

Biodiversity Assessment for Central Asia: Regional Overview

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

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SECTION I

Introduction

From April to July 2000, a team of biodiversity experts conducted a regional biodiversity assessment in the Central Asian Republic. This assessment 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). The fieldwork involved in this assessment was carried out by Raymond Carl Daviesson and Dr. Galina Fet, accompanied by local experts in each of the Central Asian countries. Spike Millington joined the team for short periods in Uzbekistan and Kazakhstan. The countries included in this assessment were Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. Because of travel restrictions in Tajikistan, a local expert undertook a "desk study" for that country.

The approach used throughout the assessment was to collect and analyze information on regional and country specific biodiversity and related areas through documentation searches, interviews, and field research trips. The Environment and Natural Resources Division of the USAID Bureau for Europe and Eurasia provided valuable input on draft reports through a contract with DevTech Systems Inc., under the Environmental Information Systems and Networking Project.

This biodiversity assessment has three interlinked objectives:

- To summarize the status of biodiversity and its conservation in Central Asia. Specifically, it analyzes threats, identifies opportunities, and makes 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 Central Asia.
- To analyze the impact of current and future USAID activities in Kazakhstan on biodiversity conservation, suggest actions that USAID could undertake to support biodiversity conservation in Central Asia that are consistent with current and future USAID programs, and identify special opportunities for the Mission in the area of biodiversity conservation.

This assessment consists of five individual reports, covering each of the countries of Central Asia, in addition to this regional overview. The reports tend to be more detailed for those countries (Kazakhstan, Kyrgyzstan and Uzbekistan) where USAID has a significant program, and where greater opportunities seem to present themselves. The regional report summarizes some the major features and issues relating to biodiversity in the region, but should be read in consultation with individual country reports to highlight specific issues and recommendations.

SECTION II

Status of Biodiversity and its Conservation

Background

In the second half of the twentieth century, the natural environment of Central Asia underwent immeasurable changes. First, the total area of land used for production of crops increased significantly. New efforts in cultivation included large-scale conversion of virgin land in northern Kazakhstan to create the bogara grain crops (crops not requiring irrigation). Throughout the region, the number and size of irrigated fields, especially for cotton production, also expanded far beyond the boundaries of the ancient irrigated oases. In both plains and mountains, large areas of forest fell victim to this intense exploitation for crop and pasturelands.

This massive transformation of the natural environment and the heavy use of pesticides and fertilizers was exacerbated by large scale development of local resources such as oil, natural gas, iron, copper, and complex ores in the establishment of the mining industry and related manufacturing industrial enterprises. The development of engineering, chemical, and consumer goods industries was followed by the expansion of cities and industrial settlements. Construction of dams and hydroelectric stations reached a giant scale in Central Asia as the need to transport water and energy to the agricultural and industrial sectors grew exponentially. A huge system of irrigation was created, sprawling for thousands of kilometers and supported by a vast network of hydroelectric stations and reservoirs. Huge filtration and discharge reservoirs became familiar features of the Central Asian landscapes.

Since the dissolution of the Soviet Union, transformation of the environment has continued in other guises. The recent privatization of land in a number of the region's countries has allowed a variety of resource exploitation, such as catastrophic local overgrazing of pastures, forest logging (which increases frequency of mud slides and progressive erosion), and wasteful use of water resulting in the erosion and salinization of soils. During this transitional post-Soviet period, the combination of the rise in poverty, a relaxation in government regulations, and easier access to arms, has rapidly increased hunting pressures on wildlife. Species such as the Central Asian grouse and even the wild boar, which previously had not been used for food by the Muslim population, became vulnerable to local communities; other species, such as argali sheep and raptors, were newly exploited for their commercial value on the international market.

All these changes, combined with the arid climate, have led to the degradation not only of natural ecosystems, but also of agricultural and pastoral lands. Most of these areas are affected by some degree of anthropogenic desertification. Rivers such as the Amudarya and Syrdarya, once the region's largest, no longer reach the Aral Sea, and their deltas are in the process of degradation. The level of the Aral Sea is decreasing catastrophically, exposing salt sediments on the lake bottom and dispersing them throughout Eurasia.

