

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

Third Quarter 2007 Technical Report



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:

Firstly, WCS is undertaking extensive **Baseline Surveys and Data Analyses of Wildlife and Wildlands** in Afghanistan's three most biologically significant areas (Wakhan, Hazarajat Plateau, and Eastern Forests). These surveys will allow WCS to analyze the status and threats to biodiversity in Afghanistan.

Secondly, 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.

Thirdly, 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 QUARTER 3, 2007

Baseline Science and Analysis

In Quarter 3, 2007, WCS continued mammal surveys of Nuristan, the first in three decades, and the second in history. Data collected by teams will support estimates of population size of markhor, wolf, jackals, black bears, Persian leopards, fox, and crested porcupine in central Nuristan. WCS continued the acquisition of remote sensing imagery and synthesis of data in a GIS framework, with special focus on the Eastern Forests. WCS also began analysis of previous survey data from the Wakhan region. A WCS ornithological expedition to the Big Pamir Proposed Protected Area, Zarkul lake and adjacent areas of the Wakhan corridor recorded 149 species. This included a total of 38 species new to the Wakhan, which strongly reflects the scarcity of previous ornithological work in this remote area of Afghanistan. In the Hazarajat region a WCS team sampled three sites over a period of two weeks and caught 49 small mammals, which were sent to the Smithsonian Institution for identification and curation. They also recorded four species of birds new to Band-i-Amir, and collected fish for later expert identification. The rangeland team collected approximately 300 plant voucher specimens; half will remain in Kabul and the others were transported to the U.S. for identification. The on-going work will provide information on how human activities influence vegetation and rangeland conditions and also impact wildlife. In ecosystem health, WCS tested the first subset of 81 sera samples collected in Pamir/Wakhan in December 2006 for brucellosis (rose bengale test), Q fever (ELISA test) and chlamydiosis (ELISA test), three abortive diseases of domestic ruminants. Prevalences were 10%, 60%, and 0% respectively. This was the first confirmation of the occurrence of Q fever in small ruminants in Afghanistan. WCS also surveyed livestock in the Kyrgyz community of the Big Pamir; seventy-one sera samples will be tested for exposure to the above-mentioned pathogens. The WCS Ecosystem Health team also analyzed data collected in

Band-e-Amir and produced a separate report compiling the principal aspects of livestock health, assessing risk of disease spill-over to wild ungulates and providing results of an investigation of fish die-off in this area..

Community Conservation Program

In Quarter 3, the WCS CCP continued its work in Wakhan to build broad-based constituencies for conservation to ensure the conservation of Afghanistan's biodiversity. WCS has now completed socioeconomic surveys of 28 out of the 30 active Wakhi summer herding settlements using both Big Pamir and Little Pamir resources. WCS also began conducting research among the Kyrgyz population, visiting approximately 75% of the roughly 50 Kyrgyz camps in the Big and Little Pamir. During these visits, WCS collected original demographic data including number of households and number of persons per household, seasonal migration patterns, and general livestock. WCS teams visited five of the six government schools in Wakhan District in which Environmental Education programs were started in Q2 2007. The teams helped prepare educational materials for the schools, held workshops with principals and teachers to discuss program implementation, and met with the student groups working under teacher supervision. The WCS teams conducted meetings in 11 of the 17 Wakhi villages using the Big Pamir to discuss the existing Environmental Law and its relevance to community governance, and to record the traditional resource management regulations. Villages agreed to incorporate the concept of Community Conservation Committees within their existing management structure, and each village council appointed one member of the community to serve as focal person and point of contact for conservation activities, and agreed to cooperate with WCS in development of conservation governance. All 24 villages actively using the Big Pamir and Little Pamir resources have now pledged their full support for WCS activities, have either appointed or agreed to appoint a focal person for conservation, and have agreed to work with WCS to develop and incorporate conservation bylaws into village council bylaws. This effectively brings all villages actively using the Big Pamir and Little Pamir under community management in partnership with WCS. WCS brought Dari language copies of the Environmental Law to Wakhan for distribution in all 42 villages. Working with the WCS Law, Policies, and Institutions Component, the team also drafted a set of bylaws for an envisioned Wakhan Conservation Association (WCA).

Laws, Institutions, and Policies

Economic development through natural resource management and biodiversity conservation depends on the creation of effective institutions and policies. During FY07 Quarter 3, WCS continued its work to increase opportunities for biodiversity conservation and natural resource management through creation of effective institutions and policies to mitigate existing threats and increase opportunities for effective conservation through better governance, enforcement, and support for the rule of law. WCS and representatives from the Ministry of Agriculture and NEPA facilitated democratic election of BAPAC (Band-e-Amir Protected Area Committee) representatives in all 13 villages lying within the proposed boundaries of the national park. WCS undertook training for 23 government and community representatives on basic concepts of protected areas, Afghanistan environmental law, contents of the BANP management plan and the role of management plans in a protected area management. The first BAPAC meeting was held on September 11 under the chairmanship of the Bamiyan Governor. Besides BAPAC members, also present were representatives from the New Zealand Provincial Reconstruction Team (PRT), U.S. State Department, U.S. Embassy, USAID, ADB and WCS. The second BAPAC meeting was held on 23 September with nearly 30 members and observers in attendance, again chaired by the Bamiyan Governor. WCS also worked with the Community Conservation Committees in the Wakhan to revise proposed articles of incorporation and the establishment of Community

Conservation Committees. As part of its train-the-trainer program, WCS continued its work with the Afghan Lawyers Union (ALU), helping to develop presentation materials and incorporating their input in an updated version of the Compendium of Environmental Law and Practice. In addition to these, WCS prepared revisions to a Hunting and Wildlife Conservation Law and submitted this to the legislative drafting group for review. WCS anticipates preparing a 3rd technical draft in late 2007 or early 2008. Finally, WCS, acting as a close advisor to the Ministry of Agriculture, recently collaborated on the budgeting and planning process for protected areas for the Ministry in the Afghan year 1387. As a result, WCS leveraged USD \$500,000 to build government institutional capacity, develop projects that service local communities and protect wildlife in two of WCS' project areas: Band-e-Amir and the Wakhan (and also Khol-e-Hashmat Khan). Government commitment to hire and equip staff, develop offices and enforce government policies will improve the management and protection of these proposed national parks.

Training and Capacity Building

Afghanistan's future ability to manage natural resources is threatened by its lack of human and institutional capacity. In Quarter 3, WCS trained and educated a total of 130 people through a variety of seminars and training courses that developed skills in wild bird identification and improved knowledge of conservation principles. WCS has achieved a multitude of successes in reducing illegal wildlife trade in Afghanistan by improving enforcement measures at US military bases, including the Bagram Airbase APO and the Bagram Military Market, as well as and the Kabul Airport Customs and the fur traders from Chicken Street. With support from FAO, the second half of the Avian Influenza Wild Bird Identification, Handling and Sampling training was conducted by WCS. Since the Ministry of Agriculture and FAO (Emergency and Rehabilitation Unit) are the first responsible for assessing the risks of and responding to avian flu outbreaks, it is important that they understand the risk of transmission between wildlife, domestic animals, and humans. Twenty-five people participated from FAO, Ministry of Agriculture and the Kabul Zoo. WCS conducted a training and demonstration for 8 members of the GIS staff and other departments of NEPA. WCS developed this training at the request of NEPA and UNEP to build awareness within the various departments about the purpose and role of GIS in environmental management, and the basic theory and capacity of GIS as a tool for analysis. WCS conducted training for the Band-e-Amir Protected Area Committee on the Environment Act of Afghanistan, the purpose of protected areas, and the benefits to declaring Band-e-Amir a national park, and the role of BAPAC and the management plan. This helped prepare and inform the community members and local government for the initial meeting of BAPAC and for their future role as implementers and managers of Afghanistan's first national park. WCS supported one exceptional Afghan Research Assistant who has worked with WCS for one year to obtain a Master's of Wildlife Science at Aligarh Muslim University in Aligarh, India. WCS also has sponsored two Wakhi community members to attend the Dutch Committee for Afghanistan's (DCA) Para-Vet Training Course. 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. Finally, to build support for conservation in each of the key ministries, WCS organized a study tour to Indonesia for ministerial decision makers that demonstrated the benefits to communities, government and natural resources that result from protecting biodiversity. Participants visited two national parks (some of them visiting a protected area for the first time), engaged in a campus-wide event at the State Islamic University on Islam and Conservation, learned about conservation education and awareness programs, and witnessed enforcement first-hand by going on patrol with the Rhino Patrol Unit. At the conclusion of the study tour, the delegation proposed creating an inter-ministerial coordinating committee on conservation. The committee has been created and

officially recognized by each Minister and approved by the President’s Office. Two meetings have already been held. WCS facilitates each meeting and provides technical expertise as needed.

Operations, Security, and Logistics

The security situation in Afghanistan deteriorated during Quarter 3 with an increase in suicide bomb attacks by anti-government elements (AGEs) in Kabul and some other regions. The situation in Nuristan (Eastern Forests complex) is at a level where only nationals from the community, who are fully aware of the dangers and are trusted by the locals, can continue with surveys on behalf of WCS. Some of these survey teams had to be withdrawn from Nuristan for a few weeks because Coalition and AGEs became involved in combat operations close to one of the areas in which camera trapping surveys were being conducted. They were able to return without problems a short while later. The main theater of WCS activities, namely Bamiyan and Wakhan, are regarded as relatively safe but the security situation is being monitored to see if any perceptible changes are taking place here. WCS continues to send the resident security guard team for refresher training with our contracted QRF (Quick Reaction Force) Hart Security. All newly arrived international staff receive a current security briefing from Hart on arrival. All new staff receive Mine Awareness Training on arrival in Kabul and may not leave for the field before completing this training. During Quarter 3 the WCS office and Guest House guards received additional training and 2 of 4 WCS Drivers attended a “defensive driving course.



Rangeland Survey team in the 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 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

Meaningful conservation decisions can only be based on accurate scientific data. Afghanistan has had almost no scientific data collection during the last thirty years of conflict, and most conservation decisions cannot be made on data that is 30 or more years out of data. Wildlife surveys, therefore, remain the core component of biodiversity conservation in Afghanistan.

Activity 1.1.1 Mammal Surveys

During Quarter 3, the Wildlife Survey team focused on analyzing the data collected in the field (Wakhan Corridor) during winter and summer 2007. During third quarter the survey team started the analysis of scats collected from the study area. Scats were carried from Afghanistan to India for analysis of the presence of different species in the scats from predators such as snow leopard and wolf from the Wakhan to get some idea of dietary use.

During the initial stages of lab work, the surface layer of the scats was scratched for the possible presence of the epithelial cells from the digestive track of the animal. 125 scats were scratched and the samples preserved following set protocols. The samples were send to Kabul for further transport to the United Sates for genetic analysis. The next stage involved the preparation of reference slides of all the possible prey species from the Wakhan Corridor. Hair samples of the potential prey species were collected during the field sessions from the Wakhan. These hair samples were used to prepare permanent slides. These slides will be used as reference for identifying prey species from the scats based on cuticular and medullary differences in the structure of hair of different species.

Further analysis of scats is under progress, and we expect the scat analysis will be complete in early November. After that we will be able to know the dietary spectrum of snow leopard and wolf from the Wakhan Corridor, which will be the first such exercise from the area. These data

will give a clear picture of the occurrence of domestic prey species in the diet of predators, which will be compared with the data collected during the previous winter to determine loss of livestock by predators and help identify ways forward regarding this potential human-wildlife conflict.

