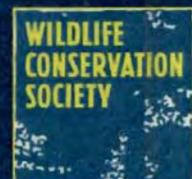
An aerial photograph of a rugged, arid landscape. In the foreground, a herd of dark-colored animals, likely goats or sheep, is grazing on a sandy, rocky bank. To the right, a river flows through a deep canyon, with a small waterfall cascading over the rocks. The background shows steep, rocky cliffs under a clear sky.

# Wildlife Conservation Society

Afghanistan Biodiversity Conservation Program  
June/Sept 2006 Technical Report



**BEST AVAILABLE COPY**

**Cover Photo: Travertine Lake Formation at Band-e-Amir.**

Band-e-Amir, one of Afghanistan's most exquisite natural landmarks, is a complex series of six crystal-clear lakes formed from a series of travertine dams. Such dams are usually created at thermal sites (like Mammoth Hot Springs in Yellowstone National Park); where the hot waters precipitate calcium carbonate, forming the dam walls. These formations are rare, unique, and worthy of protection.

## LEGISLATIVE AUTHORITY

The Wildlife Conservation Society is implementing the Afghanistan Biodiversity Conservation Program. The activities under this program have the **primary objective** of conserving biological diversity in natural and managed terrestrial ecosystems in Afghanistan pursuant to the USAID Biodiversity Primary Code. The program has four major components. First, WCS is undertaking extensive **Baseline Surveys and Data Analyses of Wildlife and Wildlands** in Afghanistan's three most biologically significant areas (Wakhan, Eastern Forests, and Hazarajat Plateau). These surveys will allow WCS to analyze the status and threats to biodiversity in Afghanistan. Second, WCS is **Strengthening Laws, Policies, and Institutions** to develop effective institutions, protected areas, and policies that will mitigate existing threats and increase opportunities for biodiversity conservation. Third, WCS is developing **Community-Based Initiatives** to better understand local threats to biodiversity, and design strategies for mitigating those threats. Finally, WCS is implementing a program of **Training and Capacity Building** to assist Afghanistan's ability to manage its biodiversity.

## SUMMARY OF ACCOMPLISHMENTS FOR FY06 Q2/Q3

### Baseline Science and Analysis

In FY06 Quarters 2 and 3, WCS has completed surveys of avian and large mammal incidence and population size estimates in the Big Pamir proposed park in Wakhan and the Hazarajat Plateau, the first such comprehensive and scientific studies in nearly three decades. Further, WCS completed an extensive range inventory of the Big Pamir and Little Pamir and did initial surveys of ecosystem health of Wakhan species in the Big Pamir to better understand the grazing dynamics of domestic animals in Wakhan and their effects on biodiversity. WCS also set up a GIS lab and established capacity to support change detection studies of the Eastern Forests, rangeland studies in the Wakhan and Hazarajat Plateau, and planning for the creation of a National Park and potential World Heritage Reserve at Band-e-Amir and a Wildlife Reserve at Ajar Valley. WCS has actively researched and compiled baseline data predating the Afghan-Soviet conflict to estimate the effects of biodiversity loss. This is one of the few comprehensive collections of such data remaining in the world. Copies will be provided to the Afghan government.

### Community Conservation & Economics

WCS has sought to build broad-based constituencies for conservation to ensure the conservation of Afghanistan's magnificent biodiversity. This includes setting up a community conservation office in heart of the Wakhan at Kret, equipped with audiovisual facilities. From this base, WCS has surveyed households and organized community conservation education workshops in the upper and lower Wakhan that would lay the groundwork for the community conservation committees and coordination on ecotourism.

### 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, interdisciplinary WCS teams have been focused on revisions to the Forestry and Rangeland laws, creating a compendium and commentary of environmental laws in Afghanistan, and starting initial surveys of deforestation and wildlife trade. Further, WCS has been actively working with four countries, Pakistan, Afghanistan, China, and

Tajikistan towards the formation of a Transboundary Peace Park in the Pamirs.

### **Training and Capacity Building**

WCS has implemented a series of short courses, practical field training and mentorship, international training opportunities, and broad scale public diplomacy and education activities for both government and academia. In Quarters 2 and 3, WCS has trained participants from the Department of Forest and Rangelands of the Ministry of Agriculture, the National Environmental Protection Agency, the Environmental Conservation Center for Afghanistan and the Veterinary School at Kabul University, and the Kabul Zoo.

### **Coordination with NGOs and Government**

WCS developed a close working relationship and trusted advisor role with the government for technical information on biodiversity conservation and continues to work to build capacity in the government to continue this work in the future. Specifically, WCS has developed close working relationship with the National Environmental Protection Agency (NEPA), the Forests and Rangeland Department of the Ministry of Agriculture, the Ministry of Foreign Affairs, and the Afghan Tourist Organization at the national level. WCS has been building strong working relationships at the provincial level in Badakhshan Province, including the local offices of the Ministry of Agriculture, NEPA, Deputy Governor of Badakhshan, the Badakhshan Chief of Police, the Provincial Reconstruction Teams, and local USAID offices. Finally, WCS has been coordinating closely with the Aga Khan Development Network, the Asian Development Bank, the United Nations Environment Program, the International Crane Foundation, and Save the Environment Afghanistan.

### **Operations, Security, and Logistics**

WCS set up the infrastructure in Quarters 2 and 3, necessary to carry out the program, including setting up furnished and equipped office and guesthouse facilities in Kabul, field bases in Wakhan (in the villages of Qila-e Panj and Kret), and initiated the establishment of a regional office in Ishkashim in lower Wakhan. WCS has recruited international and local staff. WCS has set up auditable financial accounting and inventory systems and completed its registration as an NGO within Afghanistan. Finally, WCS has developed logistics and security support systems for sites and field, including acquiring specially-modified and designed vehicles for working year-round at the off-road, high-altitude field sites within Wakhan.

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

### **Applicability to Biodiversity Primary Codes**

There is almost no current data on the status of Afghanistan's biodiversity after three decades of war. Most decisions on the protection of natural resources are based on range maps and animal abundance estimates from research done prior to 1978. Having an accurate understanding of the current distribution and status of wild fauna and flora is a necessary component of the conservation of biodiversity. Accordingly, WCS is undertaking studies of rangelands, mammals, and birds (and opportunistically of other species) to judge the status of major keystone species, and the habitats necessary to support them. This includes the collection of historical baseline data to be able to detect any potential change in animal populations. As wildlife populations may succumb to disease from domestic populations, it is important to look at the health of both wild and domestic populations to survey disease threats to biodiversity. WCS Kabul Staff is working to integrate field data with GIS and remote sensing data, and analyzing the data in light of historical distribution patterns. The development of GIS and remote sensing imagery provides an analytical framework for deciphering pattern from process, and better understand the threats to biodiversity and the relationship to other activities.

### **Activity 1.1. Wildlife Surveys**

In Quarter 3, WCS carried out the first comprehensive surveys of birds and large mammals in the Wakhan region since 1978, outside of WCS scientist Dr. George Schaller's study of Marco Polo Sheep in 2004 and Dr. Anthony Fitzherbert's rapid assessment survey in 2003.

