

Biodiversity Assessment for Tajikistan

**Task Order under the
Biodiversity & Sustainable Forestry IQC (BIOFOR)**

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ACRONYMS

BIOFOR	Biodiversity and Sustainable Forestry Initiative
I.A.	illustrative activity
NBSAP	National Biodiversity Strategy and Action Plan
NEAP	National Environment Action Plan
NGO	non-governmental organization

SECTION I

Introduction

The biodiversity assessment for the Republic of Tajikistan was funded by USAID's Regional Mission to the Central Asian Republics in Almaty under a contract to Chemonics International through the Biodiversity and Sustainable Forestry (BIOFOR) IQC (see Annex B, Scope of Work). Because of security concerns, the biodiversity team was not permitted to travel to Tajikistan, and the current report is based on a desk study carried out by Firuza Faizitdinovna Abdurahimova, with input from the Biodiversity team of Raymond Daviesson and Galina Fet.

The approach used in the assessment was to collect and analyze information on biodiversity and related areas through documentation searches, interviews with key individuals and organizations concerned with biodiversity in Tajikistan, and field trips.

Rather than duplicating research already undertaken and presented in strategy and project documents, this assessment has borrowed freely from these documents, and synthesized and adapted information where appropriate.

This assessment has three interlinked objectives:

- To summarize the status of biodiversity and its conservation in Tajikistan; analyze threats, identify opportunities, and make recommendations for the improved conservation of biodiversity. This information will help USAID and other organizations and individuals, as appropriate, make decisions related to biodiversity conservation.
- To meet the requirements stipulated under Section 119 (d) of the Foreign Assistance Act (see Annex A, FAA Sections 117 and 119), required when USAID missions are developing new strategic programs. The assessment also prepares the Mission to address issues arising under Sections 117 and 119 of the FAA, by providing information on biodiversity and natural resources in Tajikistan.
- To analyze the impacts of current and future USAID activities in Tajikistan on biodiversity conservation, suggest actions that USAID could take to support biodiversity conservation in Tajikistan that are consistent with current and future USAID programs, and identify special opportunities for the Mission in the area of biodiversity conservation.

SECTION II

Status of Biodiversity

A. Overview

Tajikistan is a newly independent state (population 6 million) located at the boundary of Europe and Asia. It shares borders with Kyrgyzstan, Uzbekistan, Afghanistan, and China. Tajikistan is a small country (143,100 km²) dominated by the Pamir mountains in the east and the Tien Shen mountains in the west. Over 93 percent of the country is above 1,000 m altitude, and over half above 3,000 m. The water supply found in Tajikistan's glaciers (over 8,000 sq.km), snows, and lakes feeds three major river systems: the Amudarya (the aquatic artery of Central Asia), the Zeravshan, and the Syrdarya. Tajikistan contributes about 50 percent of the water volume of the Aral Sea.

Tajikistan contains a great wealth of biodiversity resources in species, ecosystems, and landscapes. Although the nation is small in terms of its overall landmass, Tajikistan displays a wide variation in elevations and geology, leading to a broad range of habitats as reflected in a high diversity of species. The ecosystems represented range from high mountains, to lowland desert and riparian woodlands. A number of rare and valuable ecosystems have nearly disappeared, and forest cover has declined by over one-half in the last 50 years, putting many of the country's species at risk of extinction.

B. Major Ecoregions

The character of biodiversity in the country reflects the high altitude of much of the land, being dominated by montane and alpine species. Much of the country is dominated by glaciers, rocks, scree, and highland rock deserts. The rest of the territory is rich in different natural systems: fruit-walnut, juniper, fir, broadleaf forests, meadows, steppes and deserts.

B1. Deserts and Semi-deserts

Most desert ecosystems are located in the lower reaches of the Vakhsh, Pianj, Kafirnigan, and Syr-Daria Rivers between 400 and 2,000 m. In recent years, intensive irrigation and development of this ecosystem has occurred. Dominant plant species of the desert are *Salsola spp.*, while wormwoods *Artemisia spp.* are characteristic of semi-desert habitats. Marbled polecat, gray monitor and sandgrouse are rare species characteristic of the desert. Hedgehogs (*Hemiechinus auritus*) and tolai hare (*Lepus tolai*) are found in semi-deserts, along with bustards and birds of prey. Goitered gazelle (*Gazella subgutturosa*) inhabits these areas, as well as jackal (*Canis aureus*) and wolf (*Canis lupus*).

B2. Steppes

Steppe ecosystems are widely distributed in Tajikistan. Bunchgrass steppes occur from the foothills at 700 m. up to the high mountains at 2,000 to 3,000 m. They are dominated by either *Stipa spp.*, *Festuca sulcata* or a more herbaceous mixture. Endemism is quite high, with several

species of *Tulipa* and *Juno* present. Eagles and falcons occur, with several species of marmots at high altitudes. The wild sheep *Ovis ammon* is also found here.

Mid-mountain semi-savanna steppe is more diverse and dominated by tall grasses, such as *Hordeum bulbosum*, *Elytrigia trichophora* and *Bothriochloa ischaemum*. Endemism is high.

B3. Forests

Tajikistan is poor in forest resources. Forests in Tajikistan have been preserved only in alpine regions where access is made difficult; elsewhere, there has been a general trend toward a reduction in forest cover. Forests are mostly concentrated in northern Tajikistan at 800 – 2,500 m. The exception is riparian tugai forests situated in desert river deltas at the altitudes of 300 - 450 meters above sea level. Total forest area is approximately 215,000 ha.

Spruce forests, dominated by *Picea schrenkiana*, occur from 1,700 - 3,200 m. Understory trees include endemic rowans *Sorbus tianschanica*, *S. persica* and willow *Salix tianshanica*, mixed with honeysuckle and brambles. The endemic fir *Abies semenovii* occurs here. Typical boreal species such as hawk owl *Surnia ulula*, merlin *Falco columbarius* and black grouse *Lyrurus tetrix* reach their southern limits here. Red and roe deer, wolves and bears occur in the spruce forests.

Juniper forests make up 90,000 ha, or 40 percent of Tajikistan's forests. They occur from 900 to 3,200 m. Dominant species are *Juniperus semiglobosa*, *J. seravschanica* and *J. turkestanica*. Several endemic plant species occur, as well as bird species typical of the Himalayan fauna.

Relict walnut *Juglans regia* forest, mixed with wild fruit trees occur in southern Kyrgyzstan between 1,000 and 2,200 m. These forests are very diverse with more than 300 plant species. Endemics include the apple *Malus sieversii*, plum *Prunus ferganica*, pear *Pyrus korshinskyi*, and hawthorn species. There is a rich forest bird and mammal community, with brown bear, lynx, and wild boar.

Pistachio forests occupy 42,000 ha (18 percent of the total forest area) in dry foothill zones. Almonds, maples, and wild fruit trees are also found in these forests.

Riparian tugai woodlands in Tajikistan can be found on the lower reaches of the rivers Vakhsh, Pianj, Zeravshan, and Kafirnigan at 300-400 m. The *tugai* ecosystem is also well preserved on the banks of the former river-bed lakes along some of these rivers. *Tugai* forests are dominated by aspens, willows, and birches. Several willow species are endemic. Important understory plants include *Hippophae rhamnoides* and *Berberis spp.*. Plants and animals from desert, steppe, and wetland habitats find refuge in these forests, including Bukhara deer.

B4. Deciduous Shrublands

These habitats are very diverse and widely distributed at altitudes between 1,500 and 3,000 m. *Rosa*, *Caragana*, *Cotoneaster*, and *Spiraea* are typical shrubs, mixed with juniper species. A good number of endemics are found, including species of almond and rowan, and the fauna is rich and diverse.

B5. Meadows

Meadows occur from the forest belt at 1,900-2,500 m., through the sub-alpine zone at 2,300-3,200 m. to the alpine meadows at 2,800-3,600 m. Plant diversity decreases with increasing altitude. *Alchemilla* and *Geranium* species are dominant at higher altitudes. Reptiles are represented by rock agama (*Stellio himalayanus*) and viper (*Agkistrodon halys*). Long-tailed marmots (*Marmota caudata*) are characteristic. Weasels and martens also occur, and at higher altitudes, snow leopards, and Siberian ibex occur, along with bearded vultures and golden eagles. The rare Central Asian endemic bird, the ibisbill *Ibidorhyncha struthersii*, occurs along rivers in these habitats.



Rich, grassy meadows of high-elevation zone.

B6. Wetlands

There are more than 1,300 lakes and 7 artificial reservoirs in Tajikistan, mostly located at altitudes from 1,000 to 4,000 m. Generally they 1 km² surface area. The biggest lakes are Karakul, Sarez, Yashilkul, and artificial Kairakum reservoir. On the south of Tajikistan are situated such sizeable rivers as Vakhsh, Pianj, and Kafirnigan. Marshlands are not common due to the steep terrain.

C. Species Diversity

Tajikistan has a variety of habitats and ecosystems. Large differences in altitude, topography, climate and soil give rise to different natural environments ranging from deserts of Southern Tajikistan to alpine environments on Pamir. Climatic features, rich vegetation and landscape variety favor the evolution and spread of 81 species of mammals, 365 birds, 49 fishes, 44 reptiles, and 2 amphibians.

Tajikistan's biodiversity has an ancient origin. A number of endemic species are found here, especially among mountain flora, and fish species inhabiting mountain rivers and lakes. Its location on the edge of several biogeographic regions and the variety of ecological zones has influenced the development of its fauna and flora. The high endemism of flora and fauna in Tien-Shan and Pamir, the uniqueness of communities and ecosystems, especially relict zones, has resulted in certain ecological systems having the status of distinct biogeographic units.

