



**CAPACITY BUILDING FOR BIODIVERSITY CONSERVATION
IN
AFGHANISTAN**



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BY:

Kara Stevens

Wildlife Conservation Society

Training and Capacity Building Manager

stevenskara@yahoo.com

&

Mohammad Aref Rahimy

Wildlife Conservation Society

Training and Capacity Building Officer

marif_rahimy@yahoo.com

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EXECUTIVE SUMMARY

Since 2006, Wildlife Conservation Society's Afghanistan program has trained and educated over 4000 people in government, rural communities, universities, primary and secondary schools and non-governmental organizations. These activities have primarily focused on WCS field sites in Band-i-Amir, Ajar Valley, south-central Nuristan Province and the Big and Little Pamir, but through media, school outreach and other educational campaigns the conservation message of WCS has had a widespread geographic reach. Capacity building is a key component to many WCS programs, and Afghanistan is no exception. 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.

Short courses, field training, and international study tours aimed to increase knowledge and skill level of WCS partners, and lead to a change in behavior or action that is favorable for wildlife conservation. While this report provides information on the location, duration, audience and purpose of training activities conducted by WCS since 2006, the main purpose is to gauge the success (or failure) of WCS Afghanistan training activities towards achieving larger program conservation goals. We used tests, interviews, observation and a novel methodology for field training – training agreements – to assess trainee's improvement in knowledge and skill after the training, and observation and interviews to determine if trainee's actions or behavior had changed once they returned to their government or community position after the training.

The Afghanistan program is focused on several components: wildlife and rangeland assessments and monitoring, community conservation, wildlife trade, wildlife health, protected area management and policy and governance. Detailed assessments of wildlife populations and rangeland condition in Afghanistan had not been undertaken in over 30 years. At its inception in 2006 one primary objective of the WCS program was to undertake thorough surveys of large mammals and other fauna in Big Pamir, Little Pamir, Waghjir Valley, Band-i-Amir, Ajar Valley and Nuristan province. These sites were selected based on their existence in the past as former royal hunting grounds or as historically proposed protected areas. Afghanistan now has one legally recognized national park and other sites at various stages of development. Given the national government's limited reach in many rural, remote parts of the country, governance of protected areas requires heavy involvement by local communities, who often depend directly on livestock for their survival. The lack of veterinary services and proliferation of disease threaten not only human livelihoods, but also the wildlife that come into contact with them. Another significant threat to wildlife is trade. Now, as in the 1970s, fur trade in Afghanistan is ubiquitous, mostly unregulated and fueled by Western expatriates. Mitigating threats to wildlife requires engagement of communities living in rural areas. They are directly dependent on natural resources for their survival and often live in remote areas much outside the reach of the central government. Given their reliance on productive land for agriculture and pasture, communities surrounding proposed protected areas are a key component in conservation efforts as their use of resources often overlaps with the needs of wildlife. The legal framework under creation by the Afghan government enhances the ability of local communities to manage and protect their local resources, but capacity needs to be strengthened at all levels to implement the law.

WCS has worked with and provided training to partner government institutions such as the Ministry of Agriculture, Irrigation and Livestock, the National Environmental Protection Agency, Afghan Tour Organization, Ministry of Finance, Ministry of Education, Parliament, Ministry of Justice, and the Ministry of Interior to improve natural resource management and mitigate threats to wildlife. We have

seen multiple successes, including reducing demand for furs of CITES protected species like snow leopard, leopard and lynx at US military bases, improving the skills of community members of the Band-i-Amir Protected Area Committee to manage Afghanistan's first national park, increasing English capacity and field knowledge of Band-i-Amir rangers, and providing never before offered courses to community members and schoolchildren in conservation biology in Wakhan and Nuristan. Our training efforts made possible the first wildlife surveys of Nuristan province in 30 years, the identification of previously undocumented species in Afghanistan and the first provision of privatized veterinary services in the Wakhan, among many others.

Education and training are long-term endeavors in which the impact on conservation goals is not always immediately evident. However, we have demonstrated increased knowledge and skill level of training participants in the fields of wildlife health, protected area management, mammal and bird surveying techniques, rangeland conservation, community governance, and ecotourism. Continued evaluation of training participants is necessary to determine which investments have been most fruitful and to formulate future directions for conservation training in Afghanistan.

Acronyms

ACC	Afghan Conservation Corps
ADB	Asian Development Bank
AI	Avian Influenza
ANDS	Afghanistan National Development Strategy
BANP	Band-i-Amir National Park
BAPAC	Band-i-Amir Protected Area Committee
BBC	British Broadcasting Corporation
DCA	Dutch Committee for Afghanistan
FAO	Food & Agriculture Organization
GPS	Global Positioning System
IBA	Important Bird Area
MAIL	Ministry of Agriculture, Irrigation and Livestock
MOF	Ministry of Finance
MRRD	Ministry of Rural Rehabilitation and Development
NEPA	National Environmental Protection Agency
NGO	Non-governmental Organization
NRM	Natural Resource Management
PA	Protected Area
UNEP	United Nations Environment Program
UNICEF	United Nations Children's Fund
VFU	Veterinary Field Unit
WCS	Wildlife Conservation Society

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1 INTRODUCTION

Global conservation priorities far exceed the human technical capacity available to undertake them, especially in the developing world where it is estimated that raising the level of professional capacity for conservation would cost between \$USD 100-200 million (Rodriguez 2006). Afghanistan is no exception. Conservation is limited by a shortage of qualified technical staff to manage and protect natural resources. In order to sustain our conservation investment, the Wildlife Conservation Society (WCS) must strengthen local capacity and institutions. Training government staff, community members, and university students has been a large component of the WCS program, funded by the United States Agency for International Development (USAID). While training and education is often an integral component of conservation programs its effectiveness is not regularly measured in terms of conservation impact; research rarely demonstrates the relationship between people's understanding and their attitudes and behavior (Bride 2006). A survey of WCS Country Directors in Asia indicated that all considered training activities critically important, but many considered their training and education programs of unknown success (Banham 2007). The purpose of this report is to address this lack of measurement of training effectiveness with regard to conservation goals and to gauge the success (or failure) of WCS Afghanistan training activities towards achieving larger program conservation goals.

From short courses to international training programs, training can be measured in four levels: reaction, learning, behavior, and impact (Kirkpatrick 1996). Reaction can be described as how well participants like or dislike a training program. The assumption is that if participants are happy with the format, design and content of the training they will be more open to learning new information. At the learning level, participants are expected to improve knowledge, develop skills or change attitudes. Evaluations at this level measure participants' knowledge relative to training objectives, but they do not measure how this knowledge will be used in the long term after the training is complete. As a result of learning, training intends to impact the behavior of the participant. What will the participant do or do differently when the training is complete? Evaluation tools at this level include focus groups, observation, interviews or surveys (Simmons). Finally, a change in behavior should bring about results that contribute to greater conservation goals, such as a reduction in threats to wildlife or increased wildlife populations. While it is quite straightforward to measure a participant's reaction to training, it becomes more complex to evaluate participants' learning and resulting behavior change. Identified by Conservation Biology as one of the one hundred questions of importance to the conservation of global biological diversity, this report aims to contribute to the discussion on the relationship between individuals' learning about environmental problems and their conservation attitudes, knowledge, behaviors and actions (Sutherland et. al. 2009), specifically as it relates to wildlife conservation in Afghanistan. While the period being measured is quite brief, training activities conducted from 2006 to 2009 are evaluated against larger WCS program conservation goals. Ongoing monitoring over the long term is necessary to demonstrate the impact that training and education will have on biodiversity conservation in Afghanistan.

2 CAPACITY IN AFGHANISTAN

Having come out of a period of oppressive Taliban rule in 2001, preceded by two decades of devastating war, Afghanistan has seen 3.5 million refugees return to their homeland in the past 8 years. In this time, development has proceeded at a frenzied pace as over 13,000 km of roads have been rehabilitated, over 600 schools have been rebuilt or improved, and health care has expanded to reach more remote regions of the country. However, many challenges remain. The overall literacy rate in Badakshan, Bamyan and

Nuristan provinces is between 22-26% (MRRD 2006). Women do not have equal access to education or economic opportunities. Rural populations are highly dependent on natural resources for their survival, specifically rangeland for pasture and shrubs and timber for fuel wood. Within this context, WCS works with local communities and the Government of the Islamic Republic of Afghanistan at 5 different sites in Nuristan, Badakshan and Bamyan provinces to help manage natural resources, and monitor wildlife populations and mitigate threats.

2.1 National Environmental Protection Agency (NEPA)

NEPA was created in May 2005 out of a department that existed within the Ministry of Energy and Water. The Environment Law (Official Gazette No. 912 dated 25 January 2007) defined the responsibility and function of NEPA, which is the regulatory, policy-making and monitoring institution for the environment. Within the agency the Department of Natural Heritage Protection, with a staff of 6, has the mandate for protected areas. NEPA intends to establish offices in each of the 34 provinces, but progress towards this goal is unclear. It has provincial representation in Bamyan (total staff = 8-10) and Badakshan (total staff = 4-5). Given its nascent creation, NEPA's institutional and human capacity has not yet risen to meet its mandate and General Director Mostapha Zaher has identified the development of NEPA's human resources as a key priority for his agency (Anonymous 2008-2013).

2.2 Ministry of Agriculture, Irrigation and Livestock (MAIL)

MAIL bears the responsibility for management and implementation for three of the most important sectors in Afghanistan – agriculture, veterinary medicine and natural resources. The Department of Protected Areas falls under the Directorate of Natural Resource Management (NRM), along with the Forestry Department and the Rangelands Department. Positions within NRM seem to be fluid with regular staffing shifts between different departments depending on need. As of this writing, the Parks Department has four staff members whose professional experience ranges between 5-15 years. All have university degrees from Kabul University Faculty of Agriculture. The Director General of the NRM Directorate reports to one of three deputy ministers, who report directly to the Minister of Agriculture, Irrigation and Livestock. In contrast with NEPA, MAIL is a well-established ministry with a widespread presence throughout the country. Their provincial and central offices are relatively well resourced in terms of staff numbers and in some cases, equipment and vehicles, though there are certainly examples where improvement is much needed. The responsibility for protected areas and the respective roles of MAIL and NEPA are occasionally blurred at the provincial level and in day-to-day operations, though at a higher level the functions are fairly clear.

The Government of Afghanistan depends on “top-up” salaries by development organizations and multilateral institutions to retain skilled technical staff that might otherwise pursue more lucrative opportunities in the private sector, military or with international NGOs. With government salaries for entry-level civil servants set at USD \$50/month, there is little incentive for qualified technical Afghan personnel to pursue these positions.

2.3 Academia

There are nine public regional universities in Afghanistan (Nangarhar, Khost, Kandahar, Herat, Bamyan, Mazar, Takhar, Badakshan and Kapisa). Most regional universities offer a Faculty of Agriculture, which may cover wildlife management; the only Faculty of Science in the country is at Kabul University. Education beyond a Bachelor's degree is currently not possible in Afghanistan, but with a flood of foreign aid since 2002, there are growing opportunities for international undergraduate, graduate and professional training for university professors, government staff and students in agriculture, rangeland,

wildlife, watershed and environmental sciences. Pervasive throughout the country is a lecture-style teaching method that rarely encourages students' active participation. Due to a lack of financial and transportation resources and a high student-teacher ratio in many classes, there is almost no opportunity for students to perform practical field or lab work in the sciences or agriculture curriculum.

2.4 Non-Government Organizations

The environmental NGO sector in Afghanistan is growing, but struggles for financial stability. The flagship NGO, Save the Environment Afghanistan (SEA), has existed for decades and has developed outreach programs and materials, some with support from the International Crane Foundation. Green House Organization is newly created and is developing project plans. There are potentially dozens of other locally focused or small environmental NGOs throughout the country. To my knowledge USAID has not given any grants directly to an Afghan environmental NGO though the strengthening of civil society organizations was a component of USAID's grant to ECODIT's Biodiversity Support Program. WCS has worked in cooperation with SEA on several materials for environmental education.

3 EVALUATION METHODS

WCS employed different evaluation methods depending on whether we were measuring knowledge, skills, or behavioral change as a result of training.

3.1 Interview

To measure behavioral change or attitudes and knowledge regarding conservation, WCS used structured interviews with carefully worded questionnaires in which the interviewer deviated from the questionnaire only to clarify unclear responses. This ensured that each interviewee was asked the same set of questions. Interviews were conducted primarily by WCS Training Officer, Mohammad Aref Rahimy in the local language and then translated into English. He was trained in interview technique using guidelines in Rabinowitz's *Wildlife Field Research and Conservation Training Manual*, which has been translated into Dari (1997). The advantage of using interviews is that it allows the evaluator to ask follow-up questions to clarify responses and obtain in-depth information. However, the interviewer may bias the results unintentionally by the way in which questions are asked, or simply by their affiliation and the potential willingness of the respondent to provide answers that are seemingly pleasing to the interviewer. WCS used interviews to assess community knowledge and attitudes about environmental issues in the Wakhan and to determine the extent to which high-level government employees were using training they had received during a study tour to Indonesia.

3.2 Tests

Tests can be used to evaluate knowledge attainment or achievement of training objectives. The advantage of using this method is they can be swiftly implemented to a large group with relatively little time and money. Results can be easily quantified. However, this tool is not very useful for trainees who are illiterate or semi-literate as can be the case when training rural community members. WCS commonly used tests before and after (and sometimes only after) trainings to determine increased knowledge as a result of the training or the extent to which trainees knowledge met the training objectives. A mix of multiple choice, true/false and short answer questions were used. This tool proved slightly difficult for undereducated community members who did not have much experience in test taking. However, it was the best method available given time and financial constraints. Tests were often combined with opinion questions to assess participants' reaction to the training. In many cases tests requested the name of respondents, which meant that opinion questions about training content

and format could not be submitted anonymously. These instances are noted as it may have biased reaction results.

3.3 Observation

Observation is useful to accurately assess how an activity or skill is put into practice and can be more accurate than a questionnaire, which asks a person to describe how they are implementing a skill. One drawback of this method is that the presence of the observer may alter the participant's behavior. Observation was used to determine behavior change as a result of two trainings - teachers in Nuristan were observed in the classroom applying topics from a training they took from WCS several months prior. In addition, business owners in the bazaar of Band-i-Amir National Park (BANP) were observed to see how they were applying training in hotel and restaurant management in their business practice.

3.4 Training Agreement

The training agreement is used to assess knowledge and behavior change for training provided in the field, usually when one mentor is training a small team of 1-4 counterparts. Prior to the field training the team discusses the training's relevance to biodiversity conservation, the goals of the training, and the relevant institutions working in this area in Afghanistan. In addition, the team discusses the role of the counterpart after the training is finished. How will this training help him do his job better? The team then discusses each counterpart(s) capacity level and the basic skills necessary for fieldwork. They decide on a set of core skills that they will develop during the field training. Each skill is measured at an initial stage and a final stage based on a 0-10 scale, where 0 is 'No Competency' and 10 is 'Expert'. During the initial stage the mentor and counterpart also discuss an expected or desired level of competency that should be attained by the end of the field training. In a section titled, Action Plan, the counterpart and mentor set up a schedule of specific activities that the counterpart can put into action after the field training. It is designed to assess whether the counterpart uses the skills built during training when they return to their positions. The activities have a scheduled completion date and should be measurable in some way so the mentor can evaluate the planned activities. Similar to the focal competencies, the mentor and counterpart decide on an expected or desired level of competency on the same 0-10 scale and upon completion of the activity the mentor and counterpart decide on the level (from 0-10) that has been attained. To conclude, the mentor explains his roles and responsibilities in terms of the training and agreement. For example, how many days will be spent in the field, how many in the classroom, the frequency of contact once the field component is over and other tasks that will facilitate the agreement. The counterpart also outlines his roles and responsibilities, such as the number of days he will participate in classroom and field training, agree to submit things in a timely manner, and communicate regularly with the project manager. The mentor, counterpart and counterpart's supervisor sign the contract agreement and it is used as the basis of skills development during the duration of the training period (Appendix G).

The evaluation of training activities summarized in this report is affected by several key limitations. First, time and money significantly affected efforts on all levels. Evaluation methods were not field-tested and on certain occasions the methods we chose were not ideal for illiterate or semi-literate training participants. These instances are noted where applicable. Also, staff implementing evaluations was sometimes inexperienced or had received little training. This may have affected interviewee responses. No evaluation of control groups was undertaken to compare differing outcomes between participants who had been trained by WCS and those who had received no training. Evaluations often took place in remote sites and because of time and financial constraints were included in field missions

that had multiple objectives. This often limited sample size, as time and vehicles were a limiting factor. Therefore, it can be difficult to draw conclusions that are scientifically significant.