#### **Activity 1.1.1: Mammal Surveys**

The first phase of the mammalian survey was carried out in the Proposed Big Pamir Wildlife Reserve within the Big Pamir region. WCS will follow up with surveys of the Little Pamir and Waghjir Valley in 2007 and in 2008, respectively. The proposed reserve covers an area of 679.38 km<sup>2</sup> and has previously been reported to provide habitat for Marco Polo Sheep in the Shikargah Valley of the Big Pamir (Schaller 2004; Fitzherbert 2003; Petocz 1978), as well as Asiatic Ibex, Urial, snow leopards, brown bear, lynx, red fox, wolf, the long-tailed marmots, wildcats, martens, weasels, otters, cape hares, pikas, voles and other small rodents (Fitzherbert 2003; Petocz *et al.* 1978).

During the survey, the WCS mammals team spent 35 days in the field, sampled an area of 289 km<sup>2</sup> and surveyed snow leopard sign transects and status, and conducted distribution and abundance surveys for mountain ungulates. These surveys included 11 main valleys and 25 sub valleys; areas considered to hold high densities of wildlife species (Table 1). The mammals team, through direct and indirect observation, verified the presence of 9 large mammal species (Table 2).

#### *Snow leopard (Uncia uncia)*

To survey snow leopards, the mammal team performed 15 transects, with a total length of 11.91 km, in the Proposed Big Pamir Wildlife Reserve during the survey period. These transects primarily searched for indirect evidence (signs) of the snow leopard. The length of these transects ranged from 300 meters to 2,000 meters. Overall 44 signs were found in the 15 sign transects, which gives an estimate of 3.69 signs per kilometer. During sign transects, we

collected 32 snow leopard scats that will be analyzed to determine dietary composition, and if possible, perform genetic analyses.

*Marco Polo Sheep (Ovis ammon polii)*

During the survey period we had 7 sightings of Marco Polo sheep from Proposed Big Pamir Wildlife Reserve and counted 85 animals. Out of 85 animals, 48 were males, 30 were females and 7 were juveniles. We sighted females along with young in Nakchrishitk valley. This was the first observation ever made of Marco Polo sheep in this area.

*Asiatic Ibex (Capra ibex sibirica)*

During the survey period we had 13 sightings of Ibex from Proposed Big Pamir Wildlife Reserve and counted 162 animals. Out of 162 animals, 84 were males, 71 females, and 7 juveniles.

*Long-tailed Marmots (Marmota caudata)*

Marmots are a key summer prey species of wolf, bear, and other large predators. During the survey period we counted 67 colonies of marmots having 364 individuals. The number of individuals in a colony varied from 2 to 14 in Proposed Big Pamir Wildlife Reserve. We intensively searched 1 km long by 30 meter wide transects for number of active marmot holes in four different major valleys. WCS will develop the regression equation between number of holes and number of animals present at the end of the study when we have a sufficiently large reliable data set for statistical analysis.

*Indirect Observations*

We had opportunistic sightings of other species based on indirect observations. The WCS mammal team also collected 100 scats of wolf (*Canis lupus*) and 15 red fox (*Vulpes vulpes*) scats from the Proposed Big Pamir Wildlife Reserve.

*Questionnaire Surveys*

We also carried out a questionnaire survey of 20 families in the Proposed Big Pamir Reserve to make quantitative assessment of livestock depredation by wolves and snow leopard and the dependence of the local peoples on natural resources. These surveys will supplement more extensive work being done by the Community Conservation team.

*Predation on Livestock.*

Based on WCS surveys and interviews, the Wakhan Valley suffers high predation rates during the winter from snow leopards and wolves. Schaller (2004) and Fitzherbert (2003) both identified wolves as important winter predators; the level of predation from snow leopards is less clear, but in both cases, there have been no formal study of this issue outside of anecdotal reports.

The WCS mammal team will conduct winter surveys in January 2007 to determine the number of snow leopard and wolves that descend to the valley during winter months, information on prey availability (including kills from domestic animals, and the magnitude of environment-human conflict during the winter).

**Table 1:** Details of Big Pamir valleys surveyed in first phase of mammal survey, including whether Marco Polo Sheep populations were found.

Name of Valley	North	East	Marco Polo Sheep Sighting
Wagji Valley	37° 06' 50.3"	72° 45' 23.7"	
Nakchrishitk Valley	37° 13' 08.6"	72° 58' 17.3"	WCS 2006
Ali Su Valley	37° 11' 24.5"	73° 06' 50.2"	
Aba Khan Valley	37° 07' 19.1"	73° 02' 16.8"	WCS 2006; Petocz et al. 1978.
Shikargah Valley	37° 06' 12.6"	73° 01' 48.0"	WCS 2004, 2006; Fitzherbert 2004
Wuzed Valley	37° 04' 06.0"	72° 52' 18.0"	
Kund-a-Thur Valley	37° 05' 43.6"	72° 58' 04.9"	
Asan Katich Left	37° 03' 59.3"	73° 00' 18.8"	
Asan Katich Right	37° 04' 10.9"	73° 00' 10.3"	
Kusk Valley	36° 58' 54.5"	72° 58' 39.8"	
Kali Uoos Valley	36° 56' 51.4"	72° 50' 41.6"	
Other biologically important areas to be surveyed in the future in Big Pamir:			
Sargaz Valley/Tuibai Valley			Petocz et al. 1978.

**Table 2:** Mammalian species found during the surveys of the Proposed Big Pamir Wildlife Reserve, Afghanistan. The table lists the common and scientific name of the species found, their IUCN Red List status (IUCN, 2002), and the number of animals seen, or type of indirect evidence record.

Common Name	Scientific Name	IUCN Status	(# obsvd) / Sign
<b>Snow Leopard</b>	<i>Uncia uncia</i>	Endangered	(0)/Scats, tracks
<b>Brown Bear</b>	<i>Ursus arctos</i>		(0)/Scats, tracks
<b>Wolf</b>	<i>Canis lupus</i>		(1)/Scats, tracks
<b>Red Fox</b>	<i>Vulpes vulpes</i>		(5)/Scats, tracks
<b>Marco Polo Sheep</b>	<i>Ovis ammon polii</i>	Vulnerable	(85)/Scats, tracks
<b>Asiatic Ibex</b>	<i>Capra (ibex) siberica</i>		(162)
<b>Long-tailed Marmot</b>	<i>Marmota caudata</i>	Near Threatened	(364)
<b>Cape Hare</b>	<i>Lepus capensis</i>		(5)
<b>Ermine</b>	<i>Mustela erminea</i>		(4)



**Figure 1:** WCS survey team yaks fording a river in the Big Pamir Proposed Reserve. The WCS teams faced tremendous logistical challenges in this roadless area.

#### **Activity 1.1.2: Avifauna Surveys**

The WCS bird survey team targeted all major physiographic divisions of the Wakhan and the Big Pamir region. This included the Pamir Valley, the Wakhan Valley, the high plateau of the Big Pamir, the mountainous region of the Big Pamir, and Lake Zarqul. The survey region can be conveniently grouped into 17 segments. These areas cover an altitudinal gradient of 2,800 m to 4,800 m. Observations were made all along the survey route and all species and individuals seen were recorded. Halts of more than a day were made in select localities and the surroundings were searched intensively. The WCS Ecosystem Health team (Ostrowski 2006) also made opportunistic observations of birds in the Big Pamir region during project surveys, and is reported below.