The following factors contribute to Tajikistan's complex and rich biodiversity:

- Vertical zonation in the distribution of plants and animals (deserts, steppes, savanna, deciduous scrub, forests, meadows, alpine vegetation)

- Montane landscapes providing mosaics of habitats, juxtaposing communities normally separated by substantial distances
- Latitudinal variation in climate (northeast to southwest) resulting in different ecological zones
- The geological history of Tien-Shan resulting in relict ‘fragments’ of historical flora and fauna, including endemic species, and relict species and ecosystems (such as the fruit-walnut forests)
- Connecting mountain ridges and river systems explaining the colonization of the area by species from different biogeographic zones (desert, forest, steppe)
- Representation of species from surrounding regions (Europe, southern and eastern Asia)

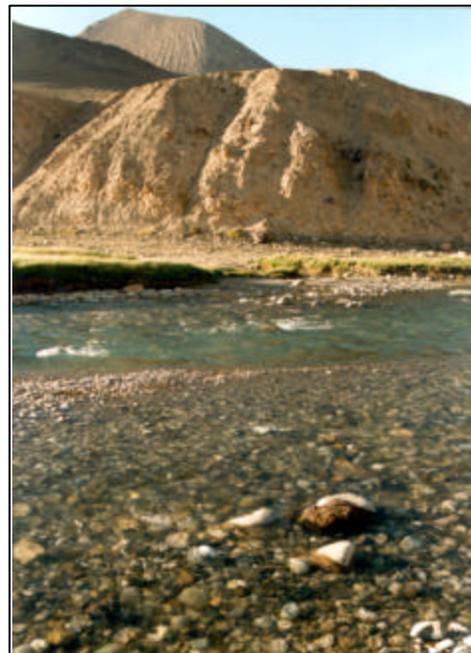
The Red Data Book of Tajikistan (1988) includes 226 species of plants, 4 species of fish, 21 reptiles, 37 birds and 42 mammals. Depletion and degradation of forest and woodlands is a major threat. Several tree species are included in the Red Data Book, including two hawthorn species, two plum species, the wild pear *Pyrus cajan*, Afghan fig *Ficus afghanistanica*, and *Thuja orientalis*.

Among vertebrates, the last tiger in the Tigrovaja Balka reserve was killed over 40 years ago. The endemic Menzbier’s marmot was extirpated ten years ago. The status of leopard and striped hyena is doubtful. In recent years, numbers of argali (*Ovis ammon*) have declined from 11,000 to 7,500 and Bukhara sheep (*Ovis vignei*) from 1,500 to 800. Other threatened species include Central Asian otter (*Lutra lutra*), goitered gazelle (*Gazella subgutturosa*), grey monitor (*Varanus griseus*), marbled polecat (*Vormela peregusna*), snow leopard (*Uncia uncia*), Tien-Shan brown bear (*Ursus arctos isabellinus*) and such birds as great bustard (*Otis tarda*) and saker falcon (*Falco cherrug*). Nineteen species of tulips are listed in the Red Data Book.

D. Agrobiodiversity

The biological resources of Tajikistan play an important role in the economy and traditions of the country. Many species are used directly, either for subsistence or commercial extraction. The country lies within a center of origin for domesticated fruit crops, and still possesses a number of wild relatives of these plants (walnuts, apples, apricots, pistachio). Natural habitats are a vital part of many traditional land use practices, such as grazing, which relies on the maintenance of mountain meadows. The loss of biodiversity has direct and indirect effects on people’s welfare and quality of life.

Botanical resources are very rich and varied. 600 species of wild plants used by man grow throughout the country. Anthropogenic influences threaten the quality of the gene pool of plants. Both population and species diversity of plants have been reduced and a number of species have nearly disappeared.



Mountain streams provide habitat for local fish species and rare birds such as Ibisbill.

There are more than 200 species of medicinal plants. The most valuable among them are: *Thalictrum foetidum*, *A. karacolicum*, *Inula macrophylla*, *Leonurus turkestanicus*, *Thermopsis turkestanica*, *Hypericum perforatum*, *Tussilago farfara*, *Origanum vulgare*, *Hippophae rhamnoides*, *Ephedra equisetina*, and *Veratrum lobelianum*.

Fruit-walnut forests in the south of Tajikistan are especially valuable and unique. Their importance lies not only in their species diversity but also the genetic diversity of economically important species (walnut, apple, almond, pistachio, pear, plum). These forests represent an important center of origin for cultivated fruit trees and a valuable 'storehouse' of genetic richness.

Wild-growing fruit plants of Tajikistan are the ancestors of many cultivated plants and thus represent valuable genetic material. They include walnut (*Juglans regia*), Siver's apple (*Malus sieversii*), Kyrgyz apple (*M. kirghisorum*), Sogdian wild prune (*Prunus sogdiana*), common pear (*Pyrus communis*), Korzhinski's pear (*P. korshinskyi*), Regel's pear (*P. regelii*), Tian-Shan cherry (*Cerasus tianschanica*), Magaleb cherry (*C. mahaleb*), barberry (*Berberis oblonga*), almond (*Amygdalus communis*), pistachio (*Pistacia vera*), Jungar hawthorn (*Crataegus songorica*), and Turkestan hawthorn (*C. turkestanica*).

E. Threats to Biodiversity

During the transition to a market economy Tajikistan has undergone an economic crisis. At the same time the country has undergone a period of severe civil strife. More than half of the population lives below the poverty level. Because of the lack of funds to purchase coal, the rural population (60 percent of the country) uses wood for heating. Many trees are cut along roads and in forests.

Major threats to biodiversity include habitat loss due to:

1. Conversion of natural habitats for agriculture and infrastructure. Outside of reserves, most desert habitat has disappeared under irrigated agriculture, principally cotton
2. Unregulated deforestation and tree cutting for fuelwood and timber
3. Overgrazing by domestic livestock, preventing regeneration and converting natural pastures to degraded lands covered by weedy species
4. Unregulated fires, especially in drier desert areas. The Tigrovaja Balka reserve has been particularly affected, with 10 percent of its forests being destroyed by fire in March, 2000, probably as a result of military exercises in the area.
5. Illegal poaching, including "organized" trophy hunts and hunting of bustards by Arab groups

SECTION III

Status of Biodiversity Conservation

A. Protected Areas

The protected area system and categories of protected areas have been largely inherited from the former Soviet system, with the “highest” level of reserves being the strictly protected *zapovedniks*. There has been some evolution in recent years to include more multiple-use areas, such as national parks.

The existing network of protected areas in Tajikistan includes four strict nature reserves (*zapovedniks*), two national parks, and seventeen conservation areas (*zakazniks*).

Table 1. National Parks & Zapovedniks

Zapovedniks		National Parks	
1. Tigrovaya Balka	49,786	4. Pamirsky	1,500,00
2. Ramit	16,100	5. Shirkent	30,000
3. Dashtidzhumsky	53,400		
4. Zorkul	87,770		

A1. Strict Nature Reservations (*Zapovedniks*)

Tigrovaia balka nature reserve covers the inundated tugai forests of the lower reaches of the rivers Vaksh and Pianj. Romit reserve is located in the Central Tajikistan between the lower reaches of the Sarbo and Sardai Migna rivers. It was established for the protection and restoration of the mountain coniferous and broad-leaved forests. Dashtijumsky reserve on the southern slope of the Darvaz ridge protects mountain steppe habitat and juniper and pistachio forests. It supports populations of markhor, snow leopard, and Siberian ibex. Unfortunately, at present, all the above mentioned *zapovedniks* are not managed and are located in the zone of armed hostilities. A fourth reserve, Zorkul, was recently created. It lies on the border with Afghanistan in the Gorno-Badakhshan region and represents high mountain ecosystems, including lakes with an important fish fauna, and high altitude breeding species, such as bar-headed goose (*Anser indicus*) and brown-hooded gull (*Larus brunnicephalus*).

A2. State Conservation Areas (*Zakazniks*)

There are 17 *zakazniks*, primarily in the west of the country. Their total area is 830,000 ha. Unfortunately, the armed hostilities (1992-1996) and the financial impoverishment of environmental management institutions have disturbed the normal functioning of the nature reserves considerably, negatively affecting biodiversity conservation.

A3. National Parks

Pamir National Park was established in the Central Tajikistan in 1992-1993. Covering more than 1.5 million ha and ranging from 1,700 to 7,000 m, it includes high mountain desert, mountain

ridges, rivers, forests, lakes, cliffs, and glaciers. The park supports rare and endemic species, including those typical of the Tibetan plateau, such as Tibetan snowcock (*Tetraogallus tibetanus*) and Tibetan sandgrouse (*Syrrhaptes tibetana*). Snow leopards and Tien Shan brown bear roam here. Shirkensky National Park is located on the southern slopes of the Gissar Mountains.

The existing protected area system provides some coverage of representative ecosystems and ecoregions, although many protected areas are too small to protect species with large home ranges or migratory species effectively.

The status of protected areas is tenuous. Since independence, individual protected areas have operated with vastly reduced budgets and staffing. They have little working equipment, transportation, or communications. Staff have suffered from low and irregular salary payments and are generally demoralized. Unable to properly patrol their areas, there has been a corresponding rise in illegal cutting of timber, hunting, and incidents of man made fires. Staff spend much of their time in other activities to provide food for their families, and this includes the selling of seedlings and timber and food production within the protected areas. It will require considerable commitment and investment to reverse the downward spiral of degradation engendered through the past ten or more years of neglect.

B. Agriculture

Agricultural and pastoral lands constitute less than one-third of Tajikistan's territory. A combination of inappropriate agricultural practices, economic difficulties, armed hostilities, and a growing population have degraded the rich land resource of the Tajikistan in recent years. Large scale application of pesticides between 1960 and 1990 resulted in high levels of soil contamination, with up to 20 times the maximum allowable concentrations of DDT.