4 INVESTMENT

Not covered in Kirkpatrick's original model, the fifth level of training evaluation is sometimes included as cost-benefit or cost-effectiveness analysis (Simmons), which evaluates the effectiveness of training in producing some outcome. In this case, the outcome is a conservation goal, for example an increase in the urial population in a national park. Given the recent implementation of many of these activities it is not yet accurate to evaluate the training in these terms, but it is useful to consider the total financial investment spent working toward these goals. The following data is based solely on direct costs and does not include indirect costs, such as security, logistics or administration born by the WCS-Afghanistan program.

Biodiversity assessments were undertaken at proposed protected area sites in the Afghan Pamir, Nuristan, Ajar Valley and Band-i-Amir. In Nuristan, total training expenses for per diem, hotels, translation and non-WCS staff time were at least \$20,400 USD to ensure that the wildlife survey teams could independently and correctly conduct surveys in the field. When WCS staff time to prepare and train teams is included, approximate investment in training Nuristan wildlife survey teams is approximately \$47,000 USD. These figures are based strictly on training expenses and do not include resources used for fieldwork. In the Afghan Pamir, resources invested to do rangeland assessments, bird surveys, Marco Polo sheep and other mammal surveys and training on livestock and wildlife disease is approximately \$93,400 USD, which includes trainer time. These are rough approximations and do not include time spent training WCS staff members, such as research assistants, who do not hold a government or community leadership position. In Band-i-Amir and Ajar Valley it can be estimated that at least \$27,000 USD has been invested in training community members, MAIL and NEPA staff for bird, rangeland and wildlife surveys. The total investment for training government officials and community members to do biodiversity assessments from 2006-2009 was at least \$167,400 USD.

Training high level government decision makers and members of community governance organizations comprise the bulk of WCS capacity building efforts for the policy and governance focal area. The total investment for these efforts was at least \$100,000 USD, including staff time.

WCS has invested a minimum of \$152,000 USD in community conservation training efforts in education, ecotourism, and protected area management. This includes staff time to set up, administer and evaluate training. All of these costs are conservative estimates and actual costs are likely to be higher.

5 PROPOSED PROTECTED AREAS

5.1 *Band-i-Amir*

Band-i-Amir is situated in central Afghanistan's Bamyan Province and is characterized by a series of six lakes of crystal blue formed by travertine dams. It was declared a provisional national park by NEPA in April 2009 for a term of three years. There are 15 villages in the vicinity of Band-i-Amir lakes with a combined population of about 3,980 people (MAIL 2009). The major land use issues include irrigated farming, rain-fed farming, grazing, shrub collection, reed cutting, and waterfowl hunting. The lakes are situated at an altitude of 2900m and the surrounding countryside falls between an elevation of 3200 – 3400m (MAIL 2009). The Band-i-Amir region hosts wolves *Canis lupus*, red fox *Vulpes vulpes*, Afghan

pika *Ochotona rufescens*, and more than 80 species of birds. There are varied reports of ibex *Capra siberica* and urial *Ovis orientalis* in the BANP surrounding area (MAIL 2009; Haji Zaher pers. comm.).

5.2 Ajar Valley

Ajar Valley is a long gorge created by the Ajar River and the Jawzari Canyon. The area has historically hosted populations of ibex, urial, and Bactrian deer *Cervus elaphus bactrianus* and predators such as snow leopard *Panthera uncia*, leopard *Panthera pardus*, lynx *Lynx lynx* and wolves (Shank 1977). During the time of King Zaher Shah it was a royal hunting reserve. Thirty years of conflict and intense hunting have significantly reduced wildlife populations with recent estimates of ibex reduced from potentially 5000 in 1977 to approximately 500 in 2007 (Shank 1977; Shank, pers. comm.). Disputes regarding land tenure, deforestation and overharvest continue to threaten the natural resources of this area (Anonymous 2003).

5.3 Afghan Pamir

The Afghan Pamir consists of potentially three different proposed protected areas- Big Pamir, Little Pamir and Waghjir Valley. The Big Pamir extends over about 5,500 km². The Wakhi occupy the western Big Pamir and livestock extensively use the area for grazing during the relatively mild summer months (Ostrowski 2006). The Kyrgyz ethnic group inhabits the eastern portion of the Big Pamir and they (and their livestock) are year-round inhabitants of the area (Ostrowski 2007). The management plan for the Big Pamir Wildlife Reserve was proposed over a 679 km² area over 30 years ago, but has never been



Figure 1. Proposed Protected Area Sites of Afghanistan.

legally recognized (Petocz 1978). Kyrgyz pastoralists inhabit the Little Pamir and move camps seasonally. The Big and Little Pamir hosts species such as Marco Polo sheep *Ovis ammon polii*, wolf, brown bear *Ursus arctos*, ibex, and snow leopard (Fitzherbert 2003; Habib 2008). The very northeastern tip of Afghanistan is the Waghjir Valley. It is uninhabited and hosts yak of the Little Pamir Kyrgyz for grazing in winter, in addition to Marco Polo sheep (Habib 2008). The Afghan Pamir falls within the Wakhan District, one of many districts of northeastern Badakshan Province. There is very little presence of national or provincial government staff in the Afghan Pamir. Within the Lower and Upper Wakhan (from Khandud to Sarhad-e-Broghil) schools have been open only since the fall of the Taliban with significant assistance from UNICEF (Mock 2007). The Wakhan has 14 schools spread throughout the valley, only 3 of which are higher secondary (up to Class 12). There are no formal schools in the Pamirs for the Kyrgyz people.

5.4 Nuristan

Nuristan province holds an extensive portion of the country's remaining deciduous and coniferous forests, which harbor a diverse assemblage of wildlife. Extensive deforestation, hunting, and lax regulation pose serious threats to the future persistence of these forests, and of its wildlife, among which are five globally-threatened large mammal species: snow leopard, markhor *Capra falconeri*, urial,

musk deer *Moschus cupreus* and Asiatic black bear *Ursus thibetanus*. WCS has been working in an area of south central Nuristan province in the Waygal Valley where Petocz conducted markhor surveys in 1977 (Petocz 1977). Nuristan suffers from ongoing unrest and lacks a significant presence from the central government or international humanitarian community.

6 PROGRAM OUTCOMES

The WCS program can be roughly grouped into several different areas of focus: community conservation, policy and governance, wildlife and rangeland assessments, protected area management, wildlife health and wildlife trade. Training and capacity building contributes to achieving the objectives as laid out in each of these focal areas. Due to a lack of qualified technical personnel WCS relies heavily on consultants from Europe, the US and Canada for program implementation. Given Afghanistan's current security issues, as well as language and cultural differences, there are limitations with this design. The training component aims to equip a cadre of Afghan conservation professionals with the knowledge and skills necessary to sustainably manage conservation in Afghanistan. The training implemented from 2006-2009 to achieve objectives in each focal area is discussed in more detail, though for the sake of brevity not all training courses are discussed in detail. A list of all trainings implemented by WCS from 2006-09 is in Appendix H.

6.1 *Wildlife & Rangeland Assessments*

Detailed assessments of wildlife populations and rangeland condition in Afghanistan had not been undertaken in over 30 years, and then in only select areas. At its inception in 2006 one primary objective of the WCS program was to undertake thorough surveys of large mammals and other fauna in Big Pamir, Little Pamir, Waghjir Valley, Band-i-Amir, Ajar Valley and Nuristan province. In addition, detailed rangeland assessments of the Afghan Pamir and Band-i-Amir were a priority. This focal area also included an assessment of the extent of threat from wildlife trade and the potential risk of disease transmission between domestic livestock and wildlife. MAIL staff are tasked with monitoring rangeland condition and wildlife populations but given limitations on technical capacity and financial resources do not have a sustainable presence in the proposed protected area sites. Thus it is often also necessary to train community members to undertake wildlife and/or rangeland assessments. From the inception of the WCS program, MAIL staff and community members have been trained in the field by international experts, in short courses and through study travel programs to obtain the skills and knowledge necessary to monitor and protect biodiversity (Figure 2). Participant testing or training agreements were conducted in most of these occasions to assess knowledge and skills gained. The goal outlined in Figure 2, of MAIL staff monitoring and protecting wildlife populations, is in accordance with that set forth by the Department of Natural Resource Management of MAIL.

WILDLIFE & RANGELAND TRAINING TOPIC SUMMARY¹

- Introduction to birding
- Rangeland conservation & mgmt.
- Asiatic black bear conservation
- Wildlife Monitoring
- Field Training –Mammals, Birds, Rangeland Monitoring; Marco Polo Sheep
- Wildlife population biology
- Introduction to GIS
- Conservation GIS
- Small mammal trapping
- Camera trapping survey design and Implementation
- Snow leopard conservation planning
- Field equipment use and data recording
- Bird identification and monitoring
- Wildlife Biology Masters Degree
- Herbarium specimen labeling and mounting
- Wildlife survey methodologies and data collection

¹ Full details in Appendix H and in text

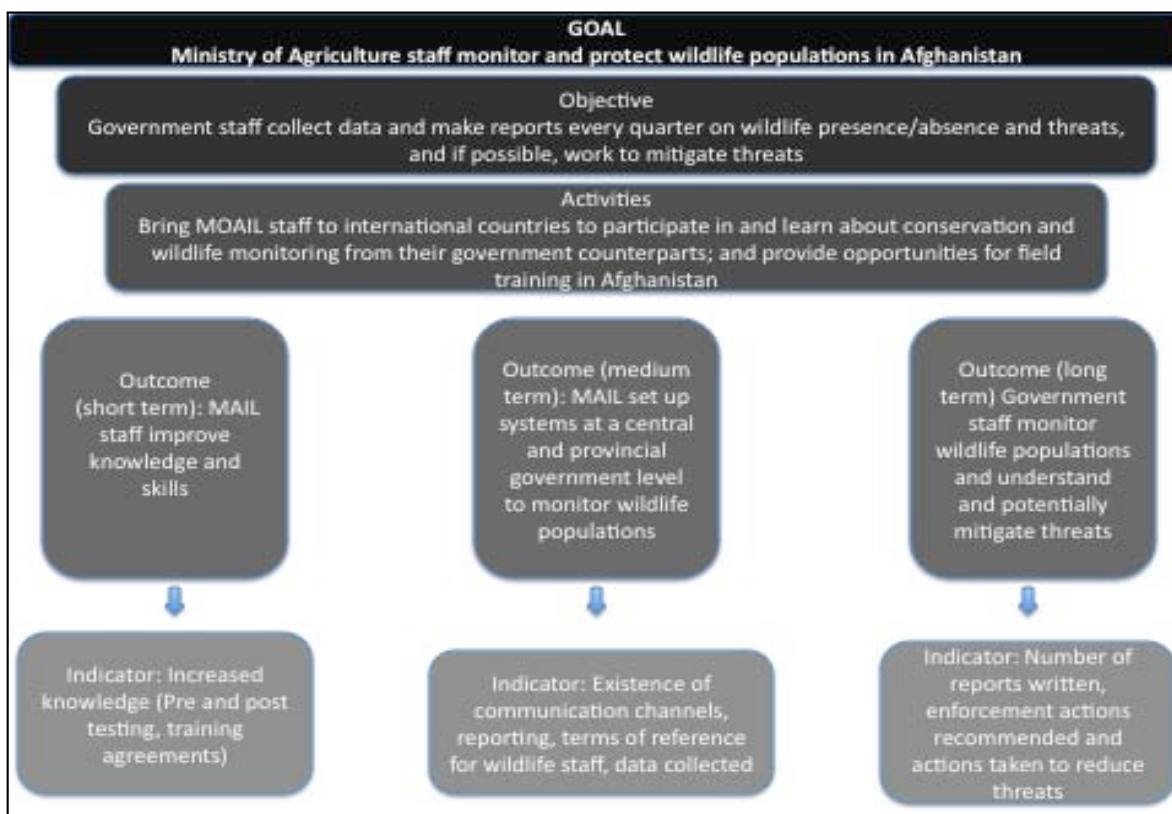


Figure 2. Logical Model for training MAIL staff to monitor and protect wildlife populations

The Department of Parks relies on information gathered from the provincial departments to adequately monitor and mitigate threats to wildlife. WCS conducted interviews with pertinent staff of MAIL to evaluate the existence of communication channels between the national and provincial level, the presence and capacity of provincial government staff to monitor wildlife and the frequency of data collected and communicated to the national level regarding wildlife issues, (n=7; Medium Term Outcome/Indicator in Figure 2). At the national level the Director General of the Department of Natural Resource Management was interviewed, as well as the Director of the Protected Areas Department and one of two Wildlife Monitoring Officers within this Department. Each provincial Director of the Department of Agriculture was also interviewed, as well as the national park warden and one ranger in Band-i-Amir National Park. The full questionnaire is in Appendix J. The interview results are summarized below according to provinces of WCS project sites – Bamyan, Badakshan and Nuristan.

6.1.1 Bamyan

WCS conducted wildlife surveys for urial, small mammals and birds, resource harvest assessment surveys and engaged in community education and consultation with regard to the development of BANP on quarterly or semi-annual field visits from 2006-08.

In total, WCS trained three staff from the Central Government in Band-i-Amir for 95 days. The government counterpart from the Protected Area Division of MAIL improved in all competencies that he was able to participate in during a rapid assessment survey for three weeks in Ajar Valley, the King’s

former hunting reserve. Though in all cases he did not meet the expected level of ability (Table 1). Skill or knowledge achievement was not measured during other field missions.

Table 1. Result of field training for MAIL counterpart in Ajar Valley in October 2006.

COMPETENCY (The ability to..)	LEVEL OF ABILITY		
	Initial 1/Oct/06	Expected /Desired	Final 20/Oct/06
1. Read maps, use GPS and compass	1	7	5
2. Recognize and identify mountain birds	1	5	4
3. Do an ungulate survey using direct observation	0	7	6
4. Trap/collect small mammals	0	7	Not enough field testing to evaluate skills
5. Handle specimens and do museum mounts	Counterpart did not participate for religious reasons		
6. Understand protected area management	3	7	5

Small mammals have not been extensively studied in BANP. A team of four Afghans was trained in October 2007 to undertake an inventory of small mammals in the hills surrounding Band-i-Pudina and Band-i-Paneer. The four team members were trained in equipment use, such as GPS and digital cameras, snap and Sherman trap function, collection and tagging procedures and data recording and management. Team members were not evaluated formally through tests, but after being trained succeeded in establishing 550m transects in four different sites and collected 49 samples of small mammal specimens over a two-week period. Experts at the National Museum of Natural History, Smithsonian Institution, Washington DC, US have identified these specimens.

6.1.2 Nuristan

Wildlife survey work in Nuristan was set in motion in November 2006 with a workshop on concepts and techniques for conducting wildlife surveys taught by two consultants to the WCS India program. The



Figure 3. Wildlife survey teams hike in Nuristan. (Photo credit: Ismail Tuheed)

intended outcome was to prepare teams of community members, provincial government staff and research assistants to a level where they were able to carry out surveys independently.

Wildlife surveys had not been conducted in Nuristan in over thirty years and the participants reported no prior experience using field equipment, collecting data, or doing systematic surveys. More than half of the group of 12 were from or had lived in Nuristan for some time so were familiar with the natural history of the species present in the region. After approximately 22 full days of training, three teams of 4 people conducted

surveys in the study site in south-central Nuristan Province. Upon completion of the initial survey, teams returned to Kabul where several mistakes were identified, such as errors in equipment use, protocol and data recording. An additional 10 days were spent training teams in Kabul to rectify errors. From January to May 2007 wildlife teams performed occupancy surveys in the study site (Figure 3). From June 2007 to November 2007 teams conducted camera trap surveys, collected small mammals and continued to collect scats for later species identification. Teams collected the first systematic wildlife presence/absence data from Nuristan in 30 years. No systematic evaluation of knowledge obtained was conducted though it is certainly the case that this project would not have been possible without the significant investment in training at the outset. Since a large portion of field teams were comprised of local community members, it would be beneficial to measure how their involvement with and training by WCS has changed their behavior or decision making in their communities, if at all.