#### *Findings*

- The WCS avifauna survey team tallied a total of 3,786 individuals belonging to 109 bird species. This is the largest number of species ever recorded in the Wakhan Pamir in a single survey and adds 22 new species to a cumulative list of 139 species reported by Petocz 1978 (100 spp.), Fitzhebert & Mishra 2003 (48 spp.), Schaller 2004 (30 spp.), and Ostrowski/WCS 2006 (59 spp.), and looks to increase with recent fieldwork. This takes the total number of species recorded in Wakhan and Pamir to 161 species.
- Among important additions are Ibisbill (*Ibidorhyncha struthersii*) and Tibetan Sandgrouse (*Syrrhaptes tibetanus*) two species endemic to high mountain systems of Central Asia. These are the first confirmed sightings in Afghanistan for both these species. A distinct subspecies of Bluethroat (*Luscinia svecica svecica*) was also seen

(presumably on passage) which is unreported for Afghanistan. The rare Bar-headed goose (*Anser indicus*) was seen at Lake Zargul and is reported for the first time since Petocz (1978). It was reported to be a regular breeder by the locals.

- The WCS Ecosystem Health team also documented 13 bird species not previously recorded in Wakhan: the short-toed eagle (*Circaetus gallicus*), the greater sand plover (*Charadrius leschenaultii*), the green sandpiper (*Tringa ochropus*), the European bee-eater (*Merops apiaster*), the golden oriole (*Oriolus oriolus*), the Himalayan woodpecker (*Dendrocopos nimalayensis*), the scaly-bellied woodpecker (*Picus squamatus*), the short-toed lark (*Calandrinia brachyactyla*), the tree pipit (*Arithus trivialis*), the Brooks's leaf warbler (*Phylloscopus subviridis*), the plain-leaf warbler (*Phylloscopus neglectus*), the Asian paradise flycatcher (*Terpsiphone paradisi*), and the red-headed bunting (*Emberiza bruniceps*).

A detailed annotated checklist including recent and historical accounts is under preparation and will be included in the Annual Report

#### **Activity 1.1.3: Wildlife Surveys of Hazarajat Plateau and Nuristan**

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

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

WCS scientists have put together an extensive collection of historical data on wildlife population abundance and incidence from natural history museums, scientific journals, and academic institutes around the world, and from previous reports on Afghan wildlife. Obtaining a record of these historical articles, documents, and texts is necessary for understanding how wildlife and wildlands have changed during the last three decades of conflict. WCS will donate scanned copies of these materials to Afghan scholar Nancy Dupree for the Afghanistan Center at the University of Kabul and to the Ministry of Agriculture and the National Environmental Protection Agency.

#### **Progress and Performance Assessment**

WCS completed its objectives for Activity 1.1 in Quarters 2/3. WCS survey teams collected data on occurrence, distribution, and estimated abundance of mammals and birds in the Big Pamir region of Wakhan. Initial analysis of the data has been completed and reported. WCS is currently working to incorporate this data within the larger GIS database, and are using it to assist us in developing protected areas. Through this research, WCS has developed initial insights into the status of biodiversity within Wakhan through the collection and assessment of geo-referenced, presence/absence data, basic demographic data on group size, and population density, of important indicator species in birds and mammals in Wakhan. Nested subsets analysis and other statistical tests will allow us to identify areas of high endemism. Finally, WCS has started the acquisition and compilation of historical data on species distributions in Afghanistan, including inputting species location data into GIS.

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

In FY06-FY07, WCS scientists will capture and fit up to 20 adult and young Marco Polo sheep in the Big Pamir with GPS satellite collars to determine distribution, trends, habitat use, feeding ecology, migratory movements, survivorship, and causes of mortality. Marco Polo Sheep are potentially endangered. To date, WCS has focused on designing and ordering satellite collars that will be trackable from space to monitor the movements, health, and biology of Marco Polo sheep throughout the year. This effort has been delayed due to technical difficulties and delays in their production (they have to be individually designed and built upon order).

Similar satellite collars placed on mountain ungulates in Mongolia have had difficulty in reaching the ARGOS satellite which relays the signal from the collars on Marco Polo Sheep. Scientists have found that the collars appear to work fine when initially tested in the field, but fail to get locations once deployed on the animals. In most cases the collars are failing outright and are acquiring no locations once they are deployed. We have been working with our contacts at both Telonics (the collar manufacturer) and ARGOS (the linking satellite) to figure out how to address the problem. The working hypothesis is that noise levels around Central Asia have increased in recent years (coming out of China and Russia), and that the signal strength is insufficient to allow communication between the collars and the satellites. WCS scientists are working with Telonics to design new collars to overcome this problem. Given the extraordinary difficulty of capturing Marco Polo Sheep, their vulnerable status in Afghanistan, the risks involved with capture to the Marco Polo Sheep, the high cost of the satellite collars, and the value of the data, WCS is limiting any work with Marco Polo Sheep (although continuing surveys) until we have resolved these technical problems. Similarly, WCS will not be able to make any assessment of the health of Marco Polo sheep populations until we do.

### **Progress and Performance Assessment**

WCS has made some progress in the design and testing of satellite radio collars to be able to monitor Marco Polo Sheep populations, including transboundary movements. Until we have resolved technical difficulties with collar design, we are focusing our work on setting up the logistics of accessing and darting the sheep.

### **Activity 1.3 Assessment of Rangelands in Wakhan**

Rangelands support both livestock and wildlife in the Pamirs. Therefore, having a good understanding of the health of the rangelands is an essential element for looking at causality between human activities and changes in wildlife abundance as well as for managing natural resources. In Q2/Q3, WCS conducted an assessment of the Big Pamir and the Little Pamir to provide information on rangeland types and conditions for biodiversity conservation. In addition, one Afghan student and three counterparts from the *Forestry and Rangeland Department* were trained on rangeland assessment techniques. The rangeland assessment was initially concerned with the training and with the development of methodology to develop indicators for rangeland degradation and rangeland types in the Afghan Pamirs.

The rangeland assessment in 2006 was made initially from Goz Khun along the Pamir River and the Wakhan Range (portions of Big Pamir Hunting Reserve) to the Tulibi Valley and then returning to Sargez. The rangeland team next traveled from Sarhad into the Little Pamir and up the Wakjhir River Valley to the China border.

### *Initial Analysis*

Most areas inspected showed significant use by livestock. This was apparent in two primary ways: as trailing and as foraging/browsing of plants. It was also apparent that in many summering pastoral areas livestock use began early in the spring and apparently continues into fall.



This is a concern because forage/browse plants get little rest from grazing/browsing during the growing season. Also, since livestock use of these rangelands is often by sheep, goats, horses, and yak competition for forage/browse with wild ungulates is likely to be high as all types of plants (grasses, forbs, shrubs) are used. As such, there is likely significant spatial competition for foraging sites.

**Figure 2:** Alpine Grassland Range Type in Little Pamir.

### **Progress and Performance Assessment**

WCS has accomplished nearly all of its objectives for FY06 for the rangeland assessments in Quarters 2&3. WCS rangelands teams completed their surveys of the Big Pamir, Little Pamir as well as surveys of the Waghjir Valley. These surveys have given us initial insights into the impact of local communities on rangelands, and provide the foundation for integrating social science data, biological data on the rangelands, and distributions of animals and birds, to better understand how to protect biodiversity. WCS is developing a monitoring protocol based on the first field season, and has started initiation of voucher plant collection for verification and reference. Finally, as the Government of Afghanistan has requested WCS to begin work on a rangelands law for Afghanistan, WCS has sought to bring together the scientific and legal components of its team together in the legal drafting and consultation process.