Erosion processes are intensive. Pastures, which are the main component of agricultural lands, are exposed to excessive exploitation, and the period of their natural rehabilitation is much slower than their rate of exploitation. This fact is exacerbated by the low natural productivity of pastures, their limited extent, and over grazing. The territory of Pamir is experiencing a serious problem of land degradation. Increasing populations led to high livestock levels, which, although reduced in recent years, still exceed pastoral carrying capacity. The Pamir region is noted for its extremely severe climatic conditions. It occupies 45 percent of the whole territory of the Tajikistan. More than 95 percent of agricultural lands on Pamir are pastures (773,000 ha), and pressure on alpine ecosystems is severe. For the last 5 to 8 years, reduction of fuel imports (coal) has led to increased cutting of trees and shrubs for fuel. The loss of traditional grazing systems has increased pressure leading to degradation and desertification of pastures.

Poor irrigation systems have led to significant water losses during transport, as well increased soil erosion. In the Yavan valley, more than 6,000 ha. of irrigated lands have been affected by gully erosion, resulting in increased runoff, which in turn increases erosion and limits soil absorption. As a result, soil productivity has decreased and salinization is evident. In the north of the country, mud deserts have formed ("takirs"), and it is practically impossible to rehabilitate these areas. The water consumption out of river Vakhsh for irrigation purposes has led to disappearance of spring-summer floods in the nature reservation "Tigrovaia Balka." As a result,

ground water levels dropped 3 to 4 meters, leading to soil and vegetation degradation and increasing susceptibility to damaging fires.

Besides the pressure of agricultural activity, many factors are causing soil degradation processes and decrease of land productivity. Forest cutting is one of the factors influencing the state of lands. Alpine forest-cutting leads to increased erosion of soils. Forest is the reliable defender of soils from weathering. As a result of lack of fuel, the cutting processes are intensive at the present time.

Cultivated lands cover 1.2 million ha, mostly for irrigated agriculture. Erosion due to lack of appropriate soil conservation practices is a major problem. There is some salinization due to poor irrigation methods. On the other hand, pesticide and other input use has declined, along with problems of run-off and pollution.

The total pasture area in Kyrgyzstan is estimated at some 8.8 million ha. Overgrazing has resulted in a steady decline in the productivity of pastures, most dramatically for lower altitude winter pastures, where plant diversity has declined with the encroachment of woody weeds. This has affected has affected some 5 million ha.

C. Forests

The forests of Tajikistan cover only approximately 1.5 percent of the land area of the country and include several categories of protection, from forest reserves to national parks. However, forestlands are under severe threat. Deforestation, forest fires, collection of wild fruit trees, and commercial development of mountain forests have led to the disruption of natural regeneration, reductions in the number of useful insects, and declines in other species of animals and plants. Reduction in forest cover has resulted in soil erosion, devastation of mountain slopes, and an increasing occurrence of landslides.

A hundred years ago, forest areas covered 16 to 18 percent of the territory of Tajikistan. Considerable forest areas have been cleared for agriculture and mining. Forests have subsequently been subject to continuously intense pressure, which has increased dramatically in recent years. Today only about 1.5 percent of the country remains forested. Unique tugai woodlands, formerly widespread in river valleys and occupying 4.9 percent of the country's forests, have almost disappeared and now constitute less than 0.6 percent of the total forest area. Three factors have contributed to the reduction in tugai forests: fires, clearing for agriculture, and the use of water for irrigation. Recently, due to armed hostilities in the south of the country, water consumption for irrigation has decreased as well as the rate of deforestation. However, the fires of natural and manmade origin are not a favorable factor for forest increase. The valuable pistachio forests were cut for the exemption of sites under the vineyard plantations, many of which are abandoned at the present time. The reduction of fuel imports (gas from Uzbekistan, coal from Russia) caused illegal forest cutting alongside the populated districts, including settlements. Degradation of rare forests and shrubs in Pamir is primarily due to excessive pasture exploitation and lack of coal. Alpine forests and shrubs are particularly vulnerable to destruction. A trend of deforestation will likely continue well into the next millennium if forest conservation and forest planting is not considered as one of the major environmental priorities for Tajikistan.

SECTION IV

Strategy and Policy Framework

Tajikistan has not developed a National Environmental Action Plan (NEAP). In 1998, a national State of the Environment report was produced. Tajikistan ratified the Convention on Biological Diversity in March 1997. The main strategy document for biodiversity conservation will be the National Strategy and Action Plan on Conservation and Sustainable Use of Biodiversity (NBSAP). An interim working group to develop the NBSAP has just been created, attached to the Ministry of Nature Protection. This group comprises a wide range of experts on biodiversity, economics, law and natural sciences.

A. Institutional Framework

The principal government body responsible for biodiversity conservation is the Ministry of Nature Protection (MNP). The Ministry includes municipal and regional committees. The MNP is responsible for, inter alia:

- Developing the legal and strategic basis for protection of the environment
- Ensuring conservation and balanced use of biodiversity
- Approving fees and taxes for utilization of natural and biological resources
- Preventing violations of legislation concerning environment
- Developing system of protected natural territories

The state forest authority “Tajikles” is the main organization responsible for forest issues. However, it simultaneously performs the functions of forest management and protection, afforestation, and timber and other forest product exploitation, as well as the development and implementation of forest policy and legislation. It has authority over almost all nature reserves, since these are mostly on forested lands.

Other government institutions with a role in biodiversity conservation include:

- National Academy of Sciences, including the Institutes of Zoology, Botany and Forest Economics
- Ministry of Public Health
- Ministry of Agriculture
- Ministry on Emergency Situations
- The Chief Geological Management
- The State Statistic Agency

B. NGOs

Currently about 30 ecological non-governmental organizations are registered in Tajikistan. Their principal activities include ecological awareness and education, information generation and

dissemination, research and scientific studies related to biodiversity, and protected area development. There is relatively well-developed NGO network concerned with biodiversity conservation, working primarily around protected areas.

The role of NGOs in environmental education and awareness raising is paramount as they carry out activities in different regions of the country and thus have the potential to interact with local communities. Among such organizations are Youth Ecological Center in Dushanbe, Kuhiston fund, and the Forestry and Wildlife Association.

C. Legislative Framework

The Constitution of the Republic of Tajikistan adopted in November 1994 guarantees the right of citizens to a healthy environment.

Current legislation includes laws, decrees of the President authorized as law and other standard acts of the Government, departmental and other legislative acts, international and regional obligations of the Republic of Tajikistan.

Since independence, the following legislative acts have been adopted to regulate environmental protection and identify compensatory measures for the damage caused to biodiversity:

- Forest Code of the Republic of Tajikistan (1994)
- Water Resource Code of the Republic of Tajikistan (1993)
- Law “On protection of the air” (1996)
- Law “On underground resources” (1994)
- Law “On protection and use of the animal world” (1994)
- Law “On State Sanitary Supervision” (1994)
- Law “On Special Protected Natural Territories” (1996)
- Law “On the protection of nature” (1993)
- Law “On protection of animal and plant resources” (1996)

The fundamental law “On protection of nature” sets out the legal, economic and social principles of environment protection for the benefit of present and future generations. It calls for the assurance of ecological safety, including the prevention of harmful impact on the country’s ecology as a result of economic and other activities.

New legislation governing economic and other activities in Tajikistan that affects natural resources must adhere to the law “On protection of the nature.”

The laws “On protection of animal and plant resources,” “On Special Protected Natural Territories,” and “Forest Code” are closely linked to the conservation of biodiversity.

Although the Convention of Biological Diversity does not conflict with current laws, the implementation of its separate provisions requires the creation of an appropriate regulatory framework.

SECTION V

Recommendations

1. The protected areas system in Tajikistan provides good coverage of the country's ecosystems on paper, but management capacity remains low. The Schedule of development and accommodation of Special Protected Natural Territories developed in 1990-1997 needs a radical revision to allow for the new social, economic, and ecological situation.
2. Despite an adequate environmental legislation on paper, the capacity and willingness to enforce laws is extremely low, resulting in frequent violations. Knowledge of laws among local populations is very low. It is unlikely that capacity will increase in the near term as economic conditions continue to deteriorate. Thus, incentive-based systems, based on a local consultative process, need to be explored.
3. As a result of civil conflict, many protected areas and forests have been occupied and degraded by armed forces. Game species have been decimated, and extirpated from certain areas. As it becomes feasible from a security perspective, short- and long-term efforts are needed to rehabilitate these areas, preferably by involving local populations. International funds will be required, given the government's resource deficit. This is justified, given the global importance of these reserves, but there needs to be an indication that rehabilitation measures will lead to effective and long-term protection. There needs to be commitment at the highest levels.

SECTION VI

USAID Programs in Tajikistan

Due to political instability and security issues, USAID's program has focused on humanitarian assistance, with some support to civil society and NGO development through small grants and training. Since some of the strongest NGOs are environmental, they should be a continued target of assistance, especially given the difficulty of launching technical assistance projects in Tajikistan. NGOs can support and move forward biodiversity conservation objectives in Tajikistan in several areas:

1. Collecting, analyzing and disseminating information on the status of biodiversity, current threats and actions needed to improve conservation. Support to improved information sharing and communications, linkages with NGOs and research organizations in the Central Asia and elsewhere. Newsletters, internet linkages, and computer support could be included here.
2. Environmental education targeted at schools and youth groups. This could include support to the creation and development of nature clubs, education materials development, and curriculum development.
3. Community-based initiatives for improved natural resources management and biodiversity conservation. These should be based on promising areas where local populations have demonstrated concern and willingness to be involved in local initiatives, and should be able to demonstrate direct economic benefits as a result of improved management. This could include support to alternatives to destructive practices or improved practices (sustainable grazing and forestry, development of non-timber forest products, improved agriculture on rehabilitated hillsides).

