

THE WILDLIFE CONSERVATION SOCIETY
AFGHANISTAN BIODIVERSITY CONSERVATION PROJECT

Hazarajat Component - 2006 Annual Report



Dr. Christopher C. Shank
Hazarajat Protected Area Component Manager

January 2007



Summary

The Hazarajat is one of the three geographical focuses of the Wildlife Conservation Society's Afghanistan Programme. The Hazarajat is located in the Hindu Kush Mountains of central Afghanistan. It is one of the poorest areas in the country and was devastated during the previous two decades of war. However, its current stability relative to the rest of the country and its scenic and wildlife resources provide opportunities for economic improvement linked with environmental protection.

The overall objective of the Hazarajat project is to undertake biodiversity assessments in the Ajar Valley and Band-i-Amir and to assist the Government of Afghanistan in making these areas legally recognized and functioning protected areas.

Two trips were made to Afghanistan in 2006 and this report summarizes expectations and results realized during the first year of the Hazarajat Project.

An ungulate survey was undertaken in the Ajar Valley which showed that populations are much reduced relative to the pre-war period. Whereas there were as many as 5000 ibex in the 1970s, there are now estimated to be 100 – 200. Urial are likely gone from the area. Grazing, which was prohibited prior to the war, has resumed but range conditions are still reasonably good. Heavy utilization of juniper is underway, but some trees remain. Meetings were held with local communities and showed a clear expression of support for protecting the Ajar Valley. A rapidly-closing window of opportunity is present to reverse the trend of environmental degradation and wildlife loss.

Band-i-Amir is the subject of national park development efforts by several agencies. The pressing problem was perceived to be coordination of efforts by these agencies and ensuring that development efforts meet the requirements of the recently enacted Environment Act. WCS facilitated development of an *ad hoc* Band-i-Amir Coordination Committee intended to share information and to coordinate policy, planning and development activities related to Band-i-Amir. This committee decided to pursue interim protection of Band-i-Amir through development and submission of a provisional management plan through a process defined in the Environment Act and draft regulations.

Field work in both areas resulted in lists of small mammals, birds, and fish found in the areas. A gallery of photographs from fixed points and through time is presented to provide a visual impression of environment change at Band-i-Amir.

In 2007, work at Ajar Valley will concentrate on consultation on components of a draft management plan with Ajar Valley communities and making contact with surrounding communities that are reported to be negatively impacting wildlife populations. Work at Band-i-Amir will be focussed on management plan preparation and facilitating legal recognition of the protected area.

Table of Contents

Summary	1
Table of Contents	1
Introduction	1
In-Country Agenda	2
Achievement of 2006 Goals	3
Ajar Valley.....	4
Background Information.....	4
2006 Activities-- Ajar Valley.....	6
Band-i-Amir	9
Background.....	9
2006 Activities—Band-i-Amir.....	10
Policy Development.....	10
Field Trips	11
Biodiversity Data	12
Other Activities	13
Equipment and Books	13
Training.....	13
Elements of the 2007 Workplan	13
Ajar Valley.....	13
Band-i-Amir	14
Literature Cited.....	15
Glossary of Acronyms.....	15
Appendix 1. Birds recorded for Band-i-Amir and Ajar.....	16
Appendix 2. Small Mammals collected at Ajar Valley and Band-i-Amir.	24
Appendix 3. Fish collected at Ajar Valley and Band-i-Amir.	25
Appendix 4. Fixed Point Photographs of Locations at Band-i-Amir.....	26

Introduction

Afghanistan is a country rich in living resources and natural beauty. Its striking landscapes of mountains, deserts, open woodlands and forests are home to a vast array of species existing in a multitude of ecological conditions.

Unfortunately, its long history of human occupation, the upheaval of the recent decades of war, a changing climate and rapid population growth have left the country's environment in ruins. Over 80% of Afghans depend directly upon the country's biodiversity, sometimes called "the wealth of the poor". Rural people live close to the land and depend upon biodiversity for critical goods and services; e.g., productive crop and grazing land, fuel, building materials, wild fish and game. Land rich in biodiversity is a form of wealth, even if it cannot always be measured in strictly monetary terms. If Afghanistan is to develop into a vibrant and economically secure nation, it must first reverse the loss of its biodiversity.

The Wildlife Conservation Society's Afghanistan Programme addresses this issue by targeted efforts in three areas: the Wakhan Corridor, the Hazarajat Plateau, and the Eastern Forest complex. The Wakhan has some of the last relatively pristine wildlife habitats and wildlife populations left in Afghanistan; the Hazarajat Plateau has some of the most important existing and potential protected areas in Afghanistan; and the Eastern Forests complex has the last remaining arid conifer woodlands remaining in the country, a

critically important component for both biodiversity conservation and economic development.

These programmes involve four interwoven categories.

- The first involves surveys and analyses to collect baseline data identify threats, and design initiatives to alleviate those threats – subjects include wildlife, rangeland, livestock, forest cover, health, and socioeconomic factors.
- The second involves community based initiatives, ranging from environmental education to facilitating in the creation of community resource committees to helping with livestock health issues to hiring and training local people as wildlife rangers, monitors, and ecotourism guides.
- The third involves policy, ranging from reviewing existing policies and providing recommendations for improvement to developing recommendations for new and expanded protected areas, training park rangers, designing a Marco Polo sheep (and markhor) trophy hunting program, and other relevant government-led conservation actions, including continued efforts to establish a four-country transboundary peace park in the Pamirs.
- The fourth involves building capacity within Afghanistan’s environmental sector. This capacity building is woven into all other project activities, and it is also specific to focused short course training and study/travel tours to relevant international sites. Throughout this project, activities are designed to raise Afghanistan’s capacity for self-management of their natural resource base through education, workshops, and training.

The Hazarajat region is the central Hindu Kush, is one of the poorest areas in Afghanistan and has experienced severe degradation during the decades of conflict. However, the relative stability of the Hazarajat, together with its rich natural and cultural resources, provides this region with some of the best opportunities for economic improvement through local and international tourism. Current WCS efforts in the Hazarajat are focused on two areas, the Ajar Valley and Band-i-Amir.

The overall objective of the Hazarajat program is to undertake rangeland and biodiversity assessments in the Ajar Valley and Band-i-Amir and to assist the Government of Afghanistan in making these areas legally recognized and functioning protected areas.

This report summarizes the 2006 activities of the Hazarajat component of the Wildlife Conservation Society’s Afghanistan Programme. More details may be found in the June and October trip reports.

In-Country Agenda

I made two trips to Afghanistan in 2006.

During the period June 13 – 30, I undertook a short reconnaissance trip to Ajar Valley and Band-i-Amir, to address the following objectives:

- Meet and establish personal contact with WCS staff in Kabul
- Seek out a government counterpart officer
- Introduce national government reps to the Hazarajat project
- Inform communities of Hazarajat project.
- Inform provincial government personnel of the Hazarajat project.
- Inform local NGOs of Hazarajat project.
- Become familiarized with logistical issues in Bamiyan Province

On the trip to Bamiyan Province, I was accompanied by Mr. Abdul Samai Sakhi, the Director of National Parks in the Ministry of Agriculture, Animal Husbandry and Food (now the Ministry of Agriculture and Irrigation). A driver and vehicle were hired in Kabul. More details may be found in the June trip report.

I returned to Afghanistan September 20 - November 15 to undertake further fieldwork and to attempt to facilitate coordination of the various activities related to development of Band-i-Amir.

The field trip (1 – 16 October) was intended to address the following objectives:

- Survey for ibex in Ajar Valley and decide whether the area is a likely candidate for protected area status
- Meet with local people in Ajar to better understand local conditions and to inform them of the WCS project
- Assess the boundaries proposed for Band-i-Amir
- Assess the significance of waterbodies peripheral to the main lakes at Band-i-Amir
- Survey for small mammals and birds at both Ajar and Band-i-Amir
- Attempt to coordinate planning efforts for Band-i-Amir currently being undertaken by several agencies.

On the field trip, I was accompanied by Mr. Mr. Sayyed Hamayun of the National Parks and Wildlife Directorate (MoAI). Mr. Kareem Bakhtiyar, a WCS guard, served in the role of guard, cook, general fixer and occasional translator. The team was accompanied by two WCS veterinarians, Ali Madad and Hazifullah, whose intent was to sample domestic fowl for avian flu and to inform local people about the disease. The veterinary team operated semi-independently from the wildlife team. More details may be found in the October trip report.