### **Activity 1.4. Promote the Development of Ecosystem Health across the Human/Livestock/Wildlife Interface**

For FY06, WCS focused on data collection on disease issues related to livestock management in the Big Pamir region and the Wakhan Valley. At present, there are no other programs that are surveying wildlife or domestic livestock health or diseases in Wakhan. Dr. Stephane Ostrowski, DVM, PhD led a team of Afghan veterinarian research assistants from the Kabul University and a counterpart from the Kabul Zoo to survey the Wakhi pasture areas in the Big Pamir region of the Wakhan District from July 2006 until end of August 2006.

During the summer field season, the Ecosystem Health team interviewed 65 households distributed in 10 major settlements in the areas of Djermasirt, Manjulak and Shikkargah (3,800-4,500 m). From these interviews, and field counts, they accurately (+/- 10%) determined the numbers of sheep, goats, yaks and cows grazing in these areas, documented the seasonal patterns of range use in these populations, and delimited geographically the extent of these areas. Through questionnaire investigations, they also documented the major mortality trends in

livestock populations, and evaluated clinically the occurrence and relative impact of a number of economically important diseases (e.g. Foot and Mouth Disease). Approximately 75 blood samples were taken for further serological investigations and specimens of endo- and ectoparasites are currently under taxonomic determinations. Dr. Ostrowski will conduct a larger scale blood sampling operation (400+ animals) for qualitative serological screening in winter when livestock will be back to Wakhan Valley. Analysis of the blood for disease pathogens is planned for the spring of 2007.

Finally, Ecosystem Health Team conducted opportunistic surveys of wildlife trade patterns both in Wakhan and in markets for wildlife. Legal and illicit wildlife trade is an important influence on the spread of infectious disease, and directly threatens the state of wildlife populations. This is combined with complementary and parallel efforts under Activity 2.6.

### **Progress and Performance Assessment**

The WCS Ecosystem Health team accomplished its goals for Quarters 2 & 3, including identifying the livestock and herd composition, gaining insight into the herding system and seasonal movements, and evaluating overall livestock health and mortality. WCS has also surveyed the Kabul Zoo, local wildlife product merchants and the Kabul Bird Market to understand wildlife trade patterns in conjunction with WCS legal and policy team.

Work during Quarter 4 will focus on sampling and blood screening of samples taken from livestock, and analysis of data to explore potential effects on disease transmission. WCS will also train veterinary teams, in collaboration with FAO, for surveying wild bird populations for avian influenza in the proposed protected areas in the Hazarajat Plateau.

Combined with studies of range-use of wild ungulates (e.g., the Marco Polo sheep), and analyses of rangeland status, and Wakhi and Krygyz grazing patterns, this study will help determine the nature and extent of conflicts between livestock and wildlife, including the possibility of disease that moves between both populations. Information collected will be developed into a disease-specific database that is spatially explicit and that will be integrated into a Geographical Information System (GIS) to identify risk factors for disease emergence and help predict future disease outbreaks. This database can help 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.

### **Activity 1.5 Community Based Livestock Health Training**

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 Quarters 2&3, WCS intensely trained two veterinarians, recently graduated from Kabul University, and the senior veterinarian of Kabul Zoo in surveying wild and domestic population for disease outbreaks to understand how disease moves between these populations, and to develop strategies to reduce the incidence of disease. The Ecosystem Health team has started collaboration with the WCS Community Conservation Team to identify community members to serve as paravets for the Wakhi communities.

### **Progress and Performance Assessment**

Initial work was completed to improve the understanding of Afghan veterinarians of disease at the ecological and landscape level so as to develop monitoring skills for disease outbreaks and to start work in training community members in basic animal care and disease monitoring. These goals will serve to protect both domestic populations of livestock, and through better care and effective monitoring by community members, reduce the possibility of disease spreading to wild populations.

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

WCS has developed, equipped and staffed a fully functional GIS lab that functions to integrate all field activities. WCS also hired an Afghan GIS specialist and have been training him to perform landscape-level analyses in the specific field of "conservation GIS" – an entirely new technical field for Afghanistan. WCS designed and acquired a GIS workstation, an A3 color printer and a full-sized GIS plotter, and installed ESRI GIS (ArcGIS) and ERDAS remote-sensing software (Imagine). The GIS team purchased a comprehensive set of topographic maps (both Russian and US maps) and other map and vector data of the country. Through developing partnerships with USGS and through working through NASA and other sites, we have acquired basic imagery at no cost for all sites, including both Landsat TM and Aster. We have also generated from the Shuttle Radar Topography Mission a 90 meter Digital Elevation Model (DEM) and are also looking at purchasing higher resolution DEMs for all of the sites. Further higher resolution imagery and data acquisition is planned (including potentially SPOT/IKONOS data) through an on-going imagery selection process to match project needs, costs, resolution, against available imagery. GIS Program staff have incorporated field data, both biological and socio-economical, into the common database and integrated with available imagery. Available information on historical species incidence and distribution has also been added. Much of this data has been used to plan next year's conservation activities.

##### *Activity 1.6.1. Landscape Assessment of Pastoralist and Livestock Movement Patterns*

Wakhi communities inhabit the western Pamirs and extend down the Wakhan District. They are basically agriculturalists, but they also have livestock, most of which they graze during summer, and now often all winter, in the Pamirs. The Kyrgyz are primarily livestock herders, keeping sheep, goats, yaks, horses, and a few Bactrian camels and donkeys. They shift these seasonally 2-3 times a year between summer and winter pastures. Field data on Kyrgyz and Wakhi communities that has been gathered in the Pamirs by the different teams under the ecosystem health program and the community conservation program have been incorporated into the GIS database. This data includes the locations of winter and summer pastures, locations of known Kyrgyz and Wakhi settlements, and perceptions of the seasonal movements occurring in the landscape, and have suggested marked shifts between these communities in the Wakhan. WCS has also been improving upon basemap toposheets by adding known roads and trails, and gazetting towns, passes and gorges, rivers and streams, and villages and settlements to standardize locations among field teams. Data collected separately under the rangeland assessment program is in the process of being added to the GIS database and will be providing an explanatory link between the patterns and processes behind the distribution of livestock and wildlife.

##### *Activity 1.6.2. Landscape Assessment of Marco Polo Sheep Migratory Patterns*

Based on the mammal surveys, WCS has plotted the locations of Marco Polo Sheep found in the Big Pamir and estimated habitat. Further data will take place once Marco Polo Sheep have been

collared.

#### *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. The ongoing effort of collecting data in the field and rendering those data spatially explicit lays the groundwork for building biological and human landscapes following the WCS Living Landscape model. As more data comes in, we will develop a clearer picture and better understanding on the landscape level that allows us to implement this approach. In the meantime, the concepts of the approach and the tools at disposal (landscape species selection, conceptual model, building conservation landscapes, monitoring and evaluation) are being introduced in Afghanistan.

#### **Progress and Performance Assessment**

The creation of the GIS laboratory, recruitment of staff, collection of baseline data, purchase of imagery, and integration with data collected in the field, and analysis has allowed us to better understand threats to biodiversity conservation and the human communities dependent on them. WCS has developed the sole conservation GIS laboratory in Afghanistan, created GIS products in support of project activities and integration of data, and started integration of different streams of data that will allow us at the end of project activities to make scientifically-based recommendations to the government for implementing biodiversity conservation strategies in Afghanistan.

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

#### **Applicability to Biodiversity Primary Codes**

Protected areas and the institutions necessary to support them are critical to the conservation of biological diversity in Afghanistan. WCS activities under Objective 2 have helped create these protected areas, will define them through stakeholder input, scientific research, and appropriate laws and regulations, and maintain them appropriate enforcement mechanisms.