Nuristan is one of the areas richest in biodiversity, but lacks a strong presence from MAIL and has no NEPA representation. The Director of the Department of Agriculture in Nuristan and four of his staff were trained by WCS as part of the initial wildlife surveys in November 2006, but it is not clear if those trained still hold their positions. Due to the inaccessibility of Nuristan and security problems, we were unable to conduct an interview with the provincial Director of the Department of Agriculture. Government officials at the national level reported receiving very few reports from Nuristan and two of three officials reported that there was no government staff in Nuristan collecting data on wildlife presence in the province.

6.1.3 Badakshan

The Department of Protected Areas and Wildlife Management staff accompanied international WCS experts in wildlife biology to conduct field surveys in the Wakhan and Pamir. WCS trained one of MAIL's Wildlife Monitoring Officers in mammal and habitat assessments in the Wakhan and Pamir in the summer of 2006. In eight key competencies identified by both mentor and counterpart during August 2006, the counterpart improved compared to the initial evaluation, though did not achieve the expected or desired level of skill (Table 2). He received over 150 days of field training from 2006 to 2008. Training evaluation for field sessions from spring 2007 onwards were not completed.

Table 2. Result of field training for MAIL Wildlife Monitoring Officer in Wakhan/Pamir with WCS in August 2006.

COMPETENCY (The ability to..)	LEVEL OF ABILITY		
	Initial (02/Aug/06)	Expected/ Desired	Final (25/Sept/06)
1. Use basic field equipment (GPS, binoculars, compass, range finder and camera trap)	0	7	6
2. Stratify different habitat units in the Wakhan	2	8	7
3. Recognize mammals based on different morphological characteristics and habitat types	3	9	8
4. Recognize direct and indirect evidence of mammals of the Wakhan area	1	8	7
5. Establish plots and transects (line, point and belt) for sampling direct and indirect evidence	0	7	6
6. Recognize and collect data pertaining to animals and habitat using nominal/ordinal and interval/ratio scale	0	7	6

7. Summarize and calculate sample statistical parameters (mean, median, SD, CV, 95% CL of the data collected in field)	0	7	6
8. Apply and use the appropriate field method depending on whether mammals, birds or habitats are being sampled	0	7	6

The following spring six new competencies were evaluated. The counterpart improved in all competencies over the three-week period, and achieved the target level in all but one area (Table 3).

Table 3. Result of field training of MAIL Wildlife Monitoring Officer with WCS in April 2007.

COMPETENCY (The ability to..)	LEVEL OF ABILITY		
	Initial (02/Apr/07)	Target	Final (22/Apr/07)
1. Get exact information on the loss of livestock from the local people	1	7	8
2. Get information about the distribution pattern of the species around the villages	1	7	7
3. Get truthful information from local people using proper interview techniques	1	7	7
4. Opportunistically record wildlife during the survey	3	6	6
5. Educate people regarding the importance of wildlife	2	7	7
6. Report survey results	2	7	5

Rangelands are the major land type in Afghanistan comprising between 70 and 80% of the country (Bedunah 2006). One of the most critical problems regarding sustainable use of rangeland is a lack of institutional capacity for managing and understanding rangeland ecosystems (Bedunah 2006). To promote greater knowledge and skills for rangeland monitoring and conservation WCS trained MAIL staff in the field and held a workshop for community leaders and MAIL staff in rangeland management. Three Badakshan Provincial Department of Agriculture staff spent over 30 days in the Wakhan/Pamir region in summer of 2006 where they conducted surveys as far east as the Waghjir Valley. Each member of the team improved their skills in the field, and usually performed equal to or at a higher level than expected (Table 4).

Table 4. Results of Badakshan Provincial MAIL staff field training by WCS in summer of 2006.

COMPETENCY (The ability to...)	LEVEL OF ABILITY (0-10)								
	Initial (24/July/06)			Expected/ Desired			Final (27/Aug/06)		
<i>Individual scores separated by column A, B and C.</i>	A	B	C	A	B	C	A	B	C
1. Recognize different types of plants (shrubs vs. forbs vs. grasses)	4	4	6	7	7	8	7	7.5	8
2. Recognize major plant communities of the	1	1	4	8	8	8	8	8	8

Wakhan Corridor (alpine vs. valley vs. riverine)									
3. Estimate plant cover using plots of known area	4	3	6	-	-	-	-	-	-
4. Estimate standing crop using plots of known area	1	1	1	5	5	7	5	5	8
5. Find a suitable location for a plot and transect	2	3	5	7	7	8	7	7	8
6. Layout a plot and transect	1	1	2	8	8	8	8	8	9
7. Use a compass and GPS to set plot location	1	1	1	8	8	8	8	8	9
8. Use a compass and GPS to monitor site location	1	1	1	8	8	8	8	8	9

In January 2007, WCS implemented a 3-day workshop at the provincial headquarters of the Department of Agriculture in Faizabad, Badakshan. Twenty-one provincial rangeland staff and seven community leaders from the Lower and Upper Wakhan attended the training to learn basic plant biology, importance of rangeland management and integrated watershed and rangeland planning, rangeland hydrology and methods for reducing damage from overgrazing. On the final day participants were asked to fill out an evaluation that assessed their knowledge of key topics covered during the training (Appendix L). Approximately 20 of 28 participants took the evaluation, which was translated into Dari. There were some members of the group with limited literacy skills, which prevented them from understanding most of the questions and their responses have not been included. Included in this test were several questions to assess the reaction of participants to the training. Seventy percent of participants said they were very likely to use the training information in their life or work. Eighty-eight percent said their knowledge of rangeland conservation had increased as a result of the training. Eighty-five percent of respondents said that the information in the training was mostly new or completely new. Participants were asked to put their names on the test, which may have affected their responses. In sum, the majority of participants achieved a basic level of knowledge of rangeland conservation that met the training objectives.



**Figure 4. Landscape in Upper Wakhan, Badakshan
(Photo credit: Kara Stevens)**

Conclusion

Central government staff demonstrated improved knowledge of wildlife monitoring methods and skills as a result of WCS training (Table 1,2,3,4). However, based on information provided from MAIL staff regarding Bamyan and Badakhsan province they have not used this knowledge to standardize methods in their own reporting. It is possible that they do not have the knowledge of how to set up or see the

value in regularly monitoring wildlife presence. It is also possible that they have attempted to create such a system, but have not yet achieved the results they seek. Since we were unable to collect reports being submitted to the central government it is difficult to recommend adjustments. Currently, MAIL and NEPA rely mainly on information from international organizations to know whether the proposed protected areas are effective at protecting target species. Ultimately the difficulty faced by provincial government staff and community members in requesting and receiving assistance from enforcement officials is a greater impediment to reducing or mitigating threats to wildlife. Educating the Ministry of Interior's border guards, intelligence officials, and police officers at local, provincial and national levels about wildlife protection, Afghanistan's environmental law and the link between environment and security could prove to build allies and support in a Ministry that WCS has to date worked little with.

6.2 Protected Area Management

Afghanistan has one legally recognized national park and other sites at various stages of development. Given the national government's limited reach in many rural, remote parts of the country, governance of protected areas requires heavy involvement by local communities. In the past three years, WCS has invested training for protected area management at all levels, but primarily targeting rural community members and local government officials. Three members of MAIL's Department of Protected Areas and Wildlife Management attended a two-week course at Aligarh Muslim University in Aligarh, India in November 2006. The course included topics in wildlife biology, as well as GIS and statistical program applications, field equipment use, and lab work. The participants were exposed to the national park system of India, a university program specializing in wildlife management, and up to date research methodologies for studying wildlife. At the time the Protected Area Department at MAIL was preparing to create a national network of protected areas from Wakhan to Band-i-Amir, but lacked knowledge of management or international best practices. The training included both practical and theoretical components. An identical pre- and post-training examination was given to all participants. The test was re-administered in the fall of 2008, approximately two years after the training (Table 5).

PROTECTED AREA MANAGEMENT TRAINING TOPIC SUMMARY¹

- Band-i-Amir PA mgmt and Environment Act
- Field Training – Community involvement in development of Band-i-Amir and Ajar Valley PAs
- Protected area planning, enforcement and mgmt
- Participatory community protected area mgmt.
- Ranger training for Big Pamir and Band-i-Amir rangers
- Ranger first aid training

¹ Full Details are in Appendix H

Table 5. Results of pre and post-training test administered to protected area and wildlife management training course

TITLE	PRE-TEST (NOV 2006)	POST-TEST (NOV 2006)	RE-TEST (OCT 2008)
Director, Department of Parks and Wildlife	48%	80%	68%
Wildlife Monitoring Officer-1, MAIL	28%	76%	68%
Wildlife Monitoring Officer-2, MAIL	44%	72%	56%
Plant Protection Officer, MAIL	16%	56%	-
WCS Research Assistant	52%	88%	-
WCS Research Assistant	16%	60%	-
WCS Research Assistant	16%	52%	-

In addition to the three staff from the Protected Area Dept. at MAIL, an official who is in the Plant Protection Dept. and who also joined WCS bird survey teams in Wakhan in the summer of 2006 attended, as well as three WCS research assistants who were recent graduates of Kabul University. The retest was not administered to this latter group in October 2008. The test was a 25-question multiple-choice exam that asked about field techniques, experimental design, equipment use and conservation principles. The participants significantly improved their comprehension of the subjects after the training. Participants demonstrated an improvement in knowledge of conservation topics before and after the training, and after two years had an average 85% retention compared to post test results.

In spring 2007, one warden and four rangers were hired from the local community to work at the ranger station in Band-i-Amir. They are secondary school educated, literate, Dari-speaking men with first hand agricultural experience. As Band-i-Amir is the first national park in Afghanistan, none had prior experience in protected area management, nor law enforcement, wildlife monitoring, conservation education or ecotourism. According to the Collaborative Management Agreement and management plan, the warden (and his staff), are responsible for enforcement of the rules as laid out in the management plan, for auditing community conservation funds, for proper management of natural resources in consultation with community members, for educating the general public about the rules of the park and the value of the resources, and for monitoring the park condition and maintaining facilities. To ensure proper management of the national park for the conservation and restoration of biodiversity, WCS has invested significant staff and financial resources in training the rangers and warden, and provincial MAIL staff.

Ranger training for BANP staff, including local police and intelligence officials, was conducted in November 2008 at the Ministry of Agriculture offices in Kabul to develop knowledge in wildlife conservation principles and laws, and skills in field craft, practical techniques for applying environmental laws, and first aid. In addition, the aim was also to improve the understanding of the purpose of creating a national park and the role of the rangers in its management and to establish better coordination and communication between the rangers, central and provincial Ministry of Agriculture offices, and the security officials stationed at Band-i-Amir. This training was first formal training engagement with Band-i-Amir security officials who are a crucial element in helping to enforce national park rules such as a ban on shrub collecting and Afghan national laws such as a ban on hunting and dynamite fishing. The instruction was primarily classroom based with a visit to Khol-i-Hashmat Khan wetland in Kabul to practice map reading, and GPS and binocular use. Attendees of the ranger training are in Appendix C.

Eighty-four species of birds have been recorded at Band-i-Amir (MAIL 2009) and Evans (1994) lists Band-i-Amir as one of the internationally Important Bird Areas (IBAs) of the Middle East. Prior to ranger training, WCS trained the rangers and warden in use of birding equipment such as binoculars and field guides during a two-day training in October 2007. Around this time, the rangers attended a two-day workshop prior to the first Band-i-Amir Protected Area Committee (BAPAC) meeting that covered the management plan, the Environment Law, presidential decrees, and the importance of protected areas for biodiversity conservation.

To test the level of general conservation knowledge of the national park staff, a 17-question test with 22 possible points was administered in November 2007. The test covered topics in field craft, Afghanistan conservation policy and management, and wildlife sciences. The BANP warden, and three of four rangers took the written test in Dari language. The median score was 61%, with a range between 4% and 75%. Of those that took the test, two are no longer employed as rangers, and two new rangers were hired in spring 2009. Given the fluid nature of ranger positions at BANP adequate pre and post-testing has proven difficult.

The Director of the Agriculture Department in Bamyan Province, along with other government participants (Appendix I), attended an international training program in Cambodia in April 2007. There he witnessed firsthand the successful implementation and management of a protected area rich in wildlife and in harmony with local communities. He learned how GIS is used in park management, the implementation of law enforcement that is transparent and fair, community planning and involvement in park management and the zonation of protected areas and rules for use in each area. The post-training evaluation to assess participant knowledge against training objectives was anonymous, and the average score of six participants was 10.8 out of 13 points, with a range between 7 and 13 correct. Evaluation papers asked about the least useful and most useful part of the training. The answers to these questions indicated that the group found the training applicable and enjoyable. Fifty percent of the group responded that a lot of the information from the training would be useful in their future, 50% said some of it would be useful. The results indicate that the Bamyan Director of the Department of Agriculture found at least some of the information useful and that he had some knowledge regarding protected area management. In the time since the training reports and observations of the Director's actions makes it clear that he has not applied the knowledge gained from the study tour since returning to his post in the government, particularly with regard to transparency and law enforcement.

The BANP rangers have significantly increased their skills and knowledge of protected area management as a result of WCS training. Obstacles that cannot be addressed through training alone pose hurdles to the stable and successful operation of BANP. Significant investments have also been made recently to train 24 volunteer rangers in the Wakhan to monitor and patrol the Big Pamir region. This group of rangers will contribute to the management of the proposed Big Pamir Protected Area.

6.3 Livestock and Wildlife Health

Rural communities in Afghanistan depend directly on livestock for their survival, and disease is one of the greatest threats to this resource. The national government is not equipped to provide modern livestock health care to remote regions of the country and private veterinary services are not widespread. Diseases in livestock can easily cross species boundaries and negatively affect wildlife populations. To build awareness and understanding of the risk of disease spillover when domestic livestock and wildlife live in close proximity, and to mitigate this threat, WCS has conducted training programs for government staff and rural livestock herders.

6.3.1 Paravet Training

The Wakhan Corridor and Pamir region hosts a human population of more than 12,000 and a livestock population several times this amount. However, as of early 2007, there was only one trained veterinarian in the Lower Wakhan and he could not service the entire region. WCS selected two individuals from the Wakhan to participate in the Dutch Committee for Afghanistan's (DCA) 6-month paravet training course. They graduated on January 7, 2008. Per WCS agreement with DCA, WCS helped the paravets establish veterinary field units (VFU) by providing furniture, medicine, signboards and technical equipment. The paravets are collecting important data for WCS on incidence of livestock disease and providing veterinary care where there was previously none in their areas of Avgarch and Kand Khun of the Wakhan Valley. WCS will slowly phase out in-kind support so the paravets must charge for their services

WILDLIFE HEALTH TRAINING TOPIC SUMMARY¹

- Wild bird capture, identification and handling
- Avian flu and wild birds
- Wildlife immobilization and handling
- Paravet training
- Field Training – livestock vaccination, wildlife and livestock disease and treatment

¹ Full Details are in Appendix H

to sustain their business. These are the first VFUs east of Khandud and payment for veterinary services is uncommon. This is a challenge the paravets and WCS are working to overcome through community education. Each month the paravets provide WCS with reports regarding their disease treatments, depredation incidents in the area, observed contact between wildlife and livestock and any reported wildlife health problems observed directly or learned secondhand. In March 2009, paravets reported that they are receiving some payment for their services. The Wakhan is not based traditionally on a cash economy and compensation is traditionally based on a barter system. The paravets are receiving oil, wool, and dried yogurt (*krut*) in exchange for their services. The vaccines, such as that for Foot and Mouth Disease have proven to be too expensive for community members in the region (35 doses, \$15 USD), but the paravets reported that they are able to make money from medicine.

6.3.2 Avian Influenza

The Food and Agriculture Organization (FAO) contracted WCS to train its avian influenza emergency response staff in wild bird identification. WCS implemented a training split into two separate weeklong sessions to FAO staff and government personnel in order to coincide with the timing of pre- and post-breeding migration periods in Afghanistan. During the twelve-day training, the participants learned to use field equipment such as GPS, binoculars, spotting scopes and bird identification guides. They learned about avian influenza surveying and monitoring, sampling, handling, ecology and identification of wild birds, and data collection and recording techniques. Participants handled wild birds from the Kabul Zoo and the Ka Farushi bird market, they identified wild birds from photos and live specimens using field guides (*Ripley's Guide to the Birds of South Asia, Rasmussen and Anderton*), they constructed species lists from observations at Khol-i-Hashmat Khan wetland in Kabul and Lake Qargha just north of Kabul, and learned about the risk of wild birds as a source for highly pathogenic avian influenza virus (AIV).