For the wild flora and fauna of Central Asia, these anthropogenic pressures have, for the most part, been adverse. Many species of animals and plants have become extinct. The Turanian tiger,

for example, became extinct within the last century. Cheetah populations are probably also extinct, and the number of the Bukhara deer has dropped sharply all over its range. Some endemic species of plants, butterflies, and other wildlife groups have become endangered. Many nature reserves suffered dramatic changes; currently, the total area of existing protected areas barely covers 1 percent of the region's territory.

An important factor affecting conservation in the region is the extremely complicated socioeconomic situation, which does not allow the countries to pay the necessary attention to the problems of nature protection. For this reason, international assistance to these republics at this particular point in their history is especially urgent.

Status of Biodiversity

Central Asia is a vast and diverse region at the confluence of several biogeographic zones, with elements of a typical north European fauna and flora, including Siberian boreal forests meeting the northern edge of the Himalayan range, including the Tibetan plateau (Pamir mountains). In the southwest, the region includes the Mediterranean and Near Eastern highlands, and the western border is formed by the Caspian Sea. Central Asia also includes unique biogeographic zones, including the Central Asian steppes and deserts and the Tien Shan mountains. The artificial boundaries of the former Soviet republics have divided these biogeographic zones among five countries in Central Asia, as well as others bordering the region. Thus, Kyrgyzstan and Tajikistan are dominated by high mountain ecosystems, and Turkmenistan by deserts. Uzbekistan contains a wide variety of ecosystems as a result of its geographic situation. Kazakhstan, by virtue of its huge size and northern location, contains the greatest variety of ecological zones.



Frigana zone of lower mountains, supporting a rich floral and insect community.

The biogeographic, topographic, and climatic habitat variation within the region has led to a wide array of landscapes and ecosystems that support a diverse biota. There are 7,000 species of higher plants and more than 900 vertebrate species, including 172 mammals, 540 birds, 106 reptiles, 14 amphibians, and 150 fish. The region's biodiversity is notable for its high degree of endemism, with up to 20% of the flora having restricted distributions. Central Asia's temperate forest, steppes, and sandy deserts (including riparian tugai forests) have each been identified by the World Wide Fund (WWF) for Nature as Global 200 ecoregions, based on such selection criteria as species richness, levels of endemism, taxonomic uniqueness, unusual evolutionary phenomena, and global rarity of major habitat types. The region is also a migratory crossroads for birds, being located on three major flyways between northern breeding grounds in Eurasia and southern wintering grounds in Asia and Africa. Central Asian wetlands are particularly important in this regard. It is also an important center for agrobiodiversity, notably the temperate forests, which harbor many wild relatives of domesticated fruit and nut trees.

Principal Threats to Biodiversity

The principal threats to biodiversity in the region are:

1. Loss or degradation of habitat through direct conversion or exploitation of natural ecosystems.
 - *Conversion of steppes to arable agriculture and cotton production.* The plowing of the fertile soils of the northern steppes for rain-fed, grain crops has resulted in a direct loss of feather grass habitats. Furthermore, soil integrity and fertility has decreased, and where agriculture has been abandoned, weedy species more tolerant of disturbed conditions have replaced the original feather grass communities. In the drier, more southern steppes, unsustainable agricultural practices have accelerated the process of desertification.
 - *Unregulated deforestation.* Cutting of woodlands and forests for commercial and fuelwood needs, as well as the clearing of land for agriculture, are a major threat to biodiversity. The desert-adapted saxaul (*Haloxylon spp.*) woodlands, the riparian tugai forests, and mountain forests have been particularly affected. The reduction in coal supplies in Kyrgyzstan and Tajikistan has greatly exacerbated deforestation in mountain forests as populations seek alternative fuel supplies.
 - *Overgrazing by domestic livestock.* The conversion of steppes and wetlands has considerably reduced the area available for livestock grazing, concentrating domestic herds on fragile remaining habitat such as stony and hilly steppe zones and around water points. This in turn results in further degradation. Traditional practices, such as pasturing in mountain meadows, is being replaced by year-round grazing around homesteads. In mountain forest regeneration is severely hampered by high livestock grazing pressure.

2. Loss or degradation of habitat through indirect effects of changing land-use patterns.
 - *Changing water balance through poor irrigation practices.* Widespread irrigation, using poor, water-wasting technologies, has had a disastrous effect on the region's ecology, leading to desiccation, salinization, erosion, and alteration of water balances. Although most conspicuous in the Aral Sea region, this is



High altitude mountain landscape, habitat for specialized mammals and birds.

widespread throughout the region.