Analysis of Field Data: Preliminary analysis of the field data revealed excellent birth rate in the population of Marco Polo sheep of the Big Pamir. The analysis of the data revealed the absence of the females from the Waghjir population. The most striking question after surveying the Waghjir was where the females are. Pectoz earlier reported (1977) presence of 100 Marco Polo sheep from the valley, whereas Schaller and Mock during their visits reported not more than 10 individuals from the valley.

Table: Records of Marco Polo sheep during summer 2007 field season from Waghjir

Date	Adult Male	Sub-adult Male	Yearling Male	Total	Conservative Estimate
20.07.2007	0	4	9	13	0
21.07.2007	0	6	9	15	15
21.07.2007	0	3	0	3	3
22.07.2007	25	0	0	25	25
22.07.2007	8	4	0	12	12
22.07.2007	0	6	0	6	6
22.07.2007	4	0	0	4	4
22.07.2007	0	2	1	3	3
23.07.2007	25	0	0	25	0
24.07.2007	9	0	0	9	0
24.07.2007	0	0	2	2	2
24.07.2007	6	0	0	6	6
24.07.2007	1	0	0	1	0
24.07.2007	6	0	0	6	0
25.07.2007	30	0	0	30	21
26.07.2007	6	0	0	6	0
26.07.2007	0	0	7	7	7
26.07.2007	0	0	11	11	2
27.07.2007	0	0	7	7	0
	120	25	46	191	106

During the summer 2007 field session we made independent observation of 19 groups of Marco Polo sheep, counting 106–191 individuals. The most striking observation in the Waghjir was the absence of females from the area. All the animals encountered were males. We tried to check both passes (Dilsang which leads to Pakistan and Waghjir which leads to China) to determine the possibility of any females in the area. The Dilsang on the higher reaches close to the Pakistan border is not good habitat for Marco Polo sheep, although further down towards Pakistan it may improve, whereas the China side appears to be good habitat. Pellet collections suggest that the sheep use both passes.

The Waghjir population, if connected to China or Pakistan, should be considered as one of the more important populations of the Marco Polo sheep in the Pamirs. We have already collected 35 samples from the Waghjir for genetic analysis and hope if Dr. Rich Harris (Marco Polo Research Team) will be able to get samples from the other side close to the Waghjir then it will be easy to link the male population of the Waghjir to its source population.

Another striking feature of the Waghjir is the total absence of livestock and humans during the summer. However, the area where we counted 106–191 male Marco Polo sheep can hold more than 500 unattended yaks during the winter season. Whether the Marco Polo sheep use that area during the winter needs further evaluation. The higher reaches of Waghjir are not suitable snow leopard habitat, but the middle portion of the valley is good and we found moderate evidence of snow leopard. Ibex is rare in the valley whereas bears and wolves frequent the area.

From our work, it appears that the proposed boundary for the reserve needs further evaluation. It may be that the boundary should be placed such a manner so that it includes Dilsang Pass within the limits of a protected area.

The comprehensive mapping of the snow leopard for range wide Conservation Planning will be part of the WCS International Conference on Range Wide Conservation Planning for Snow Leopard that will take place in February, 2008. On behalf of WCS Afghanistan's Biodiversity project, the mammal survey team is in close coordination to create the first comprehensive distribution map of the snow leopard for Afghanistan.

Activity 1.1.2 Avifauna Surveys In Wakhan

In September and October a WCS team went on an ornithological expedition to the Big Pamir Proposed Protected Area, Zarkul lake and adjacent areas of the Wakhan corridor. Their objective was to make a baseline ornithological survey and to gather data about the importance of the area for the conservation of the avifauna. The survey was timed to coincide with fall migration. The team recorded 149 species, including many migrants. A total of 38 species were new to the Wakhan, which strongly reflects the scarcity of previous ornithological work in this remote area of Afghanistan. Among the new species was a little bunting, which seems to be the first documented record of this species in Afghanistan as a whole – a fact reflecting its rarity as well as the lack of ornithological coverage. Other new species were rosy pipit, white-tailed rubythroat, black-throated accentor and white-capped bunting – all of which are restricted to just one biome and therefore of higher conservation concern than many other species. Also all four species could potentially breed in the Wakhan and deserve special attention on future surveys during the breeding season. Other records of note included birds of conservation concern: for example yellow-eyed pigeon, a species globally classified as "vulnerable" by Birdlife International, was seen again, the first observation in Afghanistan since the 1970s. It seems likely that this species regularly roosts in the area on migration and hence that the Wakhan corridor is of importance for the conservation of this species.

The importance of the Wakhan corridor for the conservation of regional avifauna, however, rests even more with resident and breeding birds. These include many biome-restricted species like Himalayan griffon, Himalayan snowcock, ibisbill, lesser sand plover, snow pigeon, Tibetan sandgrouse, Hume's short-toed lark, white-winged redstart, rufous-tailed wheatear, mountain chiffchaff, and great rosefinch. Virtually all of these are specialists of the high mountain habitats typical of the Wakhan corridor. While the data available are necessarily sparse, it seems that the Wakhan corridor hosts healthy populations of most of these species and at least for Himalayan snowcock, snow pigeon, white-winged redstart and mountain chiffchaff, these are likely of international importance. A further species for which the Wakhan corridor plays an internationally important role is the bar-headed goose. For the conservation of other species, the Wakhan corridor more likely is of national importance. These include Himalayan griffon, lesser

sand plover, brown-headed gull, Tibetan sandgrouse, white-capped water redstart, black-throated accentor and white-capped bunting to name but a few examples. Taking into account the importance of the Wakhan for the conservation of each species, WCS will now start to analyze which areas and which habitats within the Wakhan area host to the most birds of conservation concern. Initial results point to at least three areas and habitats of high conservation priority: the rocky areas at high altitude in and around the Big Pamir Proposed Area, the riverine thickets in the Wakhan valley and its side valleys, and Ghaznikul (lake) including the marshy sedge meadows in its surroundings as well as parts of Zarkul (lake). Future expeditions will further help us understand areas of priority.

Activity 1.1.3 Other Wildlife Surveys

Hazarajat: A team of two local Band-i-Amir residents and two Kabul WCS staff was trained in small mammal trapping techniques. The team sampled three sites over a period of two weeks and caught 49 small mammals. The specimens were sent to the Smithsonian Institution for identification and curation. As a sideline to their livestock health work, the WCS Ecosystem Health Project recorded four species of birds new to Band-i-Amir (common moorhen, twite, common cuckoo, European linnet) and collected fish for later expert identification.

Nuristan: For further information on wildlife survey work in Nuristan, please see Activity 2.4.1.

Activity 1.2 Marco Polo Sheep Research and Monitoring

The Marco Polo sheep (*Ovis ammon poli*) is a key indicator of ecosystem health in the Pamirs of Afghanistan and surrounding countries. Long prized for both food and ceremonial purposes by locals, as well as by foreign big-game hunters, this species was once very important to local cultures and economies. Unfortunately, local protection and management of the species and its habitat disintegrated when the Soviet Union invaded Afghanistan in 1979, resulting in unrestricted hunting as well as expanded grazing by domestic livestock herds in its habitat. Today, density, distribution, local habitat preferences, and connectivity of Marco Polo sheep populations in the Pamirs are poorly understood.

Marco Polo sheep are among the most difficult of all wild animals to study, due to their wary nature and choice of remote, precipitous habitats - characteristics that undoubtedly contribute to the species' continued presence in the region. WCS work on the species is focused on three questions, each critical for future conservation and management: 1) Is the very restricted distribution of Marco Polo sheep in the Big Pamir region real (rather than simply being an artifact of limited sampling), and if so, what is causing it; 2) Are there barriers to movement and gene flow among what appear to be disjunct sub-populations of Marco Polo sheep within Afghanistan's Wakhan corridor (as well as between these and neighboring sub-populations in Tajikistan, China, and Pakistan); and 3) Is there habitat use overlap or conflict between domestic livestock herds and March Polo sheep, and if so, could management options (such as grazing rotation schedules for domestic herders) mitigate these conflicts.

This project 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 level of support for 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 BPWR will be generated, both through direct observation, and through capture-recapture methods based on individual genetic markers from fecal samples.

During the 3rd quarter of 2007, WCS made progress in i) laboratory work on existing samples, ii) arranging for future sampling, and iii) preparation for field work to be conducted in winter 2007-08 and summer 2008.

Following up on field work conducted during July 2007, WCS catalogued a total of 96 fecal samples for DNA extraction. Due to USDA restrictions, we contracted with CIBIO –UP, Genéticos Campus Agrário de Vairão in Portugal to conduct initial DNA extraction and mtDNA analysis. These samples are currently in the laboratory, and we expect to obtain initial results on extraction success in late October, 2007. We are in the process of obtaining a USDA permit to import an additional 14 fecal samples from Marco Polo sheep and domestic livestock for dietary analysis. These analyses will be conducted at the Wildlife Nutrition Laboratory at Washington State University, Pullman, Washington.

Critical to understanding the status of Marco Polo sheep populations within the relatively narrow Wakhan corridor is understanding their relationships with animals in adjacent countries. To this end, we provided sampling equipment and instructions to colleagues in China and Tajikistan, who will be collecting fecal samples and shipping them to Portugal at no cost to the project. DNA from tissue samples already on hand will also be extracted at the American Museum of Natural History's Sackler Institute for Comparative Genomics. Contacts were made regarding collection of similar samples from northern Pakistan.

In preparation for analyses of limiting factors for Marco Polo sheep in the Big Pamir, we obtained high-resolution ASTER imagery of the area, which can be used to produce a digital topographic map at 30-m² resolution. This base map will allow us to examine topographic correlates of argali presence and absence. We also purchased and shipped winter camping gear to Kabul, for use both by the WCS team and local counterparts during our planned November-December field work in the Big Pamir. Considerable coordination and planning was conducted involving the Marco Polo sheep team and the other teams working on biodiversity and community conservation in the Wakhan corridor (Ecosystem Health, Rangelands, Community Conservation), and arrangements were made to share data and to cooperatively collect additional geographic information on livestock movements.

Activity 1.3 Assessment of Rangelands in Wakhan

Work on rangeland assessment of the Wakhan in Quarter 3 was predominately associated with fieldwork in the Wakhan Corridor. The rangeland assessment team made two separate trips into the Wakhan to examine conditions in areas of both the Big Pamir and Little Pamir. The first trip, June 24-July 14, 2007, was mostly in the Big Pamir region where we established 17 permanent rangeland monitoring plots. The second trip began field work on 10 August until 6 September 2007. During this field work we established 47 permanent rangeland monitoring plots. These permanent monitoring plots will be used for plant community analyses and for rangeland health assessment.

During the field work we collected approximately 300 plant voucher specimens. Approximately ½ of these specimens remain in Kabul and the others were transported to the U.S. for identification. The on-going work will provide information on how human activities influence vegetation and rangeland conditions and also impact wildlife. All plot locations, plot data, and photographs will be incorporated into a GIS. The plot data and photographs within the GIS will allow easy future comparisons of data and images.

During field work we trained two local Wakhi and three students from Kabul on rangeland assessment techniques. Each team member was instructed on use of GPS and the use of a compass. Plant identification, plant cover measurements, and production measurements were also taught in the field.