Participants were evaluated throughout the training to assess competencies in using GPS, spotting scope, binoculars and field guides. WCS implemented a summative evaluation after both 6-day training sessions and continually assessed the participant's skill attainment throughout the training. Every participant was competent in the use of binoculars, spotting scope and field guides, and can use the GPS to mark points. After each training a test was given in Dari to assess the participant's knowledge of key training goals (Table 6). Based on the evaluations, the participants are very competent in bird identification as a result of the practical training. They excelled at both simple and difficult bird identifications and developed these skills using both photos and field equipment. A majority of the participants understand basic theoretical and practical aspects of AI monitoring and surveillance and the risk factors of AI outbreaks related to presence of wild birds.

Table 6. Results of Evaluation of Avian Influenza and Wild Bird Identification Trainings

QUESTIONS	PART ONE RESULTS (% CORRECT OF 22 RESPONDENTS)	PART TWO RESULTS (% CORRECT OF 24 RESPONDENTS)
_____ is most common in wild birds and occur rarely in poultry. (Highly Pathogenic AIV or Low Pathogenic AIV)	86%	-
_____ is rare in wild birds and is considered a problem in the poultry industry. (Highly Pathogenic AIV or Low Pathogenic AIV)	86%	-

Name the known bird species that are both alpha 2,3 and alpha 2,6-linkage between sialic acid and galactose. (Quail)	86%	-
If you find three dead alpine swifts in a field, would this be a high priority for investigation into avian influenza as a cause? Why?	-	96%
If you find three dead Eurasian Coots near Khol-i-Hashmat Khan, would this be a high priority for investigation into avian influenza as a cause? Why?	-	83%
If you find three dead Eurasian Coots, and one dead Mallard Duck in Khol-i-Hashmat Khan, what should you do while waiting for the laboratory results?	-	58%
Killing wild birds is NOT a legitimate way to deal with avian influenza. Why not?	82%	100%
Bird Identification from four pictures: Identify English name, scientific name. Part two asked to identify whether the species was a water bird, bridge species or raptor.	95%	66%

In the first training 15 participants worked for FAO, 6 for the Islamic Republic of the Government of Afghanistan and one identified himself as 'Other'. The second half of the training drew 7 participants from the Government of Afghanistan, 16 from FAO, and one person identified himself as 'Other'. The evaluation after the second training asked the frequency with which participants had used binoculars, GPS, field guides, handled wild birds or taken samples from wild birds in the previous four months since the completion of the first half of the training. The majority of the respondents had not used field equipment, handled a wild bird or taken samples from a wild bird. Due to a funding gap at FAO, many of their staff were put on contract hiatus during the period between the two trainings. In both trainings goals for learning technical aspects of avian influenza in wild birds was achieved. At the end of the second training 100% of respondents understood that killing wild birds is not a good way to address an avian influenza outbreak in domestic poultry or humans, which was an improvement from the 82% who answered this question correctly at the end of the first training. The bird identification of part two shows that fewer participants achieved correct answers compared to the first training (Table 6). These results are misleading. The same pictures of birds were not used. Since participants had much more experience by the time they reached the end of the second training, each set of photos ranged from moderate to very difficult identification, including differentiating between various sparrow, sandpiper and raptor species. Participants were also scored on whether they could identify the species as a water bird, bridge species or raptor. This was not asked during the first evaluation.

In addition to training on AIV, WCS has accomplished a significant amount of community outreach and education about livestock health and the risk to wildlife. This has been little quantified or evaluated, but should not be overlooked in importance in generating goodwill among community members at WCS project sites.

6.4 Wildlife Trade

Now, as in the 1970s, fur trade in Kabul is ubiquitous and largely unregulated (Rodenburg 1977, personal observation). An important market for the fur trade 30 years ago was the Western tourist (Rodenburg 1977), and now, the market has evolved to respond to demand from the Western expatriate and military community. Every fur sold increases demand to harvest another from the wild. To reduce the demand for furs of CITES protected species, WCS targeted training efforts on the US military. The US military has bases all over the country, the largest being Bagram Airforce Base north of Kabul. Most bases host local merchants in a weekly bazaar since soldiers are unable to leave the base for shopping excursions. The merchants (and their goods) are tightly controlled and subject to inspection by military and civilian officials who manage security of the weekly markets. It is highly profitable for merchants to have access to military markets because their customers have no opportunity to comparison shop. WCS trained 12 Bagram Airforce Base customs officials to recognize and confiscate furs of felid species such as leopard, snow leopard, cheetah, and leopard cat that had been purchased by soldiers. WCS also trained 12 Afghan fur merchants and the 6 civilian officials who manage security of the weekly markets regarding which species were illegal to purchase and export from Afghanistan to CITES-signatory countries. Each participant passed the post-training evaluation to recognize the difference between furs of various threatened species. Follow-up monitoring was conducted two weeks after the trainings at the market at Bagram Airforce Base. Fur sellers were only selling domestic animal furs, unlike previous weeks, and could not be induced to sell the furs of protected species, with one fur seller reporting, “I can’t, I will lose my spot in the market”. Because of the nearly regular 6-month turnover at military bases, training for customs officials and market security officers is ongoing.

**WILDLIFE TRADE TRAINING
TOPIC SUMMARY¹**

- Ka Farushi bird identification and sales monitoring
- Wildlife pelt identification and CITES and Afghan Law protection
- Wildlife trade and Afghanistan’s Environmental Law
- CITES implementation

¹ Full Details are in Appendix H

6.5 Community Conservation

Rural residents of Afghanistan are directly dependent on natural resources for their survival and often live in remote areas much outside the reach of the central government. Given their reliance on productive land for agriculture and pasture, communities surrounding proposed protected areas are a key component in conservation efforts as their use of resources often overlaps with the needs of wildlife. After conducting socioeconomic surveys, WCS aimed to establish community conservation committees to manage tourism, grazing and development activities, and improve community awareness about threats to natural resources through targeted education campaigns. A key component of community conservation activities is to make the link between wildlife and tourism in order to create an incentive for community members to accept conservation interventions and protect wildlife populations.

6.5.1 Primary and Secondary School Education

WCS developed posters in coordination with Afghan Conservation Corps, UNEP and the Ministry of Education for use as supplemental material in primary and secondary schools to help teach about taxonomy, classification, ecology, animal reproduction, and adaptation. WCS coordinated with provincial Departments of

**COMMUNITY CONSERVATION
TRAINING TOPIC SUMMARY¹**

- Introduction to wildlife conservation, protected areas and ecotourism
- Methods for conducting socio-economic household surveys
- Conservation education in schools and communities
- Ecotourism principles, management and implementation
- Hotel and restaurant management
- Tour guiding
- Introduction to ecology, conservation biology and wildlife of Afghanistan
- Basic, intermediate and advanced English
- Wildlife conservation and Afghanistan national K-12 curriculum
- Protected area management and governance

¹ Full Details are in Appendix H

Education to train teachers and distribute posters to WCS field site locations.

6.5.1.1 Badakshan

In Badakshan in October-December of 2008, four government officials from the Department of Education and the Badakshan Provincial NEPA office were trained by WCS staff to deliver the posters in Badakshan province and train teachers in their application in the classroom. They visited 237 schools and trained 1,560 teachers.

In addition to poster distribution and teacher training described previously, WCS has set up an environmental education program at six schools in the Lower and Upper Wakhan. The intent of this program is to demonstrate the collective impact the communities have by harvesting fuelwood and grazing livestock, to build capacity in students and teachers for data collection and to work with students to promote conservation in their respective communities. Four teachers were trained at each school, which then set up teams of students to collect data in their villages regarding time spent and total volume of fuel wood collected, wildlife events and livestock numbers for their villages. Students use data sheets and skills of observation, measurement, math and science to implement the project. Each school's data will be collated by head teachers who will work with students to estimate the total fuel wood collected and livestock numbers for the area they inhabit in the Wakhan. Schoolchildren presented results to the community at an event in summer 2009.

6.5.1.2 Bamyan

According to the government's Central Statistics Office, there are 247 schools in Bamyan Province. Of these 173 are primary schools and 84 are secondary schools. In the vicinity of BANP there are 2 primary schools and 1 secondary school. Some students from the Band-i-Amir area migrate to the district or provincial center to seek better education (A. Alavi, pers. comm.). In March 2008, WCS trained seven members of the Bamyan provincial National Environmental Protection Agency in how the wildlife posters connected to themes covered in the national curriculum and how the teachers could use the posters in the classroom. NEPA staff visited 193 schools to deliver posters and trained 1,449 teachers in wildlife ecology.

6.5.1.3 Nuristan

Posters were also distributed to schools in Nuristan Province. WCS staff visited 31 schools and trained 190 teachers primarily in the Want, Wama and Waygal districts. Follow up observation in Bamyan, Nuristan and Badakshan provinces should be conducted to determine if teachers are using the material in their classroom and if the students have learned anything as a result.

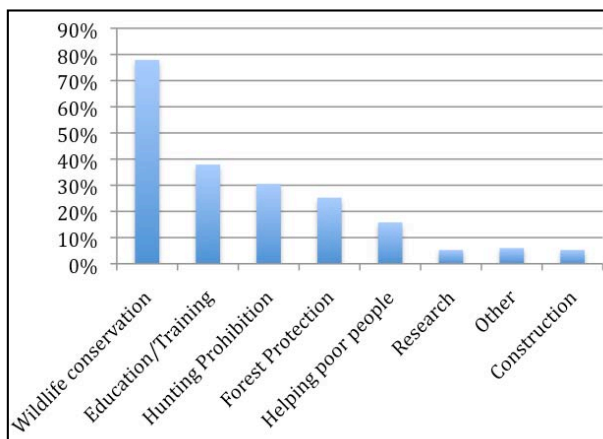


Figure 5. Wakhi community members' response when asked about the type of program WCS is implementing.

6.5.2 Community Outreach & Awareness

6.5.2.1 Badakshan

Protection and conservation of wildlife in Afghanistan depends on community awareness of the threats to natural resources and acceptance of the value of wildlife. WCS has worked to reduce threats to wildlife in the Wakhan and Pamir, such as overhunting,

overgrazing and fuel wood extraction by educating community members about the goals of the WCS project through workshops, seminars and field training. From 2006 to 2009 WCS has educated community members directly in schools and through training programs, and indirectly by hiring guides and cooks, staying in people's homes, and having meetings with community leaders. To gauge general community awareness about WCS, and the communities' perceptions regarding threats to and value of wildlife, WCS conducted a brief community member survey in November 2006 and again in December 2008. The methods for conducting the surveys were different, so comparison between the two time periods must take into account this difference. The questions asked were the same. In November 2006 the WCS Community Conservation team organized a series of village level workshops in the Upper Wakhan to introduce the WCS project. WCS notified the village leaders about the workshops and men, women and children were invited to attend. Prior to the beginning of each workshop, the assembled village members (max=134; min=5) were asked a series of six questions (Appendix K). The Community Conservation Team recorded all responses during workshops in 21 villages with 1436 total participants (female=491; male=945). Despite the large group size, the response rate to the questions was low with between 18-25 responses per question. In this type of setting it was likely culturally appropriate for the male leadership to respond to questions. In December 2008 the same questions were asked to individuals in the Upper Wakhan, with one addition to ask whether the respondent had ever received training from WCS. To select the respondents, WCS staff asked village members to identify homes where male heads of household were present. As a lone male interviewer, it would be culturally unacceptable to seek interviews with female community members. Sample size was lower than anticipated because of the departure of many community members from several villages for a funeral ceremony. Questions were asked to 95 individual interviewees in 22 different villages.

In 2008, 37% of respondents had received some kind of training from WCS, either as a ranger, a guide/cook, or on field teams. In November 2006, 86% of respondents had not heard of the Wildlife Conservation Society and of those who had, 96% did not know what type of program we were implementing. Of the people who knew WCS and the program, 100% correctly explained that the program "studies wildlife in the Pamirs". When this question was asked in December 2008, 97% of respondents had heard of WCS. Ninety one percent of those respondents responded that they knew what type of program WCS was implementing in the region. Multiple answers were accepted that ranged from irrigation/canal development to wildlife conservation (Figure 5). The next question asked which species in the Wakhan/Pamir were in danger of going extinct. In 2006, 48% of respondents replied 'none'. Other respondents, in decreasing order gave wild dog, snow leopard, lynx, Marco Polo sheep and bear as answers. In some cases, the facilitator of the workshops prompted responses to this question by asking, "What about wild dog/snow leopard, etc." The reliable piece of information from this question is that almost half of the respondents did not think any species in the Wakhan/Pamir were in danger of going extinct. Brown bear, Marco Polo sheep, and lynx are considered threatened by Habibi (2003), it is estimated that there are less than 200 snow leopards in Afghanistan (Habib, pers. comm.) and ibex are considered rare (Habibi, 2003). If community members were aware of regional wildlife, threats and conservation issues, we could anticipate the response to this question would be snow leopard. When the same question was asked in 2008, 87% said 'none', 9% said they didn't know and 1% said ibex. Since camera trapping photos set up by community rangers have captured several snow leopards in the Wakhan in spring 2009, WCS will be doing more education on snow leopard conservation, specifically in the coming year. Community members were also asked, "What are the benefits to you from wild animals in the Wakhan?" The responses between 2006 and 2008 showed a shift in people's knowledge and/or perceptions (Figure 6). The 'none' responses went from almost half of respondents to zero between the two years. There was a marked increase in tourism as a potential benefit from wildlife. The category 'Ecological Benefit' includes responses such as pollination and pest

control. Respondents were also asked about the effects of overgrazing on the environment. In 2006 responses fell into three groups: None (22%), don't know (33%) and that the lack of food has a harmful effect on domestic animals (44%). In 2008 responses varied widely. Multiple answers were accepted. The majority of respondents (61%) restated the question in their response by saying that the pasture or rangeland would become degraded. Fifty one percent responded by saying that wildlife would leave or be affected, which may be the result of respondent's knowledge of the affiliation of the interviewer and a desire to provide a pleasing answer. Water or soil erosion was mentioned by 49% of respondents. Twenty six percent mentioned a natural disaster as a potential outcome; this included floods, dust storms and tornadoes. Compared with 44% in 2006, 23% in 2008 mentioned that livestock die or become sick as a result of overgrazing. The sample size for this survey is not large enough to extrapolate to the larger population in the Wakhan. The low literacy rate necessitated face-to-face interviews and

time was a limiting factor in reaching a large number of individuals.

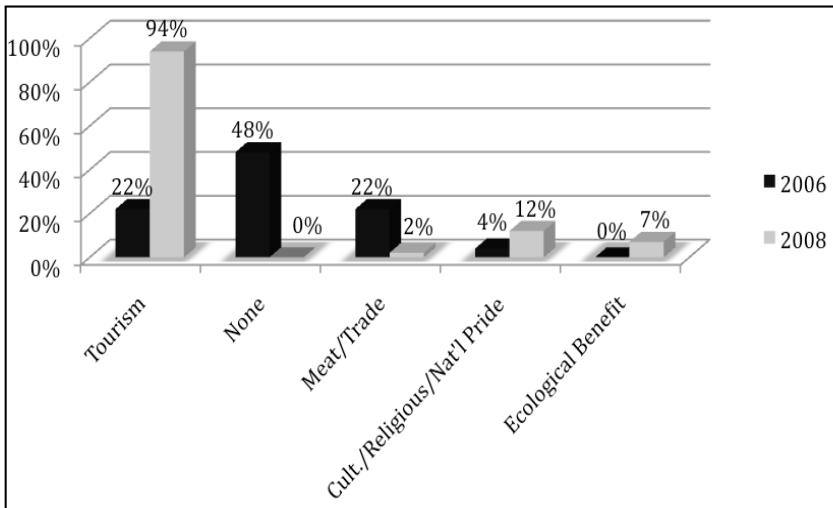


Figure 6. Wakhi community member response regarding benefits from wildlife.

