i>		<b>Project Costs</b>
<i>Security &amp; Medical</i>	<i>2AF01</i>	Training, supplies, supervision, and logistics planning.	60,000
<i>Evacuation Plan</i>	<i>2AF01</i>	Local and international transport; medical and security evacuation	40,000
<i>Insurance</i>	<i>2AF01</i>		38,587
<i>5.1 Subtotal</i>			<i>138,587</i>

### 5.2 Office, Communications, and Local Staff Costs

<i>Office, Guesthouse, and Equipment</i>	<i>2AF01</i>	Rent@118,000, utilities@6,000, phone/internet@20,000, Supplies@2,000, books/journals@1,000, report printing@6,000, Renovations and repair@5,000	158,000
<i>Kabul Office Staff</i>	<i>2AF01</i>	Office Manager@17,500; Finance Manager@22,667; Field Coordinator@14,706; Administrative Officer@11,040; Translator@9,350; Drivers@20,800; Guard Staff@72,800; House Staff@19,100; Stock Controller@5,350	193,313
<i>Operations - Micellaneous</i>	<i>2AF01</i>	Operations and miscellaneous	10,778
<i>International Flights</i>		22 flights	45,600
<i>Subtotal</i>			<i>56,378</i>
<i>5.2 Subtotal</i>			<i>407,691</i>

### 5.3 Vehicles

<i>Vehicles</i>	<i>2AF01</i>	1 pickup truck	25,000
<i>Fuels &amp; Repairs</i>	<i>2AF01</i>	Fuel and Repairs	12,000
<i>5.3 Subtotal</i>			<i>37,000</i>

## 5.4 Leadership

<i>Activity</i>	<b>Year 3</b>	<b>Project Costs</b>
<i>Project Director</i>	Salary	91,518
	Benefits(37%)	33,862
<i>Subtotal</i>		125,380
<i>Deputy Director</i>	Salary	89,781
	and Benefits (37%)	33,219
<i>Subtotal</i>		123,000
<i>Techincal Coordinator</i>	Salary	72,993
	and Benefits (37%)	27,007
<i>Subtotal</i>		100,000
<i>NY-based Program Officer</i>	Salary	13,125
	Benefits(37%)	4,856
<i>Subtotal</i>		17,981
<i>WCS Ass't Asia Director/Project Supervisor</i>	Salary	20,119
	Benefits(37%)	7,444
<i>Subtotal</i>		27,563
<i>5.4 Subtotal</i>		393,924

<i>Direct cost total</i>	<b>2,441,362</b>
<i>NICRA (15.06%)</i>	<b>367,669</b>
<i>Total budget</i>	<b>2,809,031</b>

**WCS Biodiversity Conservation Program**  
**FY08 International Travel Plan (effective dates: January 12, 2008 - January 12, 2009)**