- *Diversion of water through hydroschemes.* Dams on major rivers, together with extensive irrigation and drainage systems, have resulted in significant changes in local hydrological regimes. *Tugai* forests that depended on natural cycles of flooding have been adversely affected, and shallow wetlands have dried up. Transboundary issues of water supply and distribution are also at issue, as upland watersheds are degraded, leading to reduced and irregular supply.
- *Overuse of agricultural inputs.* Soviet agriculture was characterized by high levels of inputs, such as fertilizers, pesticides, and herbicides. Concentrations of these inputs through the irrigation systems resulted in severe water and soil pollution.
- *Effects of industrial pollution.* Effluents from industrial pollution can be especially toxic, and pollution control mechanisms are not generally in place. Mining is still largely unregulated.

Global Warming and Biodiversity Decline

In a recent study of the effects of global warming on habitat loss and change, as well as reductions in biodiversity due to shrinking habitat patch size, temperate evergreen and mixed forests and boreal coniferous forests were among the ecosystems most at risk. Two thirds of Kyrgyzstan's and half of Tajikistan's existing habitat was found to be at risk from global warming, either through outright loss or through change to another habitat type. Many species will be unable to shift their ranges fast enough to keep up with global warming, with rare and isolated populations in fragmented habitats, such as are now found throughout Central Asia, particularly at risk. As global climate change research is supported by USAID and others in the region, specific attention to potential effects on ecosystems and biodiversity should be incorporated.

From: Global Warming and Terrestrial Biodiversity Decline,
Malcolm and Markham, 2000: A report for WWF.

3. *Over-exploitation of individual species, through hunting, overfishing, and persecution.* Since the decline of the strict enforcement capacity of the former Soviet protected area and wildlife systems, citizens of the newly independent republics have taken advantage to promote unregulated and illegal hunting, including trophy shooting. Private interests in the caviar trade have promoted overfishing of sturgeon stocks in the Caspian. Collection of birds of prey for the falconry trade, particularly to the Arab states, has increased, as has collection of threatened reptiles, such as Horsefield's tortoise, for the pet trade. Hunting of houbara bustards for use by Arab falconers threatens that already globally endangered species.
4. *Effects of introduced or non-native species.* As steppes and other natural ecosystems have been degraded, invasive plant species, including non-native species have flourished, inhibiting return to the original condition, should other pressures be reduced. In the Caspian Sea, non-native species, such as the comb jelly *Mnemiopsis leidyi*, recently discovered in the Caspian, have the potential to cause major ecological disruption. In the Black Sea, this same species was responsible for a collapse in fisheries and a major decline in biodiversity, due to

predation on fish eggs and other plankton, combined with an enormous capacity for reproduction.

Conservation of Biodiversity

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 national reserves (*zapovedniks*), which were set aside to preserve ecosystems and their representative fauna and flora. Only scientific research was allowed and the public was denied access. The system also includes conservation areas (*zakazniks*) which allow for a much greater variety of land use within the reserves, including agriculture. There has been some evolution in recent years to develop national parks following the western model that allow a variety of activities, including recreation, according to a specific management plan. There are also an increasing number of biosphere reserves that include a core protection zone with a multiple use buffer zone. Currently there are 34 *zapovedniks*, 10 national parks and perhaps 150 *zakazniks*.



Bar-headed goose (*Anser indicus*), an element of the Himalayan fauna that extends into Central Asia.

The existing protected area system provides some coverage of representative ecosystems and ecoregions, but some ecosystems — notably steppes, deserts and semi-deserts — are poorly represented. In addition, many protected areas are too small to effectively protect species with large home ranges, and the boundaries do not correspond with natural ecological boundaries. The status of these protected areas is tenuous and — like the ecosystems and species that they are intended to protect — poorly known and understood, especially by local populations. Protected areas, particularly *zapovedniks*, have come under strong economic and political pressure to provide access to local populations and political powers for activities incompatible with their original objectives. Thus, recent years have seen substantial invasion of protected areas for agricultural use, turning over parts of protected areas to agricultural and other concerns, and fragmentation as roads are built through them, as well as sanctioned hunting for game species (see box below).

"Most *zapovedniks* are bordered by agricultural interests whose economic goals are furthered by utilizing *zapovednik* resources. The consequences of their activity are disastrous. Animals pastured in Markakol reserve are causing erosion and introducing organic wastes into Markakol lake. Concurrently, a logging concern is introducing excessive quantities of wood waste into the lake, which is implicated in high levels of phenols. Similar grazing and logging infringements are widespread in Central Asia; the practice is carried to its greatest levels in both Turkmenistan and Uzbekistan where *de facto* use of *zapovednik* resources is becoming *de jure* right to these resources."