Considerable time before, between and after these trips was spent in planning, report-writing, trip preparation, accumulating information and email conversations.

Achievement of 2006 Goals

The goals for the first year of the project were primarily exploratory and foundation-building. Goals, indicators and level of success are summarized in the Table 1.

	GOALS	INDICATORS	LEVEL OF SUCCESS
1	Government at national, provincial and district levels aware WCS initiatives at Band-i-Amir and Ajar Valley	Meetings and interactions with government officials	National —7 meetings with officials in the MoAI and a counterpart went on field trip. Provincial -- Meetings with Governor and Deputy Governor and Provincial Head of Agriculture, Bamiyan Province District -- meetings with Wolesewal and district agriculture officials.
2	Communities aware and supportive of WCS initiatives at Ajar and Band-i-Amir	Meetings with communities	Meetings with shuras in 4 Ajar villages-- Dehqanqala, Yelga, Dehe Myana, and Dehe Tajik. All expressed support for the project. No meetings with Band-i-Amir villages.
3	Preliminary ungulate survey for Ajar Valley	Surveys undertaken	Ibex survey completed October 4 - 8
4	Recommendation on the suitability of Ajar Valley as a protected area	Recommendation made to WCS	This report recommends that efforts be made to protect the Ajar Valley.
5	Develop an understanding of community structure and issues at Ajar	Report on local issues and conditions	A much better understanding was acquired. See details in this report.
6	Coordinated, inter-agency plan developed for developing Band-i-Amir as a legal and	Results of inter-agency coordination meeting	Three meetings of Band-i-Amir Coordinating Committee and one sub-committee meeting. See details in this report

	functioning protected area		
7	Band-i-Amir surveyed for birds, small mammals and effective boundary delineation	Reports with species lists and boundary recommendations	Mammal, bird, and fish data collected. Species lists provided in this report.
8	Equipment purchased and available	List of equipment in Kabul	All necessary equipment obtained.
9	Training on wildlife and protected areas delivered to government personnel	Number of training sessions provided and training assessment form	Training was undertaken in the field in use of optical equipment, survey techniques, birding, and small mammal capture. Small mammal capture techniques were demonstrated to WCS personnel. One lecture on bird identification delivered to approximately 35 staff members of MoAI and FAO.
10	Interim report to WCS	Report submitted	This report.

Table 1. Summary of 2006 goals, indicators and achievement of success for the Hazarajat component.

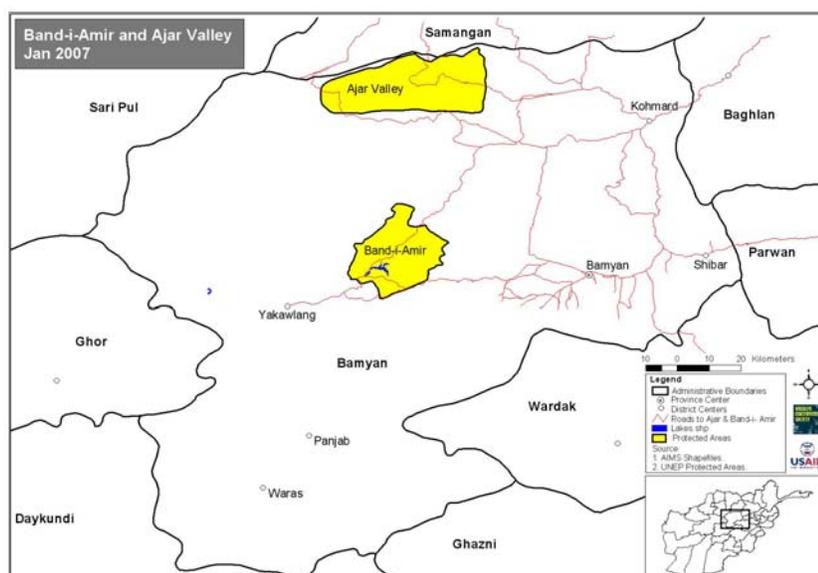
Ajar Valley

Background Information

The Ajar Valley Wildlife Reserve is a mountainous area in Afghanistan's western Hindu Kush protected for many years as a royal hunting reserve. Prior to the outbreak of hostilities in 1979, the area surrounding the Ajar Valley was ecologically undisturbed relative to most Afghan rangelands and contained large populations of alpine ibex (*Capra [ibex] sibirica*) and smaller numbers of Afghan urial (*Ovis orientalis [vignei] cycloceros*), feral yaks (*Bos grunniens*), and introduced Bactrian deer (*Cervus elaphus bactrianus*).

The Ajar Valley (Darye Ajar) is located in Bamiyan Province 70 km northwest of the town of Bamiyan (Figure 1). The eastern portion of the area is in Khamard woleswali (i.e., district) while the central and western portions are located in the woleswali of Yakowlang.

Figure 1. Map of Afghanistan showing location of Ajar Valley and Band-i-Amir.



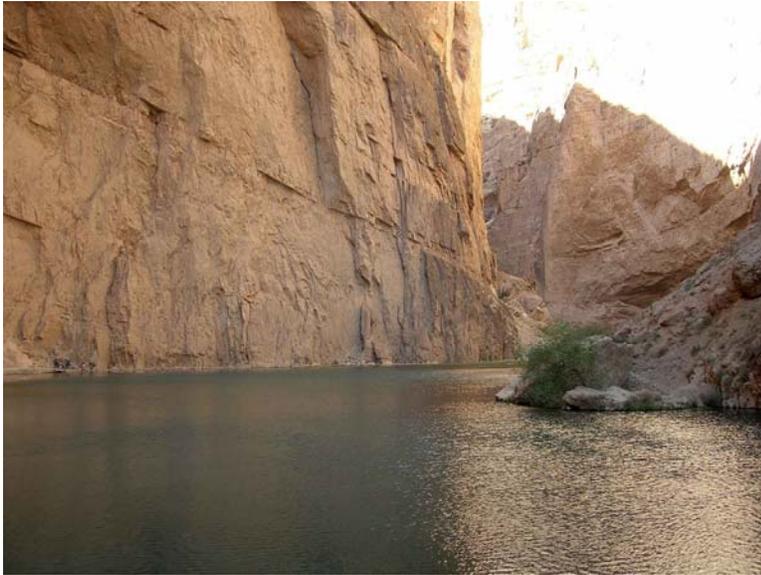


Figure 2. Lake Chiltan, Ajar Valley.

The Ajar Valley is comprised of east-west trending ridges with peaks rising to an elevation of 3,800 m. The Jawzari Canyon was cut by the Ajar River and bisects the area from east to west. The river now runs underground for most of the length of Jawzari and flows directly from the canyon wall at the spring of Chiltan. Downstream, a natural dam has created picturesque Lake Chiltan.

Figure 3. The newly-formed lake at Yelga, Ajar Valley.



A distinction should be made between two distinct components of the Ajar Valley. “Upper Ajar” can be considered the mountainous portion above (west) of Lake Chiltan with the ranges on either side of the Jawzari Canyon. “Lower Ajar” is the primarily agricultural area along the Ajar River below the Canyon. Upper Ajar can be considered as a largely natural area while Lower Ajar is a settled landscape.

In the 1970s, the road was passable all the way to the mouth of the Ajar Canyon. However, 2-3 years ago, a mudslide came down just below the town of Yelga and created a large lake (Figure 4). The road now abruptly ends at N35.363852, E67.497047, approximately 2.5km from the head of the canyon.



The lake inundated a large amount of prime agricultural and residential land. Above the lake, the river remains brilliantly clear.

Figure 4. Agriculture lands of Lower Ajar looking west towards Upper Ajar.

The rulers of Afghanistan have long used the Ajar Valley as a hunting area. Amir Habibullah built a lodge in Jawzari in the early 1900s and constructed the current trail into the valley. King Zahir Shah bought about 150 ha of land in Lower Ajar in the 1950s and built a hunting lodge near the Ajar River.

The Ajar Valley was gazetted as a Wildlife Sanctuary in June 1977. There appear to be no official records documenting the exact boundaries of the reserve. Shank et al. (1977) suggested boundaries enclosing an area of approximately 500 km².