6.5.2.2 Nuristan

In May 2008, in response to requests from Nuristan village leaders and a desire on behalf of WCS to conduct more widespread outreach in the community, WCS hired eight teachers in Archano (2), Arans, Hameshdesh, Islam Abad, Jamamesh, Apets, and Mondish villages to conduct daily English and conservation courses for the interested members of each

respected village. Teachers were selected based on performance on an English test and a series of interviews implemented at WCS office. The teachers started the courses in July 2008 and in September 2008 returned to Kabul for further training at the WCS office. The 3-day training covered the definition and importance of biodiversity, including direct and indirect benefits, active teaching and methods that can be used to increase student understanding and retention, activities that use wildlife and conservation to teach English and a practical implementation of training topics by each participant. In March 2009 two WCS staff members were sent without forewarning to monitor the English teachers and observe the application of training topics in the classroom. Forty-seven girls and 174 boys comprise the student body of all eight classes. The average class size is 26 students. The average class observation time for one observer was 80 minutes (Table 7).

Table 7. Nuristan English teacher class observation results (March 2009).

Teacher	Do students work in groups?	Do students make a presentation?	Does the teacher organize games, competition or debate?	Teacher discussed wildlife, forestry or conservation?	Amount time teacher speaking?	Amount time students speaking?	Amount of environmental information discussed in class?

	Both observer remarks are recorded.				Average of two observer remarks on a scale from 1 to 5 where 5 is high and 1 is low.		
#1	yes/no	yes/no	yes/yes	yes/yes	3.5	3	4.5
#2	yes/yes	yes/no	no/yes	yes/yes	3.5	1.5	5
#3	yes/yes	yes/yes	yes/yes	yes/yes	4	2.5	5
#4	no/yes	yes/no	yes/yes	yes/yes	4	1.5	2.5
#5	yes/yes	yes/yes	yes/yes	yes/yes	4	1.5	4.5
#6	yes/yes	yes/yes	no/yes	no/yes	3.5	2	5
#7	yes/yes	yes/yes	yes/yes	yes/yes	4	1.5	5
#8	no/no	yes/yes	no/no	yes/yes	3	2	3

Active teaching and learning is a relatively new concept in Afghanistan where teachers and students are familiar and experienced with traditional lecture-based instructional techniques. Students retain very little information from hearing and reading things relative to other methods of learning, such as looking at pictures, watching a demonstration, participating in a discussion, giving a talk or simulating the real experience. Active learning promotes student involvement in the classroom by discussing, reflecting, debating and presenting, among other activities, to improve retention and understanding of new information. WCS trained the eight teachers in Nuristan in active teaching techniques specifically for conservation topics. Teachers were observed in the classroom 6 months after the training to determine the extent to which they were teaching conservation in the classroom and using new techniques to do so. One characteristic of an “active learning classroom” is one in which students are doing much of the talking while the teacher facilitates activities or discussions. Observers noted on a scale from 1 to 5, where 5 is high and 1 is low, the amount of time students and teachers were speaking during the observation period. During all observation periods the teachers’ spoke the same (n=3) or more than (n=13) the students. We have no baseline assessment of teacher performance prior to the training. Based on my observations of the teacher’s comfort level while introducing these topics during the training, I think it can be regarded as a success that students spoke during the class period and it was not entirely lecture based. We can assume a certain degree of behavioral change on behalf of the teacher due to the observer’s presence.

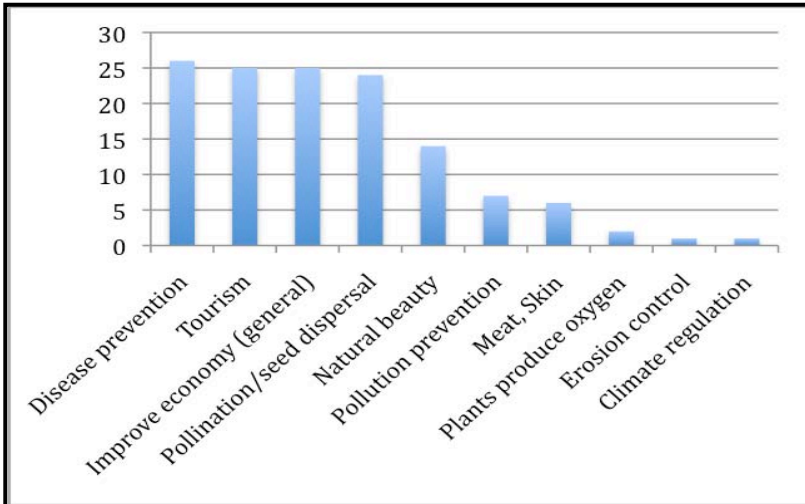


Figure 7. Nuristan students' response when asked the benefits to humans from wildlife.

In addition to observing teachers, WCS staff randomly selected three students from each classroom to interview independently (n=48). The student interviews were conducted in the local dialect of Nuristani and translated into English for the analysis. Students were asked if there were any benefits to humans from wildlife. The interviewer was instructed to probe for details if the student answered yes. Students often listed several responses and all were collated (Figure 7). The results generally demonstrate topics

covered during the teachers' training by WCS such as the direct and indirect benefits of biodiversity including pollination, seed dispersal, use of wildlife as models for biomedical research, plants as the basis for several common pharmaceuticals, climate regulation, erosion control, and many others. When the student says, "disease prevention", in response to a question about human benefits from wildlife, it is assumed they either mean medicinal uses of plants and/or wildlife as models for biomedical research. WCS mentioned ecotourism as a potential benefit from wildlife conservation, albeit briefly, during the training. However, students mentioned tourism with great frequency as a benefit from wildlife in the survey results. Nuristan is situated along the border with Pakistan and the route to Nuristan has been noted for insurgent checkpoints. Despite being a potential ibex and markhor trophy hunting location in the 1970s (Petocz 1977) and the setting for Eric Newby's, *A Short Walk in the Hindu Kush* (1958), residents of Nuristan today are not likely to receive economic benefit from tourism in the near future. Thus, it is important for conservation that Nuristan residents recognize other values to biodiversity in the probable event that they receive no immediate benefit from tourism.

No pretest of students was conducted to determine their level of knowledge regarding these topics prior to the implementation of the course, but during the interviews several students responded to a question asking what they had learned about wildlife during their classes by indicating that they previously had no knowledge of these subjects:

"I have learned many things about the importance of wildlife and their protection. Before I did not have much information about wildlife, now I have information about wildlife and know the advantages of the protection of wildlife. I hope my village will help with WCS regarding wildlife conservation." - Student A

and; *"I have learned wildlife conservation and environment protection. Before I was unaware of their advantages. Meanwhile I have learned English too."* - Student B

Evaluation of Nuristan and Wakhi community members involved in or familiar with WCS training highlight success of WCS efforts in improving awareness and attitudes toward the value of local wildlife. It is unknown how this may affect community members' actions or behavior – i.e. are they less likely to hunt? Educating community members about conservation in a way they find valuable, such as through English classes, facilitates future natural resource conservation efforts.

6.5.3 Ecotourism

One method of achieving conservation is to create an incentive for communities to protect wildlife by linking wildlife with tourism in protected area sites (Figure 8). In the short term, participants were expected to learn new and better methods for serving tourists, so that in the medium term tourists would have a more satisfying visit to the area and potentially return or recommend their experience to others. Over the long term, an increase in visitors should lead to an increased economic benefit to local community members living around protected area sites (Figure 8).



Figure 8. Logical model demonstrating purpose of tourism training in Afghanistan.

6.5.3.1 Bamyán

Band-i-Amir is of historical, cultural and religious significance for the Afghan people. Asian Development Bank’s Technical Assistance Study Team estimates that about 30,000 to 40,000 domestic tourists, and 1,000 to 1,500 foreigners visit the six lakes of Band-i-Amir per year (Anonymous 2005). Community members have a history, before the war, of generating income through hotel and restaurant services, guiding, horseback riding and other tourism enterprises. By international tourism standards, the services are not considered adequate, thus WCS aimed to increase the quantity and quality of services offered by local community members to tourists visiting the Band-i-Amir region, specifically, hotel and restaurant management and tour guiding. Negative press and reports of negative experiences can have a detrimental impact in tourist recruitment (Lexow 2004). As recently as fall of 2007, news articles highlighted the lack of toilets and adequate facilities in Band-i-Amir (Haviland 2007). For a sector that is already plagued by reports of terrorism, Taliban and desperate poverty, these reports, while sometimes accurate, can be very detrimental. To improve the quantity and quality of services offered in BANP, WCS provided two trainings: Hotel & Restaurant Management and Tourist Guide training for community members around Band-i-Amir. There is a perception that food is sometimes not available, and many visitors come self sufficient with supplies, thereby leaving almost no revenue in the area (Anonymous

2005). In conversations with Great Game and Afghan Logistics, the only two private tour operators in the country, WCS learned that these companies are spending no money in the businesses around the lakes of Band-i-Amir because they do not want to take the risk of their clients becoming sick from contaminated food or drink. Their tour groups make day trips to Band-i-Amir, pack all necessary food and drink, and return to Bamyan City for lodging (Jonathan Bean, VP, Great Game, pers. comm.).

Hotel and Restaurant Management Training

In April 2008, WCS invited 10 current and 15 potential¹ hotel and restaurant owners to Kabul to improve participants' knowledge of international tourism standards, health, sanitation, business management and the diversity of services tourists might expect when visiting the region. In addition, the training aimed to create a link between business owners in the community and private tour operators. Great Game and Afghan Logistics attended the training and explained their companies' expectations when traveling in remote regions of Afghanistan with international tourists. In addition, management, financing, signage, fair pricing, communications and security were covered during visits to the five-star Hotel Serena in central Kabul as well as the Safi Landmark Hotel, Sufi, Shandeez and Perfect restaurants.

Participants answered questions prior to starting the training to assess their level of knowledge regarding topics related to health and tourism. The same questions were asked after the 5-day training was complete (Table 8).

Table 8. Hotel and Restaurant Management Training Evaluation Results.

QUESTION (Questions 1-4 are True/False)	PRE-TEST % correct responses (n=26)	POST-TEST % correct responses (n=25)
1 Raw (uncooked) meat contains harmful bacteria for humans.	85%	84%
2 Flies carry germs that can make people sick.	77%	100%
3 A cook must always wash his hands before preparing food.	77%	100%
4 If unclean water is boiled, harmful germs and bacteria will be killed.	54%	88%
5 What is the function of the Band-i-Amir Protected Area Committee?	73%	80%
6 Why do tourists come to Band-i-Amir? (Total number mentioning wildlife/natural beauty)	54%	64%

The post-training evaluation also asked which parts of the training were useful. Almost half of the group reported that all of the parts were useful. Twenty eight percent said the hotel visits were useful. Sixteen percent said the portion about hygiene and sanitation was the most helpful. Twenty-two of 26 participants reported that there were no parts of the training that were useless. Based on the post-

¹ The bazaar was dismantled in winter of 2007 in anticipation of a newly located bazaar that would provide greater benefit by allowing more community members to open a business and not degrade the fragile travertine dam. The available spaces in the new bazaar had not yet been allocated to the communities in May of 2008. WCS requested communities to send people to the training who would be "likely" to be involved in the tourism businesses.

evaluation participants appear pleased with the relevance and format of the training. They were requested to put their names on the evaluation so this may have biased their responses. There was an increase in knowledge for all questions when evaluated as a group, except one asking whether it was true or false that raw meat contains harmful bacteria for humans. In the pre-training test 22 people answered the question correctly, 4 did not provide a response. In the post-test two people answered this question incorrectly and two did not provide a response. As a result of the training, more people have knowledge about flies as a vector for harmful bacteria, about hand-washing and water boiling to prevent the spread of bacteria, about the role of the BAPAC in the national park and the connection between Band-i-Amir's natural beauty and tourism.

The high season for tourism in Band-i-Amir occurs from May-September. Due to the destruction of the old bazaar and the delayed allocation of permits for space in the new bazaar, very few hotel and restaurant owners were able to run their business in the 2008 tourist season, which immediately followed the training. In December 2008, WCS staff visited Band-i-Amir and conducted face-to-face interviews in Dari with 23 of the 25 participants from the training; in July 2009 WCS staff again conducted the same interview with all hotel and restaurant owners (n=8), 3 of whom had attended WCS training. Of the 23 participants who were interviewed and who attended the training, eight were able to construct a provisional business in the temporary bazaar in 2008 (Figure 9). They reported that the majority of their customers for the most recent season were Afghan citizens and when asked by multiple-choice the total number of Afghan visitors for food/tea at their business establishment from June –

December 2008, five reported more than 50 (three gave no response). Amongst the eight surveyed about the total number of international visitors who came for food or tea from June-December 2008, six responded and the average total number of international visitors was five. Questions were also asked about the total number of international and Afghan overnight guests. Five of the eight business owners offered lodging. All reported the total number of Afghan guests as more than 50 when given a multiple choice, and offered total numbers of 500, 600 and 1000 in some cases. The average



Figure 9. Temporary structures in the new bazaar location in BANP. (Photo credit: Chris Shank)

total number of international overnight guests was 2.6. None of the respondents had knowingly hosted a group from Great Game or Afghan Logistics. Because winter had arrived and the temporary bazaar was almost completely dismantled, the evaluator was not able to observe the management of the business in terms of signage, transparent pricing, sanitation, or other topics covered during the training. Of the 14 people who did not have a business in the temporary bazaar, twelve have been allocated a space and are at least halfway or more than halfway completed with construction. The permanent, new bazaar was completed in time for the onset of the 2009 tourist season. Approximately midway through the 2009 season WCS staff revisited the bazaar to conduct the interview again with the hotel and restaurant owners who were present. Of those that were trained by WCS, the business owners reported slightly higher profits at the midway point of the 2009 season compared to the end of the

previous year. Of eight respondents, none reported visits from Great Game Tour Company. One respondent who had not been trained by WCS reported that Afghan Logistics Tour Company had visited his business. During the interview, WCS staff observed directly the implementation of training topics such as health and sanitation, marketing, and transparency. Those who had been trained by WCS (n=3) were more likely to have better sanitation equipment, such as hand soap, napkins and cleaning supplies. Almost all respondents had fresh water on the premises and receptacles for garbage. In terms of marketing and promotion, there appeared to be no difference between WCS trainees and others (n=5). All businesses had exterior signage, but none had menus, transparent pricing, or brochures. 2009 was a unique year because the national park was legally declared by NEPA, leading to a large public event with several domestic and international dignitaries and substantial media coverage.

Tourist Guide Training

WCS implemented tourist guide training for participants from 10 villages surrounding BANP. The participants were selected by the respective BAPAC members after being given a set of criteria from WCS that included English speaking skills, previous experience with tourists, a willingness to work in tourism in Band-i-Amir, and personality traits of being outgoing, motivated and personable. Mobin Jamshady, part-owner of Afghan Logistics Tour Company, implemented the training. Mr. Jamshady has guided scores of international tour groups all over Afghanistan, including Band-i-Amir. The goals of the training were to increase economic benefits from tourism for local community members, establish links between local communities, international NGOs and private tour operators and increase participants' confidence, knowledge, skills and motivation to engage with foreign tourists in BANP. Of the ten participants who attended, at least five had reported working with tourists previously and two had basic English skills. It is not clear if the BAPAC members could not find participants to fit the criteria or were not willing to send those that fit the criteria. The training was conducted in May 2008 and an evaluation was conducted immediately before and after the training. The questions were asked verbally in Dari language and each participant recorded answers on paper. This method was time-efficient, but did not allow for follow up questioning. All participants demonstrated improved understanding of the role of a tour guide and the reasons that people visit Band-i-Amir by providing more detailed, explicit and explanatory responses to three evaluation questions (Appendix A). In the pre-evaluation 38% of respondents mentioned the region's 'natural beauty' as a reason that tourists visit Band-i-Amir. In the post-evaluation 70% of respondents noted 'natural beauty' as an attraction to tourists. In December 2008, WCS conducted a follow-up face-to-face interview in Dari to determine the extent to which participants made an effort to work with tourists during the months following the training. Of ten participants, six were available in December. Of the six, zero had worked as a tour guide in the tourist season. Zero had tried to approach tourist groups to solicit work as a guide. Various reasons were provided for not doing so, and 5 of 6 participants reported that they were busy with other chores during the tourist season. All of those interviewed in the December 2008 evaluation generate income through farming. Five of the six interviewed attempted to learn English since the training, either through independent study or classes.

A lack of English language skills to confidently approach international visitors was likely a contributing factor. Afghan visitors, who comprise the majority of tourists at Band-i-Amir are reportedly not likely to spend money for a guide. Making stronger links between private tour operators and local community members may be the best prospect for ensuring that local community members receive benefit through guiding. Unlike the hotel and restaurant management training, the participants selected for the tourism guide training were not suitable. The establishment of a tourism guide industry operated by and for the benefit of BANP local community members will need to be accompanied by intensive English training.