Title	Flights #	Destination	Reason	Costs per trip	Total		Totals by Component
<b>OPERATIONS</b>							
Director	5	RT Wash DC - Kabul (2); RRB to Dubai (2) RT KBL-Dush(1)	R&R to Washington DC (2); Regional Rest Break (2) Transboundary Conf(1)	3,000/trip to Wash DC; 800/trip for RRB 400/trip to Dushanbe	8,000		
Assistant Director	5	RT South Africa - Kabul (2); RRB to Dubai (2) RT KBL-DUSH(1)	Home R&R in South Africa (2); Regional Rest Breaks (2) Transboundary Conference (Taj) (1)	2,000 to South Africa; 800/trip for RRB; 400/trip to Dushanbe	6,000		
WCS Headquarters	3	Rt New York - Kbl (3)	Financial System Management(1) Admin support personnel (2)	3,000/trip from US	9,000		
Assistant Asia Director	3	Rt New York - Kbl (2)/Rt New York -Dushanbe(1)	Programmatic activities & oversight(2) Trans Boundary Conference(1)	3,000/trip from US	9,000		
Wakhan Coordinator	4	Rt New York - Kbl (2) RRB to Dubai(2)	R&R to US(2); Regional Rest Break (2)	3,000/trip from US 800/trip RRB	7,600		
WCS Afghanistan National Staff	2	RT Kabul - New York	Programatic Meetings(2)	3,000/trip from Kabul	6,000	Operations Total	45,600
<b>BASELINE SURVEYS</b>							
Wildlife Survey Specialist	3	RT India - Kabul (3)	Field Work (Wildlife Surveys)	700/trip from India	2,100	Wildlife Surveys Total	2,100
Marco Polo Sheep Team & Veterinary Assistants	4	RT US - Kabul(4)	Marco Polo Sheep Behavioral Studies	3,000/trip from US	12,000	MP Survey Total	12,000
Rangeland Manager	3	RT US - Kabul(3)	Field Work (Rangelands)	3,000/trip from US	9,000	Rangelands Total	9,000
Ecosystem Health Manager	3	RT France - Kabul (2) RT Kbl -US (1)	Field Work in Ecosystem Health;	2,500/trip from France 3,000/trip Kbl - US	8,000	Ecosystem Health Total	8,000
WCS GIS Program	3	RT S.E. Asia - Kabul (3)	GIS Program Activities (3)	2,000/trip from SE Asia	6,000	GIS Total	6,000
Bird Survey Specialists	2	RT SWITZERLAND -KBL(1) RT UK - KBL (1)	Bird surveys of Bamiyan & Wakhan	2,000/trip from Switzerland 2,500/trip from UK	4,500	Bird Surveys Total	4,500
<b>LAW &amp; POLICY</b>							
Transboundary Protected Area Manager (Conference 2)	5	Rt US - Kbl (2); Rt Kbl - Pak(1); Rt Kbl - Dushanbe(2);	Transboundary Conference arrangements & setting up framework agreement with Tajikistan, Pakistan and China International Consultant US	3,000/trip from US; 500/trip from Pakistan; 400/trip to Tajikistan	7,300		
Transboundary Protected Area Workshop Afghan/WCS Participants (Conference 2)	15	RT Kabul to Dushanbe(15)	Transboundary Conference, featuring govt officials from Afghanistan (15)	15 Regional flights @ \$500	7,500		
Transboundary Workshop Interns for 2nd Conference	3	Rt Kabul - Dushanbe(3)	Administration and Logistics to set up Transboundary Conference(3)	400/trip to Dushanbe	1,200		
Transboundary Protected Area Manager (Conference 3)	8	Rt US - Kbl (2); Rt Kbl - Dushanbe(2); Rt Kbl - Beijing(1)	Transboundary Conference arrangements & setting up framework agreement with Tajikistan, Pakistan and China International Consultant US	3,000/trip from US; 2,000/trip from Beijing; 500/trip from Pakistan; 400/trip to Tajikistan	9,800		
Transboundary Protected Area Workshop Afghan/WCS Participants (Conference 3)	15	RT Kabul to Dushanbe(15)	Transboundary Conference, featuring govt officials from Afghanistan (15)	15 Regional flights @ \$500	7,500		
Transboundary Workshop Interns for 3rd Conference	3	Rt Kabul - Dushanbe(3)	Administration and Logistics to set up Transboundary Conference(3)	400/trip to Dushanbe	1,200	Transboundary Conference Totals	34,500
Hazarajat PA Manager	3	RT Canada - Kabul(3)	Travel for Field Work and Protected Area Development(3) )	3,000/trip from Canada	9,000	Hazarajat Total	9,000
Legislation and Policy Manager	2	RT US - Kabul(2)	Review Legislation/Wildlife Trade Survey	3,000/trip from US	6,000	Legislation Total	6,000
Ecosystem Services Valuation Researcher	2	RT Canada - Kabul	Field Work	3,000/trip from Canada	6,000	Ecosystem Services Total	6,000
Ranger Training/Ecotourism Specialists	2	RT US - Kabul(1); RT S.E. Asia - Kabul(1)	Program Implementation	3,000/trip from US; 2,000/trip from S.E. Asia	5,000	Ranger Trg Total	5,000
<b>COMMUNITY CONSERVATION</b>							
Community Conservation Team	4	RT US - Kabul ( 2 x 2 individuals)	Field Work (2 individuals)	3,000/trip from US	12,000		
Community Conservation Field Manager	3	RT Pakistan - Kabul	Field Work (3 trips)	600/trip from Pakistan	1,800	Community Conservation Total	13,800
<b>TRAINING &amp; CAPACITY BUILDING</b>							
Capacity Building and Training Manager	2	RT US - KBL	Implementing TCB component	3,000/trip from US;	6,000		
Afghanistan Training Courses	2	RT US -KBL	Bringing in Experts to Train Afghans in Conservation Science	3,000/trip from US;	6,000		
Conservation Study Travel Program	43	Rt Kbl-C.Asia(7) Rt Kbl - E.Coast(2) Rt Kbl - W.Coast(1) Rt Kbl-SE Asia(20) Rt Rt Kbl-Pak/India(10) Rt Kbl-SE Asia(3)	Study courses, training, graduate programs, and participation in int'l conferences planned for E.Coast (US) W.Coast (US), Pakistan, India, Central and S.E. Asia	3,000/trip to US; 1,000/trip to Central Asia; 700/trip to Pak/India; 1,600/trip to SE Asia; 1,200/trip to SE Asia;	56,500	Training & Capacity Building Total	68,500
<b>TOTAL NUMBER OF FLIGHTS</b> 152							
				<b>TOTAL COST OF FLIGHTS</b>	<b>230,000</b>		<b>230,000</b>