Progress and Performance Assessment

In Quarter 3, WCS continues to develop baseline information for rangeland monitoring and planning. Collected voucher specimens are currently in the U.S. for verification. The GIS system continues to be developed with plot locations added to the system. Plot data from the 59 monitoring plots established during the 2007 will be reviewed when plant species are verified and then added to the GIS system.

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

For 2007 Q3, WCS continued data collection on disease issues related to livestock management in the Big Pamir region and expanded these investigations to Little Pamir, the Wakhan Valley and Bande-e-Amir in the central Hazarajat region. At present, there are no other programs that are surveying wildlife or health of domestic livestock in Wakhan, and no programs in Afghanistan looking at the links between diseases shared between wildlife and livestock.

In May, the first subset of 81 sera samples collected in Pamir/Wakhan in December 2006 was tested for brucellosis (rose bengale test), Q fever (ELISA test) and chlamydiosis (ELISA test), three abortive diseases of domestic ruminants. Prevalences were 10%, 60%, and 0% respectively. This was the first confirmation of the occurrence of Q fever in small ruminants in Afghanistan. Because the Rose Bengale test lacks specificity (false-positive results occur), the eight positive samples for brucellosis were retested with ELISA and Complement Fixation Test during August 2007. They were all negative, suggesting that none of the livestock tested so far in Wakhan/Pamir have been exposed to *Brucella* spp. Further testing for exposure to Foot and Mouth Disease (FMD), Peste des Petits Ruminants (PPR), toxoplasmosis and bluetongue disease will be carried out in October and November. In July WCS surveyed livestock in the Kyrgyz community of the Big Pamir, Badakhshan. Questionnaires, clinical surveys and blood samples were done. Seventy-one sera samples have been forwarded to the KCVDL where samples will be tested for exposure to the above-mentioned pathogens with special emphasize on Rinderpest, a disease unrecorded in Afghanistan for the last decade but of crucial economical importance for the country and of questionable occurrence in the eastern tip of the Wakhan corridor where movement of animals between Afghanistan, Pakistan and Tajikistan is loosely controlled. During September, WCS has also surveyed livestock in Wakhi community of Little Pamir, Badakhshan. Using the same procedure as during earlier work on Wakhis of Big Pamir (summer 2006) and in July in Kyrgyz of Big Pamir, questionnaires, clinical surveys and blood-samples were done. Ninety sera samples were forwarded to KCVDL.

WCS in collaboration with FAO has been involved in the training of staff at the KCVDL in how to carry out these tests, including using Enzyme-Linked ImmunoSorbent Assays, or ELISA tests, a biochemical technique used to detect the presence of an antibody or an antigen in a sample, rather than relying on fee-for-services at western diagnostic laboratories. This will increase Afghanistan's capacity to identify and monitor infectious disease outbreaks and enlarge the testing capacity of the Afghan staff in a range of other diseases than those they are already trained to detect (FMD, PPR, RP and Avian Influenza). In May 2007, WCS purchased and brought to the laboratory serological kits for Q fever, chlamydiosis, toxoplasmosis and brucellosis. The screening work has started in September in collaboration with FAO and governmental staff.

Combined with studies of range use of wild ungulates (e.g., Marco Polo sheep), analyses of rangeland status, and Wakhi and Kirghiz grazing patterns, the ecosystem health component will help determine the nature and extent of conflicts between livestock and wildlife, including the possibility of disease spillover from livestock to wildlife. 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.

In mid-June 2007, the Ecosystem Health team taught Wakhi herders in five different pasture areas of the Big Pamir grazing system to use hand-held GPS units and record three times per day the position of their livestock herds within the grazing area. GPS units were downloaded in mid-September. All five GPS units have operated successfully and more than 600 data points have been collected and directly plotted on topographic maps. Seven GPS units will be redeployed in October, 2007 to document the range use of livestock during winter. The preliminary data set collected in summer 2007 has been compiled and integrated into the GIS developed at WCS Kabul. The data will help document range use by Wakhi domestic ruminants and, when combined with Marco Polo sheep range use data, evaluate the pattern of disease spillover risk and contribute to understand the deterministic factors of Marco Polo sheep range use.

In August 2007, the WCS Ecosystem Health team analyzed data collected in Band-e-Amir, Bamiyan province during May-June 2007 and produced a separate report compiling the principal aspects of livestock health, assessing risk of disease spill-over to wild ungulates and providing results of an investigation of fish die-off in this area..

The WCS Ecosystem Health Team continues to conduct opportunistic surveys of wildlife trade patterns in Kabul Bird Market as well as in other localities in Afghanistan to understand wildlife trade patterns in conjunction with the WCS legal and policy team. In late August while traveling to Wakhan, a short visit was paid to Mazar-e-Sharif bird market to investigate the occurrence and extent of falcon trade in the area. Legal and illicit wildlife trade has an important influence on the spread of infectious disease, and may directly threaten wildlife populations. This is combined with complementary and parallel efforts under Activity 2.6.

In September-October 2007, the Ecosystem health Team carried out the second part of a training course on bird identification and avian influenza surveillance technique for FAO field staff. The second part of this course included handling of wild birds, waterfowl observation if wetlands

located around Kabul and questionnaire investigations concerning diseases at the poultry/wild bird interface in Kol-e-Hashmat Khan wetland. Also in September discussions were conducted at the Kabul Zoo about future management options for several species that are in a situation of overcrowding at the zoo (i.e., eagle owl, griffon vultures, rhesus macaques, wolves). A management plan has been proposed and should receive approval of the Ministry of Agriculture and NEPA by the end of the year.



Activity 1.5 Community Based Livestock Health Training

The Wakhan region's remoteness, limited or absent veterinary services, and competition for limited pasturage makes the likelihood of disease transmission between wildlife and domestic herds reasonably high. This could be catastrophic for both indigent farmers who are entirely dependent on livestock to survive the winter, and wildlife such as the Marco Polo sheep. During May 2007, WCS selected two Wakhi candidates who currently follow the para-veterinary training course implemented by the Dutch Committee for Afghanistan (DCA). WCS has transported the two candidates to Charikar in the north of Kabul where both of them have succeeded to enroll for the 6-month training course. A visit was paid to candidate paravets in August 2007 to maintain contact with them, assess their learning progress and collect letters for their families. By spring 2008, WCS will provide the two trainees with the necessary equipment and lodging to start their practice. In addition, time will also be allocated to further train them, in particular in wildlife disease issues. In July 2007, WCS has also hired a Wakhi trainee to join and assist the Ecosystem Health team in the Big Pamir. He was trained to identify broad categories of disease conditions, to describe symptoms to veterinarians, to provide basic wound and lesion care, to perform vaccination and blood-sampling, and provide care and basic animal husbandry. This training was designed to complement and facilitate traditional veterinary care and increase awareness of disease spread through domestic livestock. In Quarter 3, 2007, WCS also continued to invest in training two recent Kabul University graduates in monitoring the health status of wild and domestic populations.

Progress and Performance Assessment

The WCS Ecosystem Health team developed and advanced serological screening work to be carried out at the Central Veterinary laboratory in 2007, carried out two field missions in Big Pamir and Little Pamir, respectively, collecting information and samples, and re-tested Brucella positive samples collected in 2006. In addition the team has sent abroad sear samples collected in Band-e-Amir for testing against Contagious Caprine Pleuro Pneumonia as well as some Brucella negative samples from Big Pamir. A one-week training course was carried out for FAO field staff and capacity building was continued at Kabul Zoo.

Activity 1.6. Landscape Assessments and GIS Program

During Quarter 3, WCS continued its systematic spatial integration of all field activities, data collection and analysis activities to better understand the intersections between geographic, biological, and socioeconomic variables in the conservation calculus. For example, all rangeland inventory plots are spatially established and will be incorporated into a GIS. Included will be a plant community type designation, plot data, and all photographs of monitoring plots. Monitoring plots can be re-measured to help determine changes in rangeland health and potential impacts on conservation of resources and on pastoral livelihoods. We continue to map rangeland types using field measurements and remote sensed data and will test if a supervised classification using plot data collected in 2006-07 will delineate accurately plant communities of the Wakhan.

Imagery and Data Acquisition

WCS' GIS program continued to acquire recent and historical remote sensing imagery for Afghanistan. A major focus for the last quarter has been on the planned Eastern Forest Complex (EFC) forest cover (change) assessment. A collection of scenes from various satellite platforms and sensors has been gathered. The collection consists in higher resolution data focused on Nuristan and Kunar, and lower resolution data for the entire Eastern Forest Complex. Data are from the following platforms/sensors:

- Landsat MSS, V-NIR bands, 57 m resolution, 1972-1979
- Landsat TM, V-IR bands, 30 m resolution, 1989-1992
- Landsat ETM, V-IR bands, 30 m resolution, 2000-2002
- Aster, V-IR bands, 15/30 m resolution, 2002-2007
- Spot 4/5, V-IR bands, 10/20 m resolution, 2004-2006

The list of tasks completed comprises the following:

1. identification, assessment, selection, ordering and acquisition of series of satellite imageries for the Eastern Forest Complex for four time periods (1970s, 1990s, 2000s, 2002-2007) from different satellite image sensors/platforms. That includes Landsat MSS 1970s, Landsat TM 1990s, Landsat ETM 2000s, Aster 2002-2007 and Spot 4/5 2004-2006;
2. preliminary supervised classification of forest cover (3 forest classes: Deciduous, Oak sp. and Coniferous) using the Spot 2004-2006 data and field GPS data of different forest types as training samples;
3. processing of imageries ahead of any forest cover change detection exercise; that includes (where appropriate)
 - o resampling of each scene to the highest resolution considered,
 - o reprojecting each scene to suitable projection (UTM 42),
 - o checking and adjustment of each scene's geo-position,
 - o stacking adequate time-series layers,

- displaying appropriate bands combination,
 - enhancing image through brightness/contrast;
4. search and formulation of an appropriate image analysis method for forest cover change detection;
 5. hands-on training of the GIS/RS Analyst in the application of the approach envisaged,
 6. preliminary trial of the method for one Landsat path/row (152/36) and one time-series comparison (2000s vs. 1990s).

We have adopted a hybrid approach of visual and automated classification for forest cover change detection. We have preliminary tested it on a single Landsat scene (152/36), using a Maximum Likelihood Classification (MLC) approach (Erdas), with so far 3 iterations done. We also have in our collection series of images which are both at the highest resolution (10/15m) and the most up-to-date (2007) scenes ever to be used for such assessment.

Developing Conservation GIS Expertise

WCS continued to invest in its Afghan GIS officer during Quarter 3, introducing and training him in situ on an appropriate method for conducting a forest cover change detection exercise. Meanwhile, with the recruitment of a second GIS officer full-time in July, WCS continues its effort to become the focal point for conservation GIS in Afghanistan. WCS aims to continue to build its GIS capabilities in the specialized technical field of conservation GIS during the remainder of 2007 and to assist the government to build this capacity within its own staff. In particular, WCS intends to extend that capacity building effort to the National Environment Protection Agency (NEPA) at their new GIS facility. For this purpose, a 1/2-day “Introduction to Conservation GIS” presentation was made in front of heads of departments and other staff concerned at NEPA in September.