For the tourist guide training, other limitations, presumably economic, prevented trainees from risking time and agriculture opportunities for the unpredictable income from guiding tourists. For this particular training, greater care should have been taken to select trainees jointly with BAPAC members from respective communities. This additional front-end time and money investment would have improved the training outcomes.

6.5.3.2 Wakhan

Tourism Guide and Cook Training

WCS trained 25 community members in spring 2007 to address a lack of qualified guides or cooks to accompany tourist groups in the Wakhan/Pamir. The breathtaking landscape of the Wakhan region is steeped in historical and cultural significance. It is known as the ‘Roof of the World’ and hosts an assemblage of wildlife found in few other places. However, facilities are primitive and tourism is a nascent industry that competes with the more developed Tajik side of the Pamirs. Training in 2007 included topics in conservation awareness, introduction to the tourist industry, equipment use, planning, sanitation, first aid and English. Many of those trained were hired in the ensuing field season by WCS research teams and WCS international researchers were asked to rate the skills of the guides and cooks on a scale from 1 (poor) to 5 (good). The results are in Table 9. (from O’Neill 2007).

Table 9. Wakhan Guide and Cook Feedback Form Summary

TREK GUIDES’ SKILLS	RANK (n=1)	TREK COOKS’ SKILLS	RANK (n=2)
Familiarity with route	3.0	Food Preparation	3.3
Management Skills	2.0	Food Management	3.5
Communication Skills	1.7	Hygiene	2.3
Organization Skills	1.0	Use of Kitchen Equipment	4.0
Guides’ Average Score	1.9	Cooks’ Average Score	3.3

The scores for the guides are quite low so further training is needed, especially in English language. The scores for the cooks are average. All of the respondents indicated that they would be willing to hire their guides and cooks again despite the low rankings.

Three high-performing trainees were recommended to Great Game Travel and two worked as paid interns during the summer of 2007 (O’Neill 2007). The Community Conservation Team conducted an earnings survey after the trainees had an opportunity to employ their new skills for one tourist season (2007). Of 25 persons trained, 6 were hired to work in the 2007 season. Those 6 trainees made 11 total trips, which were almost evenly split between WCS research teams (6) and the private sector (5). A lack of English skills prevented most trainees from finding employment as a guide. Out of 11 trips, trainees were hired to cook for 10 trips and guide for one. The average amount earned per hired trainee in 2007 was \$286 USD (14,300 Afghani) and the average number of days worked was 29. Prior to the training, none of the trainees were receiving income from tourism. As a result of the training, those hired were able buy new clothes, food or build expansions to their home (O’Neill 2007).

We have seen an increase in knowledge and skills with regard to providing tourism services in both Wakhan and Band-i-Amir. How the training participants put this knowledge to use and whether this leads to an increase in economic benefit and thus, favorable attitudes towards conservation measures

will need to be closely monitored. Tourism is not likely to deliver benefits to all community members equitably, nor meet community members' expectations in terms of economic benefit so it will be important to discuss and demonstrate benefits to conserving biodiversity outside of those offered by tourism, and to continue working with community members to ensure that a portion of benefits from tourism are reinvested in community development.

6.6 Policy & Governance

UNEP is the leading international group focused on environmental policy in the country. In partnership with NEPA and the Ministry of Justice they helped establish the Environment Law and have worked on several other pieces of environmental legislation. Given Afghanistan's history and the diminishing influence of national government with increasing distance from the capital, most laws contain recognition of community rights to manage natural resources. Before a law is passed it must be cleared through both houses of the National Assembly (*Meshrano Jirga and Wolesi Jirga*). The Committee on Natural Resource Management of the *Wolesi Jirga* plays an important role in passing environmental legislation.

Afghanistan lacks adequate conservation legislation, policy, and management at both the national and local levels. At its inception, the WCS program aimed to review relevant national, provincial, and local policies and legislation necessary to protect and conserve biodiversity and work with the Government of Afghanistan to draft and approve such policies and legislation. The legal framework under creation by the Afghan government enhances the ability of local communities to manage and protect their local resources, but capacity needs to be strengthened at all levels to implement the law (Wingard 2007).

POLICY TRAINING EVENTS¹

- Afghanistan's Environmental Law and implications for wildlife conservation
- Protected area governance
- Financial management and stakeholder communication

¹ Full Details are in Appendix H

6.6.1 Band-i-Amir Protected Area Committee (BAPAC)

There are 15 villages in the vicinity of Band-i-Amir with a combined population of about 3,980 people (MAIL 2009). Community members elected a representative for the Band-i-Amir Protected Area Committee (BAPAC) from 13 of 15 villages (Figure 10). In addition, BAPAC also has representation from



Figure 10. BAPAC representatives from 13 different communities at the BANP Ranger Station.

five different provincial government offices. According to the Collaborative Management Agreement and the management plan BAPAC has the responsibility to oversee implementation of the management plan, collect and expend funds related to the national park, resolve community disputes, manage visitor services and initiate alternative livelihood development for communities. The Governor of Bamyan Province, Habiba Sorabi, chairs BAPAC.

BAPAC was organized in the third quarter of 2007 to mitigate existing threats and increase opportunities for effective conservation through better governance, enforcement and support for the rule of law. Prior to the first meeting of BAPAC WCS held a training for community members on the Environment Act of Afghanistan, the concept and purpose of protected areas, the contents of the Band-i-Amir National Park management plan, the benefits to declaring Band-i-Amir a national park and the role of management plans in protected area management.

Since the first meeting in September 2007, BAPAC has held 13 meetings. They have elected officials, passed by-laws, facilitated the dismantling and relocation of the bazaar, and adapted and approved the management plan so the park could be legally protected. In April 2009, in cooperation with Aga Khan Development Network's Program for Professional Development in Bamyan, all BAPAC members participated in a weeklong training titled, "Communicating with Stakeholders". Topics included communication to various audiences, communication styles, facilitating and chairing a meeting, writing an agenda and taking meeting notes, responsibilities of elected officials, and communication for donors and government officials. An additional weeklong training was held for a subset of six BAPAC members on project management, proposal writing and financial management. Monitoring of BAPAC members' actions regarding reporting to their constituency, securing donor funds, facilitating meetings, and managing finances will be necessary to determine the extent to which these trainings have improved the management of BANP.

6.6.2 Inter-Ministerial Decision maker Conservation Training

Establishing and managing national parks takes cooperation and coordination between many government bodies, including the MAIL, NEPA, the Ministry of Finance, Parliament, Ministry of Interior, their provincial counterparts and many others. The two main implementing agencies (MAIL and NEPA) are challenged in managing protected areas by a lack of funding to properly equip and maintain provincial offices and a difficult policy environment for natural resource management and protection. Wildlife conservation in Afghanistan will only be successful in the long term if the Afghan government, across all Ministries, values its importance and demonstrates willingness to invest in its protection. To move toward this goal, WCS aimed to increase favorable decisions in policy and funding for conservation in Afghanistan by demonstrating conservation best practices and benefits of protected areas to high-level government decision-makers at sites in Indonesia (Appendix D). In the short term WCS aimed to improve the knowledge of government decision-makers regarding wildlife and conservation and have them demonstrate buy-in by coordinating together on conservation issues. In the medium term, functional inter-ministerial coordination should improve communication to address policy hurdles and funding shortfalls. In the long term, the Afghan government should increase funding from conservation and write, pass and enact policy that protects natural resources (Figure 11). One study tour cannot cut through the government morass that often prevents funding for conservation, but in combination with several other actions, it contributes to building a cadre of government officials who will champion conservation in their respective ministries.

Indonesia is an ecologically dissimilar country, but faces similar threats of habitat destruction, wildlife trade and deforestation to that of Afghanistan. The WCS Indonesia program, in close partnership with the Government, implements programs to increase enforcement, education and awareness of wildlife conservation. In addition, they have had success working



Figure 11. Logical model of providing training to government decision makers

with local communities to manage and protect their national parks. In Indonesia, the study tour group met with the central government in Jakarta, visited Lampung Province on Sumatra where WCS Indonesia has brought together park authorities, local government, local NGOs and community groups to protect tigers, elephants, and rhinos. Participants learned firsthand through demonstration about the importance of conservation, methods for law enforcement, how to build conservation awareness and education in schools and communities, provide benefits through ecotourism and the links between Islam and the environment. On the final day of the study tour WCS facilitated a discussion about how we can take what we have seen and learned to move conservation forward in Afghanistan. Dr. Shahidi, Deputy Minister of Economy, discussed the importance of protected areas for Afghanistan. He nominated each participant of the study tour to be a focal point for conservation issues in their respective Ministry and placed responsibility on each person to explain the importance of natural resource management to others within each Ministry. Abdul Ghani Ghuriani of MAIL proposed that the delegation form an inter-ministerial coordinating committee on conservation. The committee would be officially recognized by each Minister and approved by the President. The discussion ended with a promise to meet again in Kabul to discuss actions the delegation can advocate in each Ministry that will help move conservation policy forward in Afghanistan. It is my impression that part of the reason the participants were open to receiving these relatively new ideas was because of the common religion between Indonesia and Afghanistan and the warm welcome and hospitality afforded to them by every Indonesian host we met during the study tour.

The study tour took place in August 2007 (Asad/Sambulah 1386) and in February 2009 an interview was conducted with each participant to determine the progress towards improved coordination between ministries on conservation funding and policy. Nine participants attended the training and as of February 2009 seven were still in the same position. First, interviewees were asked general questions related to conservation issues in Afghanistan. Of the seven respondents, five officials responded to the questionnaire about their general conservation knowledge (Appendix E). The average percent correct out of 14 possible points was 81%. Respondents most commonly missed the questions about which species should be protected in Afghanistan because of low global population numbers. Four of five

respondents thought the red fox (*Vulpes vulpes*) should be protected in Afghanistan, and three of five thought the tiger should be protected in Afghanistan.

The second part of the interview asked about the formation and functioning of the Coordinating Committee for Wildlife Conservation and Natural Resource Management that was discussed on the final day of the study tour in Indonesia. Seven of the nine participants who are still in Kabul working for their respective ministries participated in this part of the interview. The committee was formally recognized and approved by President Karzai in the final quarter of 2007. It was reported by interviewees that the committee has met between three and six times from its inception until February 2009. All participants are attending the meetings, but participants rely on MAIL to organize meetings, facilitate the agenda and discussion, and write up meeting notes. The participants generally agree about the purpose of the committee – to apply the things that were learned in Indonesia, to coordinate amongst the various ministries on conservation issues, and thus, to expedite government processes. Thus far, the committee meetings have discussed the proposed hotel development in Band-i-Amir, Khol-i-Hashmat Khan encroachment and potential solutions, protected area regulations and committee functions such as secretariat and a workplan. When asked what the committee had accomplished, a variety of responses were put forward. Three of seven respondents reported that there had been no practical implementation. Two others noted that the committee was functioning well and had achieved presidential recognition. WCS has observed proceedings at two meetings and acted in the role of advisor, but meeting times and agendas are initiated by MAIL. Given the time constraints on high-level government officials it is reasonable to expect the participants to meet once every few months. As a newly established committee, its role and function is becoming clarified and will need continued monitoring.

The third part of the interview focused directly on policy, funding and staffing for natural resource management amongst and between the various ministries and Parliament. Seven of the nine participants gave interviews. All participants were asked how many staff in their ministry work on natural resource management or have it included as part of their job description. In addition, they were asked whether that number had increased, decreased or remained the same compared to the previous two years. NEPA and MAIL reported staffing increases over the last year and the Ministry of Economy, Ministry of Justice, Parliament, and Ministry of Finance reported the same levels of staffing compared to last year and two years ago. The Ministry of Interior, which is responsible for the police, reported zero staff dedicated to wildlife conservation or natural resource management, but commented that each police officer is responsible for working with proper authorities in each district and province on enforcement issues. Outside of MAIL and NEPA the average number of people working on these issues amongst the mentioned ministries is 11.2, with a range between 5 and 20.

One long-term goal of the study tour in Indonesia was to demonstrate benefits from biodiversity and protected areas to the participants so they would see the value in protecting these resources in their own country, and thus support financing for the government agencies that are tasked with this responsibility. A multitude of factors influence funding decisions, of which a lack of awareness regarding the value of biodiversity amongst high-level decision makers is just one. Poorly funded Department of Natural Resource Management in MAIL and provincial offices limits the ability of the government to monitor and protect wildlife and manage protected areas in remote regions of Afghanistan.

When allocating funding to each Ministry, the MOF evaluates how much is provided by donor funding (external), before deciding the core budget. Another consideration for the MOF when allocating budgets is financial administration. Once the MOF allocates money to each Ministry, the respective ministry is responsible for allocation to each department.

Another intended long-term goal of the study tour in Indonesia was an improved legislative environment for protection of natural resources. As with funding, there are several direct and indirect factors that affect the outcome of these decisions. This requires long term monitoring to determine if the participants involved in the training, and by extension, the committee working together are able to effectuate improvement in this area. Prior to August 2007, the primary law protecting biodiversity in Afghanistan was the Environment Law, which was passed in January 2006. In addition, two Presidential decrees banning hunting and logging were in place. The hunting decree expired in March 2009. President Karzai issued a new decree a few months later that banned the use of generators to harvest aquatic species. Other legislation is in the works to protect biodiversity, such as the Protected Area Regulations, Environmental Impact Assessment Regulations, Forestry Law, and the Mining Law. Since the study tour in August 2007, the Environmental Impact Regulations have been passed (Sayed Yusuf Halim, Head of Taqin, Interview: 5 March 2009) and a compromise was reached with the Protected Area Regulations, which allowed Band-i-Amir to be declared a national park. A list of protected species was passed in June 2009 to replace the Presidential Decree banning hunting.

As a result of the study tour, participants demonstrated that they valued conservation in Afghanistan by forming an Inter-Ministerial Coordinating Committee on Wildlife Conservation. It is too soon to tell if the participants and the committee are effective in advocating for conservation in their respective ministries/parliament such that MAIL and NEPA are adequately funded and policies to protect and manage natural resources are not obstructed. It is unreasonable to assume that a brief study tour could overcome these immense challenges, but improved coordination and advocacy for conservation at a high level helps to accomplish these goals.

7 CONCLUSION

At the inception of the WCS program in 2006, we aimed to update information about wildlife and rangeland condition at 5 proposed protected area sites in Bamyan, Badakshan and Nuristan Provinces, improve legislation and governance to protect biodiversity, and enhance community management of natural resources. Training is a crucial component in the work of WCS and the Government of Afghanistan to accomplish these goals. However, without evaluating the content and format of trainings, as well as the participant's reaction, knowledge attainment and resulting behavioral change, it is difficult to know how effective training has been in achieving the expressed conservation goal and future directions for capacity development.

For many training activities, WCS has demonstrated improved knowledge or that the participant's knowledge has met the training objectives. It is more difficult to measure behavioral change, but we have seen many successes such as those in reducing sales of wildlife products on military bases, creating Afghanistan's first community managed national park, and providing services for tourists around protected areas while increasing economic benefit to community members. Training requires investment of often-scarce conservation funding so it is crucial to understand which training investments help build capacity of government institutions and community members to manage natural resources.

Though not mentioned explicitly in this report, the capacity building of WCS staff has built awareness, knowledge and skill that have dramatically increased our effectiveness conducting research and establishing conservation interventions with communities and allowing continuity of activities in the absence of short term international experts. WCS can boast to having trained one of the best Afghan birders in the country, one of the strongest conservation GIS analysts, vets with unique wildlife disease expertise and the first Masters level trained Marco Polo sheep biologist. Others we have trained have

gone on to provincial and national-level posts at MAIL, NEPA, professorships at University of Nangarhar, and other NGOs. These young people and others we have invested in are the future conservation leaders in the country.

Afghanistan is characterized by tumultuous change, civil unrest and government instability. In the last forty years, many Afghans have seen their land seized, their houses destroyed, their livelihoods unraveled. However, in general the commitment to education has been consistent. During Taliban rule, many people surreptitiously educated young girls at risk to their own safety. The conviction that education holds the key to a more prosperous future is evident throughout rural areas of Afghanistan today. Where the majority of people depend on natural resources for their survival, providing the knowledge of methods to better manage these resources given pressures of development and economic growth is something that will be welcomed and sustained even as the conflict continues.