These activities are each rather different and require different skills and approaches. Many NGOs are based on academic expertise and are more suitable for the first area mentioned above, but there is a need to develop community-NGO partnerships to implement local initiatives, with support from local government and traditional authorities, such as neighborhood associations (mahalla) and ethnic communities.

Under the upcoming CAR Environment and Energy project, targeted activities could include:

1. Increase awareness and understanding of policy makers and technical managers of the benefits of an integrated natural resource management approach that emphasizes linkages and sustainability. As part of the proposed training for increased management capacity (illustrative activity (I.A.) #1), incorporate ecological principles into technical approaches. For example, this could include the role and importance of catchment forests in maintaining water quality and supply, the importance of vegetation in maintaining hydrological regimes, and the role of biodiversity in maintaining soil fertility. Since many of these issues are transboundary in nature, regional training, and cooperation will be advantageous.

2. Develop integrated wetland management initiatives that promote the sustainability of ecological functions such as the continued provision of ecological goods and services, including biodiversity conservation (I.A. #8). Community-based projects that promote sustainable management can provide opportunities to develop regional and local partnerships between communities, local government, and private sector interests. Specific activities could include improved management of riparian vegetation for pasture and haymaking, as well as reeds for local construction and water quality improvement.
3. Promote the prevention and rehabilitation of salinized soil through improved vegetation management and conservation, ecological improved irrigation, and better wetland conservation and management (I.A. #9). This provides another opportunity to develop local partnerships based on community-led initiatives.
4. Consider the development of small hydroelectric schemes and renewable energy sources to relieve pressure on destruction of forests for fuelwood. Despite Tajikistan's huge hydroelectric potential, most investment is in large schemes, and many households remain without energy.

Sections 117 and 119 of the Foreign Assistance Act

44 Foreign Assistance Act of 1961 (P.L. 87-195) Sec. 117

Sec. 117.⁶⁸ Assistance for Disadvantaged South Africans.—

* * * [Repealed—1993]

Sec. 117.⁶⁸ Environment and Natural Resources.—(a) The Congress finds that if current trends in the degradation of natural resources in developing countries continue, they will severely undermine the best efforts to meet basic human needs, to achieve sustained economic growth, and to prevent international tension and conflict. The Congress also finds that the world faces enormous, urgent, and complex problems, with respect to natural resources, which require new forms of cooperation between the United States and developing countries to prevent such problems from becoming unmanageable. It is, therefore, in the economic and security interests of the United States to provide leadership both in thoroughly reassessing policies relating to natural resources and the environment, and in cooperating extensively with developing countries in order to achieve environmentally sound development.

(b) In order to address the serious problems described in subsection (a), the President is authorized to furnish assistance under this part for developing and strengthening the capacity of developing countries to protect and manage their environment and natural resources. Special efforts shall be made to maintain and where possible to restore the land, vegetation, water, wildlife, and other resources upon which depend economic growth and human well-being, especially of the poor.

(c)(1) The President, in implementing programs and fully under this chapter and chapter 10 of this part, shall take fully

⁶⁸ Formerly at 22 U.S.C. 2151a. Sec. 117 was repealed by sec. 4(e)(3)(D) of the South African Democratic Transition Support Act of 1993 (Public Law 103-149; 107 Stat. 1506). It had been added originally by sec. 20(f) of Public Law 99-470 (100 Stat. 1064). Sec. 117 provided assistance for disadvantaged South Africans through South African non-governmental organizations, such as the Educational Opportunities Council, the South African Institute of Race Relations, REAID, professional teachers unions, Church Program of the University of the Western Cape, the National Council for the Blind, SACHED, UTP Trust, TOPS, the Willingruit Fellowship Center (WFC), and civic and other organizations working at the community level which did not receive funds from the Government of South Africa.

A previous version of sec. 117, "Infant Nutrition", was repealed in 1979.

⁶⁹ 22 U.S.C. 2151p. Sec. 117 was redesignated 117. See sec. 301(2) of Public Law 99-529 (100 Stat. 99-529, resulting in the creation of that section, which dealt with tropical forests, and then sec. 301(3). Public Law 99-239 added a new section 118 entitled "Tropical Forests". This section, as added by sec. 113 of Public Law 95-56 (91 Stat. 537) and amended by sec. 110 of Public Law 95-424 (92 Stat. 946) and sec. 122 of Public Law 95-53 (93 Stat. 946), "Cooperation Act of 1981 (Public Law 97-113; 96 Stat. 101-513); 104 Stat. 2026), added a new chapter 10 of this Act, under this part for developing and strengthening the capacity of less developed countries to protect and manage their environment and natural resources. Special efforts shall be made to maintain and where possible restore the land, vegetation, water, wildlife, and other resources upon which depend economic growth and human well-being, especially that of the poor.

⁷⁰ In carrying out programs under this chapter, the President shall take into consideration the environmental consequences of development activities.

See also sec. 1990 (Public Law 101-167; 103 Stat. 1228), as amended, relating to "Global Warming Initiative".

See also sec. 533 of the Foreign Operations, Export Financing, and Related Programs Appropriations Act, 1991 (Public Law 101-513; 104 Stat. 2013), as amended, relating to "Environment and Global Warming".

See also sec. 532 of the Foreign Operations, Export Financing, and Related Programs Appropriations Act, 1992 (Public Law 102-166; 105 Stat. 1566), relating to "Environment".

See also sec. 532 of the Foreign Operations, Export Financing, and Related Programs Appropriations Act, 1991 (Public Law 101-513; 104 Stat. 2026), added a new chapter 10 to part 1 of this Act,

45 Foreign Assistance Act of 1961 (P.L. 87-195) Sec. 119

to account the impact of such programs and projects upon the environment and natural resources of developing countries. Subject to such procedures as the President considers appropriate, the President shall require all agencies and officials responsible for programs or projects under this chapter—

(A) to prepare and take fully into account an environmental impact statement for any program or project under this chapter significantly affecting the environment of the global commons outside the jurisdiction of any country, the environment of the United States, or other aspects of the environment which the President may specify; and

(B) to prepare and take fully into account an environmental assessment of any proposed program or project under this chapter significantly affecting the environment of any foreign country.

Such agencies and officials should, where appropriate, use local technical resources in preparing environmental impact statements and environmental assessments pursuant to this subsection.

(2) The President may establish exceptions from the requirements of this subsection for emergency conditions and for cases in which compliance with those requirements would be seriously detrimental to the foreign policy interests of the United States.

Sec. 118.⁷¹ Tropical Forests.

(a) IMPORTANCE OF FORESTS AND TREES COVER.—In enacting section 103(b)(3) of this Act the Congress recognized the importance of forests and tree cover to the developing countries. The Congress is particularly concerned about the continuing and accelerating alteration, destruction, and loss of tropical forests in developing countries, which pose a serious threat to development and the environment. Tropical forest destruction and loss—

(1) result in shortages of wood, especially wood for fuel; loss of biologically productive wetlands; siltation of lakes, reservoirs, and irrigation systems; floods; destruction of indigenous peoples; extinction of plant and animal species; reduced capacity for food production; and loss of genetic resources; and

(2) can result in desertification and destabilization of the earth's climate.

Properly managed tropical forests provide a sustained flow of resources essential to the economic growth of developing countries, as well as genetic resources of value to developed and developing countries alike.

(b) PRIORITIES.—The concerns expressed in subsection (a) and the recommendations of the United States Interagency Task Force on Tropical Forests shall be given high priority by the President—

(1) in formulating and carrying out programs and policies with respect to developing countries, including those relating to bilateral and multilateral assistance and those relating to private sector activities; and

providing for long-term development in sub-Saharan Africa, and made a conforming amendment to section 103(b)(3) of this Act.

⁷¹ 22 U.S.C. 2151p-1. Sec. 118 was added by sec. 301(3) of Public Law 99-529 (100 Stat. 3014). See also footnote 68.

will prevent forest destruction, loss, or degradation, including research in agroforestry, sustainable management of natural forests, small-scale farms and gardens, small-scale animal husbandry, wider application of adopted traditional practices, and suitable crops and crop combinations.

(10) To the fullest extent feasible, conserve biological diversity in forest areas by—

(A) supporting and cooperating with United States Government agencies, other donors (both bilateral and multilateral), and other appropriate governmental, intergovernmental, and nongovernmental organizations in efforts to identify, establish, and maintain a representative network of protected tropical forest ecosystems on a worldwide basis;

(B) whenever appropriate, making the establishment of protected areas a condition of support for activities involving forest clearance of degradation; and

(C) helping developing countries identify tropical forest ecosystems and species in need of protection and establish and maintain appropriate protected areas.

(11) To the fullest extent feasible, engage in efforts to increase the awareness of United States Government agencies and other donors, both bilateral and multilateral, of the immediate and long-term value of tropical forests.

(12) To the fullest extent feasible, utilize the resources and abilities of all relevant United States Government agencies.

(13) Require that any program or project under this chapter significantly affecting tropical forests (including projects involving the planting of exotic plant species)—

(A) be based upon careful analysis of the alternatives available to achieve the best sustainable use of the land, and

(B) take full account of the environmental impacts of the proposed activities on biological diversity,

as provided for in the environmental procedures of the Agency for International Development.

(14) Deny assistance under this chapter for—

(A) the procurement or use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner which minimizes forest destruction and that the proposed activity will produce positive economic benefits and sustainable forest management systems; and

(B) actions which significantly degrade national parks or similar protected areas which contain tropical forests or introduce exotic plants or animals into such areas.