Data Analysis and Integration

The GIS unit has continued its valuable work during Quarter 3. Collation of field data collected during summer 2007 is now completed and most of this data (biological and socio-economical) has been made spatially explicit. During the period a map book for all the three areas of interest were prepared. This map book includes topographic and satellite views/representation of all the areas. Further support to field teams included providing specific maps and appropriate/processed data. The GIS unit finalized previous GIS spatial data and put them in appropriate format for the WCS Living Landscapes Program (LLP). The GIS unit also continued its efforts in tracing, refining and processing topographic data from different sources available, including Russian topographic maps, field data collections and other sources into the standard GIS spatial format which then can be used for the Living Landscapes approach. This includes finalizing administrative boundaries, roads, passes, ethnic areas and pasture areas, seasonal settlements and movement patterns during different seasons, and water bodies are currently being processed.

The GIS unit also preprocessed band combinations and merged resolutions of Quickbird satellite imagery for both Band-i-Amir and Ajar Valley. The GIS unit worked closely with the Hazarajat Plateau team to revise the proposed protected area boundaries for Band-i-Amir and Ajar Valley proposed protected areas based on discussions with the teams in consultation with local communities.

Assessments for Landscape Management

The WCS Living Landscapes Program (LLP) 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. WCS staff continue to design a strategy for geospatial analysis of the project components to create a landscape-species model that will help define the parameters for the proposed protected areas, and to identify and prioritize their threats. In this quarter, the GIS team compiled datasets and stored them in a standard format in the structured GIS database in terms of projection, datum, and extent/scale of data, and documented metadata for every dataset.

OBJECTIVE 2: 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 Quarter 3, WCS shifted its primary focus from the drafting of national level legislation to the development of legal tools for local communities and the training of legal professionals through the Lawyer's Union of Afghanistan. WCS continued its active involvement in coordinating activities of the Afghan government, NGOs, United Nations agencies, and donors, for the development of protected areas in Afghanistan.

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 define these protected areas through stakeholder input, scientific research, and appropriate laws and regulations, and maintain them through appropriate enforcement mechanisms.

Activity 2.1 Update Wakhan Protected Areas

WCS continued development of Wakhan protected areas through the acquisition of remote sensing imagery, analysis of animal distribution patterns, mapping of grazing patterns in high summer pastures, and analysis of human-wildlife conflict. Further, WCS maintained active engagement of these communities through the first three quarters through meetings with CDCs and the agreement to create a protected areas committee.

WCS, acting as a close advisor to the Ministry of Agriculture, recently collaborated on the budgeting and planning process for protected areas for the Ministry in the Afghan year 1387. As a result, WCS leveraged USD \$500,000 to build government institutional capacity, develop projects that service local communities and protect wildlife in two of WCS' project areas: Band-e-Amir and the Wakhan (and also Khol-e-Hashmat Khan). Government commitment to hire and equip staff, develop offices and enforce government policies will improve the management and protection of these proposed national parks.

Activity 2.2 Assessment and Development of a Transboundary Peace Park

WCS continues to be the lead organization for the creation of a Transboundary Protected Area between Pakistan, Tajikistan, Afghanistan and China. The creation of a Transboundary Protected Area in the Pamirs will help facilitate collaborative management of the region's unique biodiversity, foster scientific cooperation, manage the impact of zoonotic diseases, encourage sustainable regional economic development and ecotourism, and promote diplomacy and

cooperation among the four countries. The goals for this second conference include formally establishing a Transboundary Conservation Commission, 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.

WCS is completing its report on the initial Transboundary Protected Area Conference in Urumqi, China, and will propose a framework agreement to be negotiated between the four countries prior to the second conference. The timing of the second conference has been delayed at the request of the Government of Tajikistan. The reason for the request stems in part from the inability of the Islamic Republic of Pakistan delegation to attend at the agreed upon time. The Pakistan government will be holding elections starting in November with the installation of an interim government. Elected officials will not be in place and available until January or February. Moreover, key members of the delegation from the Islamic Republic of Afghanistan will not be available in December as they will be in the United States on an official visit.

In consideration of the necessity of the presence of these delegations at the conference, The Government of Tajikistan is asking for a rescheduling until the Spring of 2008. The delay will allow WCS to pursue the drafting and negotiation of a framework agreement and possibly target a signing at the Second Conference. In this endeavor, WCS has engaged the State Department's Bureau of Ocean, Environment, and Scientific Affairs, the US Embassy in Tajikistan, and is working alongside other organizations both in response to the strong interest so far expressed by all concerned and to create a groundswell of support for the initiative.

Activity 2.3 Central Hazarajat Plateau Conservation Initiatives

During Q3, WCS was very active in steering and facilitating intra-governmental cooperation and the creation of a governance mechanism for the future Band-i-Amir National Park.

Engagement of the Provincial Authorities in Governance of Band-i-Amir: As noted in the Q2 report, meetings between WCS and Provincial authorities in late May revealed the need to better coordinate the communications and efforts of national and provincial governments in the planning and governance of Band-i-Amir. A number of carefully planned and coordinated actions and information sessions were undertaken to integrate the provincial officials into the protected area process. This process culminated in the 10th Band-i-Amir Coordinating Committee being held at the Band-i-Amir ranger station. The meeting was chaired by Mrs. Habiba Sarabi, the Bamiyan Provincial Governor, and attended by approximately 60 people including many notable personages such as Prince Mustafa Zahir (Director General, National Environmental Protection Agency [NEPA]), Engineer Hashim Barikzai, (Director General, Natural Resources Management, Ministry of Agriculture, Irrigation and Livestock [MoAIL]), Mohammad Sharif (First Deputy Minister, MoAIL), Baba Mohseni (Head, Bamiyan Provincial Council), the Mayor of Bamiyan town, Ghulam Malikyar (Asia Development Bank [ADB]) and Dr. Alex Dehgan (Country Director, WCS Afghanistan). Presentations were made by MoAIL, NEPA and WCS representatives explaining the roles of government Ministries and describing the legislation and the management planning process. The Governor agreed to set up the Band-i-Amir Protected Area Committee (BAPAC), as required in the Protected Area Regulations, and hold the first meeting within 15 days.

Creation of the Band-i-Amir Protected Area Committee (BAPAC): Protected Area Committees are prescribed by the Protected Area Regulations as the community/government institutional structures that will provide direction and policy for each protected area. The Regulations state that the Protected Area Committees will be comprised of:

- One representative from each of the communities located in or adjacent to the protected area,
- One representative from the Provincial Council;
- One representative from the District Council;
- One representative from the Afghan Tourist Organization (ATO);
- One local representative of NEPA;
- the Warden representing MoAIL
- the private sector.

Between September 4 – 7, WCS and representatives from MoAIL and NEPA facilitated democratic election of BAPAC representatives in all 13 villages lying within the proposed boundaries of the national park.

On September 10, WCS undertook training for 23 government and community representatives on basic concepts of protected areas, Afghanistan environmental law, contents of the BANP management plan and the role of management plans in a protected area management.

The first BAPAC meeting was held on September 11 under the chairmanship of the Bamiyan Governor, Mrs. Habiba Sarabi. Besides BAPAC members, also present were representatives from the New Zealand Provincial Reconstruction Team (PRT), US State Department, US Embassy, USAID, ADB and WCS.

The second BAPAC meeting was held on 23 September with nearly 30 members and observers in attendance. The meeting was again chaired by the Bamiyan Governor. Some substantive management issues were addressed.

Hiring, Training and Performance of Band-i-Amir Park Rangers: Following protracted discussions with MoAIL, WCS agreed to provide salaries for newly-hired Park Rangers for a short period until the Ministry completed the governmental process for formally employing the same individuals. A formal contract between WCS and the Ministry set out the terms of the agreement and made it clear that funding is temporary and the Ministry is responsible for all other affairs related to the employees. Funding for the single current MoAIL employee at Band-i-Amir remains the responsibility of the Ministry. An agreement was subsequently made to extend WCS funding until December 31.

A team comprised of Mr. Sami Sakhi (MoAIL), Mr. Ashagullah (MoAIL, interim Park Warden) and Mr. Syed Ayub Alavi (WCS Hazarajat Conservation Specialist) traveled to Band-i-Amir between July 7–11 and supervised the selection of one individual from each of 4 clusters of villages.

MoAIL has provided a series of interim Park Wardens from existing staff to oversee the Park Rangers. Hiring of a permanent Park Warden is expected later in the year.

Rangers received training on concepts of protected areas, Afghanistan environmental law, contents of the BANP management plan and the role of management plans in a protected area

management along with the community BAPAC members.

The Park Rangers have proven to be very effective in their short time on the job. The emphasis has been on education and awareness of local people rather than punishment.

World Heritage Site Nomination for Band-i-Amir: A decision was made to delay submission of the draft papers for nomination of Band-i-Amir as a UNESCO World Heritage site. This was a strategic decision based on the perceived need for the Government to have allocated substantive resources to management. MoAIL has a budget for protected areas in the next fiscal year and is expected to be able to demonstrate a substantial financial commitment to the proposed Band-i-Amir National Park.

Activity 2.4 Eastern Forests Program

WCS Eastern Forests Program uses a multi-pronged approach to understanding the steady loss of biodiversity in the eastern region due to deforestation, and developing solutions to stop it. WCS mammals teams, as described earlier, are inventorying the forests of central Nuristan, to determine what changes have occurred in the ecosystem since 1977, and identify prospective conservation areas. WCS is also assessment deforestation rates through satellite imagery recently acquired from the French satellite SPOT, as well as other imagery from Landsat ETM and Aster. In Spring-Fall, 2007, WCS will be attempting to value the ecosystem services provided by the forests to the Nuristanis. Finally, WCS has attempting to assess the size and value of the timber and firewood trade in Afghanistan.

2.4.1 Nuristan Wildlife Surveys

WCS Nuristan wildlife survey teams, comprised of local community members, have completed occupancy surveys of central Nuristan, specifically the Waygal Valley (1000 km²). The field teams focused on large and medium carnivores and large herbivores to estimate the proportion of area occupied by a species, taking into account the fact that species are not always detected even when present (MacKenzie et al. 2002, 2005; MacKenzie and Royle, 2005). This type of survey was designed because the animals in Nuristan are at low densities and are very difficult to detect.