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APPENDICES

APPENDIX A. Tourism Guide Training Pre and Post-Evaluation Results

Why do tourists come to Band-i-Amir?		
Person	Pre- Evaluation	Post-Evaluation
1	Natural beauty	Walking, riding, investment, to see differences in culture, recreation, and to know history of Band-i-Amir
2	Sightseeing, walking, entertainment	Natural beauty such as clean and pure water, and for horse riding and investment
3	Learning culture, customs, traditions of the area	Reduce work pressure and get away from crowded and noisy cities to a calm place where there is no pollution. Band-i-Amir has beautiful blue water and there is boating, mountain climbing and horse riding.
4	To see interesting places	Recreation, skiing, to see local culture of people, like wedding parties, and to see the natural beauty of the area
5	Because it is a naturally nice and clean area	Band-i-Amir is a natural and protected area and it has a clean environment
6	Band-i-Amir has beautiful places	Recreation because Band-i-Amir has a good climate
7	For tourism	Walking, investment, riding and to learn about the different cultures and the history of Band-i-Amir
8	For tourism	These guests come because it is a natural place. They come for investment, for walking, for skiing in the winter. Some come to reduce work pressure, some for horse riding and others to see the amazing landscape of Band-i-Amir
9	<i>Not present</i>	To see the beautiful environment and climate of Band-i-Amir
10	<i>Not present</i>	For the beautiful nature and culture of Band-i-Amir.
What is the responsibility of a tourist guide?		
1	Taking tourists to places	To tell the owner of the horse which day we are going horse-riding.
2	Guide tourists to beautiful places	Take tourists to beautiful areas and keep them safe and comfortable. Make sure if we have plans to ride horses that everything is ready on time.
3	Guide tourists to new places	Share information about customs, culture, geography and history of Band-i-Amir. We should tell tourists about the different activities for recreation and we should arrange those. We should make them aware about land mines and muggers, which might be in the area.
4	Manage and guide tourists	Our job is to guide the tourists. When we meet them we should show our identity card and give them a warm welcome to the area. If they want horses we should arrange those for rent and take care of our tourists.
5	Show tourists nice places and keep them safe and take care of them	The guide should keep the tourist safe from threats and show them areas they are interested in. We should be careful of our reputation so they have a good experience

		and leave Band-i-Amir with good health and a lot of good memories. When they return to their countries they will tell other tourists that Band-i-Amir is a place that can be visited and has lots of good tourist guides. This will be good for the development of Band-i-Amir.
6	No answer	Show areas of Band-i-Amir to tourists
7	Translation	Our duty is to arrange a schedule for the tourists and explain it.
8	Guide the tourists	We should guide the tourists in a good way and be disciplined so that the tourists won't go away.
9	<i>Not present</i>	A guide should know the important points and be technical.
10	<i>Not present</i>	A guide should keep the tourists safe and explain the nature, culture and history of Band-i-Amir.
Why do you want to work with tourists?		
1	It is our responsibility	Because I like to. It is for my future to have a good income.
2	To have a better relationship with tourists	For the development of our country and to have a good income.
3	To introduce Afghan culture, customs and traditions to people from all over the world	
4	Because I am familiar with the area	It has a good affect on the economy and we can become familiar with other languages
5	Because many people come to the area and we will get famous and it will help develop the region	Because I love this position and it has a benefit for me and for my village. Tourists have an important role for development of this region.
6	No answer	To help the people, to share my experience and to have a good income.
7	To make tourists familiar with the area	Because it is a good experience and a good income.
8	To make tourists familiar with the area	It is for our benefit. Tourists should have a good guide who knows the area and can explain the culture and beautiful places.
9	<i>Not present</i>	Band-i-Amir is pretty. Tourists are a good economic source for the Afghan government.
10	<i>Not present</i>	No answer

APPENDIX B. BANP Warden and Ranger Conservation Pre and Post-Test Results*

NO.	QUESTION	TOTAL PARTICIPANTS ANSWERED CORRECTLY (OUT OF 4) IN NOV 2007	TOTAL PARTICIPANTS ANSWERED CORRECTLY (OUT OF 5) IN MAY 2009
1	Which of the following is caused by overgrazing? (choose all the answers that are correct) a) The plant cannot store food in its roots for winter and to survive drought b) The plant cannot produce enough roots c) The plant cannot produce enough leaves d) The plant reproduces e) The plant cannot survive winter	4	5
2	Conservation of natural resources is important for: a) Survival of life on earth b) Sustainable development c) Healthy environment d) All of the above	3	3
3	Small population faces the problem of: a) Inbreeding depression b) Disease Susceptibility c) Loss of genetic diversity d) All of the above	2	0
4	Wetlands are conserved for: a) Birds b) Mammals c) General Ecosystem d) All of the above	1	2
5	Scats are used to mark: a) Territories b) Resting Sites c) Denning Sites d) All of the above	2	0
6	Bird Flu can be transmitted from: a) Wild birds to domestic birds b) Domestic birds to humans c) Human to human d) All of the above e) Both a and b	2	1
7	GPS points should be taken when: a) You see an animal in the wild b) You are laying out a transect c) You see a rare bird d) All of the above	0	0
8	Currently, what percent of land in Afghanistan is designated as a protected area? a) 17% b) 10% c) 2% d) 0%	2	1
9	As rangers managing a national park, what types of information or data should you keep records of?	3	3
10	What is the role of the Ministry of Agriculture as it relates to national parks?	1	2
11	What is the role of the National Environmental Protection Agency (NEPA) as it relates to national parks?	1	3
12	Is it legal to hunt wildlife in Afghanistan?	3	5
13	What can be done to improve the soil condition in areas around BANP?	3	4
14	Why are birds important for the environment?	3	4
15	What are the benefits of wetlands (choose all that apply)? a) They improve water quality by removing nutrients, pesticides and bacteria from surface water b) They help control erosion and flooding c) They are important habitat for wildlife d) There are no benefits to wetlands	1	5
16	What animal of the Band-i-Amir habitat might leave this track? (<i>Picture of canid track</i>)	1	2

17	What animal of the Band-i-Amir habitat might leave this track? (<i>Picture of ungulate track</i>)	1	3
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* Only two rangers took both the pre and post-test.

APPENDIX C. Attendees of Band-i-Amir Ranger Training

NAME	POSITION	LOCATION
Mohammad Taher	Warden Band-i-Amir	Band-i-Amir
Mohammad Ashraf	Forestry General Officer	Bamyan
Mohammed Sharif	Head of NEPA	Bamyan
Abdul Ghafoor	Manager Property Dept	Bamyan
Sayed Mirza	Ranger	Band-i-Amir
Sayed Hassan Ali	Ranger	Band-i-Amir
Sayed Zaher	Ranger	Band-i-Amir
Mohammad	Ranger	Band-i-Amir
Abdul Wahed	Ranger	Khol-i-Hashmat Khan
Abdul Farouq	Ranger	Khol-i-Hashmat Khan
Mohammad Azim	Ranger	Khol-i-Hashmat Khan
Sayed Masum	Ranger	Khol-i-Hashmat Khan
Mohammad Ibrahim	Yakawlang CID	Bamyan Police Office
Gul Ahmad	Yakawlang CID	Bamyan Police Office
Nematullah	Yakawlang NDS	Yakawlang
Sayed Reza	Band-i-Amir NDS	Band-i-Amir

APPENDIX D. Participants for Study Tour to Indonesia

OFFICE	TITLE	NAME
Ministry of Finance	Budget Member	Arif Hussain
Ministry of Agriculture, Irrigation and Livestock	Director of Policy & Planning	Abdul Ghani Ghuriani
Parliament	Natural Resources Committee	Haji. Sultan Mohammad Aworang
Afghan Tourist Organization	President Afghan Tourist Organization	Fawzia Asifi
Ministry of Economy	Deputy Minister	Dr. Nazir Ahmad Shahidi
Ministry of Justice	Head of Taqin	Syed Yosouf Halim
National Environmental Protection Agency	Executive Deputy General Director	Eng. Dad Mohammad Baheer
Ministry of Interior	Chief of Internal Crime Investigation Unit	Sardar Aqa Nasser
Ministry of Foreign Affairs	Deputy of United Nation and International Conferences Department	Shahabuddin Saqib

APPENDIX F. Training Agreement Template

Project Manager/Mentor:

Training Component:

Counterpart:

Counterpart Supervisor (if applicable):

Field training:

Date of Agreement:

** Note: These agreements are meant to provide a framework for planning and evaluating a training activity for an individual counterpart. They provide a structured approach towards considering training needs and follow up actions, and for reaching agreement between the project manager, the counterpart and the counterpart supervisor (if applicable) on the expected inputs and outcomes. As such, these agreements are intended to be working documents that are revised and updated as necessary and appropriate. There will therefore be multiple versions of each agreement, at minimum an initial and a final version, which can be tracked by the date of agreement.*

1. Introduction: What are the component goals and how does the counterpart contribute?

Instructions: The project manager, the counterpart and the counterpart supervisor (if applicable) should discuss and briefly record below how the counterpart training fits within the broader context of conservation in Afghanistan. Discuss how this component relates to biodiversity. What are the goals of this component? What are the key institutions working in this area in Afghanistan? What is the current level of capacity in Afghanistan? What role will the counterpart have after the training is finished?

2. Training Needs Assessment: What are the training needs of the counterpart?

Instructions: The project manager, the counterpart and the counterpart supervisor (if applicable) should identify and list below the key competencies (skills and areas of knowledge) that the counterpart needs to develop. List as many competencies as you wish. List the competencies in terms of 'The ability to...'

1. *Example: conduct community surveys*

Etc. as necessary

3. Evaluating Learning: How has the counterpart's ability improved?

Instructions: The counterpart's progress in developing each of the competencies listed above should be measured on a 0-10 scale (described below) and recorded in the table provided below. The counterpart's starting level of ability for each competency should be evaluated and agreed upon by the project manager, the counterpart and the counterpart supervisor (if applicable) at an initial stage, perhaps after 1-2 weeks in the field. At that time, all parties will also agree upon a target (expected or desired) level of ability for each of the competencies. Upon completion of the field season, all parties will agree on the achieved level of ability. If the parties disagree, different scores can be recorded.

No Ability	Minimum Ability			Intermediate Ability			Advanced Ability			Expert
0	1	2	3	4	5	6	7	8	9	10
No experience, completely unfamiliar with the task	Cannot correctly perform task without supervision, mistakes common			Performs task independently, but requires supervision to do so correctly, makes some mistakes			Has performed task independently a number of times, makes very few mistakes			Could instruct others on completion of this task, can troubleshoot

COMPETENCY	LEVEL OF ABILITY		
	Initial	Target	Final
1. Example: conduct community surveys			
2. Etc. as necessary			

4. Post-Training Action Plan: How will the counterpart use their new competencies?

*Instructions: The degree to which the counterpart is able to utilize the new competencies after the training should be measured through the development, implementation and evaluation of an action plan. Using the Action Plan table below, the project manager, the counterpart and the counterpart supervisor (if applicable) should set a schedule for completion of specific activities, related to the competencies developed, that the counterpart can put in to action after the training period. The target level of ability to be demonstrated by the counterpart, using the same 0-10 scale as above, should also be recorded for each activity. Activities should be chosen that are a) important actions in their own right, b) are an appropriate way to demonstrate that the counterpart has achieved a certain level of ability in a given competency, and c) are measurable in some way. See the example provided below. **If applicable, it is critical that the supervisor also commits to supporting the counterpart in their implementation of the agreed action plan.** Activities can be designed for each separate competency or a combination of competencies.*

ACTION PLAN		
ACTIVITY	COMPETENCIES	TARGET ABILITY LEVEL
1. Example: conduct community survey and produce report by 20/02/07	1	7
2. Etc. as necessary		

Instructions: After the agreed activities are complete, or an agreed amount of time has passed, the table below should be completed. The deliverable output should be confirmed along with the actual date on which this was produced. The project manager, the counterpart and the counterpart supervisor (if applicable) should agree, using the same 0-10 scale as above, on the actual level of ability demonstrated by the counterpart, as measured through the deliverable output. Once again, if the parties have a different opinion, different scores can be recorded.

	Actual	LEVEL OF ABILITY

ACTIVITY DELIVERABLE	Completion Date	LEVEL OF ABILITY	
		Target	Final
1. Example: report on community survey	20/02/07	7	8
2.			

5. Agreed Inputs: What inputs will each party commit to providing?

Instructions: This section provides a place to record the inputs (the roles and responsibilities) that the project manager, the counterpart and the counterpart supervisor (if applicable) agree to provide to ensure that the training and follow-up action plan have the best chance to succeed.

Project Manager's Inputs: What are the project manager's roles and responsibilities?

- a) No. of days of field instruction:
- b) No. of days of classroom instruction:
- c) Frequency of regular meetings/communication:
- d) Mode of communication:
- e) Materials/equipment provided to complete activities:
- f) Other etc:

Counterpart Inputs: What are the counterpart's roles and responsibilities?

- a) No. of days of participation in field instruction:
- b) No. of days of participation in classroom instruction:
- c) Frequency of regular meetings/communication:
- d) Mode of communication:
- e) Materials/equipment provided to complete activities:
- f) Other etc:

Counterpart Supervisor Inputs: What are the counterpart supervisor's roles and responsibilities?

- a) Agreement to release counterpart from normal duties:
- b) Agreement to support implementation of the action plan:
- c) Frequency of regular meetings/communication:
- d) Mode of communication:
- e) Materials/equipment provided to complete activities:
- f) Other etc:

I have read, understand and agree to participate in the fulfillment of this training agreement:

<Name>, Project Manager:

Date:

<Name>, Counterpart:

Date:

<Name>, Counterpart Supervisor:

Date:

APPENDIX H. All training workshops, seminars, study tours and field training by WCS from 2006-09.†

	TOPIC (*=INTERNATIONAL)	AUDIENCE (TOTAL NUMBER TRAINED IN PARENTHESES)	DATE	DURATION
1	Wildlife Immobilization, Handling and Sampling	Kabul Central Vet Lab (4), Kabul Zoo staff (8), Other (9); (21)	Nov 2006	4 days
2	Introduction to Birding	MAIL staff (17), FAO (3); (20)	Nov 2006	2 hours
3	Rangeland Health Management and Conservation	Badakshan Provincial Department of Agriculture (20), Wakhan Community leaders (8); (28)	Jan 2007	4 days
4	Bear Research and Management Conference*	Wali Modaqiq, UNEP (1)	Nov 2006	7 days
5	Conservation Biology and Wildlife Monitoring	MAIL staff (2), NEPA staff (1), WCS Research Assistants (5)	Aug 2006	12 days
6	Wildlife Monitoring and Management*	Protected Area Department-MAIL; WCS Research Assistants (7)	Dec 2006	10 days
7	Rangeland Conservation Field Training	Badakshan Provincial Dept. of Agriculture (3), WCS Research Assistants(1); (4)	Jul-Aug 2006	33 days
8	Livestock and Wildlife Health Field Training	Kabul Zoo Vet (1), WCS Research Assistants(2) ; (3)	Jul-Aug 2006	16 days
9	Mammal Survey Field Training	NEPA Kabul staff (1), MAIL staff (1), WCS research assistants (2); (4)	Aug-Sept 2006	53 days
10	Bird Survey Field Training	MAIL staff (1), WCS research assistants (2); (3)	Aug-Sept 2006	53 days
11	Mammal Survey and Protected Area Management Field Training	MAIL staff (1)	Oct 2006	18 days
12	Small Mammal Trapping and Identification Field Training	MAIL staff (1), WCS Research Assistants (2); (3)	Nov 2006	14 days
13	Environment Law and Protected Area Management	BAPAC (13) and BANP rangers (5); (18)	Sept 2007	2 days
14	Tourism Guiding and Cooking	Wakhi community members	2007	