Because of the *de facto* protected status, there was very little hunting, farming and livestock grazing within the locally understood reserve boundaries. As a result, the high pastures were considered to be among the least disturbed rangelands in the country. During the mid-1970s, FAO project staff estimated ibex numbers at approximately 2,350 based on actual survey results, but accepted an estimate of 5,000 made by Abdul Mir Shikari, the King's hunter, as being feasible. Urial were found to be much rarer, but no population estimates were provided. Bactrian deer were introduced in 1955 from the Darqad wetlands on the Amu Darya River and were reported to number 26 animals in 1976. As a consequence of relatively undisturbed habitat, birds were considered to be more diverse than elsewhere in the central Hindu Kush. Common leopard (*Panthera pardus*), lynx (*Lynx lynx*), wolf (*Canis lupus*), fox (*Vulpes vulpes*), river otter (*Lutra lutra*), and stone marten (*Martes foina*) were all found in the reserve area, although no population estimates were available. Snow leopards (*Uncia uncia*) have been reported for the area, but this seems unlikely.

2006 Activities-- Ajar Valley

In 2006, the critical need was to undertake a rapid on-the-ground assessment of wildlife populations, rangeland conditions, impacts of farmland expansion and grazing, community organization and support for environmental protection. Utilizing this information, a decision could be made regarding whether protection measures are politically, socially and biologically feasible. Making this decision was the thrust of the 2006 work.

Figure 5. Looking south across Jawzari towards ibex range, Ajar Valley.

Two approaches were taken to surveying for ibex. Initially, we went to a well-known lookout on the north side of canyon providing a view of the vast open slopes and canyons on the south side. However, no animals were seen. In the second approach, a local guide took a circuitous route to a point high on the mountain and pushed ibex down along a well-known

Figure 5. Looking south across Jawzari towards ibex range, Ajar Valley.



escape route towards the vantage point where we were hidden. In this case, we saw 5 ibex (2 adult females, and 3 yearlings) at a distance of 500m. This was not a scientific survey but served to demonstrate that

some ibex do remain in the Ajar Valley. The consensus opinion is that there are now 100 – 200 ibex remaining. This is such a small number and the animals are apparently so wary that systematic population surveys will be very difficult. It is, however, probably enough ibex to repopulate the area if illegal hunting can be stopped.

The situation of urial remains uncertain. However, based on an interpretation of local knowledge, it is probable that there is no viable population of urial remaining in the Ajar Valley. Nevertheless, there are occasional reports of sightings which are described as animals wandering in from surrounding areas.

Wolf tracks were seen on the valley floor and local people indicate that leopards still exist.

A minor effort was made at trapping small mammals around our camp. *Callomyscus bailwardi* (Long-tailed Hamster) and *Apodemus sylvaticus* (Wood Mouse) were captured. See Appendix 2 for more details. These identifications require verification.

Locals recognize 5 species of fish in the Ajar River. Two species were acquired from local fishermen and were identified by Dr. Brian Coad, an expert on Afghan and Iranian fishes at the National Museum of Canada. The species locally known as *shir moi* is the cyprinid *Capoeta capoeta heratensis*, the Transcaucasian barb, which is likely to be elevated to species rank as *Capoeta heratensis*. The species locally known as *khal moi* is *Salmo trutta*, the brown trout, which may either be native or introduced. See Appendix 3 for more details. Fish are heavily exploited and average size is small. District regulations allow fishing only with hook and line, but people were openly fishing with throw nets.

Appendix 1 presents historical data on bird sightings in the Ajar Valley along with observations made in June and October 2006. Three new species were recorded, but are considered as uncertain.

Prior to the war, grazing was prohibited in Upper Ajar, except for flocks owned by the royal family. Upper Ajar is now being grazed as common lands. No range assessment was made, but some generalizations can be made. Plants are mostly spiny, particularly at higher elevations. Grazing appears to be more intense in more accessible areas. Graminoids are mostly limited to where they are protected by thorny plants. In some places, range conditions look quite good, at least by Afghan standards (Figure 6).

A critical issue is access to water by wild animals. There are only a limited number of springs all of which are heavily used by livestock and herders between March and November. The problem posed by the small number of water sources is aggravated by the current drought. Water may be a limiting factor for wild ungulates.

Figure 6. Range at 3000m elevation, Ajar Valley.



The district government has declared it illegal to cut live juniper trees, but allows collection of dead wood. In both June and October, we saw numerous donkey loads of juniper wood coming down from Upper Ajar. It appears that much of this wood is harvested by coppicing juniper trees leaving some of the tree standing. Considerable collection of shrubby plants also occurs in Upper Ajar. Juniper is preferred for winter heating and shrubs for cooking.

The royal family purchased about 150 ha in Lower Ajar sometime in the 1950s. His Excellency Mostapha Zaher indicates that the family has a formal deed (*qawala*) for this land. I walked the perimeter with a GPS unit in hand and established a rough boundary for the royal lands. This land is almost entirely dedicated to agriculture, but the royal family does not allow any further development. The area is leased to local people for \$2000 per year. The royal family also owns a few irrigated fields in Jawzari Canyon which are farmed by three brothers. Royal lands are locally administered by Abdul Mir Shikari, the king's hunter. The royal hunting lodge is now in ruins (Figure 7).

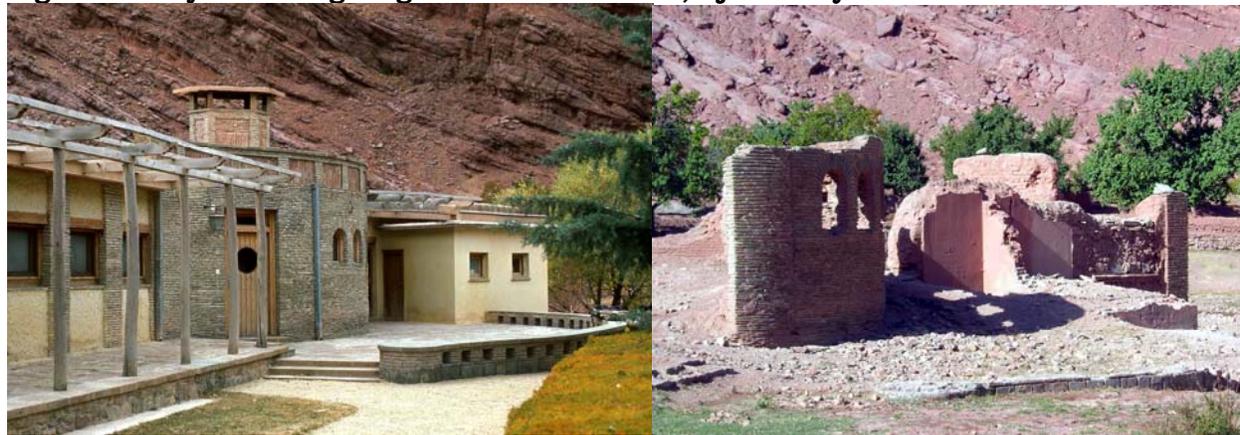
The only people living permanently in Upper Ajar are the three brothers living in tents and farming in Jawzari. However, the entire Upper Ajar area is extensively inhabited by herders during all of the snow-free months (March – November).

We met with the shuras of the four villages. Dehqanqala is a Shia Hazara village while Yelga, Dehe Myana, and Dehe Tajik are Sunni Tajik villages. The Dehqanqala is the home of Abdul Mir Shikari was the most engaged of the four shuras. All shuras expressed interest in cooperating with WCS in protecting the local environment. However, most shura members would appear not to understand protected areas or sustainable use.

Local politics are complicated and not well understood. Dehqanqala is closely allied with the royal family. There are at least three local commanders who have seized lands further down the valley and are operating them in a feudal manner.

Five years ago, a man from Dehe Tajik was shot and killed in a border dispute by people from Podinatu on the western end of the reserve. Ajar people do not currently graze west of Pushtechob Canyon. On a reconnaissance trip, our guide noticed tracks that he did not recognize and refused to travel further than Pushtechob. It would appear that Ajar people currently control only the eastern part of the Upper Ajar Valley. This suggests that, initially at least, the reserve must be limited to those areas recognized as being under control of Ajar people.

Figure 7. Royal hunting lodge in 1977 and 2006, Ajar Valley.



An elder from the Dehqanqala shura said “the war is over for us, but it goes on for the ibex”. Local people say the problem is coming from surrounding villages (Dare Suf in the north, Pushte Waz in the south and Podinatu in the west). and that nobody from Ajar is still hunting. However, there is evidence that this is not strictly true. WCS and MoAI sent a joint letter to the Governor of Bamiyan Province asking her to ensure that all communities are aware of the Presidential Decree banning hunting.