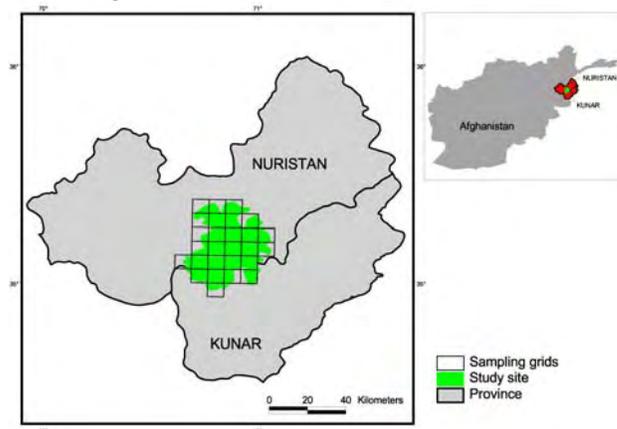


Figure 1: Nuristan Field Site for Wildlife Surveys

According to initial results, wolves, foxes and jackals seem to be common in the surveyed area and occur in a large proportion of sites. However, when interpreting these results, it is important to consider the fact that for these preliminary surveys, we selected an area known *a priori* to be

good wildlife habitat, and further surveys are necessary in other regions. Leopards and snow leopards appear to be much rarer than the canids. It is likely that for these large, solitary and secretive felids, detection probability may be extremely low. Petocz and Larsson (1977) reported a sizable population of markhor in the same area, though our teams failed to detect any large herds, or collect evidence from new areas. The occupancy modeling highlights the important role of poaching in limiting species distributions—for wolf, red fox and porcupine, poaching intensity had the highest effect on distribution. The questionnaire surveys carried out by the field teams also reflected the intensity of hunting in the area. Of 136 interviews carried out, 66% of the respondents had hunted at some time, and 62% of these continue to hunt. However, this should not be used as representative of the entire Nuristan population since interviewees were not selected at random, but were pre-selected for their knowledge of the forest and wildlife. Meat and personal consumption were the most common reasons for hunting, followed by trade. In the case of carnivores, retaliatory killing seemed to be prevalent, as the meat was not consumed. Ninety seven percent of the respondents reported livestock predation by carnivores. Figure 2 shows species hunted, by percentage. The most commonly hunted species are mountain ungulates (40%), bear (18%, probably Asiatic black bear) and leopard (14%).

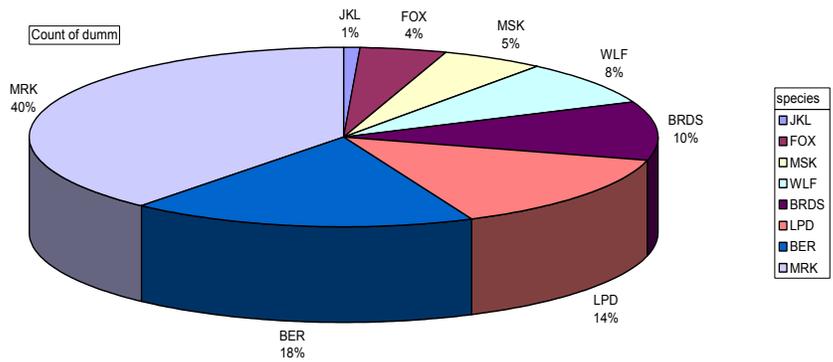


Figure 2: Target Species for Hunting in Nuristan Based on Community Questionnaire Surveys

Teams continue to collect scats for genetic analysis to determine species IDs. Through a partnership with the WCS Great Cats Program and the American Museum of Natural History, all scats from Nuristan are being sent to this lab for free analysis. Over 100 scats have been collected and sent thus far, but results are back from just the first 25, which are listed below. This information is useful to confirm species presence in Nuristan, to determine teams' reliability in identifying scats, and to develop a field guide to the scats of wildlife of Afghanistan. Photos were taken with scale and upon completion of the full set of scat analysis a field guide, with photos and description, will be developed.

Table 1: Species Identification of Scats through Laboratory Analysis (AMNH), and Wildlife Team Identification

Grid	Team	species identified by 16S (AMNH)	Team ID
231	A	unidentified rodent	Porcupine
253	A	<i>Canis aureus</i> (Golden Jackal)	Jackal
275	A	failed	Jackal
297	A	failed	Markhor
298	A	<i>Canis aureus</i> (Golden Jackal)	Jackal
?	A	unidentified rodent	
273	B	failed	
273	B	failed	
273	B	<i>Canis aureus</i> (Golden Jackal)	
295	B	<i>Vulpes vulpes</i> (fox)	
318	B	<i>Canis aureus</i> (Golden Jackal)	
318	B	unidentified rodent	
318	B	<i>Canis aureus</i> (Golden Jackal)	
318	B	<i>Canis aureus</i> (Golden Jackal)	
318	B	failed	
320	B	failed	
320	B	<i>Selenarctos thibetanus</i> (Asiatic Black Bear)	
316	C	failed	Asiatic Black Bear
316	C	<i>Prionailurus bengalensis</i> (Leopard Cat)	Fox
317	C	<i>Canis lupus</i> (Gray wolf)	No ID
317	C	failed	Asiatic Black Bear
317	C	<i>Prionailurus bengalensis</i> (Leopard Cat)	Fox
317	C	failed	Snow Leopard
317	C	failed	Asiatic Black Bear
320	C	<i>Vulpes vulpes</i> (Fox)	Red Fox

WCS started collection of abundance data to estimate the population size of carnivore and ungulate populations through camera trapping. Alex Dehgan trained the teams in camera trapping techniques, operation, and theory, and developed their skills with practical experiments in Kabul. The teams completed an initial round of surveys on 4 grids of 100 km² area, but the camera trap locations were not disperse enough to adequately cover each grid, so these grids will be resurveyed to collect more data. Some of the camera trap photos are below.



Separately, the WCS Nuristan team learned sampling techniques to assess the small mammal species diversity at key sites in Nuristan, and will work with the Smithsonian National Museum of Natural History to identify these species. Small mammal specimens, not only from Nuristan but also Ghazni, Bamyán, Wakhan, and Kabul have been shipped to the Smithsonian and are currently being analyzed. Prior to WCS’ shipments, the Smithsonian had less than 10 specimens from Afghanistan in its archives, compared with hundreds of thousands from places all over the world. These collections add to the global knowledge of biodiversity and future specimens will be housed in Kabul’s future Museum of Natural History, potentially being housed at the Kabul Zoo or Kabul University. WCS Wildlife Survey Teams are currently in Nuristan collecting more specimens.

2.4.2 Timber Trade

WCS is investigating current logging practices through a review of existing publications and the use of timber trade surveys. All data have been fully entered and are now being analyzed for a final report. Initial assessments have been produced for use by USAID and others. As reported previously, these surveys were designed to assess the species, volumes, types, uses, sources, and values of timber in various open air bazaars located in Afghanistan's major trading centers, that serve the entire Kabul market as a way to measure the impact of the market on resources in the Eastern Forests. Final analysis will be ready in early 2008.

Progress and Performance Assessment

The emphasis in FY 2006 for the Eastern Forests Program has remained, as called for in the project document, a more detailed and accurate assessment of the status of and pressures on the forest resources of the region. All components of the assessment have been initiated with preliminary data for wildlife trade and timber trade already available. Analysis is ongoing and will continue through the remainder of FY2007.

Activity 2.5 Ranger Training

WCS is delaying the implementation of a ranger training program until the protected areas are created, and existing environmental laws are drafted. Once this occurs, WCS will work with the Ministry of Agriculture and NEPA to implement this program. Given the new WCS-facilitated ranger hiring in Band-i-Amir, WCS expects to engage in ranger training initiatives in the spring of 2008, focused on these rangers and potentially provisional rangers currently being identified for the Wakhan region.

Activity 2.6 Review of Wildlife and Protected Areas Legislation and Policies

The protection of biodiversity in Afghanistan requires the development of a body of laws for wildlife and protected areas, institutions with the necessary authority and capacity to enforce those laws, a devolvement of management authority to the regions, and an understanding of economics necessary to address the issues. In Quarter 3, WCS continued its review of compiled legislation through focus sessions with the LUA to incorporate their input into an updated version of the Compendium. The partnership continued into third quarter of this year with the intention of holding the first training sessions to be conducted by the LUA. Presentations have been prepared and initial sessions held.

Environmental Law Compendium and Practice Guide

With the input of the LUA, a third draft of The Compendium of Environmental Law and Practice in Afghanistan has been completed. This draft has been submitted to UNEP for review and revisions will be incorporated in late 2007, early 2008. The subjects discussed in the Compendium remain the same and include for reference:

- A discussion of environmental law as an introduction to legislative drafting groups and other Afghan officials.
- A description of the principles of legal development, relevant to national environmental laws for use by legislative drafting groups.
- A full description of the environmental policy framework, branches of government and their environment related responsibilities, legal profession and practice, specific legal instruments used to manage the environment, and summaries of the various laws currently enacted or proposed.
- A description of the international conventions concerning environmental law and conservation, to which Afghanistan is a party.
- Detailed analyses of the Environment Law, Mining Material Law, draft EIA Regulations, draft Forest Law, draft Rangeland Law, draft Protected Areas Regulation, and draft Hunting and Wildlife Conservation Law.
- A description of environmental crime, and ways in which enforcement can be effective.
- Formatted versions of the legal text as reference material for legal practitioners, resource managers, and consultants.
- An annex containing information Afghanistan's National Development Strategy – Environment section, and various tables providing detailed information on international agreements, CITES status of species that occur in Afghanistan, wetlands data, and a chronology of legal developments to assist with the determination of the status of law in the country.

Translations of the Compendium will likely occur in the early part of 2008. It remains the plan that, upon completion of all translations, all identified biodiversity related legislation will be formatted for publication and distribution in hard copy, on a CD, and in a downloadable pdf format.

Establishment of a Legislative Drafting Group

In the context of the drafting work WCS has performed on all legislation and legal tools (including forestry, rangeland, wildlife conservation and hunting, protected areas, collaborative management agreements for protected areas, and articles of incorporation for community conservation groups in Band-i-Amir and the Wakhan), a legislative drafting group has formed that has included individuals from several national and international organizations. WCS's 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 and WCS, in the drafting of the Forestry Law.

Other international partners include the Asian Development Bank, World Bank, FAO, NRC, and AREU. This configuration continues to be 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. This has been expanded to include the Lawyer's Union of Afghanistan and local community members in Band-i-Amir and the Wakhan. Members from the government agencies were directly involved in the development of all national level legislation and have reviewed the development of legal instruments for local communities. It is hoped that with additional training The Lawyer's Union of Afghanistan may take a role in the development of national law. WCS feels that the development of additional national level legislation should be held until the numerous laws already submitted have been approved. The capacity of the legislative drafting group, as led by WCS, has outstripped the parliamentary capacity to review and assimilate new information.

Drafting of Forestry Law, Rangeland Law, Hunting and Wildlife Conservation Law, and Amendments to the Protected Area Regulations

WCS Law and Policy program will continue to provide information to the Government of Afghanistan to refine or revise proposed legislation as needed.

Forest Law: Public consultation on the draft Forest Law is currently underway with comments being returned to UNEP for incorporation into a final draft for review by the working group and second submission to the taqin.

Protected Areas Regulations: Protected area management structures are currently being developed by newly formed Protected Areas Committees (PAC), including the Collaborative Management Agreement (CMA) and any internal rules such groups may decide upon for their own operations. In addition to the PAC rules and the CMA, WCS will formulate operational by-laws for the PAC to ensure the fair and consistent application of the agreed upon rules.

Rangeland Law: WCS has taken the lead on drafting this legislation with the 4th technical draft of the Rangeland Law. The contentious nature of this particular resource and the uncertainty of land tenure will result in the need for numerous drafts and meetings on this law. With discussions still ongoing, a further revision of this law has not yet been requested.

Wildlife Conservation and Hunting Regulations: WCS finalized the first draft of the Hunting and Wildlife Conservation Regulations, and only recently received feedback on the draft. WCS will prepare a second technical draft in Quarter 4 and submit to the Ministry of Agriculture.