(From Sievers, Tsaruk & Zatoka, National Parks, Snow Leopards and Poppy Plantations: The Degradation and Development of Central Asia's Preserved Lands. Central Asia Monitor 2-3, 1995)

For the past five to eight years, individual protected areas have been operating on vastly reduced budgets and staffing, with 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, poaching 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, timber, and food production within the protected areas. Some protected areas, particularly in Tajikistan and border areas, have suffered from armed conflict, with occupation of reserves and widespread poaching of wildlife.

SECTION III

Institutional and Policy Framework

Government Institutions

The government institutions responsible for environment and natural resources management, along with the legal framework, have also been inherited from the former Soviet system. While there have been minor changes, such as Ministries of Nature Protection replacing the State Committees on Ecology, the philosophy and modus operandi of government institutions still retains a command-and-control mentality. At the same time, diminished resources and changing social and economic situations mean that enforcement capabilities are so limited as to be virtually ineffective.

Laws, which in any case often lack implementing regulations, are unimplementable. Rural populations remain for the most part unaware of legal provisions. Some laws have been amended in recent years but not to favor a more participatory approach. The changes that have been made favor more strict control of the resources and are primarily punitive in character. Most of the laws have been promulgated through executive or Presidential decree, with little or no public input. There appears to be an unwillingness to embrace incentive-based measures that could transfer or reduce the need for government enforcement (see box below).

Governments have signed many international conventions and agreements, the provisions of which take precedence over national legislation. However, the obligations of these treaties, including provision of financial support, are largely unmet by regional, drawing into question their commitment to environmental priorities. NEAPs and NBSAPs have been, or are being, developed by all countries. They are intended to be strategic frameworks for policy and investment and receive multilateral funding for their development. Some are impressive documents, containing valuable information and analysis. Yet it is not clear how these are going to be implemented, without continued international funding. There is a tendency to develop ever more plans (including studies, inventories, and maps), rather than developing specific on-the-ground initiatives that can move the process forward and demonstrate concrete results.

While *zapovedniks* certainly belong to the country in which they are located, the legal and social framework in which they operate must be reformulated to overcome the Soviet-era atmosphere of conflict in which they exist with their neighbors. Although most *zapovedniks* are in regular conflict with raion and oblast governments, or with the local population, simply re-establishing a national environmental ministry's or committee's jurisdiction over the reserve will not solve the conflict. In order for poaching, logging and grazing to be reduced, local consensus must be built for the existence of the *zapovednik*. In addition to well-developed and locally implemented environmental curricula in area schools, ministry officials will need to enter into an open dialogue of priorities and concerns with local leaders. Limited recreation, ecotourism partnerships and concessions, and sustainable harvest of nuts and fruits are simple, and likely mutually beneficial, policies that can add to the perceived and actual value of *zapovedniks* at the local level.

From (From Sievers, Tsaruk & Zatoka, National Parks, Snow Leopards and Poppy Plantations: The Degradation and Development of Central Asia's Preserved Lands. Central Asia Monitor 2-3, 1995).

NGOs

With the possible exception of Turkmenistan, there is a growing NGO community in all Central Asian countries. Environmental NGOs tend to be among the most prominent. Nevertheless, the environmental NGO community remains weak, with many NGOs consisting of a few people with even fewer resources and no office. Very often they consist of scientists and academics who no longer receive salaries, or receive minimal salaries as a result of massive budget cuts in academic institutions. NGOs are often the means by which these scientists can continue studies and research through international funding.

While these NGOs can play a useful role in information gathering and dissemination, monitoring, awareness, and lobbying, there is a need to also encourage more development-oriented NGOs that can play a critical role as partners and intermediaries with government, particularly local government and communities and community representatives. At this level, there is a need to raise awareness and develop locally based natural resources and biodiversity conservation initiatives.