#### **Activity 2.1 Update Wakhan Protected Areas**

Efforts in FY06 have focused on integration and analysis of data from other activities within a remote sensing framework to update protected area boundaries. WCS has been working to delimit the boundaries of a proposed reserve in the Big Pamir based on landcover imagery, scientific data on fauna and flora, and historical species incidence data as available. These data support the boundaries proposed by WCS based on previous work done by WCS scientist and Vice President, Dr. George Schaller. Further, as the nomadic Kyrgyz communities are also an essential component to the creation and management of these protected areas, WCS has started engaging these communities through an anthropologist who is studying their domestic livestock husbandry and economic systems.

#### **Progress and Performance Analysis**

WCS has started analysis of biological and socioecological data for updating the proposed protected area boundaries of the Big Pamir, collected GIS and remote sensing data for the Big Pamir, Little Pamir, and Waghjir Valley for landcover classification and wildlife research, and is

developing a high resolution digital elevation model for the region. These activities provide the basis for future protected area designations, including biologically important regions for inclusion in a transboundary peace park.

#### **Activity 2.2 Assessment and Development of a Transboundary Peace Park**

The Pamirs, flanked by the Hindu Kush, Karakoram, Himalayas, Tien Shans, and Kunlun ranges, comprise 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 threatened Marco Polo sheep (*Ovis ammon polii*) traverse sovereign boundaries of states, as do snow leopards, ibex and other species. The region is renowned for its diverse cultural traditions and the great variety of plants and animals which, together, create a distinctive and unique landscape. Transboundary cooperation of joint resources through the creation of a trans-frontier reserve or international protected area is necessary to protect and manage these resources.

On September 29, 2006, representatives from Tajikistan, Pakistan, China and Afghanistan assembled for a three-day workshop in Urumqi, China to discuss the creation of a Pamir Transboundary Conservation Initiative. This workshop was sponsored by WCS and USAID. All four countries are concerned with protecting the integrity of the environment and promoting sustainable livelihoods among its people.

Notable attendees included:

#### **Islamic Republic of Afghanistan (6 Representatives Total)**

1. H.E. Mostapha Zaher, Director General, National Environmental Protection Agency
2. Jarullah Mansoori, Legal Advisor, National Environmental Protection Agency
3. Hazrat Hussain Khaurin, Director-General, Department of Forests & Rangelands, Ministry of Agriculture
4. Abdul Ghani Ghuriani, Deputy Director-General, Department of Natural Resources and Management, Ministry of Agriculture.
5. Dr. Yusuf Nooristani, Deputy Minister of Defense for Borders (previously served as Minister of Environment)
6. Amrullah Jayhoon, Director, Asia-Pacific Dept., Ministry of Foreign Affairs

#### **Republic of Tajikistan (4 Representatives Total)**

7. Abduvokhit Karimov, Chairman, State Committee on Environment, Conservation & Forestry
8. Kasirov Kokul, Director-General, State Committee on Environment Conservation and Forestry, and Director-General of the State Directorate of Protected Areas.
9. Abdussator Samadovich Saidov, Director, Institute of Zoology and Parasitology, Tajikistan Academy of Sciences
10. Eldar Shafiev, Director, Center of Support and Development of Natural Protected Areas and Forestry

#### **Islamic Republic of Pakistan (7 Representatives Total)**

11. Dr. Bashir Ahmed Wani, Inspector General, Forests, Ministry of Environment
12. Jamil Ahmad, Director for Biodiversity, Ministry of Foreign Affairs
13. Ghulam Tahir, Director Khunjerab National Park, Gilgit, Northern Area

Progress and Performance Assessment  
WCS successfully implemented the first Transboundary Peace Park workshop with representatives from the governments of Tajikistan, Pakistan, China and Afghanistan. Political challenges from the Chinese government prevented the signing of a draft agreement among all four countries, but WCS will focus on initially developing an agreement between three of the countries: Pakistan, Tajikistan, and Afghanistan. Among Afghan government representatives, the will to create a transboundary region is strong, and the WCS Afghanistan program will build

The Urumqi workshop is the first of three WCS-USAD workshops to be held on Pamir transboundary conservation. The second is scheduled for the fall of 2007, and workshop attendees recommended that it be held in Dushanbe, Tajikistan. The second workshop is expected to review the recommendations from the Urumqi workshop, finalize an action plan for the Pamir region, and identify implementing agencies, organizations, and donors for each initiative. The third workshop is expected to be held in the fall of 2008 in Islamabad, Pakistan. This workshop will act as the official launch for transboundary cooperation, and any final agreements between countries are expected to be signed then.

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All participants were enthused with participating in transboundary protection of the Pamir region. Three countries - Pakistan, Tajikistan, and Afghanistan - were fully prepared to move ahead with the actions necessary to create a transboundary protected area that would include parts of each country. The representatives from China were still uncomfortable with the creation of a transboundary reserve, but were happy to participate with the other countries on specific threats reduction and conservation initiatives. This may have been since the Chinese were not engaged at a sufficiently high protocol level.

During the two days, speakers gave presentations and openly discussed the status, threats, and needs for each country's region of the Pamirs, and the status and threats to the wildlife and people of the region. They then worked together to outline specific activities that each country could initiate. A number of actions were suggested, both within each country and between countries, to manage resources better on a solid scientific foundation, facilitate cooperation for mutual benefit, and encourage good neighborhood relations. While the suggestions provided a framework for collaboration, it remained absolutely clear that the sovereignty of each government will be fully respected and that all decisions pertaining to the land within its borders remain with each government.

Dr. George Seebler from WCS was the keynote speaker and WCS Asia Assistant Director Peter Zahler was the workshop facilitator. WCS Country Directors Dr. Xie Yan (China) and Dr. Alex Dehgan (Afghanistan) participated, and Dr. Ali Kang and other WCS China staff were instrumental in the workshop's success. Also attending were representatives from IUCN and WWF, and a representative from the IUCN-WCPA Task Force on Transboundary Protected Areas.

- People's Republic of China (15 Representatives Total)
- 14. HOU Cuihua, Vice president of Xinjiang Forestry Bureau
  - 15. CHU Hongjun, Vice president of Aletai district of Xinjiang
  - 16. WEN Haizhong, Deputy Director of Legislation and Policy Bureau of the State Forestry Administration
  - 17. CAO Zowu, Legislation and Policy Bureau of the State Forestry Administration
  - 18. YAN Xun, Director, Wildlife Protection Bureau of the State Forestry Administration
  - 19. SHI Jun, Deputy Director, Wildlife Management Department, Xinjiang Forestry Bureau

on this support internally in Afghanistan. Further, WCS has been working with the Department of State to encourage our embassies in all four countries to engage on this issue.

### Activity 2.3 Central Hazarajat Plateau Conservation Initiatives

Band-e-Amir (Figure 3) and Ajar are two of the greatest opportunities for Afghanistan to benefit from ecotourism, given the sites' central location and their inherent beauty and uniqueness. However, both sites suffer from a variety of problems that threaten their integrity and suitability for tourism. Threats to Band-e-Amir include uncontrolled tourism that is damaging the site's fragile land forms, uncontrolled fishing that may be impacting native fish populations (including use of explosives that threatens the integrity of the natural dams), and overhunting that may have already resulted in the extinction of urial and ibex from surrounding hills. Threats to Ajar include uncontrolled poaching that has caused apparent dramatic declines in wildlife species.