Local Instruments for Resource Management: WCS has recently begun to focus more attention on the development of legal instruments that may be used by local communities to organize themselves around questions of resource management. These instruments presently include the Protected Area Committee bylaws, terms of references, and collaborative management agreements, as well as the Wakhan Community Conservation Committees. All instruments are still in draft form and have been submitted to those individuals in the WCS program responsible for the areas in question. Each instrument will be vetted at the community level and then revised before submission to the appropriate national authorities for approval. All instruments are designed to fit with existing and traditional governance structures as well as comply with or anticipate the mandates of proposed national legislation. The combination of simultaneous development, however, necessarily causes a degree of uncertainty in the process.

Regulations vs. Laws vs. Local Agreements: The analysis on the hierarchy of law contained in the Compendium and the experience of the legislative drafting group continue to suggest that our legislative efforts will struggle with the question of legal authority versus speedy approval. In short, the parliamentary process in Afghanistan has numerous pieces of legislation that have been submitted simultaneously to all standing committees, resulting in an apparent deadlock. Submitting additional national legislation is unlikely to result anything being approved. On the other hand, regulations may be approved at the ministerial level. Given the interests of NEPA and the Ministry of Agriculture in moving forward, this may be the logical path to follow. However, regulations as a general rule do not compete well with national legislation in a developing legal system. Submitting additional drafts as laws will probably result in a protracted approval process, but might improve the ability of resource managers to argue against competing interests granted by other national level legislation.

Activity 2.6.2 Trophy Hunting Program

Having reviewed relevant examples of trophy hunting programs and conducted a detailed analysis of the legal aspects of trophy hunting in Afghanistan, WCS has prepared a draft analysis that demonstrated that there is reason to be concerned that a trophy hunting program will face significant legal challenges. WCS' assessment remains that it is still too early to begin developing a trophy hunting system – although our efforts are moving in this direction.

As previously reported, the first difficulty is still the existence of a complete hunting ban (which precludes any hunting program for the near term) and the likely status of Marco Polo sheep as “protected” under the Environment Act. The Environment Law provides for the listing of species as “harvestable” or “protected,” delegating the authority to conduct listing to the National Environmental Policy Agency (NEPA). Procedures for listing are to be developed by NEPA. At present, listing procedures have not been drafted, nor is there any temporary or interim decree affecting the legal status of Marco Polo sheep. The same is true for ibex and markhor. WCS surveys conducted in the Wakhan are attempting to determine the status of the species, but a final conclusion is still premature. The proposed Wildlife Conservation and Hunting Law establishes the legal parameters for a trophy hunting program, but remains in discussion for the moment.

Activity 2.6.3 Wildlife Trade

Training conducted to build awareness and education about wildlife trade for Bagram APO military officials, Bagram market officials, and Kabul airport customs is explained in Training and Capacity Building Activity 4.1. Training for 13 Kabul fur traders is also detailed in this section. WCS has effectively shut down the fur market at Bagram airbase, which serves 16,000 military personnel. WCS will continue outreach with other US military and ISAF bases to end the sale of CITES protected wildlife species. SFC Thomas Lockhart, Customs Program Manager of the 82nd Airborne Division, responded via email to his colleagues and WCS after the training at Bagram:

“As Customs personnel, this is an integral part of our responsibility to assist the Border Patrol, Environmental Protection Agency, the Department of Agriculture and Transportation, and most importantly for the Task Forces, assisting our Troopers to do the right thing. Many are not aware of what they are purchasing, and I have not met any Service Members that would knowingly traffic illegal animals and furs. Thanks to you all, and keep up the great work.”

In addition, WCS worked with Kabul Airport leadership to place Dari, English and Pashto versions of the snow leopard poster raising awareness about wildlife trade in the immigration and departure section of the newly-redesigned Kabul Airport. While people wait in long immigration lines, the only thing to read is the WCS/Government of Afghanistan poster urging people not to buy wildlife products in Afghanistan because it violates the law and puts endangered wildlife at risk of extinction.

WCS recently made connections with Sharjah Breeding Center in Sharjah, UAE, to coordinate and quantify wildlife product shipments seized in Dubai that have come from Afghanistan. The Director of the Sharjah Breeding Center is a member of the CITES Scientific Authority of Dubai. Analyzing the species and quantities seized there and in other countries will give us a better idea of Afghanistan's role in the regional and global trade in illegal wildlife products.

WCS is currently performing research and consultations to determine the feasibility of a safe fur certification program for fur traders in Kabul with monitoring through NEPA and WCS.

Activity 2.7. Environmental Service Valuation

In the third quarter of 2007, based on the household survey questionnaire which was developed in the second quarter, the Environmental Service Valuation Team conducted a pre-test survey in Nuristan. The team has since been analyzing and revising the questionnaire for the main survey which is scheduled for November. In the middle of July, the team organized a one-week training workshop in Kabul for six enumerators who came from Nuristan and Kunar. During the workshop, we revised the questionnaire and translated it into Pashto so that the enumerators and local people could understand the survey questions without any problem. In addition, by doing exercise surveys with one another, the enumerators identified problems that would potentially occur while conducting the pre-test survey in the field.

The objective of the pre-test survey was to examine whether the questions could properly acquire answers and whether the answers would produce correct values and forms for analysis models. The enumerators conducted 47 surveys in Neshgram village in the central Nuristan over a period of ten days. Aside from the pre-test survey, the enumerators also made household lists for three villages in central Nuristan: Neshgram, Chimi, and Kaygal. The household lists will be used to sample subjects randomly for the main survey. The enumerators successfully completed their work 25 days earlier than scheduled.

The analysis of the pre-test data includes three steps: coding data, testing models, and revising the questionnaire. At present, the team has finished the first two steps. Before we input the data, the answers to all the surveys were fully reviewed with the enumerators. Through data coding, the team was able to identify questions which did not collect answers properly. Based on the results of the statistical analysis, the collected data, as indicated by model testing, performed with regards to the research hypothesis. In revising the questionnaire, the team will amend the questions so that they can collect clear and detailed values for the variables, which are significant in the analysis model. The analysis of the pre-test data will be completed by November 15th, 2007. The main survey will begin in mid-November for a total duration of three months.

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

Applicability to Biodiversity Codes

WCS actions are designed to enhance community-level resource management, building upon traditional resource management systems through incorporating the interests of the Islamic Republic of Afghanistan, the international conservation community, and global tourism. These activities necessarily take place on multiple levels: the village level; the inter-village level, where multiple villages share resources; the district level; the provincial level; the national level; and, especially in the area of ecotourism, the international level. Accordingly, the Community Conservation Program (Objective 3) works with all Wakhan-related project components to incorporate their findings and initiatives within the community framework. These include Ecosystem, Wildlife and Livestock Assessments (Objective 1); Laws, Policies and Institutions (Objective 3); and Training and Capacity Building (Objective 4). WCS Community Conservation Program (CCP) reports the following activities for Q3 2007.

Activity 3.1 Socioeconomic Surveys of Wakhan

The WCS CCP team traveled more than 100 kilometers on foot and crossed four passes higher than 4,500 m to visit three main Wakhi summer herding areas in the Little Pamir: Chapdara, Shpodkis and Warm. The team visited a total of 10 active summer herding settlements and conducted interviews and surveys to identify village and clan affiliation, numbers of households and livestock, and seasonal migratory movement. GPS locations were obtained for incorporation into the GIS for Wakhan.

Of the 30 active Wakhi summer herding settlements using both Big Pamir and Little Pamir resources, 28 have now been surveyed. One remote Little Pamir area, Bai Qara, will be surveyed in 2008. The Big Pamir area of Wuzed Zherav also remains to be surveyed in 2008.

Simply put, almost nothing is known about the Kyrgyz, of either the Little or the Big Pamir. Population figures and structure, livestock numbers, trade patterns, and political organization – what little information is currently available 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. Furthermore, by having a representative in the Pamir, WCS will begin to develop a relationship based on trust with the Kyrgyz, one that goes beyond simply hiring animals from them. Such a relationship, on both an individual and an institutional level, will facilitate the implementation of community conservation and natural resource conservation initiatives by informing and involving the main stakeholder in the Little Pamir – the Kyrgyz.

Because of this, WCS sponsored a US doctoral candidate conducting research among the Kyrgyz population in the Little Pamir to begin a socioeconomic survey of the Kyrgyz communities in the Little Pamir. This included adapting the existing WCS household survey questionnaire for use with the Kyrgyz community, and initiate data collection in the main Little Pamir Kyrgyz settlement of Qara Jilga. This work will continue in Q4 2007 and in 2008. During the months of July and August, WCS visited approximately 75% of the roughly 50 Kyrgyz camps in the Big and Little Pamir. During these visits, we collected basic demographic data – number of households and number of persons per household, seasonal migration patterns, and general

livestock.

In the Little Pamir, where WCS concentrated efforts over one month (mid-July to mid-August), we modified the Household and Range Use surveys for administration among the Kyrgyz and translated both into Kyrgyz. We visited all 25 camps in the Little Pamir, took GPS locations, and surveyed 20% of these camps, administering both the Household and Range Use surveys. We also collected qualitative information on illegal hunting by Kyrgyz, rangeland use patterns, and attitudes towards conservation and ecotourism.

The CCP team also conducted a cultural landscape inventory of historic forts, tombs, petroglyphs and inscriptions in the villages of Wakhan and in the Little Pamir. The team visited sites previously noted by researchers and several sites previously unnoted. These sites indicate a substantial human presence in Wakhan dating back at least 1,200 years. Some rock carvings likely date back over 2,000 years and give evidence of the wildlife presence and human activities in Wakhan at that time. This material will form the basis of a project goal to develop an outline for interpretive material to support protected area nominations.

Activity 3.2 Conservation Awareness and Environmental Education

The WCS CCP team visited five of the six government schools in Wakhan District in which Environmental Education programs were started in Q2 2007. The team helped prepare educational materials for the schools, held workshops with principals and teachers to discuss program implementation, and met with the student groups working under teacher supervision. The students in the upper classes of each school are conducting three environmental education activities: environmental event record keeping; census of number, kind and status of community livestock; and survey of daily household fuel wood usage. The schools visited were:

- Ptukh Middle School
- Rochun Middle School
- Baba Tangi Middle School
- Sast Middle School
- Qila-e Panja High School

Mr. Aminuddin Shah, a community representative who also attended the WCS Environmental Education workshops held in Q2 2007, made separate visits to all six schools (Deh Ghulaman Middle School included) to prepare materials and meet with teachers.

The CCP team met with the outgoing Director of Education for Wakhan District, Mr. Ghazal, to discuss the program and with the incoming Director of Education, Mr. Mohammad Deen, who requested that WCS extend this successful program to the remaining seven government schools in Wakhan District. This is planned for 2008.

The CCP team plans to conduct awareness workshops on “What is a Protected Area?” in 24 Wakhi villages during Q4 2007. Draft national legislation on protected areas will require substantial community participation in the protected area planning and nomination process. This series of workshops, which will include an introduction to the six internationally recognized protected area categories, will enable the communities to participate effectively in the process as it develops.

Activity 3.3 Community Organization and Governance

The CCP team reviewed the Environmental Law of the Islamic Republic of Afghanistan, the draft Rangeland and Forestry Laws, and the draft Protected Area Regulations. Following these reviews, the CCP team recognized a need to prioritize the Big Pamir region including the former Big Pamir Wildlife Reserve. The team conducted meetings in 11 of the 17 Wakhi villages using this area to discuss the existing Environmental Law and its relevance to community governance, and to record the traditional resource management regulations in each village. The team also discussed previous management regimes (especially the Afghan Tourist Organization grazing and hunting control from 1968-1978, and the 1993-96 Mujahideen national government period) in each village.