	TOPIC (*=INTERNATIONAL)	AUDIENCE (TOTAL NUMBER TRAINED IN PARENTHESES)	DATE	DURATION
15	Wakhan/Pamir Bird Identification and Ecology	Wakhan tour guides (10)	Oct 2007	1 day
16	Household Interview and Data Collection Techniques	Nuristan community members (6)	June 2007	10 days
17	Wildlife Trade – Fur Identification and CITES	Bagram Military Base Customs Officials (12)	2007	4 days
18	Wildlife Trade – Fur Identification and CITES	Kabul Airport Customs (8)	2007	4 days
19	Wildlife Trade – Fur Identification and CITES	Fur Merchants (12)	Oct 2007	1 day
20	Wild Bird Identification and Avian Influenza Monitoring and Surveillance	FAO (16), Government of Afghanistan (7), Other (1), (24)	May 2007; Oct 2007	12 days
21	Introduction to Environmental Law	Kabul University Faculty of Law Students (40)	July 2007	1 day
22	Wildlife Population Biology	NEPA Kabul staff (6), NEPA Provincial staff (7), MAIL staff (4); (17)	Nov 2007	3 days
23	Introduction to GIS	NEPA Kabul staff (8)	Oct 2007	4 hours
24	Scientific Method and Research Design	WCS Research Assistants (8)	Sept 2007	4 hours
25	Protected Area Planning, Enforcement and Management*	NEPA, Bamyan Provincial Dept. of Agriculture, Wakhan Community Leaders, Badakshan Provincial Dept. of Agriculture (6)	Apr 2007	8 days
26	Conservation GIS*	WCS GIS Officer (1)	June 2007	14 days
27	Conference-Society for Conservation Biology*	Kabul University (2) and Nangarhar University Professors (1); (3)	July 2007	8 days
28	Conservation Policy*	Parliament, MAIL, Ministry of Justice, NEPA, Ministry of Finance, Afghan Tourist Organization, Ministry of	Aug 2007	8 days

	TOPIC (*=INTERNATIONAL)	AUDIENCE (TOTAL NUMBER TRAINED IN PARENTHESES)	DATE	DURATION
		Foreign Affairs, Ministry of Interior, Ministry of Economy; (9)		
29	Masters Program – Aligarh Muslim University, Wildlife Biology Department*	WCS Research Assistant (1)	Sept 2009 (completion)	2 years
30	Conservation Training and Capacity Building*	WCS Community Conservation, Hazarajat Program Staff (2)	Oct 2007	5 days
31	Community Conservation and Ecotourism Management*	Wakhi community leaders (7)	Oct 2007	10 days
32	Small Mammal Assessments	Band-i-Amir Community members (2), WCS Research Assistants (2); (4)	Oct 2007	4 days
33	Conference-Snow Leopard Monitoring and Conservation*	MAIL-Natural Resource Management Department (2)	March 2008	4 days
34	Community Conservation and Ecotourism Management*	Kyrgyz Community Leaders (8)	June 2008	10 days
35	Paravet Training Course (DCA)	Wakhi Community Members (2)	July 2007 (start)	6 months
36	Introduction to Conservation Biology and Afghanistan Wildlife	Afghan Journalists (40)	Not available	4 hours
37	Hotel and Restaurant Management	Business Owners in Band-i-Amir (26)	April 2008	6 days
38	Tourism Guiding	Band-i-Amir Community Members (8)	May 2008	4 days
39	English Courses	Kyrgyz Community Leaders (2)	March 2008	1 month
40	English Courses	Band-i-Amir Rangers and Teachers (8)	Dec 2007 (start)	1 year
41	English Courses	MAIL NRM Department (20)	Nov 2008 (start)	5 months
42	English Courses	Nuristan Community Members (150)	July 2008 (start)	1 year

	TOPIC (*=INTERNATIONAL)	AUDIENCE (TOTAL NUMBER TRAINED IN PARENTHESES)	DATE	DURATION
43	Introduction to Ecology and Active Learning	Bamyan NEPA (7)	June 2008	3 days
44	Introduction to Ecology and Active Learning	Badakshan NEPA and Badakshan Dept. of Education (4)	October 2008	2 days
45	Wakhan/Pamir Bird Identification and Ecology	Little Pamir Community Members (14)	June 2008	1 day
46	Community Conservation and Ecotourism Management*	Kyrgyz Community Leaders (6)	June 2008	8 days
47	Protected Area Policy, Management and Tourism*	Parliamentarian (1)	June 2008	5 days
48	Avian Influenza and Wild Bird Monitoring and Handling*	WCS Research Assistants (2)	July 2008	7 days
49	Marco Polo Sheep Monitoring Field Training	MAIL Wildlife Monitoring Officer, WCS Research Assistant, Wakhi Community Members (4)	August 2008	30 days
50	Mammal Survey Field Training	Wakhi and Kyrgyz Community members (3)	July 2008	25 days
51	Bird Survey Methodologies Field Training	WCS Research Assistant (1)	June 2008	30 days
52	Community Conservation and Protected Area Mgmt. Field Training in Bamyan	MAIL Wildlife Monitoring Officer (1)	July 2008	21 days
53	Introduction to Conservation Biology and Active Learning	WCS English Teachers from Nuristan (8)	Sept 2008	4 days
54	English Courses	Wakhi Community Members (40)	January 2009 (start)	2 months
55	Wildlife Survey Methodology and Data Collection	Nuristan Community members and WCS Research Assistants (12)	Nov 2007	22 days
56	Environmental Education	Wakhan Schoolteachers (6)	May 2007	15 days
57	Bird Survey Methodologies Field	WCS Research Assistant (1)	Sept 2007	21 days

	TOPIC (*=INTERNATIONAL)	AUDIENCE (TOTAL NUMBER TRAINED IN PARENTHESES)	DATE	DURATION
	Training			
58	Active Teaching and Ecology	Kabul Zoo Environmental Educator (1)	March 2009	15-20 hours
59	Conservation Education Fellowship*	WCS Protected Area Specialist (1)	June 2009	2 weeks
60	First Aid Training	Band-i-Amir Rangers (5)	May 2009	1 weeks
61	Wakhan Tourist Guide and Cook Training	Community members (25)	Spring 2007	2 weeks
62	Herbarium Specimen Labeling and Mounting	Kabul University Professor (1), WCS Research Assistant (1); (2)	Spring 2008	1 day
63	Introductory Ranger Training	Wakhi Community Members (31)	July 2009	3 days
64	Ranger Training – field craft, data collection and tourism management	Band-i-Amir National Park Rangers (4)	August 2009	2 weeks

† This list is not exhaustive. There are likely some recent trainings that have been inadvertently left out of this list. Contact authors for participant lists for abovementioned trainings.

APPENDIX I. PARTICIPANTS IN STUDY TOUR TO WCS CAMBODIA

NAME	TITLE
Habibullah Barat	Head of Conventions, NEPA
Mohammed Taher Atayi	Forestry Dept. Head, Bamyang, Ministry of Agriculture
Abdul Raheem Sheerzad	Badakshan Dept. of Forestry, Ministry of Agriculture
Gul Nabi Himat	Wildlife Department, NEPA
Sayid Aminuddin	Wakhan Community Leader, Qala Panj
Inayatullah Farahmand	Interpreter, Wildlife Conservation Society

APPENDIX J. INTERVIEW CONDUCTED WITH MAIL STAFF

Interview Questionnaire – National Government

Interviewers: Kara Stevens and Aref Rahimy

Interviewees: Hashim Barikzai, DG, NRM Department
Abdul Samai Sakhi, Director, Protected Area Department
Assadullah Khairzad, Wildlife Monitoring Officer

- We are specifically concerned about the relationship between the national office and Badakshan, Bamyán and Nuristan provinces.
- All answers will remain confidential and we will not connect the person's name to their answers

1. What is the method for communication between your department and your provincial staff regarding wildlife issues? (*Check all that apply*) Clarify wildlife issues: *hunting, population decline/increase, depredation, human/wildlife conflict, deforestation, wildlife disease, presence, trade*)

- written reports
- phone
- face-to-face communication
- e-mail
- no answer/don't know

2. How often do you communicate with provincial department staff regarding wildlife issues?

- quarterly
- monthly
- 2-3 times a month
- weekly
- no set schedule, varies by province, whenever we/they visit
- never
- no answer/don't know

3. Is there a provincial staff member whose terms of reference include monitoring wildlife..

In Nuristan? YES or NO or DON'T KNOW

In Badakshan? YES or NO or DON'T KNOW

In Bamyán? YES or NO or DON'T KNOW

4. In the past two years, has the number of staff hired to address wildlife issues in the provinces:

INCREASED or DECREASED or NOT CHANGED?

5. Do provincial staff collect data on wildlife presence and absence.....

In Nuristan? YES or NO or DK (Yes = Q6; No, DK =Q11)

In Badakshan? YES or NO or DK (Yes = Q6; No, DK =Q11)

In Bamyán? YES or NO or DK (Yes = Q6; No, DK =Q11)

6. How often do _____ provincial staff collect data on wildlife presence/absence in their province? *Write the name of the province next to the answer choice.*

- Quarterly

- b. Monthly
 - c. 2-3 times a month
 - d. Weekly
 - e. no set schedule, varies by province, whenever we/they visit
7. In Nuristan, which species are the MAIL staff focused on protecting and/or collecting data on?
8. In Bamyan, which species are the staff focused on protecting and/or collecting data on?
9. In Badakshan, which species are the staff focused on protecting and/or collecting data on?
10. What are the methods used for collecting data on _____? *(ask about each species mentioned above. Question can be rephrased as, How do you collect data on _____?)*
11. Are provincial staff required to submit work reports to the national government?
- a. Yes (YES = Q12)
 - b. No (NO = Q18)
12. If yes, does the content of these reports contain information about disease, population numbers, hunting, trade, human/wildlife conflict or presence or absence of wildlife in the provinces?
- a. Yes (YES= Q13)
 - b. No (NO = Q18)
 - c. Don't know/no answer
13. How often are reports about wildlife submitted to the national government?
- a. Weekly
 - b. 2-3 times a month
 - c. Monthly
 - d. Quarterly
 - e. 2 times a year
 - f. Not regularly/never
 - g. No answer/don't know
14. What is the form of the reporting about wildlife?
- a. Written
 - b. Verbal
 - c. Both
 - d. No answer/don't know
15. In 1385, how many reports about wildlife were submitted from.... *(offer the ranges of 1-5, 6-10, 11-15, 16-20, 21-25, 26-30, more than 30)*

Badakshan?	
Bamyan?	
Nuristan?	

16. In 1386, how many reports were submitted from....

Badakshan?	
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Bamyan?	
Nuristan?	

17. In 1387, how many reports so far have been submitted from.....

Badakshan?	
Bamyan?	
Nuristan?	

Ask for copy of a report, if it is available

18. As a result of information gathered from the provinces in regard to threats on wildlife, what specific actions has the Kabul office taken to mitigate those threats? *(Ask: what other Ministries were involved? If a law was broken, did anyone attempt to enforce it? Were the police/army contacted? Is the threat resolved? Find out who, what, where, when, why. Ask WHAT ELSE?)*

19. In the NRM Department at MOAIL in Kabul, whose terms of reference include monitoring wildlife populations and/or wildlife management? *(list all that are mentioned)*

20. In the past three years, has the number of staff in MOAIL in Kabul working on wildlife and protected areas increased, decreased or stayed the same?

21. In the past three years, has the qualification of the staff members in Kabul working on wildlife and protected areas increased, decreased or stayed the same?

22. In the next three years, will the number of staff at MOAIL nationwide working on wildlife and protected areas, increase, decrease or stay the same?

Other comments:

Interview Questionnaire – **Provincial Government**

Interviewer: Kara Stevens and Aref Rahimy

Interviewees: Engineer Alim, Director, Badakshan Provincial Dept. of Agriculture

Mhmd. Taher Atahi, Director, Bamyan Provincial Dept. of Agriculture

- We are specifically concerned about the relationship between the national office and Badakshan, Bamyan provinces.
- All answers will remain confidential and we will not connect the person's name to their answers

1. What is the method for communication between your department and the national government in Kabul regarding wildlife issues? *(Check all that apply) Clarify wildlife issues: hunting, population decline/increase, depredation, human/wildlife conflict, deforestation, wildlife disease, presence, trade)*

- written reports
- phone
- face-to-face communication

- d. e-mail
 - e. no answer/don't know
2. How often do you communicate with the national government in Kabul regarding wildlife issues?
- a. quarterly
 - b. monthly
 - c. 2-3 times a month
 - d. weekly
 - e. no set schedule, varies by province, whenever we/they visit
 - f. never
 - g. no answer/don't know
3. Is there a staff member in your department whose terms of reference include monitoring wildlife?
YES (=Q4) NO (=Q5)
4. How long has he been working in that role at your department?
5. In 1385, what was your department's budget?
6. In 1386, what was your department's budget?
7. What is your department's budget this year?
8. Do your staff collect data on wildlife presence and absence?
- YES (=Q9)
 - NO (=Q12)
9. How often do your staff collect data on wildlife presence/absence in ____ province?
- a. Monthly
 - b. 2-3 times a month
 - c. Weekly
 - d. no set schedule, varies by province, whenever we/they visit
10. In _____, which species are your staff focused on protecting and/or collecting data on?
11. What are the methods used for collecting data on _____? *(ask about each species mentioned above. Question can be rephrased as, How do you collect data on _____?)*
12. Are you or your staff required to submit work reports to the national government?
- a. Yes (=Q13)
 - b. No (=Q19)
13. Does the content of these reports contain information about disease, population numbers, hunting, trade, human/wildlife conflict or presence or absence of wildlife?
- a. Yes (=Q14)
 - b. No (=Q19)
 - c. Don't know/no answer
14. How often are reports about wildlife submitted to the national government?
- a. Weekly
 - b. 2-3 times a month

- c. Monthly
- d. Quarterly
- e. 2 times a year
- f. Not regularly/never
- g. No answer/don't know

15. What is the form of the reporting?

- a. Written
- b. Verbal
- c. Both

16. In 1385, how many reports about wildlife were submitted? *(if they can't say, offer the ranges of 1-5, 6-10,11-15, 16-20, 21-25,26-30, more than 30)*

17. In 1386, how many reports about wildlife were submitted? *(if they can't say, offer the ranges of 1-5, 6-10,11-15, 16-20, 21-25,26-30, more than 30)*

18. So far in 1387 how many have been submitted? *(if they can't say, offer the ranges of 1-5, 6-10,11-15, 16-20, 21-25,26-30, more than 30)*

19. As a result of information gathered from <your province> in regard to threats on wildlife, what specific actions has the Ministry of Agriculture in Kabul taken to mitigate those threats? *(Ask: what other Ministries were involved? If a law was broken, did anyone attempt to enforce it? Were the police/army contacted? Is the threat resolved? Find out who, what, where, when, why. Ask WHAT ELSE?)*

20. To whom in Kabul do you submit your reports? *(list all that are mentioned)*

Ask for a copy of a report if it is available.

21. In the past three years, has the number of staff in your department working on wildlife and protected areas increased, decreased or stayed the same?

22. In the past three years, has the qualification of the staff in your department working on wildlife and protected areas increased, decreased or stayed the same?

23. In the next three years, will the number of people working on wildlife and protected areas in your province increase, decrease or stay the same?

Other comments:

APPENDIX K. WAKHAN COMMUNITY AWARENESS QUESTIONNAIRE

#1 : Have you heard of the Wildlife Conservation Society? YES or NO

Note: If the answer is No, skip to question #3

#2: Do you know what type of program WCS is implementing in Afghanistan? YES or NO

Note: If the answer is No, skip to question #3

#2A: If yes, what type of program does WCS implement in Afghanistan?

#3: What wildlife species in Wakhan are in danger of going extinct?

Note: If group answers "NONE", skip to #4.

#3A: Why is <the animal mentioned in Question 3> in danger of going extinct?

#4: What are the benefits to you from the wild animals in the Wakhan?

#5: What are the effects of overgrazing on the environment?

APPENDIX L. RESULTS OF POST-TRAINING EVALUATION IN RANGELAND CONSERVATION

NO	QUESTION	RESULTS
1	Which of the following are caused by overgrazing? (Choose all that apply) a. The plant cannot store food in its roots for winter and to survive drought b. The plant cannot produce enough roots c. The plant cannot produce enough leaves d. The plant reproduces e. The plant cannot survive winter	3/3 correct: 16% 2/3 correct: 0% 1/3 correct: 63% 0/3 correct: 21%
2	Soil is made up of: a. 25% matter, 75% pore space b. 50% matter, 50% pore space c. 40% matter, 60% pore space d. 75% matter, 25% pore space	Correct: 50%
3	Water is needed for the following processes: a. Photosynthesis b. Opening stomata for carbon dioxide absorption c. Uptake of nutrients from the soil d. All of the above	Correct: 42%
4	The bigger the leaf, the _____ growth of the plant.	Correct: 94%
5	Where does the leaf blade grow from? a. Tip b. Junction of blade and sheath c. Both a and b.	Correct: 94%