Figure 3: Band-e-Amir Lake

In Quarters 2 & 3, WCS activities served to ground-truth information about the status of Band-e-Amir, to introduce the project to the government and communities in Ajar Valley, and to prepare for the fall field season to survey these areas for wildlife. WCS scientist Dr. Chris Shank, who has worked in Afghanistan in the 1970's on these two reserves and did the initial studies of their biodiversity, took an initial survey trip to both Band-e-Amir and Ajar Valley with an Agriculture Ministry counterpart, Abdul Sami

Sakhi.

In Ajar, preliminary meetings were held with the most influential communities in the valley, while at Band-e-Amir, WCS waited to clarify the activities of the Asian Development Bank before engaging communities there. Meetings in the field were held with UNEP, Asian Development Bank, the Aga Khan Foundation and the Aga Khan Development Network, and the Food and Agriculture Organization. WCS also informed provincial government personnel of the Hazarajat project, including Haji Mohammed Qasem, Director of Administration of Bamiyan Province, and Eng. Mohammed Tahir Ataey, the Agriculture Head for Bamiyan province. Meetings were also held in Kabul with the Eng. Hazrat Hussain Khaurin, Director General of the Department of Forests and Rangelands of the Ministry of Agriculture, and H.E. Mostapha Zaher, Director-General of the National Environmental Protection Agency.

### Progress and Performance Assessment

Activities during these quarters created the foundation for future coordination among donor and implementing agencies, scientific surveys of both proposed protected areas, gazetting of park

boundaries, review and drafting of management plans, and the creation of a GIS data base and acquisition of a digital elevation model and high resolution imagery for both regions. Substantial work is clearly required to coordinate the environmental community in Afghanistan, in particular, to support the rule of law and Afghan environmental institutions. This will be an important goal for WCS next year.

#### **Activity 2.4 Eastern Forests Initiative**

The Eastern Forests Complex in Afghanistan contains some of the last remaining arid conifer forest in the Greater Himalayan mountain chain. The Complex runs from the border of Badakhshan in the north to Paktika in the Southeast of Afghanistan, and contains mixed oak and coniferous forests. Tree cover tends naturally to be more continuous in this region where precipitation is far higher and less erratic than elsewhere. This habitat, a Global 2000 Ecoregion (Western Himalayan Temperate Forest), is rich in biodiversity, including historical populations of snow leopards, leopards, jungle cats, Himalayan lynx, leopard cats, wild cats, Pallas' cats, jackals, striped hyenas, martens, Asiatic black bears, Siberian ibex, markhor, urial sheep, and wild boar. It is under tremendous deforestation pressure (discussed below). Further, its location in the sensitive and conflict-prone border regions between Afghanistan and Pakistan makes monitoring of deforestation challenging.

Through our GIS team (Activity 1.6), WCS has collected, and is continuing to obtain existing remote sensing data to estimate current rates of forest loss, classify remaining forest cover, and determine sample areas for wildlife surveys in the Eastern Forests. The remote sensing data will consist of high resolution data focused on Nuristan and Kunar, and medium resolution data for analysis of the entire Eastern Forest Complex. In Quarter 4, WCS will conduct the first biological surveys of this region in 30 years.

#### **Progress and Performance Assessment**

WCS is meeting its goals of collection of remote sensing data to update current estimates of deforestation, and which is necessary to calculate the rate of forest loss. This will provide baseline data for the prioritization of conservation areas and identification of threats.

#### **Activity 2.5 Ranger Training**

In Quarters 2&3, WCS worked with local communities to identify individuals for training during fieldwork and through local consultations. The majority of ranger training will primarily occur through a series of workshops in 2007-2008 after the demarcation of protected areas and initiation of community conservation activities. WCS is drawing all of the ranger-trainees from local communities where the Parks will be established. Further, through project fieldwork activities (wildlife surveys, community conservation activities), we have identified candidates based on their level of education, natural history knowledge, and enthusiasm.

#### **Progress and Performance Assessment**

WCS has identified persons for wildlife training, raised community awareness of the project, and has been actively working to design a multi-tiered ranger training program. As this activity is partially dependent on the creation of the parks, most activities will occur after we have had the opportunity to analyze baseline data, meet with local and regional governments and other stakeholders, and define park boundaries.

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

WCS has been active in helping create the laws, policies, and institutions necessary for biodiversity conservation in Afghanistan through legislative drafting, the development of a close working relationship with other partners, particularly the United Nations Environmental Program, and through work with our community conservation program (Activity 3.3) to develop the institutions at the local level for the management of their natural resources.

#### **Activity 2.6.1 Legislative Review**

An in depth review of all compiled legislation is currently in progress. WCS anticipates publishing, in cooperation with UNEP, the Ministry of Agriculture, and the National Environmental Protection Agency, a compendium of environmental law and practice for Afghanistan. The contents will include descriptions of institutional frameworks for environmental management, legislative promulgation procedures, as well as an analysis and description of identified legislation. Due to the draft status of some of the laws reviewed, our review will necessarily remain preliminary. Still, we will publish a finished product for distribution to interested parties in both Dari and English.

#### *Establishment of Legislative Drafting Group*

In the context of the drafting work WCS performed on the forestry legislation, a legislative drafting group has been formed including individuals from several national and international organizations. Our primary international partner has been UNEP, which maintains an office presence specifically dedicated to environmental legal development. UNEP was instrumental in drafting the Environment Law and participated, along with FAO, in the drafting of the Forestry Law. From this point forward, UNEP anticipates spending more effort developing legislation for the "brown" sector, i.e., toxic chemicals, waste management, pollution control, etc. They will, however, continue to play a key role in facilitating regular communication between all members of the legislative drafting group and assist with lobbying efforts in parliament. Other international partners include the Asian Development Bank, World Bank, FAO, NRC, and AREU. This configuration is flexible and will depend, for any given legislative effort, on the interests and capacities of international organizations. National partners currently include, in the first instance, the National Environmental Protection Agency and Ministry of Agriculture. Members from both agencies have been intimately involved in the development of the Environment Act, Protected Areas Regulation, and the Forestry Law. Priority needs for the group have been identified and cooperative work begun in the development of a new Rangeland Law for the country. Other laws identified by the group include hunting, endangered species, and trophy hunting.

#### *Drafting of Forestry Law*

In August 2006, WCS contributed to a final review and revision of the Forestry Law before public consultation and submission to the Taqin (parliamentary body responsible for reviewing all proposed national legislation) for approval. This process is ongoing with a final consultation conference tentatively planned for December 2006. However, we anticipate that the effort to promulgate this law will take significantly more time, perhaps as much as 6 months from the end of FY2006.

#### **Activity 2.6.2 Trophy Hunting Program**

WCS has reviewed relevant examples for trophy hunting programs in several countries. The most relevant, reflecting the conditions that exist in Afghanistan, comes from Pakistan's northern

border along Afghanistan's eastern forest region. It is too early to say where this review will lead. For trophy hunting to have any chance of success in this country, a number of elements outside the control of WCS will need to come together. These include, at a minimum, 1) strong commitment from government agencies to support the initiative, especially from the Ministry of Finance to allow local communities a monetary stake in a potentially lucrative resource use, 2) survey results that show sufficient populations of trophy species (in particular, Marco Polo Sheep, but also Markhor, Urial sheep, and Wild Boar), and 3) a security environment that does not deter foreign hunters from coming to Afghanistan, or areas of Afghanistan with trophy hunting potential. The government has voiced at least some commitment to the concept of local community management of natural resources; all legislation so far drafted or approved explicitly recognizes this approach. However, revenue sharing is a component part for which some concern remains that the national government will not allow sharing at a level that has meaning for the local communities. Surveys of both the Big and Little Pamirs, and Hazarajat Plateau have been conducted and are ongoing. Results will not be available until later in FY2007. The last concern, security, does not appear to be a significant problem for the Wakhan corridor where the Marco Polo Sheep occur. It may, however, present an obstacle in other areas.