A key outcome of these meetings was that all villages stated their preference for conservation activities to be administered through their existing village council or *shura*, which were created as part of the National Solidarity Program. Villages declined to form separate Community Conservation Committees, but will incorporate the concept of CCCs within their existing management structure. Each village council appointed one member of the community to serve as focal person and point of contact for conservation activities, and agreed to cooperate with WCS in development of conservation governance.

Previous meetings in FY06 covered 11 additional villages, including those actively using the Little Pamir. All 24 villages actively using Big Pamir and Little Pamir resources have pledged their full support for WCS activities, have either appointed or agreed to appoint a focal person for conservation, and have agreed to work with WCS to develop and incorporate conservation bylaws into village council bylaws.



WCS Training Graduation Ceremony, Wakhan

This effectively brings all villages actively using the Big Pamir and Little Pamir under community management in partnership with WCS. This management will take place through the existing village council structure and accords well with the both existing and proposed national environmental legislation.

Meetings also revealed that all 42 Wakhi villages in Wakhan have traditional usage rights in the Big Pamir and Little Pamir. Although households from all the villages do not actively go to the Afghan Pamir areas, they do send livestock with related

households. Based upon this information, the CCP team recognized a need to include all 42

villages in Wakhan within the conservation governance structure. Working with the WCS Law, Policies, and Institutions Component, the CCP team drafted a set of bylaws for an envisioned Wakhan Conservation Association (WCA).

The CCP team then met with Afghanistan Small-Medium Enterprise Development (ASMED), a USAID-funded project, to begin the grant application process for funding the establishment of the 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.

The CCP brought Dari language copies of the Environmental Law to Wakhan for distribution in all 42 villages.

Activity 3.4 Ecotourism Enterprise Development

Ecotourism Enterprise Development activities accelerated in Q3 with the hiring of an Ecotourism Manager, Ms. Kimberley O'Neil. Activities were conducted in five areas: tourism product development; capacity building within local communities; information for tourists; international tourism promotion; and awareness of ecotourism principles.

The CCP team has now completed reconnaissance of major trekking routes in Wakhan and made an assessment of tourism potential. This includes un-developed primary tourism products in Wakhan (e.g., Nushaq, Afghanistan's highest peak and the second highest peak in the Hindu Kush). The CCP team has identified a critical need to remove landmines from the valley leading to Nushaq, and met with the relevant de-mining NGO Halo Trust to develop a plan.

The CCP team held follow-up meetings with both trainees and village councils on the Wakhan Trek-Guide and Trek-Cook training held in Q2 2007. Three trained guide-cook pairs were assigned to WCS teams (Wildlife Survey & Marco Polo Sheep Monitoring, Activities 1.1 and 1.2; Rangeland Survey, Activity 1.3; Livestock Health Assessment, Activity 1.4). These were: Inayat (Qila-e Pinja) and Qurban (Wuzed) with the Livestock Health Assessment Team, and Khuda Birgen (Ptukh) and Khaliq Dad (Sarhad-e Broghil) with the Rangeland Survey Team.

The trainees who attained the highest skill level and showed the greatest promise were recommended to Great Game Travel, a private-sector tour operator with an office in Faizabad that is offering tourism in Wakhan. These individuals worked as paid interns in summer 2007 with Great Game Travel and will continue to work with that company. The individuals were: Mohammad Ayub (Rorung), Mehrban Shah (Shelk), Gharib Mohammad (Kret), Bahlai (Qila-e Pinja), and Khaliq Dad, (Sarhad-e Broghil).

The CCP team initiated discussions with ASMED to submit grant applications to fund a guide/cook association as a component of ecotourism enterprise development.

The CCP team developed a plan to produce deliverable information products for tourists that support tourism to Afghanistan (including Wakhan), and met extensively with the Afghan

Tourist Organization (ATO) to plan these upcoming activities.

The CCP team worked with ATO to submit an application for Afghanistan to become a Member Destination of the Pacific Asia Travel Association (PATA). This regional membership will further strengthen the government tourism sector. The CCP team also identified potential grant for seed money to establish the Tourism Association of Afghanistan (TAA), a private-sector initiative, and held meetings in Kabul with private sector operators and agencies, who have agreed to move ahead with this initiative.

As part of the process to better integrate the public and private tourism sectors, the CCP team began drafting voluntary codes of conduct for all (3) tourism stakeholders (tourists, host communities, and tourism industry) in cooperation with the government and private sectors.

STOL Landing Strip: The CCP team and WCS Kabul staff continued to hold discussions with Pir Syed Shah Ismail on re-establishing a STOL airstrip at Qila-e Panja for use by PACTEC. Shah Ismail informed PACTEC that he will accept the project, and PACTEC pilots made a site visit.

Handicraft Production: WCS CCP held meetings in Qila-e Wust with women to discuss wool and handicraft production (a secondary tourism product), and received some samples. A feasibility report on wool and handicraft production is in preparation. Should development of income generating opportunities such as handicrafts be determined as necessary for linking conservation with economic benefits, this small pilot project could be launched.

OBJECTIVE 4: CAPACITY-BUILDING INITIATIVES

Applicability to Biodiversity Codes:

Afghanistan's future ability to manage natural resources is threatened by its lack of human and institutional capacity. Nowhere 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

During Quarter 3, WCS has achieved a multitude of successes in reducing illegal wildlife trade in Afghanistan by improving enforcement measures at US military bases and the Kabul Airport. Dr. Alex Dehgan and US Embassy Science Fellow Clay Miller worked together to train the Bagram Airbase APO and the Bagram Military Market Managers. Dr. Dehgan also trained the Kabul Airport Customs and the fur traders from Chicken Street. Details of these trainings are below.

On August 12, Dr. Alex Dehgan and Mr. Clay Miller from the U.S. Embassy in Afghanistan conducted an Endangered Wildlife Awareness Training session for 10 Customs and Post Office personnel at Bagram Military Base. The training focused on Afghanistan's wildlife, illegal trade of wildlife, legal implications (both international and US law), and skin identification for

endangered/protected species. Twelve members of Bagram customs attended and each passed the post-training test that evaluated whether they had learned key points of international and US law and how to tell the difference between furs of various endangered species. During this time Dr. Dehgan and Mr. Miller visited the Bagram Market to find more than 10 fur vendors selling snow leopard, leopard cat, leopard and various other threatened and endangered species. They proposed coming back to train the Bagram Market Managers about skin and fur identification and Afghan and international law. Six people in charge of allowing merchants into Bagram Airbase Market were trained and evaluated. The following week, no fur sellers were found in Bagram Market, which serves 16,000 US Military servicemen and women. WCS is now working on expanding this program to other US and ISAF military bases.

WCS conducted a similar training for 12 Kabul Airport customs officers and police. In just one week they had already seized several furs. WCS continues to monitor which species are being captured and to assess whether the airport customs officials require further training.



WCS has been approached by a coalition of fur and leather merchants/exporters who requested training in Afghan biodiversity conservation, Afghan and international environmental law provisions, and identifying illegal species after they were denied entry into the Bagram Market. WCS provided this training in late September to a group of 13 merchants, and is assisting the fur dealers in marketing their stores in exchange for their agreement not to sell illegal fur species. The selling point for these dealers is that they would benefit economically by being labeled “green” and supporting Afghan wildlife. They have agreed to stop the selling of illegal furs, display a statement that they support Afghan wildlife and promise not to sell illegal furs, and work with WCS to investigate the potential for a certification program through the government – most likely NEPA – that their stores are not engaged in illegal trade that would be enforced through periodic monitoring. The future success of the program will depend on identification or development of legal mechanisms for this activity combined with continued public outreach by WCS to discourage NGO workers and the military from frequenting stores that do not adhere to Afghan law or are uncertified.

With support from FAO, the second half of the Wild Bird Identification, Handling and Sampling training was conducted by WCS Ecosystem Health Program Manager, Dr. Stephane Ostrowski, for 6 days from September 28-October 4. Twenty-five people participated from FAO, Ministry of Agriculture and the Kabul Zoo. The purpose of the second half of the training was to improve bird



identification skills, introduce the concepts of active and

passive surveillance in epidemiology, teach theoretical aspects of any sampling exercise (timing, focus, species, number), develop ability in participants to perform necropsy on wild birds and take samples from internal organs, as well as handle wild birds, adequately perform community questionnaire surveys regarding wild and domestic bird contact, and categorize risk factors of AI outbreaks related to presence of wild birds.

Over the course of 6 days, WCS evaluated and reviewed topics discussed during the first training in May, visited Lake Qargha to practice bird identification and basic census methods, interviewed community members around Khol-e-Hashmat Khan using objective questioning techniques, handled live birds and performed a post-mortem analysis on several wild birds. In addition, the participants were introduced to GIS as an analytical and planning tool and developed skills in the use of important field equipment, such as binoculars, GPS, spotting scope and bird guides. Since the Ministry of Agriculture and FAO (Emergency and Rehabilitation Unit) are the first responsible for assessing the risks of and responding to avian flu outbreaks, it is important that they understand the risk of transmission between wildlife, domestic animals, and humans.

Raffael Aye, WCS Ornithologist, conducted training on the ecology and importance of threatened bird species and important bird areas of the Wakhan/Pamir for 13 tour guides from the Wakhan community. The guides were introduced to field equipment, such as binoculars and spotting scopes, and the bird guides. Pictures and powerpoint presentations were used to discuss the important ecological role of birds in seed dispersal, pollination and as biological control for mice and insects, as well as discuss the threatened and rare species of the Wakhan/Pamirs. The participants used the field equipment to practically locate and identify the bird species of their region. Increased awareness about the global importance of the Pamir ecosystem will help the guides explain this information to future tourists, especially those interested in the wildlife of the Pamirs.

Etienne Delattre, WCS GIS Program Manager, and Haqiq Rahmani and Rohullah Sanger, WCS GIS Program Officers, conducted a training and demonstration for 8 members of the GIS staff and other departments of NEPA on September 20th. NEPA has hired three GIS officers and UNEP has received GIS and computer lab equipment on behalf of NEPA. However, the capacity level for GIS in NEPA is quite low. WCS developed this training at the request of NEPA and UNEP to build awareness within the various departments about the purpose and role of GIS in environmental management, and the basic theory and capacity of GIS as a tool for analysis.

The Band-e-Amir Protected Area Committee (BAPAC) was established in mid-September and is comprised of 13 community members and 4 members of provincial government.



Ayub Alavi, WCS Hazarajat Program Officer (standing on left), explains the draft version of the Band-e-Amir Management Plan to the Band-e-Amir Protected Area

BAPAC's responsibility is to approve the management plan, manage the park according to the Environment Act and the management plan and do so with the goals of cultural and natural conservation for the area. However, many are unaware of the Environment Act and have no experience in park management. Prior to the first meeting of the Protected Area Committee, Dr. Alex Dehgan and Ayub Alavi, WCS Hazarajat Program Officer, conducted training for BAPAC on the Environment Act of Afghanistan, the purpose of protected areas, and the benefits to declaring Band-e-Amir a national park, and the role of BAPAC and the management plan. This helped prepare and inform the community members and local government for the initial meeting of BAPAC and for their future role as implementers and managers of Afghanistan's first national park.