Band-i-Amir

Background

Band-i-Amir's six lakes of crystal-clear, azure water, separated by travertine dams and surrounded by spectacular red cliffs, comprise one of the world's most uniquely beautiful natural landscapes. The Band-i-Amir lakes lie in an east-west trending valley at

Figure 8. Travertine dam separating Panir Lake from Haibat Lake



approximately 2,900 m elevation and are located 185km north-northwest of Kabul and about 55 km west of Bamiyan town (Figure 1).

Band-i-Amir was declared a national park on September 30, 1973 in response to a petition from the Afghan Tourist Organization. This declaration was not published in the official government Gazette by the Ministry of Justice and, therefore, has no legal status. There has never been effective management of the area.

Travertine is formed when ground water rich in carbon dioxide (CO_2) passes through limestone rocks and dissolves the limestone becoming saturated with calcium carbonate (CaCO_3). When the water resurfaces at springs, the sudden drop in pressure and the change in temperature cause the water to release the carbon dioxide gas, like pouring a bottle of soda. The calcium carbonate then recrystallizes and precipitates out as travertine.

Travertine sometimes forms in series of terraces or as dams holding back ponds or large lakes. Attempts to explain how these unlikely formations might occur have been the source of much speculation. A recent mathematical modelling study has shown that it can be explained simply as a result of a depositional instability arising from turbulent flow of a supersaturated solution over a sloping surface (Goldstein et al. 2006).

Figure 9. Shah-i-Aulia Shrine and paddleboats at Band-i-Haibat.



Biological processes also appear to influence travertine formation. Eucaryotic algae and cyanobacteria, commonly associated with travertine formations worldwide, reduce CO_2 concentrations through photosynthesis facilitating degassing and calcium carbonate deposition. Travertine often precipitates onto dead and living plant material. Some studies have shown that this reduces the biomass and diversity of aquatic macro invertebrates while others have shown travertine dammed streams to have enhanced decomposition rates,

biomass and diversity (Carter and Marks 2007).

Although not obvious or charismatic, the most unique component of biodiversity at Band-i-Amir may be species complexes associated with travertine deposition. Pentecost (2005) provides much detail on species found in association with travertine. The ecology of travertine systems appears to be little studied.

Local people believe that Band-i-Amir Lakes were created by ‘Alī ibn Abī Tālib (599 – 661 CE), the cousin and son-in-law of the Prophet Mohammad. Dupree (1977, p 177 – 178) provides a sophisticated version of this creation myth. An older version is related by Burnes (1842) relates how Hazrat Ali created the lakes and then killed a dragon. This

Figure 10. Travertine mound and fissure ridge at Darye Ajdahar



rendition explicitly links Band-i-Amir with Darya Ajdahar (Dragon Valley) located 8 km southwest of Bamiyan town. Dupree (1977, p 170) provides a detailed rendition of the story of Ali killing the dragon. Geologically, the dragon represents fine examples of several types of travertine formations as categorized by Pentecost (2005). The 300m split along the dragon’s back caused by Ali’s sword is a “fissure ridge”. The horns or teeth are “travertine mounds” and the rippled white rock below the spring (the dragon’s eye) is a cascade of flowstone “minidams”. The linkage between Darye Ajdahar and Band-i-Amir could be promoted to tourists.

Travertine systems are found in several places throughout the world. Well-known travertine lake systems include Huang Long Valley (Sichuan, China), Pamukkale (Turkey) and most famously, Plitvice Lakes National Park (Croatia), all of which are on the UNESCO World Heritage List.

2006 Activities—Band-i-Amir

In 2006, the critical activity was considered to be the coordination of the many development activities being undertaken by several agencies at Band-i-Amir and ensure that protected area development meet the requirements of Afghanistan’s new Environment Act.

Policy Development

Band-i-Amir is high profile and several agencies are working on developing the area as a national park. ADB has been particularly active over the past two years and has completed a variety of park planning reports, public consultations and on-the-ground projects. WCS facilitated development of an *ad hoc* Band-i-Amir Coordination Committee intended to share information and to coordinate policy, planning and development activities related to Band-i-Amir. The Committee is comprised of members from MoAI, NEPA, ATO, SEA, UNEP, UNDP ACC, USAID, US State Department, ADB and WCS (see Glossary of Acronyms). Meetings were held on 28 October at WCS, November 4 at NEPA/UNEP, and 14 November at ADB. A technical subcommittee met on November 7 at the ADB offices.

The Environment Act was enacted by Parliament in December 2005, but approval of the attached regulations was stalled. The major issue was a disagreement in wording between NEPA and MoAI. The Coordination Committee was successful in breaking this deadlock and the regulations are currently being considered for approval by the *taqin* (the legislation department of the Ministry of Justice). Following the *taqin*'s approval, NEPA can simply declare the regulations as being in force.

One of the major issues addressed by the Committee was to decide on the best approach to obtain early protected status for Band-i-Amir. It is universally recognized that pressures on Band-i-Amir are mounting and authority to provide interim protection is required as soon as possible. ADB has been pursuing the approach of obtaining a Presidential Decree. The Committee expressed concern that this approach steps outside the legal procedures outlined in the Environment Act. The consensus of the Committee was that a better approach would be to attempt to get an interim management plan approved by NEPA following the requirements of the Environment Act and the draft regulations. WCS was given responsibility to re-draft ADB's land use plan as an interim management plan that conforms to the tenets of the Environment Act.

The Environment Act indicates that protected area management plans must be accompanied by a Collaborative Management Agreement (CMA). A draft CMA was developed jointly by WCS and UNEP. A significant component of the CMA was the draft revenue sharing agreement.

Field Trips

Field trips were made to Band-i-Amir in June and October. The June trip was a very quick one-day reconnaissance intended to develop an understanding of current conditions. The October trip was intended to assess possible boundary delineation and to check several wetlands peripheral to the main lakes.

The protected area boundary proposed in Shank and Larsson (1977) follows delineation of the upstream watershed of the Band-i-Amir Lakes. This boundary was largely adopted by ADB in their land use plan. Examination of the area in the extreme northern part of the watershed showed that it to be characterized by many seep springs and watercourses fed by upstream springs. However, little of this water actually reaches Lake Zulfiqar. It would appear that most of the water entering the lake system is welling up from the lakebed from groundwater sources. This suggests that a priority research issue for the future should be a hydrogeological study to determine the area that should be protected to ensure the integrity of Band-i-Amir's water inputs.

We briefly assessed three wetlands that were previously unknown to, or at least unappreciated by, earlier planners. The 3 km of the Band-i-Amir River between Dehokhana-i-Payin and Kotak (N34.81368, E67.124738) is a large reed-covered marsh. When we visited it in October, the 3m reeds had been almost entirely cut and cattle were

grazing in the shallow water. Only a handful of ducks were seen. However, a small lake in a side valley (N34.81670, E67.12389) was found to retain its reeds and was harbouring coots, grebes and ducks. About 20 ducks were found on a small lake west of Abqol (N34.882316, E67.235213) and nearly 300 ducks on the shallow lake near Jedechel (N34.807336, E67.272977). Unfortunately, distances were too great to identify species. These lakes may well all be better suited to waterfowl use than the Band-i-Amir lakes themselves and should be included within the boundaries of the protected area and zoned as special protection zones in the preliminary management plan.

Biodiversity Data

Two fish species were collected at Band-i-Amir and identified by Dr. Brian Coad at the National Museum of Canada (Appendix 3). The species locally known as *shir moi* is the same species as at Ajar; i.e., *Capoeta capoeta heratensis* (or *C. heratensis*), the Transcaucian Barb. The fish locally known as *sag moi* is probably *Triplophysa stoliczkai*, the Tibetan stone loach, although loaches are notoriously difficult to identify and taxonomically uncertain. Local people say that Band-i-Haibat harbours a 1m predatory fish (*qesil-laloi-ragin-kaman*) that stays in very deep water, except for one month during the spring. Local people only catch them by fishing through the ice in winter.