(15) Deny assistance under this chapter for the following activities unless an environmental assessment indicates that the proposed activity will contribute significantly and directly to improving the livelihood of the rural poor and will be conducted in an environmentally sound manner which supports sustainable development:

(2) In seeking opportunities to coordinate public and private development and investment activities which affect forests in developing countries.

(c) ASSISTANCE TO DEVELOPING COUNTRIES.—In providing assistance to developing countries, the President shall do the following:

(1) Place a high priority on conservation and sustainable management of tropical forests.

(2) To the fullest extent feasible, engage in dialogues and exchanges of information with recipient countries—

(A) which stress the importance of conserving and sustainably managing forest resources for the long-term economic benefit of those countries, as well as the irreversible losses associated with forest destruction, and

(B) which identify and focus on policies of those countries which directly or indirectly contribute to deforestation.

(3) To the fullest extent feasible, support projects and activities—

(A) which offer employment and income alternatives to those who otherwise would cause destruction and loss of forests, and

(B) which help developing countries identify and implement alternatives to colonizing forested areas.

(4) To the fullest extent feasible, support training programs, educational efforts, and the establishment or strengthening of institutions which increase the capacity of developing countries to formulate forest policies, engage in relevant land-use planning, and otherwise improve the management of their forests.

(5) To the fullest extent feasible, help end destructive slash-and-burn agriculture by supporting stable and productive

farming practices in areas already cleared or degraded and on lands which inevitably will be settled, with special emphasis on demonstrating the feasibility of agroforestry and other techniques which use technologies and methods suited to the local environment and traditional agricultural techniques and

ensure close consultation with and involvement of local people.

(6) To the fullest extent feasible, help conserve forests, which have not yet been degraded, by helping to increase production on lands already cleared or degraded through support of reforestation, fuelwood, and other sustainable forestry projects and practices, making sure that local people are involved at all stages of project design and implementation.

(7) To the fullest extent feasible, support projects and other activities to conserve forested watersheds and rehabilitate those which have been deforested, making sure that local people are involved at all stages of project design and implementation.

(8) To the fullest extent feasible, support training, research, and other actions which lead to sustainable and more environmentally sound practices for timber harvesting, removal, and processing, including reforestation, soil conservation, and other activities to rehabilitate degraded forest lands.

(9) To the fullest extent feasible, support research to expand knowledge of tropical forests and identify alternatives which

plant conservation programs. Special efforts should be made to establish and maintain wildlife sanctuaries, reserves, and parks; to enact and enforce anti-poaching measures; and to identify, study, and catalog animal and plant species, especially in tropical environments.

(C) ⁷⁶ FUNDING LEVEL.—For fiscal year 1987, not less than \$2,500,000 of the funds available to carry out this part (excluding funds made available to carry out section 104(c)(2), relating to the Child Survival Fund) shall be allocated for assistance pursuant to subsection (b) for activities which were not funded prior to fiscal year 1987. In addition, the Agency for International Development shall, to the fullest extent possible, continue and increase assistance pursuant to subsection (b) for activities for which assistance was provided in fiscal years prior to fiscal year 1987.

(d) ⁷⁶ COUNTRY ANALYSIS REQUIREMENTS.—Each country development strategy statement or other country plan prepared by the Agency for International Development shall include an analysis of—

(1) the actions necessary in that country to conserve biological diversity; and

(2) the extent to which the actions proposed for support by the Agency meet the needs thus identified.

(e) ⁷⁶ LOCAL INVOLVEMENT.—To the fullest extent possible, projects supported under this section shall include close consultation with and involvement of local people at all stages of design and implementation.

(f) ⁷⁶ PVOs AND OTHER NONGOVERNMENTAL ORGANIZATIONS.—Whenever feasible, the objectives of this section shall be accomplished through projects managed by appropriate private and voluntary organizations, or international, regional, or national nongovernmental organizations, which are active in the region or country where the project is located.

(g) ⁷⁶ ACTIONS BY AID.—The Administrator of the Agency for International Development shall—

(1) cooperate with appropriate international organizations, both governmental and nongovernmental;

(2) look to the World Conservation Strategy as an overall guide for actions to conserve biological diversity;

(3) engage in dialogues and exchanges of information with recipient countries which stress the importance of conserving biological diversity for the long-term economic benefit of those countries and which identify and focus on policies of those countries which directly or indirectly contribute to loss of biological diversity;

(4) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity;

(5) whenever possible, enter into long-term agreements in which the recipient country agrees to protect ecosystems or other wildlife habitats recommended for protection by relevant governmental or nongovernmental organizations or as a result of activities undertaken pursuant to paragraph (6), and the

⁷⁶ Para. (c) through (h) were added by sec. 302 of Public Law 99-529 (100 Stat. 3017)

(A) Activities which would result in the conversion of forest lands to the rearing of livestock.

(B) The construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undegraded forest lands.

(C) The colonization of forest lands.

(D) The construction of dams or other water control structures which flood relatively undegraded forest lands.

(d) PVOs AND OTHER NONGOVERNMENTAL ORGANIZATIONS.—Whenever feasible, the President shall accomplish the objectives of this section through projects managed by private and voluntary organizations or international, regional, or national nongovernmental organizations which are active in the region or country where the project is located.

(e) COUNTRY ANALYSIS REQUIREMENTS.—Each country development strategy statement or other country plan prepared by the Agency for International Development shall include an analysis of—

(1) the actions necessary in that country to achieve conservation and sustainable management of tropical forests, and

(2) the extent to which the actions proposed for support by the Agency meet the needs thus identified.

(f) ANNUAL REPORT.—Each annual report required by section 634(a) of this Act shall include a report on the implementation of this section.

Sec. 119. ⁷² Renewable and Unconventional Energy Technologies. * * * [Repealed—1980]

Sec. 119. ⁷² Endangered Species.—(a) ⁷⁴ The Congress finds the survival of many animal and plant species is endangered by overhunting, by the presence of toxic chemicals in water, air and soil, and by the destruction of habitats. The Congress further finds that the extinction of animal and plant species is an irreparable loss with potentially serious environmental and economic consequences for developing and developed countries alike. Accordingly, the preservation of animal and plant species through the regulation of the hunting and trade in endangered species, through limitations on the pollution of natural ecosystems, and through the protection of wildlife habitats should be an important objective of the United States development assistance.

(b) ⁷⁴ In order to preserve biological diversity, the President is authorized to furnish assistance under this part, notwithstanding section 660, ⁷⁶ to assist countries in protecting and maintaining wildlife habitats and in developing sound wildlife management and

⁷² Sec. 119, as added by Public Law 95-58 (91 Stat. 528), amended by sec. 111 of the International Development and Food Assistance Act of 1974 (92 Stat. 948), and by sec. 107 of the International Development Cooperation Act of 1979 (93 Stat. 382), was repealed by sec. 51 of the International Security and Development Corporation Act of 1980 (Public Law 96-53; 94 Stat. 3147). See sec. 106 of this Act for text concerning energy technologies.

⁷⁴ Sec. 119(a) and (b) were added by sec. 702 of the International Environment Protection Act of 1983 (Title VII of the Department of State Authorization Act, Fiscal Years 1984 and 1985, Public Law 98-184; 97 Stat. 1045).

⁷⁶ Section 634(a)(A) of the Foreign Operations, Export Financing, and Related Programs Appropriations Act, 1980 (Public Law 101-167; 103 Stat. 1227), added "notwithstanding section 660" at this point.

United States agrees to provide, subject to obtaining the necessary appropriations, additional assistance necessary for the establishment and maintenance of such protected areas:

(6) support, as necessary and in cooperation with the appropriate governmental and nongovernmental organizations, efforts to identify and survey ecosystems in recipient countries worthy of protection;

(7) cooperate with and support the relevant efforts of other agencies of the United States Government, including the United States Fish and Wildlife Service, the National Park Service, the Forest Service, and the Peace Corps;

(8) review the Agency's environmental regulations and revise them as necessary to ensure that ongoing and proposed actions by the Agency do not inadvertently endanger wildlife species or their critical habitats, harm protected areas, or have other adverse impacts on biological diversity (and shall report to the Congress within a year after the date of enactment of this paragraph on the actions taken pursuant to this paragraph);

(9) ensure that environmental profiles sponsored by the Agency include information needed for conservation of biological diversity; and

(10) deny any direct or indirect assistance under this chapter for actions which significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas.

(h) ⁷⁶ ANNUAL REPORTS.—Each annual report required by section 634(a) of this Act shall include, in a separate volume, a report on the implementation of this section.

ANNEX B

Scope of Work

Country Biodiversity Assessments Central Asia

I. Objective:

To conduct country-wide assessments of biodiversity resources and their status for the purposes of complying with sections 117 and 119 of the Foreign Assistance of 1961, Agency guidance on country strategy development, and USAID Environmental Procedures described in Title 22 CFR, Section 216.

II. Background:

A. Policies Governing Environmental Procedures

The Foreign Assistance Act (FAA) of 1961, Sec. 498C states that funds made available for assistance to the New Independent States (NIS) shall be subject to the provisions of Section 117 relating to Environment and Natural Resources (FAA Sec. 498C, footnote e). Section 117 requires that the President take fully into account the impact of foreign assistance programs and projects on environment and natural resources (Sec 117 (c)(1)). Current USAID Legislation which guides environmental impact and monitoring is Title 22 of the Code of Federal Regulations, Part 216 (“Reg. 216”). In complying with the law, USAID provides its Environmental Procedures under ADS 204.5 to ensure accordance with the requirements of Title 22 CFR 216.