Activity 4.2 Conservation Study Travel Program

Indonesia

Establishing and managing national parks takes cooperation and coordination between many government bodies, including the Ministry of Agriculture, the National Environmental Protection Agency, the Ministry of Finance, Ministry of Interior, Parliament, their provincial counterparts, local communities, and many others. To build support for conservation in each of the key ministries, WCS Indonesia and Afghanistan programs organized a study tour for decision makers that demonstrated the benefits to communities, government and natural resources that result from protecting biodiversity.



Three delegates from Indonesia, and two from Afghanistan (Sultan Mohammed Haji Aworang, Afghan Parliamentarian and Fauzia Assifi, Afghan Tourist Organization), discuss the role of Islam and Conservation and the duty of Muslims to protect and conserve nature, at the State Islamic University in Jakarta.

The study tour took place from August 19-29, 2007, during which time participants visited two national parks (some of them visiting a protected area for the first time), engaged in a campus-wide event at the State Islamic University on Islam and Conservation, learned about conservation education and awareness programs, and witnessed enforcement first-hand by going on patrol with the Rhino Patrol Unit. At the conclusion of the study tour, the delegation proposed creating an inter-ministerial coordinating committee on conservation. As of September 2007, the

committee has been created and officially recognized by each Minister and approved by the President's Office. Two meetings have already been held. WCS facilitates each meeting and provides technical expertise as needed.

Experiencing firsthand the benefits from conservation practices improved the delegation's understanding of the importance of protecting their country's rich and threatened natural resources. The study tour also gave the opportunity for each Ministry to learn each other's role in biodiversity conservation in Afghanistan. Since at least 7 participants in the study tour have no formal training in natural resource management and conservation, and most of them had never witnessed conservation in practice, the agreement of each person to advocate for conservation issues within each Ministry is quite an accomplishment.

Aligarh Muslim University, Aligarh, India

Almost all of the international consultants 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. WCS supported one exceptional Afghan Research Assistant who has worked with WCS for one year to obtain a Master's of Wildlife Science at Aligarh Muslim University in Aligarh, India starting in August 2007. His field work will take place in Afghanistan starting in the summer of 2008. He wishes to study Marco Polo sheep for his Master's Thesis, which will be the first scientific research completed by an Afghan on this species. To build technical scientific capacity in Afghanistan, it is absolutely essential that Afghans continue to have the opportunity to receive professional education.

Activity 4.3 Field Training and Scientific Mentoring

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. Since July 2007, WCS has sponsored two Wakhi community members to attend the Dutch Committee for Afghanistan's (DCA) Para-Vet Training Course, which will be complete in January 2008. 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.

Naqibullah Mostafawi has been working with WCS bird survey teams since June of 2006. He is a gifted and passionate ornithologist and has developed strong bird identification, data collection and survey skills. From July to September 2007 he conducted bird surveys in Dasht-e-Nawar, Khole Hashmat Khan, Ka Farushi and many important bird areas of the Wakhan and Pamir. From September to October he conducted surveys with WCS Bird Survey Manager, Raffael Aye. The goals of the bird survey were to gain a better understanding of the avifauna of the Wakhan (Greater Pamir Valley, Big Pamir Proposed Protected Area and Wakhan Valley), investigate different habitat types in terms of bird diversity and value for bird conservation, and develop Naqib's bird identification and bird survey skills.

Dr. Don Bedunah, WCS Rangeland Program Manager, conducted field surveys in the Little

Pamir with a team of three research assistants. The team developed the ability to recognize different types of plants (forbs vs. shrubs vs. grasses and to the species level), developed the ability to find a suitable location and layout a plot and transect, and developed the ability to use a compass and GPS to set plot locations and monitor site locations.

Dr. Rich Harris and Bilal Habib worked jointly for part of the field season to assess Marco Polo sheep range, ecology, and population in the Big Pamir with a team of two Wakhi community members and WCS Research Assistant Zalmai Moheb. The two Wakhi community members, Sabir of Khandud and Safdar of Sargaz, learned the purpose and method for scat collection for DNA and nutrition analysis for wildlife of the Wakhan, particularly Marco Polo sheep. They also learned how to use field equipment such as GPS, binoculars, spotting scope and compass. These skills, coupled with their well-developed local knowledge of the ecology, range and habits of the Marco Polo, make them valuable members of WCS future Marco Polo sheep monitoring efforts. Bilal Habib, Zalmai Moheb, Sabir and Safdar also conducted a surveillance mission in the Waghjir Valley to assess presence and range of Marco Polo sheep and the impact of Kyrgyz settlements in the area.

WCS Independent Research Projects

WCS Ecosystem Health Research Assistants, Ali Madad Rajabi and Hafizullah Noori have continued to conduct thrice-weekly visits to Ka Farushi bird market in Kabul to monitor the sales and collection of wild bird species. This builds data collection, computer and bird identification skills and gives WCS and the Government of Afghanistan more information to assess risks to public health as a result of wildlife trade. In addition, they have conducted a survey of pharmacists in Kabul, Mazar-e-Sharif, Jalalabad, Bamyan and Ghazni to assess the sale of Diclofenac, an antibiotic commonly used to treat livestock that is lethal to vultures as it accumulates and has caused a severe decline in vulture populations in the Indian subcontinent and Southeast Asia. The results of this survey are being collated and developed into a report. These two individuals were hired straight from university by WCS one year ago with no computer or field experience and minimal English skills. In the past year they have developed to a point that they can conduct field missions independently, collect data, and compile it into a report for submission to the government. Because of this increased capacity, the WCS Ecosystem Health team is able to collect data and implement programs year round in various parts of Afghanistan.

Activity 4.4 Public Diplomacy and Outreach

WCS began distributing three posters that were developed in coordination with Afghan Conservation Corps and UNEP for the Ministry of Education. Posters have been distributed to all of the ministries of the government and to schools in Nuristan, to start. WCS will continue to distribute posters, first to our project areas of Eastern Forests, Bamyan and Badakshan, and the remainder to project locations of partner institutions ACC and UNEP.

Progress and Performance Assessment

WCS trained 130 people in Quarter 3 in natural resource management, environmental governance, wildlife and domestic animal disease, benefits of biodiversity conservation and raised awareness and enforcement of wildlife trade. The number of people trained is below the indicator projected for Quarter 3. However, so far in the first three quarters of this year, WCS has trained many more than originally projected in Indicator 4.1 for the entire year.

OPERATIONS, SECURITY, AND LOGISTICS

The security situation in Afghanistan deteriorated during Quarter 3 with an increase in suicide bomb attacks by anti-government elements (AGEs) in Kabul and some other regions. The main theater of WCS activities, namely Bamiyan and Wakhan are regarded as relatively safe but the security situation is being monitored to see if any perceptible changes are taking place here.

The situation in Nuristan (Eastern Forests complex) is at a level where only nationals from the community, who are fully aware of the dangers and are trusted by the locals can continue with surveys on behalf of WCS. It is currently untenable to place any international staff in this region because of the high threat of kidnap or violence by marauding bands of AGEs passing through the border regions from Pakistan. During Quarter 3 some of the Wildlife Survey Teams had to be withdrawn from Nuristan for a few weeks because Coalition and AGEs became involved in combat operations close to one of the areas in which camera trapping surveys were being conducted. They were able to return without problems a short while later.

As part of its commitment to security and safety WCS continues to send the resident security guard team for refresher training with our contracted QRF (Quick Reaction Force) Hart Security. All newly arrived international staff receive a current security briefing from Hart on arrival. All new staff receive Mine Awareness Training on arrival in Kabul and may not leave for the field before completing this training. During Quarter 3 the WCS office and Guest House guards received additional training in baton and pepper-spray use and 2 of 4 WCS Drivers attended a “defensive driving course conducted by Hart Security. It is anticipated that the remaining two drivers will complete this training during Quarter 4.

WCS plans to take possession of the proposed Badakshan Regional office and storage facility in Ishkashim during Quarter 4. It is anticipated that this facility will provide a valuable base for operations into the Pamirs and Wakhan Corridor during 2008. The center will reduce the costs associated with housing *en route* to field activities in Wakhan, while providing a visible reminder for the people of Wakhan of WCS-USAID cooperation with the community. It is also hoped that it would reduce reaction time for emergency teams to respond to events or incidents which may occur in Wakhan when bad weather or other circumstances might prevent helicopter response from Kabul. WCS had intended to open this office during Quarter 3 but the unavailability of a suitable manager for the position delayed implementation. It is expected that this facility will be operational in late Quarter 4 or early Quarter 1 of 2008 once the correct individual has been identified and appointed.

It is also anticipated that during Quarter 4 WCS will make an application to USAID to be considered for rental of a pre-owned Armored vehicle Class C or D (as per the recommendation of Marcus Singleton of USAID Security Office, Washington DC, at the recent Implementing Partner’s Security Conference in Kabul) for use within Kabul City area if such vehicle is available for rental or as surplus from completed USAID partnerships. Although the areas where WCS operates outside of Kabul are relatively safe, there are times when it is prudent to use an armored vehicle within Kabul, particularly if the possibility of incidents is deemed higher than usual by Intelligence reports.

Afghanistan Biodiversity Conservation Project

USAID Performance Indicators & Milestones for FY07, Quarter 3

OBJECTIVES	INDICATORS	Key		Quarter 1	Quarter 2	Quarter 3	Quarter 4					
		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Progress on Indicator (%):		0%	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		14%				57%			85%		
	INDICATOR 1.2: RANGELAND ASSESSMENTS	0%			35%						98%	
	INDICATOR 1.3: ECOSYSTEM HEALTH		15%				55%			88%		
	ACTIVITY 1.4: LANDSCAPE ANALYSES AND GIS PROGRAM					40%			75%			
OBJECTIVE 2: STRENGTHENING LAWS, POLICIES, AND INSTITUTIONS	INDICATOR 2.1: PARKS AND PROTECTED AREAS				30%			65%			90%	
	INDICATOR 2.2: ANALYZE, AND DRAFT LEGISLATION					40%		60%		89%		
	INDICATOR 2.3: ECOSYSTEM SERVICES VALUATION	0 Households surveyed							75%			
OBJECTIVE 3: COMMUNITY-BASED NATURAL RESOURCE MANAGEMENT	INDICATOR 3.1: COMMUNITY CONSERVATION COMMITTEES	0%	0%						78%			
	INDICATOR 3.2: ECOTOURISM ENTERPRISE	0				40%				80%		
OBJECTIVE 4: TRAINING AND CAPACITY BUILDING	COMMON INDICATOR 204: # PEOPLE TRAINED IN NATURAL RESOURCES MANAGEMENT & CONSERVATION AS A RESULT OF USG ASSISTANCE		45 PERSONS TRAINED (11%)							460 Persons Trained 115%	130 Persons trained 147%	Total: year-to-date 635 PERSONS TRAINED (147%)
	INDICATOR 4.4: PUBLIC DIPLOMACY & CONSERVATION EDUCATION INITIATIVE			15,000 persons		15,000 persons (40%)			55000 persons 73%			
USAID COMMON BIODIVERSITY INDICATORS	Total Number of People:		45	15,000								
	COMMON INDICATOR 203: Number of people with increased economic benefits derived from sustainable natural resources management and conservation as a result of USG assistance.	0								395 (87%)		
	Total Number of Areas:											
	COMMON INDICATOR 194: Number of areas under community management	0								80%		