International Projects

There are several internationally supported projects that directly address biodiversity issues in Central Asia. The first is the Caspian Environmental Program, which brings together Kazakhstan, Turkmenistan, and other littoral countries in a framework aimed at addressing Caspian environmental issues. A series of regional thematic centers have been set up. That for biodiversity is based in Atyrau, Kazakhstan. Activities so far have mostly been to develop the institutional framework and begin planning exercises. The Central Asia Transboundary Biodiversity project, supported by WB/GEF, aims to protect threatened ecosystems in the Western Tien Shan mountains, shared by Kazakhstan, Kyrgyzstan, and Uzbekistan. It will also strengthen and coordinate national policies, regulations, and institutional arrangements for biodiversity conservation. The UNDP/GEF-supported Integrated Conservation of Priority Globally Important Migratory Bird Wetland Sites project focuses on three demonstration sites in Kazakhstan. Other wetland initiatives include the rehabilitation of Sudoche Lake in Uzbekistan as part of the Integrated Aral Sea program. USAID should coordinate with these programs in these areas as there may be significant opportunities to leverage funds and complement ongoing activities.



Morels. Edible fungi such as these provide an important resource for local populations, with potential for small-scale commercial production.

Several opportunities exist to work with international investors (oil, gas companies) to support increased transparency and clarification of the legal and policy situation, harmonize national legislation with international norms and guidelines, integrate biodiversity considerations into sectoral and environmental guidelines and policies, and support community-based initiatives and improved monitoring in geographic areas affected by investment projects.

WWF reviewed biodiversity conservation issues in Central Asia and developed an initial investment portfolio in 1998. Specific projects are listed by ecological zone in Annex F and can provide additional guidance to USAID in identifying specific geographic zones, protected areas, and species plans.

SECTION IV

Recommendations for USAID

Strategic Objective 1.6 - Improved Management of Critical Natural Resources, including Energy

USAID's regional Mission in Central Asia includes an environmental strategic objective: "improved management of critical natural resources, including energy." Intermediate results are:

- Increased management capacity in the natural resources sector
- Improved policy and regulatory framework for natural resources management
- Sustainable models developed for integrated natural resource management
- Public commitment established for natural resources management policies

While the program emphasizes natural resources, the focus is heavily oriented to water and energy, with "green" issues (forests, watershed protection, sustainable agriculture, biodiversity) conspicuously absent. This appears also to apply to models of "integrated" natural resources management.

Although the effect of current and planned activities on biodiversity is not negative, but in fact is probably beneficial (through such proposed activities as oil field cleanup, environmental policy reform, global climate change, promotion of transboundary cooperation in water issues), there remains a great deal of potential to incorporate biodiversity issues into the proposed program at very little cost and potentially high impact. These opportunities are discussed below.

USAID is also promoting civil society under its democracy strategic objective. ISAR and Counterpart Consortium are working with nascent environmental NGOs and community groups to strengthen capacity and build partnerships. Through local resource centers, training programs and small grants, awareness of environmental and biodiversity issues is increasing, and local government and civil society representatives are engaging in dialogue and environmental activities.

The mission might consider:

- i) Supporting to "twinning" relationships between U.S. and CAR national institutions involved in biodiversity conservation. An example is the U.S. National Park Service, which has a similar cooperative agreement (with USAID funding under an interagency agreement) with the government of Georgia for training and exchange visits, as well as twinning of individual protected areas that share similar ecological and management issues. A further example concerns universities and other academic institutions with expertise in relevant areas, such marine conservation issues relevant to the Caspian Sea or desert research institutes.
- ii) Continuing to support ISAR and Counterpart for NGO and community group development and capacity building. If appropriate consider supplementary funding for small grants and

partnerships (such as sending local government staff and community/NGO leaders on joint training and study tours).

- iii) Bringing together government agencies, NGOs, and private sector organizations to discuss and examine alternative methods and approaches that emphasize partnership, comanagement of resources, and that explore incentive-based management systems rather than strict enforcement models, for which resources and capacity are likely to remain low. This can be done through joint training, study visits, pilot initiatives, and regional partnerships linking neighboring countries to learn from experiences elsewhere, both regionally and internationally. Pilot community-based initiatives, where clear opportunities and willingness to undertake improved management and conservation activities exist, should be explored. Examples could include integrated wetland management for improved water supply and quality (through, for example, natural filtration by riparian vegetation or controlled hunting and fishing), ecotourism development, protected area management, and improved grazing practices.
- iv) The increasing petroleum activities in and around the Caspian Sea, an environmentally fragile area of high biodiversity importance, offer significant opportunities for incorporating environmental management and biodiversity conservation into economic development activities by incorporating these issues early in the planning process and ensuring adequate monitoring. Opportunities also exist for increasing national and international awareness, developing site-specific management plans and species conservation planning (for Caspian seal, sturgeon, waterfowl, and the like) as well as reinforcing the awareness of and commitments to international and regional treaties and conventions. Recommendations for the north Caspian are included in Annex E.
- v) The upcoming USAID CAR Environment and Energy project provides an excellent framework and opportunity for the integration of biodiversity conservation initiatives at low cost and potentially high impact and visibility, to broaden the Mission's development program. Examples include:
- Wetland and riparian vegetation management as part of local water initiatives
 - Incorporating biodiversity in training and awareness programs
 - Including biodiversity in policy and legislative development and application
 - Considering biodiversity in monitoring and assessment in transboundary issues
 - NGO development