Section 119 of the FAA relates to Endangered Species. It states that “the preservation of animal and plant species through the regulation of the hunting and trade in endangered species, through limitations on the pollution of natural ecosystems and through the protection of wildlife habits should be an important objective of the United States development assistance (FAA, Sec. 119 (a)).” Furthermore it states that “Each country development strategy statement or other country plan prepared by the Agency for International Development shall include an analysis of (1) the actions necessary in that country to conserve biological diversity and (2) the extent to which the actions proposed for support by the Agency meet the needs thus identified (FAA, Sec. 119(d)).”

For USAID Missions to be in compliance with the above, and for USAID Missions to effectively determine impact on natural resources and endangered species and incorporate mitigation measures in their programs, a biodiversity assessment is needed to inform Mission planning. The purpose of this Task Order is to provide the USAID/CAR Regional Mission in Central Asia with this critical information.

B. Overview on USAID Programs in Central Asia

The USAID Regional Mission for Central Asia (USAID/CAR) manages U.S. assistance in five newly independent states of Kazakhstan, Turkmenistan, Kyrgyzstan, Tajikistan and Uzbekistan. USAID's assistance focuses on the economic, political, social, and environmental aspects of the transition process to more open, free market, democratic societies. Kazakhstan and Kyrgyzstan have full range of U.S. assistance. In Uzbekistan and Turkmenistan, the range of assistance is more limited by the pace of reform. In Tajikistan, USAID assistance primarily supports the reconciliation process after a civil war. Training, partnerships, and technical assistance are essential elements of all USAID/CAR programs. USAID/CAR provides considerable technical expertise through a network of specialized contractor and grantee partners.

Summary of Energy and Environmental Initiatives

The majority of USAID's work in the energy and environment sectors in Central Asia is regional rather than country-specific. This is because many of the energy and environmental challenges defy resolution at the national level -- the associated problems cross national boundaries. Consider, for example, the relationship electricity and water: most of the major hydro-electric dams are in one country, the primary electricity dispatch center is in another, the power purchaser may be in third, agricultural irrigation takes place in a fourth and a fifth nation, and chief river routes thread through all five of the Central Asian countries of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. Energy, water and environmental officials throughout the region face many of the same problems as they look to market-based solutions for answers.

USAID's energy sector objective has been to establish a more economically sound and environmentally sustainable energy system as an engine of regional economic growth. Energy, covers oil and gas, as well as electricity. Patterns of energy sector investment and energy use in Central Asia will significantly influence the future political and economic independence of the region from Russia. If used strategically, these investment and use patterns could hasten Central Asia's emergence as a major petroleum producer in the 21st century - - rivaling the Gulf region in its importance as an internal oil and gas market.

In the broader environment sector, USAID seeks to reduce regional economic and political tensions generated by transboundary environmental issues. These include the many aspects of sustainable water management in the Aral Sea Basin, environmental protection of the Caspian Sea, and reductions in pollution which contribute to global climate change.

Kazakhstan

Resource-rich Kazakhstan, with vast reserves of oil, gas and minerals, stretches from Mongolia to the Caspian Sea yet has a population of merely 16.5 million. Kazakhstan is the most politically and economically stable republic within Central Asia. Although traditionally a nomadic culture, Soviet policies led to a sedentary population that is more ethnically diverse and urban. Since gaining independence in 1991, President Nursultan Nazarbayev has been this constitutional

republic's central political figure. Power is centralized within the presidency, although there is a Cabinet of Ministers and a Parliament. Nazarbayev recently relocated the capital to the northern city of Astana (formerly known as Aqmola) even though Almaty remains the cultural and economic center of the country.

In Kazakhstan, USAID promotes the integrated development and economically efficient operation of regional electric power systems, assists the Ministry of Oil and Gas and the state energy companies in oil and gas investment issues, supports region-wide cooperation in sustainable water resource management, and works to improve the capability for environmental management in both pollution mitigation and global climate change areas.

Kyrgyzstan

The small mountainous Kyrgyz Republic situated just south of Kazakhstan hosts the alpine grandeur of the Tien Shan Mountains and the serenity of Issyl-Kul, an inland sea nested between two mountain ranges. Much of the country was closed to foreigners during Soviet times due to the top-secret mining and weapons development facilities located here. Since the declaration of independence in December 1991, Kyrgyzstan has been working closely with international donors and making steady progress in political, social and economic reforms.

USAID support for economic transition initially focused on short-term and later stabilization measures designed to help bring government spending and inflation under control, shifted its focus to key structural reforms. This has included support for privatization of small- and medium-sized enterprises, establishment of financial markets, banking reform, fiscal reform, and development of an appropriate legal infrastructure for commercial activities. In 1998, with significant USAID technical assistance, Kyrgyzstan became the first Central Asian country to accede to the World Trade Organization.

In Kyrgyzstan, USAID promotes the integrated development and economically efficient operation of regional and national electric power systems, supports region-wide cooperation in sustainable water resource management, and works to improve capability for environmental management.

Tajikistan

Although Tajikistan achieved independence in 1991 with the break-up of the Soviet Union, independence brought widespread civil war to the nation. Tajikistan is the sole country among the five Central Asian states where underlying ethnic, regional, economic, and ideological strife led to civil conflict and caused major population displacements. Civil war broke out between rival clans in 1992 – 1993 and continued intermittently even after formal Peace Accords were signed in Moscow in June 1997.

Civil unrest by rival factions, however, continues to pose a challenge to continuing peace in the republic. Geographic isolation, dependence on food and industrial suppliers from beyond its borders, the elimination of most subsidies from Moscow, and the collapse of former trading

relationships have all combined to create instability, with implications for other states in the region.

Currently U.S. government assistance in Tajikistan focuses primarily on humanitarian assistance and promotion of the peace process. Opportunities for longer-term impact are also made when appropriate. Much of the international assistance to Tajikistan has been carried out through U.N. humanitarian programs, other U.N. agencies, the International Red Cross and other international and American PVOs.

The ultimate challenge in Tajikistan for any development program is to resolve the current security situation. Until this issue is resolved, any progress towards the mission's objectives will be limited.

Turkmenistan

A primarily desert country, Turkmenistan borders the Caspian Sea and has substantial oil and gas reserves. However, getting the oil and gas to market remains a significant obstacle. President Saparmund Niyazov is the highly visible authoritarian leader of Turkmenistan. Even though the constitution provides for a balance of powers, the legislative and judicial branches are in effect powerless. Since gaining independence in 1991, the government has resisted introducing political and economic reforms. As Turkmenistan has not experienced a sharp decline in living standards, the government has had little incentive to undertake the economic reforms necessary to become a market economy.

The USAID portfolio in Turkmenistan focuses on mutually agreed upon activities, wherein the Mission can introduce and implement reforms as well as improve the investment environment for local and international businesses. Specific programs in budgetary reform, trade and investment are currently in operation, as is support for energy sector, with an emphasis on gas and oil. In health programs, USAID introduced modern clinical services, including reproductive health and disease surveillance, and facilitates a medical partnership program. USAID also supports fledgling NGOs and community-based organizations in an effort to promote citizen involvement in civic life. Technical training is designed to support the specific activities in which USAID is involved.

Uzbekistan

Uzbekistan, which borders all four other Central Asian republics, boasts many of the historical and architectural highlights of the region. The country has the most diverse economic resources in the region, including agriculture, mining and industry. Officially, Uzbekistan is a secular, democratic presidential republic with a President, cabinet of Ministers and a legislative body.

The USAID portfolio in Uzbekistan focuses on economic, democratic, and social aspects of the transition process, as well as the environment and energy sectors. From a USAID perspective, the goal in Uzbekistan is to engage reform-minded elements in the government and assist as requested in the establishment of the basic building blocks of a market-oriented economic system. Assistance for the market transition involves support of tax reform, budget reform, bank

reform, accounting conversion and development of a strong, open and transparent investment climate.

Energy and environment initiatives support specific programs in privatization and development of energy and water resource policies which foster international trade and investment, reduce regional tensions, and increase social stability and environmental sustainability.

III. Statement of Work

The Contractor shall perform the following activities:

- a) Hold meetings with the Bureau Environmental Officer (BEO) of USAID's EE Bureau in Washington and the EE Desk Officer and other suggested by the Desk Officer to ensure full understanding of EE's program in Central Asia, USAID environmental procedures and purpose of this assignment. These discussion should include any policy decisions and approaches which the BEO and Agency Environmental Advisor are taking as per their authority under Reg. 216, which may not be explicit in general legal documentation. The Contractor should also meet with a representative of EE's energy division familiar with the CAR program as well as with a representative of the Bureau's democracy and governance office to cover to civil society-related issues. The Contractor should also include meetings with relevant World Bank officials and with appropriate international conversation NGOs.
- b) The Contractor should review materials provided by USAID to become familiar with the internationally-funded Caspian Environment Program and especially the activities of its regional thematic centers whose work affects bio-resources in Kazakhstan and Turkmenistan. These are existing host-country institutions, each of which have been provided funding to summarize current understanding of an important Caspian Sea environmental issue. These include sea-level rise (Almaty), desertification around the Caspian (Turkmenistan), biodiversity (Almaty), and commercial bio-resources (Astrakhan, Russia).
- c) Field a team to conduct an overview and general analysis of each country's biodiversity and its current status. The documentation should include description of:
 - Major ecosystem types highlighting important, unique aspects of the country's biodiversity, including important endemic species and their habitats.
 - Natural areas of particular importance to biodiversity conservation, such as key wetlands, remaining old-growth or coastal areas critical for species reproduction, feeding or migration, if relevant.
 - Plant and animal species which are endangered or threatened with extinction. Endangered species of particular social, economic or environmental importance (such as the Caspian seal)

should be highlighted and described, as should their habitats. An updated list, such as the IUCN red list should be included as an annex.