#### **Progress and Performance Assessment**

The legislative review and drafting work has been successful to date, building on prior efforts and existing networks. WCS anticipates the approval of the Forestry Law sometime in early FY2007. One of the primary objectives of this law is the recognition of local community rights to access and use forest and non-timber forest products. Assuming these provisions survive the upcoming debates in parliament, they will form the basis for the further development of local regulations and/or agreements that will help guide local management forest resources. WCS will also conduct training programs on the implementation of the Forestry Law at the local level. Three additional laws will likely form the majority of continuing legislative drafting work for FY2007; including the Rangeland Law, Hunting Law, Endangered Species Law, and Trophy Hunting Law. For all of this work, priority activities will be defined in cooperation with partners in national government and the legislative drafting group.

#### **Activity 2.7 Environmental Services Valuation**

In Quarters 2 and 3, WCS created an Afghanistan Environmental Valuation Advisors Group (WCS staff, environmental economists in academia, and others) consisting of a set of international experts in the field of environmental valuation. The advisor's group is made up of Dr. Gary Bull, Assistant Professor of Environmental Economics at the University of British Columbia, WCS economists Dr. Ray Victorine, Associate Director of the Conservation Finance Program, and Dr. David Wilkie, Associate Director of the Living Landscapes Program, Peter Zahler, Associate Director of the WCS Asia Program, and Dr. Alex Dehgan, Afghanistan Country Director, which met in June and July 2006. In Quarter 3, Dr. Gary Bull and KiJoo Han, a doctoral student at the University of British Columbia, traveled to Afghanistan to assess the feasibility of potential study areas and approaches, collected background data, selected the Eastern Forests Complex as the geographic study area, and identified data sources and partners in July 2006. Mr. Han has been developing survey methodologies from September 2006 until March 2007.

#### **Progress and Performance Assessment**

WCS has met the goals for FY06 through the formation of an advisory group, selection of a biologically important region to model, collected available data, and started developing survey

methodologies. These actions will assist the Government of Afghanistan to begin the process of estimating the contribution of ecosystem services to the national economy that could serve as a model for other nations in the region to incorporate ecosystem values into their national system of accounting.

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

#### **Applicability to Biodiversity Codes**

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. WCS activities are designed to promote community-based decision-making to enable local-scale resource management and conflict resolution. Most actions focus on the communities, but additional stakeholders and government authorities on district, provincial and national levels are also engaged.

**Figure 4:** Conducting a socioeconomic survey within a village.

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

In Q3 2006 the WCS Community Conservation Program identified all Wakhan villages that utilize grazing resources in the Big Pamir and Little Pamir, and surveyed all Wakhi pasture settlements in the Big Pamir to determine number and type of livestock, the number of households using each pasture area and their village affiliation, and the seasonal migratory pattern of each group of herders (figure 4). This material is currently being gazetted into the GIS database to compare with rangelands data and mammal and bird survey data.

### **Activity 3.2 Conservation Awareness & Environmental Education**

In Q3 2006, the WCS CCP formulated a conservation awareness program, to be presented in each of the 21 villages utilizing Pamir grazing resources. The majority of this program will be implemented in Quarter 4.

### **Activity 3.3 Community Organization and Governance**

In Q3 2006 the WCS CPP initially met with 22 village councils (shuras) representing Wakhi villages using Pamir grazing resources. WCS also laid the groundwork to establish a presence in the Wakhan to work with these communities throughout the year on governance.

### **Activity 3.4 Ecotourism Enterprise Development**

In Q3 2006 the WCS CPP identified 14 individuals from 10 villages who had received basic tourism-related training from other NGO stakeholders. WCS worked with 7 of these individuals providing on-the-job training. These individuals will be the focus of our activities over the next two years, as well as others identified from local shuras and the national solidary program.

### **Progress and Performance Assessment**

WCS identified the villages and designed the survey methodologies for the socioeconomic surveys, and started conducting the surveys. WCS has also made initial progress in Quarter 3 in developing the foundation for implementing community based natural resource management in Wakhan. These activities will ramp up in Quarter 4 with the presence of a permanent WCS field office in Wakhan.

## **OBJECTIVE 4: CAPACITY-BUILDING INITIATIVES.**

### **Applicability to Biodiversity Codes**

Afghanistan's future ability is threatened by its lack of human and institutional capacity. No where is this more evident than in the sciences, where basic knowledge remains a critical constraint on natural resources management. The lack of institutional and scientific technical capacity is a primary threat to the conservation of biodiversity in Afghanistan. Developing institutional and technical capacity through short courses, field training opportunities, study travel opportunities, and on a larger scale, public education, has the primary objective of conserving biodiversity.

### **Activity 4.1 Afghanistan Training Courses**

To reduce duplication and overlap, a needs assessment was conducted through interviews with UNEP, ADB, FAO, NEPA, Ministry of Agriculture, Save the Environment Afghanistan and other associates to determine past, current and planned training and capacity building activities in the field of conservation.

WCS taught a course for the field survey teams (Activity 4.3) on biodiversity conservation focused on the methodologies for rapid assessment surveys (15 people). The participants in the survey program were trained in skills of bird identifications, recording observations, using a field-guide and other field equipment. They were trained in sampling techniques for bird

abundance and composition, line transect sampling and time constrained searches, and rapid habitat evaluation methods. All the classroom components were complemented with practical exercises. The participants compiled their field data, performed basic analysis, and wrote up short reports. WCS also taught two seminars on "Community Conservation in the Wakhan" in two venues. There were approximately 70 attendees, including staff from the Ministry of Agriculture, NEPA and ADB, among others. Most of the training courses will be implemented during Quarter 4.

#### **Progress and Performance Assessment**

Building research and analysis skills will assist the Afghans in being able to assess its biodiversity and identify its threats. The needs assessment will drive the nature of the training program for the next three years, completion of the assessment allowed WCS to ensure that its training programs would complement existing activities in Afghanistan, and maximize the training environment. WCS used this assessment to set up training courses for Quarter 4, consistent with the Annual Workplan.

The short training courses that were offered will help government counterparts in the Ministry of Agriculture and the next generation of conservation professionals develop technical skills in biodiversity conservation, which were then implemented through extended programs of practical field mentorships.

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

WCS sent a Afghan conservation professional to the 17<sup>th</sup> Annual Conference on Bear Research and Management in Nagano, Japan. Mr. Modaqiq presented a paper on the status of Himalayan Black and Brown Bear in Nuristan Province and also took part in a range-wide mapping exercise that will include data collected from Nuristan Province on black bear sightings collected by WCS. This is the first time that a representative from Afghanistan took part in the conference and included data points for inclusion in the range mapping exercise. WCS also worked to forge relationships with Aligarh Muslim University, a center of excellence in India for wildlife studies, to provide training opportunities for promising individuals that were currently working with WCS.