Cushion plant, Acantholimon, from the Plumboginaceae family, in a high elevation alpine meadow.

The following include recommendations directly linked to the recent CAR Regional Environment and Energy project procurement (where applicable, activities are linked to the illustrative activities (I.A.) referred to in the RFP).

- a) Increase awareness and understanding by 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 (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.
- b) Incorporate biodiversity concerns into river basin management and monitoring, including riparian forests, wetlands, and wetland-dependent species, such as bird and fish faunas.
- c) Support climate change research in relation to potential impacts on natural ecosystems and biodiversity distribution and conservation.
- d) Incorporate biodiversity into environmental impact policies and legislation, as part of the regulatory framework for investment, e.g. in oil and gas exploration.
- e) Develop integrated wetland management initiatives that promote the sustainability of ecological functions, including 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 among 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, fisheries and hunting, and possibly ecotourism enterprises. Initiatives can build on activities already programmed under the GEF integrated wetlands programs, e.g. the Ural River delta.
- f) Promote the prevention and rehabilitation of salinized soil through improved vegetation management and conservation, improved irrigation practices, and better wetland conservation and management (I.A. #9). This provides another opportunity to develop local partnerships based on community-led initiatives.
- g) Promote and support partnerships between oil and gas companies, local governments, and communities to improve monitoring of ecological conditions and biodiversity in the north Caspian region, including better understanding of the north Caspian ecosystem and collection of baseline data. This activity could be linked to the development of EIA guidelines for the industry and the region. It should also serve to leverage the efforts of other donors under the Caspian Environmental Program.

Below are brief discussions of how each SO can contribute to biodiversity management.

Strategic Objective 1.3 - Improved Environment for the Growth of Small and Medium Enterprises

This SO reflects the crucial need to strengthen the capability of small- and medium-sized enterprises (SMEs) to survive by improving the environment in which they operate. SMEs are important in driving developing economies in that they provide needed jobs and increase the flow of cash through the economy. Small and medium enterprises that encourage biodiversity conservation include ecotourism, sustainable forestry and the development and marketing of natural products, such as mushrooms, nuts, and bulb flowers. However, other enterprises can have a potentially negative impact on the environment and biodiversity. There are many examples of these problems illustrated in the country assessments. They include negative impacts on sturgeon stocks because of increased caviar production and conversion of steppes to agricultural purposes. Both of these activities, which are primarily a result of SMEs, have a significant negative impact on biodiversity. One way of mitigating these impacts is through the development and improved monitoring and enforcement of environmental guidelines for enterprises, including EIA and environmental management systems.

Strategic Objective 2.1 - Strengthening Democratic Culture Among Citizens and Target Institutions

USAID is already supporting environmental NGOs under this SO, for example through the Caspian Environmental Partnership, with ISAR. This support should be continued and build upon successful activities thus far accomplished. There is a need to improve understanding and develop constructive relationships between government and NGOs. Facilitated registration procedures and greater transparency are key areas. There is an opportunity to strengthen the capabilities of NGOs to allow them to assist with some of the forestry and protected area management responsibilities currently under government control. They may be able to help the government develop better management tools and practices, as well as promoting and developing improved relationships and linkages between local government and local communities. Joint training and study tours are a means of bringing local decision makers and NGO and community representatives together to review alternative approaches to improved natural resources management. Supporting NGOs, which are by nature often run by local groups with interest in the community, has some direct and indirect effects on encouraging a civil society that participates in democratic processes. Improving access to information is another area that can be supported under this SO. These activities potentially could be included as part of the SO 2.1 portfolio.