- Current and potential future threats to biodiversity including a general assessment of overall health of ecosystems and major factors affecting ecosystem health such as land use, pests, and/or contamination, etc. or major institutional or policy failures or transboundary issues as appropriate. Special attention should be given to the potential impacts from future oil and gas development, especially in the Caspian Sea region, and from changing patterns of transboundary water use.
 - Conservation efforts including national policies and strategies, the status of financing for conservation, the status of country participation in major international treaties (with particular attention to the Convention on International Trade in Endangered Species – CITES), the country’s protected area system, and botanical gardens/gene banks (if relevant) and their status, and monitoring systems. This section should also include recent, current and planned activities by donor and multilateral lending organizations (IFIs), international conservation NGOs, and agencies of the USG that support biodiversity conservation, including sustainable forestry, soil conservation, and efforts to combat desertification and establishment of parks. Identify NGOs, universities and other local organizations involved in conservation, and a general description of responsible government agencies. A general assessment of the effectiveness of these policies, institutions and activities to achieve biodiversity conservation should be included. Priority conservation needs which lack donor or local support should be highlighted.
 - USAID’s program in general and, if relevant, 1) any perceived potential areas of concern related to biodiversity impacts with current or planned program activities, or 2) any potential opportunities for USAID to support biodiversity conservation consistent with Mission program objectives.
- d) For the CAR region prepare a report which incorporates the points above on the status of biodiversity and conservation efforts and implications for USAID programming and environmental monitoring to ensure compliance with 22 CFR 216.

A. Methodology:

The Contractor shall field a two-person team of U.S. specialists for this assignment. One team member should be a natural resource management specialist with significant experience international, regional or Central Asia experience. The second team member should be a natural resources/institutional policy specialist with significant, relevant international, regional or Central Asia experience.

The Team Leader may have either of these specialties; however, he or she must have international experience with USAID and knowledge of USAID environmental regulations and programs. Additionally, the Team Leader must have proven leadership and communication skills (both oral and written), and preferably with relevant experience in USAID’s E&E Bureau. The Team Leader should be a senior-level professional with minimum qualifications of Ph.D. or

equivalent education plus 7 years additional relevant experience, or Masters plus 9 years additional relevant experience, or Bachelors plus 11 years additional relevant experience.

The second team member should be mid-level or well-qualified junior level professional. This specialist must have proven technical, analytical, and written communication skills, and have demonstrated his or her ability to work successfully in a team. Minimum requirements for a mid-level professional are Ph.D. or equivalent degree plus 3 years of relevant additional experience, or Masters plus 9 years additional relevant experience, or Bachelors plus 7 years additional relevant experience. Minimum qualifications for a Junior-level specialist are Ph.D. or equivalent degree or Masters, or Bachelors plus one year additional relevant experience or 5 years experience. Potential contractors are asked to supply USAID/CAR with the names of the proposed U.S. specialists, indicating the Team Leader along with at least one alternate candidate named for each of the two positions.

USAID/CAR strongly encourages the use of qualified local professionals with command of the English language as *additional* team members for this assignment. With a large and varied geographic region to cover, comprising several independent nations, the addition of knowledgeable local specialists would considerably strengthen the team. In selecting such specialists, the Contractor should consider previous experience working with international donor projects, as well as technical knowledge and English language skills, as a key qualification.

Prior to beginning actual field work in the region, the Contractor shall submit an outline of a model country-wide biodiversity assessment to USAID/CAR to ensure that USAID and the Contractor have a common understanding of the approach to be taken in the preparation of the assessment, the depth of coverage expected, and the treatment of sensitive issues.

B. Deliverables:

The primary deliverable under this task order is a report on the CAR region, with discrete sections for each of the five countries, addressing the points specified in the statement of work. The report will contain country-specific findings and recommendations and also provide a regional context and recommendations. The report will contain at a minimum one map per country that provides a broad picture of key ecosystems, habitats and projected areas, one annex containing IUCN lists for endangered and threatened species, and one annex containing Sections 117 and 119 of the Foreign Assistance Act.

The second sets of deliverables are in-country Mission exit briefings accompanied by two-page written summaries of key findings and recommendations. One electronic copy in Word format of this assessment shall be provided to the USAID/CAR Mission as well CTO (Environmental Officer).

C. Reporting Requirements:

The Contractor shall report to the USAID/CAR Mission Environmental Officer in Almaty, Kazakhstan for this overall assignment.

Anticipated Level of Effort (LOE) and Schedule:

The LOE for this assignment is a total of 176 expatriate person-days, assuming 2.5 weeks per country for a two-person U.S. team as follows:

- Meetings in Washington with USAID, World Bank, NGOs and other as relevant – to cover all five countries (3 person – days)
- Field assessment, analysis and Mission debriefing (15 person-days in each country, except Tajikistan. For Tajikistan is allocated 5 person-days)
- Report preparation (including incorporating USAID comments (12 person-days)

Additional LOE is provided for local experts (120 days), drivers (65 days) and interpreters (65 days).

Schedule: Work under this task order may begin immediately after its signing. Upon signing this task order, the Contractor shall coordinate with USAID/CAR to establish the timing for the field assessments with the USAID Mission.* A final schedule shall be developed for this task order and delivered to the USAID/CAR Mission Environment Officer no later than 2 weeks after the signing of this task order.

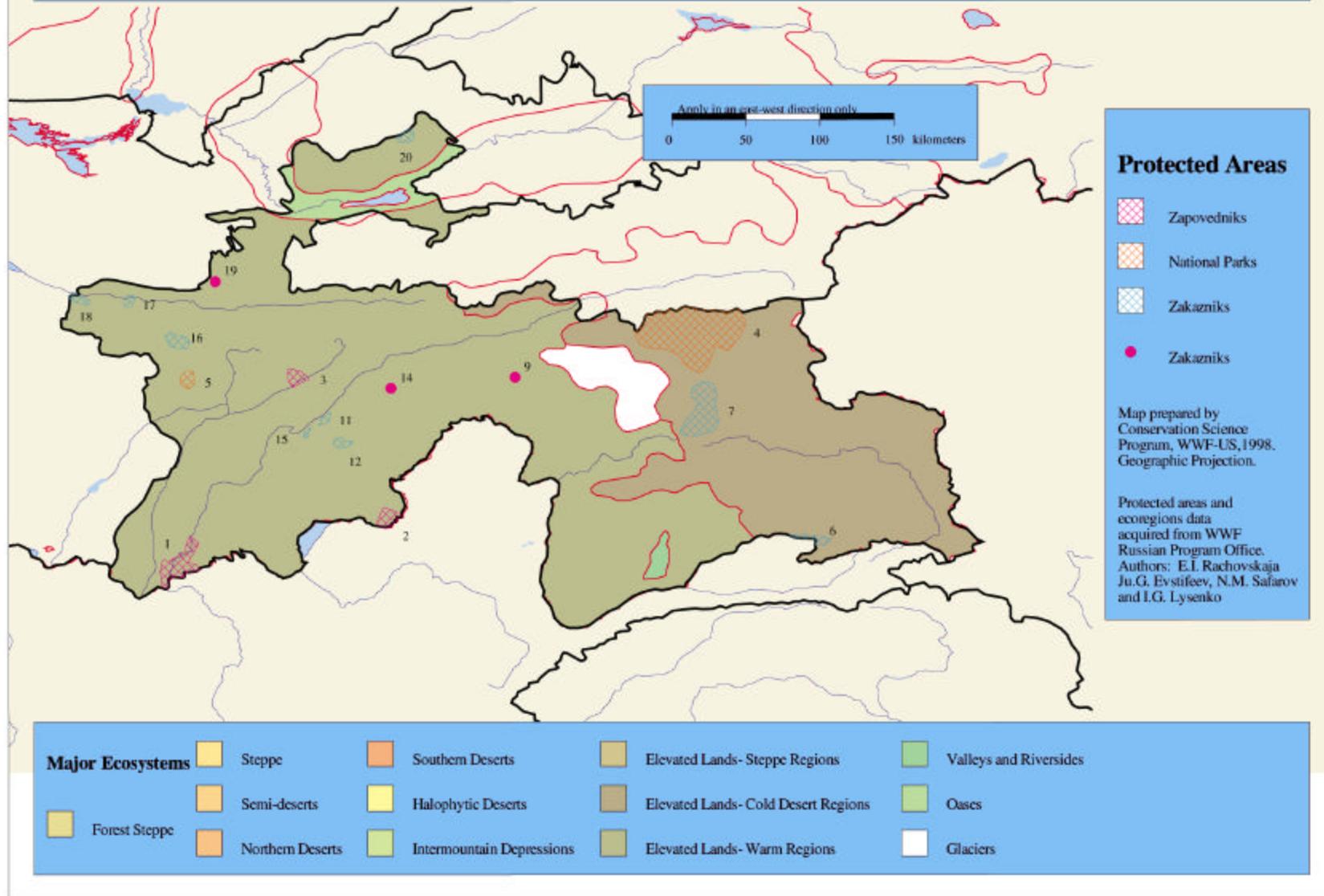
Logistics: The Contractor will coordinate logistics with the USAID/CAR Mission (CTO) Environmental Officer or his designated Control Officer in each country. The Regional Mission and its Country Program Offices will assist the contractor by providing key references, documents and contacts available in country as well as advise on local transportation and interpretation services. In planning regional travel, the Contractor should consider that air travel in CAR during the winter months can be adversely affected by inclement weather, causing irregular flight schedules and unforeseen delays and reroutings. An additional logistical consideration is the frequent inability of U.S. personnel to physically visit Tajikistan. Travel to Tajikistan is, at the moment, prohibited due to security issues. The contractor will likely have to rely on a “desk-study” approach, strengthened by input from in-country expertise.