It is apparent that ibex and urial are now gone from the area of Band-i-Amir. There is a set of urial horns on a small mosque in Kupruk indicating their presence in the recent past. Park planning must take into consideration opportunities for future reintroduction opportunities. Several red foxes, alive and dead were seen. During the night of October 13 – 14, a wolf jumped the 2.5m wall of the community paddock at Jurukhushan and killed one sheep and one goat and injured 3 sheep and apparently killed 11 animals about 3

Figure 4. *Shir moi* (*Capoeta capoeta heratensis*) and *sag moi* (*Triplophysa stoliczkai* (?)) from Band-i-amir)



weeks earlier. WCS sent a roll of barbed wire from Kabul to string along the top of the paddock wall. The number of wolves remaining in the area and their current prey dependence is unknown.

Three habitats were trapped for small mammals at Band-i-Amir—the restaurant and surroundings in the bazaar, the rocks immediately above the bazaar, and the rocky steppe

to the north of the bazaar. In total, trapping effort was approximately 100 trap-nights concentrated mostly on the steppe habitat. One long-tailed hamster (*Callomyscus bailwardi*) was caught in the rocks above the bazaar, two migratory hamsters (*Cricetelus migratorius*) were caught on the steppe and 6 *C. migratorius* were caught in the bazaar (Appendix 2). These identifications are provisional, particularly that for *C. bailwardi*.

Eleven bird species were added, with varying degrees of certainty, to the list of species found at Band-i-Amir (Appendix 1). These species are Gadwall (*Anas strepera*)?, Great Crested Grebe (*Podiceps cristatus*), Horned Grebe (*Podiceps auritus*), Gray Heron (*Ardea cinerea*), unknown Cormorant, Eurasian Sparrowhawk (*Accipiter nisus*), Steppe Eagle (*Aquila nipalensis*)?, Yellow-billed Cough (*Pyrrhocorax graculus*), Carrion Crow (*Corvus corone*), Eurasian Tree Sparrow (*Passer montanus*) and Common Rosefinch (*Carpodacus erythrinus*).

Fixed point photographs provide a visual record of environmental change. Appendix 4 is a series of photographs taken from the same points in 1936, 1977, 2002 and 2006. The overall impression is that there has been little environmental change at Band-i-Amir over the past 70 years. In future, this appendix as a reference ino accumulating a catalogue of consistent fixed-point photographs.

Other Activities

Equipment and Books

All field equipment needed for the project was acquired and is currently securely stored in Kabul. A special cable was found to be necessary for linking the temperature recorder to a laptop. This cable could not be found in Kabul and consequently, the weather station was not deployed in 2006. The Smithsonian Institution and Lynx Ediciones were approached to donate copies of *The Birds of South Asia: The Ripley Guide* to the MoAI. They agreed to provide 5 copies at half price. These books will be transferred to the Ministry at cost during 2007.

Training

Knowledge about the use of spotting scopes, binoculars, GPS, compass, map-reading, ungulate surveys and bird identification was transferred to one Ministry counterpart and 3 WCS staff during fieldwork. A lecture on bird identification was given to an approximately 30 FAO and MoAI employees.

Elements of the 2007 Workplan

Ajar Valley

WCS and the Government of Afghanistan should pursue protected area status for the Ajar Valley. Priority activities in 2007 will be as following

January - March	April - June	July - September	October - December
Develop elements of a management plan for Ajar Valley	Consult local people on the elements of the draft management plan	Develop a draft grazing management plan	Provide basic conservation awareness to local people with particular emphasis on protected

			areas
Develop maps, digital elevation models, satellite images and hybrids suitable for reporting, planning and community consultation	Provide basic conservation awareness to local people with particular emphasis on protected areas		Engage Pushte Waz and Podinatu in protected area development
	Engage Pushte Waz and Podinatu in protected area development		Design an ungulate monitoring system to be undertaken by local people
	Undertake a quantitative range assessment		Biodiversity inventory, particularly for plants, birds, small mammals and fish
	Biodiversity inventory, particularly for plants, birds, small mammals and fish		Map local place names and natural resource use patterns
	Develop maps, digital elevation models, satellite images and hybrids suitable for reporting, planning and community consultation		Work with local government officials to effectively limit harvest of ibex, fish and juniper
	Map local place names and natural resource use patterns		
	Work with local government officials to effectively limit harvest of ibex, fish and juniper		
	Initiate a catalogue of fixed point photographs		

Band-i-Amir

WCS should continue to work with partners in achieving legally recognized and functional protected area status for Band-i-Amir. Priority activities for 2007 are as follows:

January - March	April - June	July - September	October – December
Continue to facilitate and support activities of the Band-i-Amir Coordination Committee	Continue to facilitate and support activities of the Band-i-Amir Coordination Committee	Continue to facilitate and support activities of the Band-i-Amir Coordination Committee	Continue to facilitate and support activities of the Band-i-Amir Coordination Committee
Provide necessary legal support to the Government and to the Band-i-Amir Coordination Committee	Provide necessary legal support to the Government and to the Band-i-Amir Coordination Committee	Provide necessary legal support to the Government and to the Band-i-Amir Coordination Committee	Provide necessary legal support to the Government and to the Band-i-Amir Coordination Committee
Develop the text of an interim management plan for Band-i-Amir and take all necessary steps to see that it is approved in 2007	Take all necessary steps to see that Preliminary Management Plan is approved in 2007	Take all necessary steps to see that Preliminary Management Plan is approved in 2007	Take all necessary steps to see that Preliminary Management Plan is approved in 2007
Work with partners to provide very basic conservation awareness to local people and to consult on the elements of a protected area management plan for the Ajar Valley	Work with partners to provide very basic conservation awareness to local people and to consult on the elements of a protected area management plan for the Ajar Valley	Work with partners to provide very basic conservation awareness to local people and to consult on the elements of a protected area management plan for the Ajar Valley	Work with partners to provide very basic conservation awareness to local people and to consult on the elements of a protected area management plan for the Ajar Valley
Develop maps, digital elevation models, satellite images and	Develop maps, digital elevation models, satellite images and	Develop a draft grazing management plan	

hybrids suitable for reporting, planning and community consultation	hybrids suitable for reporting, planning and community consultation		
	Plan future work on aquatic biodiversity and hydrology of the Band-i-Amir travertine lake system		Plan future work on aquatic biodiversity and hydrology of the Band-i-Amir travertine lake system
	Undertake a quantitative range assessment		
	Biodiversity inventory, particularly for plants, birds, small mammals and fish		Biodiversity inventory, particularly for plants, birds, small mammals and fish
	Add to the catalogue of fixed point photographs		Add to the catalogue of fixed point photographs

Literature Cited

Burnes, A. 1842. Cabool: Being a personal narrative of a journey to, and residence in that city, in the years 1836, 7 and 8. 1973 edition. Akademische Druck-u. Verlagsanstalt, Graz, Austria.

Carter, C.D. and J.C. Marks. 2007. Influences of travertine dam formation on leaf litter decomposition and algal accrual. *Hydrobiologia* 575:329-341.

Dupree, N. H. 1977. An historical guide to Afghanistan. Afghan Tourist Organization, Publ. No. 5, 2nd ed. 492 pp.

Goldenfeld, N. Chan, P.Y. and J. Veysey. 2006. Dynamics of Precipitation Pattern Formation at Geothermal Hot Springs. *Phys. Rev. Lett.* 96, 254501.

Pentecost, A. 2005. Travertine. Springer-Verlag, Berlin. 445 pp.

Shank, C. C., and J. Y. Larsson. 1977. "A Strategy for the Establishment and Development of Band-e-Amir National Park." *FAO, FO:DP/AFG/741016* (1977).

Shank, C. C., R. G. Petocz, and K. Habibi. 1977. "A Preliminary Management Plan for the Ajar Valley Wildlife Reserve." Field Report, FAO.

Glossary of Acronyms

ACC	Afghan Conservation Corps
ADB	Asia Development Bank
ATO	Afghan Tourism Organization
MoAI	Ministry of Agriculture and Irrigation
NEPA	National Environmental Protection Organization
SEA	Save the Environment Afghanistan
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WCS	Wildlife Conservation Society
USAID	United States Agency for International Development

Appendix 1. Birds recorded for Band-i-Amir and Ajar.

The 1977 records are from FAO reports and the 2002 records are from unpublished data collected during the UNEP mission in 2002 (P. Zahler, pers. comm. 2002).