Strategic Objective 2.3 More Effective, Responsive and Accountable Local Government

This SO also has significant potential to assist in biodiversity issues. There are several ways in which activities under this SO might prove useful in assisting SO 1.6.

One area is helping local governments develop and implement policies based on local realities in such areas as protected area management and sustainable forestry and grazing initiatives. Current policies are often ineffective because of low capacity for enforcement, but they also lack implementing regulations and guidelines. There is an opportunity to develop locally adapted

regulations in a participatory manner, so that the likelihood of their effective application is increased. This can be done on a pilot basis.

Secondly, pilot initiatives around specific areas or resources (see above) can provide an excellent opportunity to bring together different stakeholders, including communities, NGOs, the private sector, and local governments to discuss and review roles and responsibilities for local management of natural resources. A key element would be more effective, responsive, and accountable local government, according to agreed mandates. Such pilot initiatives may have the potential to be replicated under similar conditions throughout each country and the region as a whole. Protected areas could represent one example, bringing together protection and management of biodiversity and sustainable natural resource management in adjacent areas. USAID could support pilot initiatives as part of wider donor-supported projects, such as the Western Tien Shen biodiversity project, the Caspian Environmental Program, or Migratory Birds Wetlands Project.

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 Education, 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. 103)", was redesignated 117. See sec. 301(2) of Public Law 99-529 (100 Stat. 99-529).

Sec. 117 was amended by sec. 101 of Public Law 101-167, 103 Stat. 1228, to furnish assistance 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 Initiatives".

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. 1666), 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 sec. 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 feature 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.

(E) 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.

(f) 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 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.

(g) 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. ⁷⁵ Renewable and Unconventional Energy Technologies. * * * [Repealed—1980]

Sec. 119. ⁷⁵ 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 650. ⁷⁵ To assist countries in protecting and maintaining wildlife habitats and in developing sound wildlife management and

⁷⁵ Sec. 119, as added by Public Law 95-68 (81 Stat. 528), amended by sec. 111 of the International Development and Food Assistance Act of 1978 (92 Stat. 948), and by sec. 107 of the International Development and Food Assistance Act of 1976 (93 Stat. 362), was repealed by sec. 401 of the International Security and Development Cooperation Act of 1980 (Public Law 96-523, 94 Stat. 3147). See sec. 106 of this Act for text concerning energy technologies.

⁷⁴ 22 U.S.C. 2151(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 Year 1984 and Public Law 98-164; 97 Stat. 1046).
⁷⁵ Sec. 119, as added by Public Law 95-68 (81 Stat. 528), amended by sec. 107 of the International Security and Development Cooperation Act of 1980 (Public Law 96-523, 94 Stat. 3147), was amended by sec. 103 of the Foreign Operations, Export Financing, and Related Programs Appropriations Act, 1990 (Public Law 101-167; 103 Stat. 1227), added "notwithstanding section 650" 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 juridical 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 fledging 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 or 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.

IV. 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.

V. 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).

VI. 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 29

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

March

Country, city	Amount of time (days)	Comments
II. Kazakhstan		
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	
Kyrgyzstan		
Bishkek (and/or other city plus Tajikistani assessment)		17 by road
Almaty	2	
Uzbekistan		
Tashkent	7	everyday flights from Almaty
Nukus (and/or other city)	4	everyday flights from Tashkent
Tashkent	6	
Turkmenistan		
Ashgabat	8	2 flights a week from Tashkent
Dashhowuz (and/or other city)	5	everyday flights from Ashgabat
Ashgabat	4	
Tashkent	2	
Almaty	1	everyday flights from Tashkent
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Day, Date		Location	Schedule	Appointments	Notes
April					
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
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.

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Day, Date		Location	Schedule	Appointments	Notes
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.	
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 Koirot, 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.

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Day, Date		Location	Schedule	Appointments	Notes
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.
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.
WD	3	AM Ministry calls. PM travel Issy-Kul.	Kyrgyz program review. Called on Ministry of Ecological Affairs, met with Director. Called on Department of Forestry met with Director Dr. Korlofv. By road with Nina Kavetskaya of Almaty Mission.		Traveling along northern shore. Overnight at hotel Astoria in Cholpon.
TH	4	Issy-Kul north shore.	Issy-Kul field trip. Saw wide range of agroforestry and an area where no activities or human habitation exists due to heavy radiation fall out from Chinese nuclear testing? This area between Anan Yevo and Ak Bulat on the northeastern shore of Issy-Kul. Visited small but interesting museum and endangered species restocking project of snow geese. Touring south Issy-Kul. Overnight at Karakol.		Continued traveling to eastern end of lake. Overnight at the town Karykol.
FR	5	Touring south Issy-Kul.	Overnight at Dzhergalan Valley.		By road along south shore of Issy-Kul and drove to National Recreation Area at Dzhergalan. Overnighed at the Sanatorium.