#### **Progress and Performance Assessment**

Afghanistan's participation in the International Bear Conference in Japan allowed for it to rejoin the international scientific and conservation community. The conference also included a workshop in assessing the status of the Asiatic Black Bear and the Brown Bear which required applying research data to GIS. WCS short course and seminar programs also allow WCS scientists and consultants to contribute to training and capacity building while they are in country carrying out project activities.

#### **Activity 4.3 Field Training and Scientific Mentoring**

From the period of June to September, WCS has prepared and sent five teams to do field research in the Afghan Pamir for intensive field training in biodiversity assessment. Fifteen participants from the National Ministry of Agriculture, Provincial Department of Forest and Rangelands, Kabul University and the Kabul Zoo have taken part in scientific field research, most for the first time, and this training provides much needed practical experience. WCS is working to build capacity in these teams throughout the year to prepare them further for the

spring field season.

Across all teams, trainees have used for the first time, the most basic field equipment, such as GPS and compass. They have learned basic field survey methodologies, such as laying out transects and quadrats and have learned objective household survey techniques. While many trainees have knowledge of natural resource management theory, few have put it into practice. WCS is one of the only NGOs in the country providing scientific field training and scientific mentoring as an integral part of its program.

#### **Progress and Performance Assessment**

WCS completed an extensive program of practical field-based training and mentoring in modern scientific methodologies for Afghan scientists and government officials in the field. Five teams with 15 participants participated in fieldwork for over *450 field training-person days* in Quarter 2 and 3, with additional practical training in Quarter 4. Based on survey evaluations and monitoring of the field teams, all of the participants have improved their technical skills and most at a level beyond what was expected. By continuing to do small projects, WCS will test whether the trainees can use these skills independently, and WCS scientific staff continues to work with Afghan counterparts to build their skills. For example, the mammal assessment team is trapping small mammals around Kabul to build skills in data collection, learning Afghan species, doing basic research, developing keys for species identification, taking biological measurements, using scientific equipment, and learning advanced scientific terms and nomenclature systems.

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

WCS is developing a public diplomacy strategy to increase awareness of conservation problems and increase support and goodwill for biodiversity conservation activities. WCS has commenced negotiations with Tolo Television to create two television series. The first would be a show of international wildlife films dubbed in Dari, available from a library of hundreds of films maintained by WCS and the International Wildlife Film Festival in Missoula, Montana. Second, WCS is negotiating with Tolo Television to create a series documenting wildlife in Afghanistan. If successful, this would be useful for tourism, environmental education, and public diplomacy and would be filmed over the next year.

Separately, WCS has begun preliminary discussions with the Afghan Conservation Corps, UNEP, and the Ministry of Education, to begin supplementary biodiversity conservation education materials for distribution to K-8 levels in schools all over Afghanistan to increase awareness of environmental problems in Afghanistan.

#### **Progress and Performance Assessment**

WCS has identified two communities for environmental communication initiatives – the expatriot community (including military forces) in Afghanistan that may through a lack of knowledge be illegally driving wildlife trade, and the future generation of young Afghans accessible through schools and education institutions. Finally, WCS has identified to target communities situated in areas of high biodiversity and develop education materials through the community conservation program and community conservation workshops.

## **OPERATIONS, SECURITY, AND LOGISTICS**

WCS set up the infrastructure in Quarters 2 and 3, necessary to carry out the program, including setting up furnished and equipped office and guesthouse facilities in Kabul, field bases in Wakhan (in the villages of Qila-e Panj and Kret), and initiated the establishment of a regional office in Ishkashim in lower Wakhan. WCS has recruited international and local staff. WCS has set up auditable financial accounting and inventory systems and completed its registration as an NGO within Afghanistan. Finally, WCS has developed logistics and security support systems for sites and field, including acquiring specially-modified and designed vehicles for working year-round at the off-road, high-altitude field sites within Wakhan.

### *Facilities, Staff, and Logistics*

Specifically, WCS set up an office, furnished it with office equipment, satellite-based internet connections, and furniture, purchased vehicles, hired and trained staff, set up auditable financial mechanisms, and started placing teams into the field in extremely remote and challenging environments. Over the last six months, WCS has put in systems to facilitate the challenging logistics of moving teams into the field in some of the most remote places on earth, monitoring their security, and resupplying them as needed. We have opened a regional office in the Wakhan, and small field bases in the heart of the Wakhan at Kret and Qala-Panj for resupplying teams. Finally, we have developed management policies that are transparent, treat national and international staff equally, and maintain our financial integrity. We have also fully registered in Afghanistan and are in full compliance with all laws and regulations.

### *Security*

Afghanistan is a volatile and unpredictable environment, and security risks are difficult to determine. Threats may arise against both our facilities and field teams. The remoteness of the country and the omnipresence of mines and unexploded ordinance have also posed substantial dangers. Accordingly, WCS Afghanistan has invested considerable resources into security and operations. To mitigate these risks, WCS has joined the Afghanistan NGO Security Organization, which provides intelligence for NGOs on security in the country. WCS has also hired a cadre of experienced security guards with multiple years of experience in the military, and intelligence, and a security company to provide training. We have devoted considerable resources to training our guard staff in surveillance, IED detection and avoidance, bomb threats, personal and vehicle searches, basic and advanced lifesaving. WCS has invested resources into hardening its facilities, creating and supplying first aid kits for deployed personnel, teams, vehicles, and facilities, developing UN MOSS compliant structures, and drafting evacuation plans and an extensive operations and security manual.

**Afghanistan Biodiversity Conservation Project  
USAID Performance Indicators & Milestones for FY06, Quarters 2 & 3**

OBJECTIVES	INDICATORS	Key		Quarter 1	Quarter 2	Quarter 3	Quarter 4					
		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	
OBJECTIVE 1: SURVEY AND MONITOR WILDLIFE SPECIES AND THE LANDSCAPE CONTEXT IN WHICH THEY ARE FOUND	INDICATOR 1.1: WILDLIFE ASSESSMENTS											
	INDICATOR 1.2: RANGELAND ASSESSMENTS											
	INDICATOR 1.3: ECOSYSTEM HEALTH											
	ACTIVITY 1.4: LANDSCAPE ANALYSES AND GIS PROGRAM											
OBJECTIVE 2: STRENGTHENING LAWS, POLICIES, AND INSTITUTIONS	INDICATOR 2.1: PARKS AND PROTECTED AREAS											
	INDICATOR 2.2: ANALYZE, AND DRAFT LEGISLATION											
	INDICATOR 2.3: ECOSYSTEM SERVICES VALUATION											
OBJECTIVE 3: COMMUNITY-BASED NATURAL RESOURCE MANAGEMENT	INDICATOR 3.1: COMMUNITY CONSERVATION COMMITTEES											
	INDICATOR 3.2: ECOTOURISM ENTERPRISE											
OBJECTIVE 4: TRAINING AND CAPACITY BUILDING	COMMON INDICATOR 204: # PEOPLE TRAINED IN NATURAL RESOURCES MANAGEMENT & CONSERVATION AS A RESULT OF USG ASSISTANCE											
	INDICATOR 4.4: PUBLIC DIPLOMACY & CONSERVATION EDUCATION INITIATIVE											
USAID COMMON BIODIVERSITY INDICATORS	Total Number of People:	106	143	211	320	502	816	1376	2418	4440	8548	
	COMMON INDICATOR 203: Number of people with increased economic benefits derived from sustainable natural resources management and conservation as a result of USG assistance.											
	Total Number of Areas:	1	2	3	4	5	6					
	COMMON INDICATOR 194: Number of areas under community management											