		Band-i-Amir	Band-i-Amir	Band-i-Amir	Band-i-Amir	Ajar	Ajar	Ajar	
		1977	2002	June 2006	Oct. 2006	1977	June 2006	Oct. 2006	
Phasianidae	Turkeys, Grouse, Pheasants and Partridges								
Himalayan Snowcock	<i>Tetraogallus himalayensis</i>							X?	
Chukar	<i>Alectoris chukar</i>					X		X	
Anatidae	Ducks, Geese and Swans								
Gadwall	<i>Anas strepera</i>				X?				
Eurasian Teal	<i>Anas crecca</i>		X		X				
Mallard	<i>Anas platyrhynchos</i>				X				
Northern Pintail	<i>Anas acuta</i>		X?						
Garganey	<i>Anas querquedula</i>								
Northern Shoveler	<i>Anas clypeata</i>		X		X				
Ferruginous Pochard	<i>Aythya nyroca</i>	X							
Great Crested Grebe	<i>Podiceps cristatus</i>				X				
Horned Grebe	<i>Podiceps auritus</i>				X				
Black-necked Grebe	<i>Podiceps nigricollis</i>		X		X				
Red-necked Grebe	<i>Podiceps grisegena</i>								
Ciconiidae	Storks								
Black Stork	<i>Ciconia nigra</i>					X			
Ardeidae	Herons and Bitterns								
Gray Heron	<i>Ardea cinerea</i>				X				
Great Egret	<i>Egretta alba</i>	X							
Little Bittern	<i>Ixobrychus minutus</i>	X							
Phalacrocoracidae	Cormorants								
Great Cormorant	<i>Phalacrocorax carbo</i>								
Pygmy Cormorant	<i>Phalacrocorax pygmaeus</i>								
Little Cormorant	<i>Phalacrocorax niger</i>			X Species Unknown					Unconfirmed. Cited by Avibase and Habibi. Rasmussen and Anderton (2005) state that the only Afghan specimen was misidentified, but that the species may occur in

									Afghanistan.
Falconidae	Falcons and Caracaras								
Eurasian Kestrel	<i>Falco tinnunculus</i>	X	X	X	X	X			
Saker Falcon	<i>Falco cherrug</i>		X?						
Lammergeier	<i>Gypaetus barbatus</i>	X				X		X	
Egyptian Vulture	<i>Neophron percnopterus</i>	X				X			
White-rumped Vulture	<i>Gyps bengalensis</i>								
Himalayan Griffon	<i>Gyps himalayensis</i>	X							
Eurasian Griffon	<i>Gyps fulvus</i>					X			
Cinereous Vulture	<i>Aegypius monachus</i>								
Short-toed Eagle	<i>Circus gallicus</i>								
Western Marsh-Harrier	<i>Circus aeruginosus</i>		X						
Northern Harrier	<i>Circus cyaneus</i>								
Pallid Harrier	<i>Circus macrourus</i>		X?						
Montagu's Harrier	<i>Circus pygargus</i>								
Shikra	<i>Accipiter badius</i>								
Eurasian Sparrowhawk	<i>Accipiter nisus</i>				X	X			
Northern Goshawk	<i>Accipiter gentilis</i>					X			
White-eyed Buzzard	<i>Butastur teesa</i>								
Long-legged Buzzard	<i>Buteo rufinus</i>		X? Reported as Upland Buzzard		X?				
Rough-legged Buzzard	<i>Buteo lagopus</i>	X							Rasmussen and Anderton (2005) cite <i>B. lagopus</i> as a winter vagrant in Afghanistan
Steppe Eagle	<i>Aquila nipalensis</i>				X?				
Golden Eagle	<i>Aquila chrysaetos</i>	X	X		X	X			
Rallidae	Rails, Waterhens and Coots								
Eurasian Coot	<i>Fulica atra</i>	X	X	X	X				
Recurvirostridae	Stilts and Avocets								
Black-winged Stilt	<i>Himantopus himantopus</i>	X							
Charadriidae	Plovers								
Little Ringed Plover	<i>Charadrius dubius</i>	X	X						
Scolopacidae	Sandpipers and Snipe								
Common Redshank	<i>Tringa totanus</i>		X						

Marsh Sandpiper	<i>Tringa stagnatilis</i>		X			X			
Common Greenshank	<i>Tringa nebularia</i>								
Green Sandpiper	<i>Tringa ochropus</i>	X							
Wood Sandpiper	<i>Tringa glareola</i>								
Terek Sandpiper	<i>Xenus cinereus</i>								
Common Sandpiper	<i>Actitis hypoleucos</i>	X	X						
Laridae	Gulls, Terns and Skimmers								
Lesser Black-backed Gull	<i>Larus fuscus</i>		X Unknown Species		X Unknown Species				Rasmussen and Anderton (2005) note that the genus <i>Larus</i> is confused and subject to revision. May be best referred to as <i>L. heuglini</i> .
Great Black-headed Gull	<i>Larus ichthyæus</i>								
Black-headed Gull	<i>Larus ridibundus</i>								
Slender-billed Gull	<i>Larus genei</i>								
Whiskered Tern	<i>Chlidonias hybridus</i>		X?						
Pteroclididae	Sandgrouse								
Pin-tailed Sandgrouse	<i>Pterocles alchata</i>		X Unknown species						
Spotted Sandgrouse	<i>Pterocles senegallus</i>								
Black-bellied Sandgrouse	<i>Pterocles orientalis</i>								
Crowned Sandgrouse	<i>Pterocles coronatus</i>								
Columbidae	Doves and Pigeons								
Rock Pigeon	<i>Columba livia</i>	X	X	X	X	X		X	
Common Wood-Pigeon	<i>Columba palumbus</i>							X?	
Oriental Turtle-Dove	<i>Streptopelia orientalis</i>		X						
Apodidae	Swifts								
Alpine Swift	<i>Tachymarptis melba</i>					X			
Common Swift	<i>Apus apus</i>					X			
Coraciidae	Rollers								
European Roller	<i>Coracias garrulus</i>	X	X						
Indian Roller	<i>Coracias benghalensis</i>								
Alcedinidae	Kingfishers								
Common Kingfisher	<i>Alcedo atthis</i>	X			X	X			
Meropidae	Bee-eaters								
European Bee-eater	<i>Merops apiaster</i>	X							

Upupidae	Hoopoes								
Hoopoe	<i>Upupa epops</i>	X	X		X	X			
Laniidae	Shrikes								
Long-tailed Shrike	<i>Lanius schach</i>		X?						
Lesser Gray Shrike	<i>Lanius minor</i>	X							
Woodchat Shrike	<i>Lanius senator</i>								Vagrant, Rasmussen and Anderton (2005)
Red-backed Shrike	<i>Lanius collurio</i>	X							Unconfirmed. Cited by Avibase and Habibi. <i>Lanius</i> taxonomy is unsettled. <i>L.</i> <i>collurio</i> often includes <i>L.</i> <i>isabellinus</i> and <i>L.</i> <i>phoenicuroides</i> . <i>L.</i> <i>collurio sensu</i> Rasmussen and Anderton (2005) probably does not occur in Afghanistan.
Masked Shrike	<i>Lanius nubicus</i>	X							Unconfirmed. Cited by Habibi. <i>Lanius</i> taxonomy is unsettled. <i>L.</i> <i>nubicus</i> Sometimes considered conspecific with <i>L.</i> <i>schach</i> (Rasmussen and Anderton, 2005). Possible vagrant in Afghanistan.
Corvidae	Crows and Jays								
Eurasian Magpie	<i>Pica pica</i>	X	X					X	
Red-billed Chough	<i>Pyrrhonorax pyrrhonorax</i>	X	X		X		X	X	
Yellow-billed Chough	<i>Pyrrhonorax graculus</i>				X				
Carrion Crow	<i>Corvus corone</i>				X				
Common Raven	<i>Corvus corax</i>	X	X		X				
Hooded Crow	<i>Corvus cornix</i>				X				
Paridae	Tits and Chickadees								
Willow Tit	<i>Parus montanus</i>	X							Unconfirmed. Cited by Habibi.
Azure Tit	<i>Parus cyanus</i>								Unconfirmed. Cited by Avibase and Habibi.
Blue Tit	<i>Parus caeruleus</i>	X				X			Unconfirmed. Cited by Habibi. "Speculative" in W Afghanistan (Rasmussen and Anderton, 2005)