* See tentative itinerary on page 9

**Tentative Itinerary for the Biodiversity Assessment Team
Central Asia, March**

Country, city	Amount of time (days)	Comments
<i>Kazakhstan</i>		
Almaty	4	
Kokshetau	3	4 flights a week from Almaty Pavlodar (and/or
other city)	3	train /flight from Kokshetau
Almaty	3	
Atyrau	3	4 flights a week from Almaty
Almaty	1	
<i>Kyrgyzstan</i>		
Bishkek (and/or other city plus Tajikistani assessment)	17	by road
Almaty	2	
<i>Uzbekistan</i>		
Tashkent	7	everyday flights from Almaty
Nukus (and/or other city)	4	everyday flights from Tashkent
Tashkent	6	
<i>Turkmenistan</i>		
Ashgabat	8	2 flights a week from Tashkent
Dashhowuz (and/or other city)	5	5 everyday flights from Ashgabat
Ashgabat	4	
Tashkent	2	
Almaty	1	everyday flights from Tashkent
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Major Ecosystems and Protected Areas of Tadjikistan



ANNEX D

Team Schedule

2000 BIOFOR C.A.R. Regional Biodiversity Assessment

Day, Date		Location	Schedule	Appointments	Notes
<u>April</u>					
TU	4	Washington DC	Early AM flight for D.C. PM arrival at Dulles International.		Booking at Wyndham City Center Hotel.
WD	5	Washington DC	AM appointment with Spike Millington, Nicole Beaumont.		
TH	6	Washington DC	AM meeting with Chemonics. PM briefing by project managers.		
FR	7	Washington DC			
SA	8	Washington DC			
SU	9	Frankfurt	Day in Frankfurt enroute to Almaty, Kazakhstan.		Flight delay.
MO	10	Almaty	Calls, mail. 4:30 PM USAID meeting.	Net connections.	
TU	11	Almaty	USAID documents. Meeting with facilitator.	Info from documents.	
WD	12	Almaty	Travel planing. Appointments, NGO.	Local contact info and phone.	Tickets & travel arrangements
TH	13	Almaty	10:00 Bekenov Amankul Bekenovich (Ministry of Sciences). 11:30 Aitjanov Aian, chief ecologist EPD (local EPA) UNDP programs, water resources issues, pollution. Kryldakova R.(national coordinator) Yushenko K. (monitoring) 11:00 Institute of zoology, Kovshar'A.F, Erokhov, Levin (crane). 15:30 Dnyshpanov, Regional Forestry Zoological Society (Red Book).	(requested info) 10 days Thesis of the conference 1999. Get e-info 5 days (e-request sent). Get e-info 5 days. Electronic proposal in print. Get report @info. Get more info.	10-12:00 PM email: 1.Chinara (Kyrgyz) 2. Firuza (Tadjik, desk) 3. Elena (Uzbek) 4. Turkmen inquiry

Day, Date		Location	Schedule	Appointments	Notes
FR	14	Almaty	9:00 – 10:00 Turkmenistan calls. 10:00 Envirc and Terra, both NGOs working in environmental and trans-border issues. Envirc produced two books on Methodologies of Stony Lands Sustainable Development and Desert Management. 11:00 Forestry committee. 14:00 Rushan Karyldakova, small grants GEF-UNDP. Zharas Tokenov, UNDP Sustainable Development Policy Specialist (Program officer, ? Regional Environmental Representative).	Calls and electronic responses from local facilitators.	Travel arrangements for trip to Pavlodar etc.
SAT	15	Pavlodar	Full day of interviews, Almaty Regional Director Forestry, Academy of Sciences. (See appendix for people met.) Travel to Pavlodar PM.	Discussed wide range of environmental and natural resource development impacts.	Hotel check out. Flight 3113; 19:15-21:35.
SUN	16	Pavlodar, Almaata park tour.	Dr. Prof. Vice Dean of Pavlodar State University, Fungi expert. Park Director, Regional Forestry Director (cards in Russian, will photo copy). Director-Xamula Oleg Nik., Galina Vishnevskaya Dr. Prof. V. Dean Pavlodar State University), rangers, local officials. Visit to Nature Museum. (5 hrs. each way driving.)	Park hit by fungal infestation, causing large-scale forest loss.	
MO	17	Almaty	Vice Minister of Forestry. Director of the protected areas.		Flight 3114; 15:00-17:30.
TU	18	Almaty – Kokchetav	Prof. Kim Yelki, Forestry Law/Legislation. AM. Vice Minister of Environmental Affairs, Reg. Director of Forests, Hunting & Fishing. Kokchetav. Met director & staff of Caspian Ecological Program.		Flight 4477; 15:00-18:30.
WD	19	Astana	Minister of Forestry early AM. Director Protected Areas & Wetlands. Dr. L. Shabanova, Chr Caspian Sea Project, UNDP-funded. Visiting protected areas enroute.	By road to Astana.	
TH	20	Astana	Committees, NGOs & Caspian Sea project leaders. PM Bayan Aul National Park. Astana late PM.	Dir. Tengis Biosphere, Minister, Forestry.	

Day, Date		Location	Schedule	Appointments	Notes
FR	21	Astana	Mr. Alexander Amanbaev Minister of Forestry early AM, Director Protected Areas, & Wetlands. Visiting Ministries, Forestry, Protected Areas. Talgat S. Kerteshev Chief Min. Forestry, and Ustemirov Koicot, Forestry Department Chief.	People: Ministry of Forestry, Protected Areas (see card appendix).	
SAT	22	Astana, wetlands AM, Almaty PM	Kurgaljinsky Zapovednik & Murat National Park, also called Tengis Wetlands (3 hrs. each way driving). Dir. (forestry) Dr. T. Sidorova Assistant Director (field scientist). The park is being supported by NABU, and they are funding its preparation for being declared a Biosphere site.		Traveled with Head of Protected Areas & Wetlands, Biosphere. Return flight to Almaty.
SUN	23	Almaty	Paper work.		Forms to Chemonics.
MO	24	Almaty	Appointment USAID 9:30. TETHYS Tethys group NGO Dr. K. Pachikin Soils Sci Dept Head, Dr. B. Arnov V. Pres., Dr. Roman Jashenko (UNDP TERRA (GIS) NGS, KSG Ibrashev. 534-050 (070) 534-082	Some of these may not be able to see us due to big meetings re: inauguration of wells.	Petroleum people not available.
TU	25	Almaty	Aliya Satubaldina. European Union (not available). Met Tethys (NGO) and Kazakh Zoological Society people (cards on list) Ministry of Science Institute Dir. Dr. Prof. Science Laureate, Amankul Bekenov.	Excellent NGO with every capability, with Acad. of Science experts. Funded projects with IUCN, WWF and German orgs. 'Nature-shcutz-Bund'	
WD	26	Almaty	World Bank? Nat. Info & Analytical Center for Statistical Info in PM.	Visited NGO, Mapping Office, Dostyk for mail.	Revisited Terra NGO.
TH	27	Almaty	Michael Bailly, principal regional man. Jmb@hb.almaty.kz , USAID oil contacts.		Will complete interviews when able, and contacts made by USAID.
FR	28	Almaty	Report.		
SAT	29	Almaty	Report.		
SUN	30	Almaty	Day off.		
May					
MO	1	Almaty	Report. Meeting with Chinara. Igor and Tadjik people at hotel while they are on stopover between flights from Peking. AM report writing.		Arrange to meet them at Airport with Dostyk vehicle. Igor to email flights, times. Last minute flight changes, had to pay for vehicle sent to airport for pickup.

Day, Date		Location	Schedule	Appointments	Notes
TU	2	Almaty – Bishkek Note*** Revised Kyrgyz itinerary	By road to Bishkek, 07:00. Appointment at USAID Mission at 16:30, approx. Minister has agreed to see us after his official meetings with the President.	Met Chinara PM and went over our program in Kyrgyzstan. Have an appointment with Minister of Environ. Affairs in PM. Overnight hotel.	Confirmed hotel reservations, and program with Chinara and travel plans. Met Vice Minister. Met Nina from Almaty Mission at USAID/Bishkek.
June					
SAT	24	Tashkent – Almaty	Travel to Almaty.		
SUN	25	Almaty – Aktau	Travel to Aktau.		
MO	26	Aktau	AM meeting with Regional Hunting & Fishing Protection Department. Met director and staff. Manage Karagia Protected Area of 147,500 hectares.		
TU	27	Aktau	AM Ministry of Ecology, Minister unavailable due to President's visit next two days.		
WD	28	Aktau	Met with Marat G. Abdrakmanov, head of Regional Environmental Protection Agency.		
TH	29	Atyrau	Met head of Oblast Fisheries Protection Agency, northern Caspian area to discuss seal die off. PM flight to Atyrau.	Has no monitoring system that is linked with other Regional Caspian Project offices. Did not hear of die off until end of May. Also needed to test sedimentary plugs for DDT and other agrochemicals.	
FR	30	Atyrau			
July					
SAT	1	Atyrau			
SUN	2	Almaty			
MO	3	Almaty	Mission debriefing on Caspian Seal die off PM.		
TU	4	Almaty	Holiday		
WD	5	Enroute to USA	Early AM flight to Frankfurt.		
TH	6	Enroute	No bookings made by UA to Lufthansa, standby for two flights. Ended up spending day 06:30 – 19:30 in Frankfurt. Baggage was left in Almaty.		
FR	7	Washington DC	Arrived Washington without bags.		
SAT	8	Washington DC	Bags delivered in late PM.		
SUN	9	Washington DC	Day off.		

Day, Date		Location	Schedule	Appointments	Notes
MO	10	Washington DC	Project expense report.		
TU	11	Washington DC	Report writing/expenses.		
WD	12	Washington DC	Financial report.		
TH	13	Washington DC	Financial report.		
FR	14	Washington/SFO	Travel.		