Hirundinidae	Swallows and Martins								
Collared Sand Marten/Bank Marten	<i>Riparia riparia</i>					X			Some genuine and some fraudulent specimens from Afghanistan (Rasmussen and Anderton, 2005)
Eurasian Crag-Martin	<i>Ptyonoprogne rupestris</i>					X			
Barn Swallow	<i>Hirundo rustica</i>	X							
Red-rumped Swallow	<i>Cecropis daurica</i>					X			
Common House-Martin	<i>Delichon urbica</i>	X				X			
Alaudidae	Larks								
Greater Short-toed Lark	<i>Calandrella brachydactyla</i>		X?						Cited by Habibi as <i>C. cinerea</i>
Crested Lark	<i>Galerida cristata</i>				X				
Horned Lark	<i>Eremophila alpestris</i>		X	X	X				
Pycnonotidae	Bulbuls								
Common Bulbul	<i>Pycnonotus barbatus</i>	X							Introduced
Sylviidae	Old World Warblers								
Cetti's Warbler	<i>Cettia cetti</i>					X			
Moustached Warbler	<i>Acrocephalus melanopogon</i>								
Paddyfield Warbler	<i>Acrocephalus agricola</i>								
Blunt-winged Warbler	<i>Acrocephalus concinens</i>								
Eurasian Reed-Warbler	<i>Acrocephalus scirpaceus</i>		X			X			
Blyth's Reed-Warbler	<i>Acrocephalus dumetorum</i>					X			
Great Reed-Warbler	<i>Acrocephalus arundinaceus</i>								One record only (Rasmussen and Anderton, 2005)
Clamorous Reed-Warbler	<i>Acrocephalus stentoreus</i>					X			
Upcher's Warbler	<i>Hippolais languida</i>					X			
Common Chiffchaff	<i>Phylloscopus collybita</i>	X			X	X		X	
Mountain Chiffchaff	<i>Phylloscopus sindianus</i>	Unknown							Cited for Afghanistan by Dickinson (2003), one record only from Siestan (Rasmussen and Anderton, 2005)
Plain Leaf-Warbler	<i>Phylloscopus neglectus</i>								Near endemic (Evans 2006)
Greenish Warbler	<i>Phylloscopus trochiloides</i>								
Sulphur-bellied Warbler	<i>Phylloscopus griseolus</i>		X?						
Lemon-rumped Warbler	<i>Phylloscopus proregulus</i>								Considered as <i>P. chloronotus</i> by Rasmussen and Anderton (2005)

Brooks's Leaf-Warbler	<i>Phylloscopus subviridis</i>								Near endemic (Evans 2006)
Hume's Warbler	<i>Phylloscopus humei</i>								
Green Warbler	<i>Phylloscopus nitidus</i>								
Tytler's Leaf-Warbler	<i>Phylloscopus tytleri</i>								
Western Crowned Leaf-Warbler	<i>Phylloscopus occipitalis</i>								
Greater Whitethroat	<i>Sylvia communis</i>	X				X Species Unknown		X Species Unknown	
Lesser Whitethroat	<i>Sylvia curruca</i>		X				X		
Menetries's Warbler	<i>Sylvia mystacea</i>								
Timaliidae	Babblers and Parrotbills								
Streaked Laughingthrush	<i>Garrulax lineatus (lineatum)</i>								Rasmussen and Anderton (2005) give genus as <i>Trochalopteron</i>
Variiegated Laughingthrush	<i>Garrulax variegatus (variegatum)</i>								Rasmussen and Anderton (2005) give genus as <i>Trochalopteron</i>
Common Babbler	<i>Turdoides caudatus (caudata)</i>								Rasmussen and Anderton (2005) split <i>huttoni</i> (Afghan Babbler) from <i>caudatus</i> . The <i>caudatus</i> form not found in Afghanistan.
Sittidae	Nuthatches and Wallcreeper								
Eastern Rock Nuthatch	<i>Sitta tephronota</i>						X	X	
Wallcreeper	<i>Tichodroma muraria</i>		X				X	X	
Rock Nuthatch	<i>Sitta neumayer</i>	X	X						Unconfirmed. Cited by Habibi.
Sturnidae	Starlings								
Rosy Starling	<i>Pastor roseus</i>		X	X					
Turdidae	Thrushes								
Rufous-tailed Rock-Thrush	<i>Monticola saxatilis</i>						X		
Eurasian Blackbird	<i>Turdus merula</i>						X		
Chestnut Thrush	<i>Turdus rubrocanus</i>								
Muscicapidae	Chats and Old World Flycatchers								
Red-breasted Flycatcher	<i>Ficedula parva</i>	X					X		
Bluethroat	<i>Luscinia svecica</i>	X	X				X	X	
Indian Blue Robin	<i>Luscinia brunnea</i>								
Rufous-backed Redstart	<i>Phoenicurus erythronota</i>					X Unknown Species			
Blue-capped Redstart	<i>Phoenicurus caeruleocephalus (coeruleocephala)</i>								

Black Redstart	<i>Phoenicurus ochruros</i>	X	X			X	X		
White-winged Redstart	<i>Phoenicurus erythrogaster (erythrogastrus)</i>								
Blue-fronted Redstart	<i>Phoenicurus frontalis</i>								
White-capped Redstart	<i>Chaimarrornis leucocephalus</i>								
Plumbeous Redstart	<i>Rhyacornis fuliginosus</i>								
Stonechat	<i>Saxicola torquata (torquatus)</i>	X	X			X			Sibley and Monroe (1996) splits <i>S. maura</i> from <i>S. torquata</i> and cite <i>S. maura</i> from Afghanistan. Dickinson (2003) does not recognize the split. Rasmussen and Anderton (2005) follow Dickinson.
Hume's Wheatear	<i>Oenanthe alboniger (albonigra)</i>								
Northern Wheatear	<i>Oenanthe oenanthe</i>								
Finsch's Wheatear	<i>Oenanthe finschii</i>								
Variable Wheatear	<i>Oenanthe picata</i>								Near endemic (Evans 2006)
Pied Wheatear	<i>Oenanthe pleschanka</i>					X			
Red-tailed Wheatear	<i>Oenanthe chrysopygia</i>	X	X?		X Unknown Species	X			<i>O. chrysopygia</i> long considered conspecific with <i>O. xanthopyrma</i> . Latter not found in Afghanistan (Rasmussen and Anderton 2005). Habibi cites <i>O. xanthopyrma</i> . Avibase cites both.
Desert Wheatear	<i>Oenanthe deserti</i>	X							
Isabelline Wheatear	<i>Oenanthe isabellina</i>					X			
Common Redstart	<i>Phoenicurus phoenicurus</i>	X				X			Unconfirmed. Cited by Avibase and Habibi. Likely found in NE Afghanistan, but no genuine records (Rasmussen and Anderton, 2005)
Whinchat	<i>Saxicola rubetra</i>	X							Unconfirmed. Cited by Avibase and Habibi. Single observer sight records from Afghanistan need verification (Rasmussen and Anderton (2005)
White-tailed Wheatear	<i>Oenanthe leucopyga</i>					X			Unconfirmed. Cited by Habibi. Rasmussen and Anderton (2005) do not list it occurring in the region.

Black Wheatear	<i>Oenanthe leucura</i>	X							Cited by Habibi, Rasmussen and Anderton (2205) do not list it occurring in the region.
Passeridae	Sparrows, Snowfinches and Allies								
House Sparrow	<i>Passer domesticus</i>	X							
Eurasian Tree Sparrow	<i>Passer montanus</i>				X				
White-winged Snowfinch	<i>Montifringilla nivalis</i>	X							
Motacillidae	Wagtails and Pipits								
White Wagtail	<i>Motacilla alba</i>		X			X	X	X	
Citrine Wagtail	<i>Motacilla citreola</i>					X			
Yellow Wagtail	<i>Motacilla flava</i>					X			
Gray Wagtail	<i>Motacilla cinerea</i>	X	X			X			
Water Pipit	<i>Anthus spinoletta</i>	X			X				
Upland Pipit	<i>Anthus sylvanus</i>								
Fringillidae	Finches and Hawaiian Honeycreepers								
Common Rosefinch	<i>Carpodacus erythrinus</i>			X					
Sinai Rosefinch	<i>Carpodacus synoicus</i>							X?	Cited for Afghanistan by Dickinson (2003)
Fire-fronted Serin	<i>Serinus pusillus</i>						X		
Emberizidae	Buntings, American Sparrows and Allies								
Corn Bunting	<i>Emberiza calandra</i>	X							

Appendix 2. Small Mammals collected at Ajar Valley and Band-i-Amir.

SMALL MAMMALS-- BAMIYAN, OCTOBER 2006														
Specimen	Species	Date	Location	Latitude	Longitude	Elevation	Habitat	Weight (g)	Total Length	Head/Body Length	Tail	Ear	Hind Foot	Notes
D1	<i>Callomyscus bailwardi</i> Long-tailed Hamster	2006-10-05	Jawzeri Camp, Ajar	N35.38561	E67.40215	2207m	Along cliff/field interface	20	165	80	85	17		Discarded
3	<i>Callomyscus bailwardi</i> Long-tailed Hamster	2006-10-05	Jawzeri Camp, Ajar	N35.38561	E67.40215	2207m	Along cliff/field interface		185	98	87	16	19	Stuffed
1	<i>Apodemus sylvaticus</i> Wood Mouse	2006-10-05	Jawzeri Camp, Ajar	N35.38561	E67.40215	2207m	Along cliff/field interface		160	98	62	12	16	Stuffed
2	<i>Callomyscus bailwardi</i> Long-tailed Hamster	2006-10-12	Band-i-Amir	N34.82268	E67.19154	2914 m	Rocky bluff above bazaar		183	99	84	17	18	Stuffed
D2	<i>Cricetelus migratorius</i> Migratory Hamster	2006-10-15	Band-i-Amir	N34.82705	E67.19365	2958 m	Steppe above bazaar	26	110	85	25		15	Discarded
4	<i>Cricetelus migratorius</i> Migratory Hamster	2006-10-15	Band-i-Amir	N34.82705	E67.19365	2958 m	Steppe above bazaar	22	110	92	18	15	12	Stuffed skull burned and discarded
5	<i>Cricetelus migratorius</i> Migratory Hamster	2006-10-14	Band-i-Amir	N34.82268	E67.19154	2914m	In restaurant in bazaar	48	125	104	21	16	17	Stuffed
D3	<i>Cricetelus migratorius</i> Migratory Hamster	2006-10-15	Band-i-Amir	N34.82268	E67.19154	2914m	In restaurant in bazaar	48	138	113	25		18	Discarded
D4	<i>Cricetelus migratorius</i> Migratory Hamster	2006-10-15	Band-i-Amir	N34.82268	E67.19154	2914m	In restaurant in bazaar	26	116	94	22		11	Discarded
D5	<i>Cricetelus migratorius</i> Migratory Hamster	2006-10-15	Band-i-Amir	N34.82268	E67.19154	2914m	In restaurant in bazaar	37	116	99	17		16	Discarded
D6	<i>Cricetelus migratorius</i> Migratory Hamster	2006-10-15	Band-i-Amir	N34.82268	E67.19154	2914m	In restaurant in bazaar	27	112	93	19		16	Discarded
D7	<i>Cricetelus migratorius</i> Migratory Hamster	2006-10-15	Band-i-Amir	N34.82268	E67.19154	2914m	In restaurant in bazaar	30	115	96	19		16	Discarded

Appendix 3. Fish collected at Ajar Valley and Band-i-Amir.

FISH SPECIMENS FROM BAMBIYAN PROVINCE, AFGHANISTAN--OCTOBER 2006								
04-Oct-06	Ajar River, Bamiyan Province	N35.37491, E67.45055	1984m	Labelled as <i>shir moi</i>	Gift from fishermen	Caught on hook/line from clear, fast running stream	<i>Capoeta capoeta heratensis</i> (or probably now <i>Capoeta heratensis</i> —Transcaucasian barb. Locally known as <i>shir moi</i>	
04-Oct-06	Ajar River, Bamiyan Province	N35.37491, E67.45055	1984m	Labelled as brown trout. Told it was a <i>khal moi</i> . In June, I was told brown trout is <i>zarare</i>	Gift from fishermen	Caught on hook/line from clear, fast running stream	<i>Salmo trutta</i> Brown Trout	
13-Oct-06	Band-i-Amir, Bamiyan Province. Bridge below Band-i-Haibat	N34.82011 E67.18460	2922m	Told one was <i>khal moi</i> and one <i>shir moi</i> . Probably the same	Bought from fisherman	Caught on hook/line in clear stream from bridge	<i>Capoeta capoeta heratensis</i> (or probably now <i>Capoeta heratensis</i>). Transcaucasian barb	
13-Oct-06	Band-i-Amir, Bamiyan Province. Bridge below Band-i-Haibat	N34.82011 E67.18460	2922m	Told one was <i>khal moi</i> and one <i>shir moi</i> . Probably the same	Bought from fisherman	Caught on hook/line in clear stream from bridge	<i>Capoeta capoeta heratensis</i> (or probably now <i>Capoeta heratensis</i>) Transcaucasian barb	
14-Oct-06	Band-i-Amir, Bamiyan Province. Stream below Band-i-Haibat	ca. N34.82011 E67.18460	2922m	3 <i>sag moi</i> , probably loaches, one labelled	Capture commissioned	Caught with tiny snare in stream	<i>Triplophysa</i> (formerly <i>Nemacheilus stoliczkai</i> (?))-- Tibetan stone loach	

Appendix 4. Fixed Point Photographs of Locations at Band-i-Amir

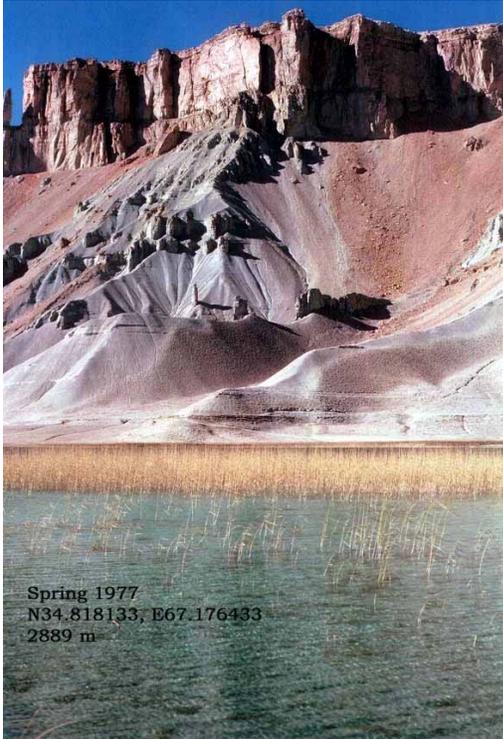
Fixed Point # 1-- Band-i-Zulfiqar and Band-i-Pudina from lookout (N34.83416, E67.20414, 3010 m).



Fixed Point #2 Zulfiqar, Pudina and Panir (N34.83880, E67.20545)



Fixed Point #3 Band-i-Gholaman (N34.81833, E67.17640)



Fixed Point #4 Band-i-Haibat near shrine (N34.821916, E67.19365).



Spring 1977



September 2002

Fixed Point #5 Shrine from Road Across Band-i-Habiat



W.R. Hay,
Geographical
Journal, Vol.
87, page 349,
1936



Fixed Point #6 Band-i-Pudina, close-up of vegetation

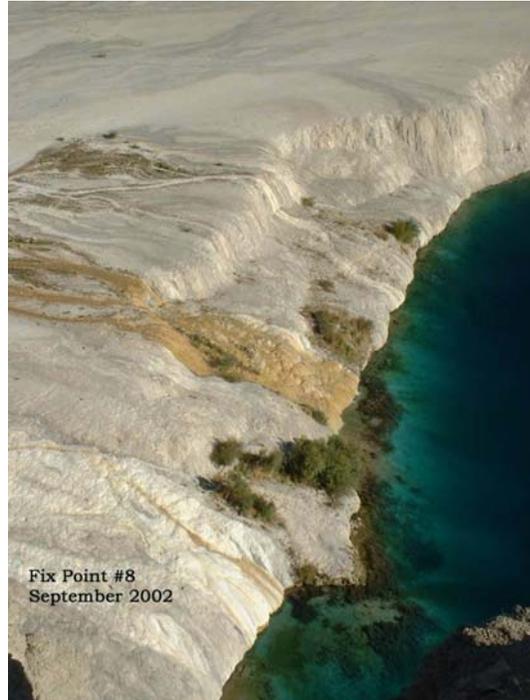


Fixed Point Photo #7 Looking West from above shrine.



13 October 2006
N34.82258, E67.19342
2960 m
Looking west

Fixed Point #8 Panir Dam (No GPS location)



Fixed Point #10 Haibat Dam from North



Hay, W.R., 1936 Geographical Journal, Volume 87, page 348, 1936