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Day, Date		Location	Schedule	Appointments	Notes
SAT	6	Touring south Issy-Kul. Returned to Bishkek PM	Issy-Kul – Bishkek south shore. Interviewed local NGO and other activist concerning Kumtor Mining Company's cyanide spill and ongoing leeching from the mine's tailings. This abandoned uranium mine operations and refining center are still radioactive. Heavy rains in the past five years have caused radioactive runoff to flow into Issy-Kul. Local authorities have attempted to hush up the impacts on the environment and local populations.	AM drove to the Canadian-Kyrgis Kumtor Mining site at the headwaters of the Barskoone River, where an accidental release of cyanide spilled into the river, killed a number of people, injured many. Considerable local protest continues as a result. Great doubts still persist about safety, cleanup, and compensation. Visited Forest Dept. nursery. Very impressive, but selling seedlings to survive, no pay. Also visited an abandoned uranium mine site still active from enriched ore. Place an environmental hazard, Kyrgis doing nothing near Kadzhy Sai.	Arranged transportation and air tickets to Djal-abad.
SUN	7	Bishkek	Dir. Forestry Dr. Korlof and Terek NGO AM at house.		Was at hospital, but came to meet us. Met with NGO AK TEREK (forestry).
MO	8	Bishkek	Interviews, Institute of Biology Ministry of Ecological Affairs. (Full list of scientists in appendix.)		C
TU	9	Bishkek-Djal-abad to Sary-Chelek Biosphere area	Early AM meeting, midday flight to Djal-abad, drove to protected area 5.5 hrs. Met the director in late PM. Met local NGOs who were exceptional, doing all the right things on very little money they get from Counterpart Consortium, and self generated efforts. Exceptional effort, worth funding.		Flight to Djal-abad, met driver, drove to Sary-Chelek protected area. Truly magnificent! Same story on pay gaps and funding and staff cut-backs.
WD	10	Sary-Chelek Protected Area	Full day in protected area visiting sites, local NGOs.		
TH	11	Sary-Chelek-Djal-abad, over night. Sanitorium Hotel (ex KGB country club).	AM return visit to Karavan, met with local NGOs.	Director of Sary-Chelek is driving force behind NGOs within area.	By road to Karavan and on to Djal-abad.
FR	12	Djal-abad – Bishkek	Visited local NGOs and Peace Corps volunteers in AM. Late PM flight back to Bishkek.		Counterpart Consortium doing good job with local NGOs and Peace Corps very much appreciated by locals.
SAT	13	Day visit to Chon-Kemen National Park	Same story at Chon-Kemen. Has 140 km of roads, 17 bridges, 130 workers, only \$8,000 per year budget. Barely holding on by growing vegetables, selling tree seedlings.	Met with park director.	

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Day, Date		Location	Schedule	Appointments	Notes
SUN	14	Bishkek	Day off (the first since we arrived in region).		
MO	15	Bishkek	Report writing.		
TU	16	Bishkek	Meetings, Flora/Fauna Forum.		
WD	17	Bishkek	Meetings, WB Western Tien Shan Trans-boundary Biodiversity Project meeting.		
TH	18	Bishkek	Report writing.		
FR	19	Bishkek	Institute of Biological Sciences department heads, and Vice Chancellor.		Cards in appendix.
SAT	20	Bishkek	Forestry & Ecological Affairs meetings at Ministry.		
SUN	21	Bishkek	Met Counterpart Consortium, and UNDP Coordinator re: in-country programs.		
MO	22	Bishkek	Report writing.		
TU	23	Bishkek – Tashkent	Change of itinerary since we flew out of Bishkek directly to Tashkent. AM last minute meetings with members of the Institute of Biology.		PM flight to Tashkent. Met our counterpart facilitator and went over country itinerary.
WD	24	Tashkent	AM meetings with State Committee for Biocontrol, Adiljan K. Atadjanov, and HQ staff. Meeting with Anatoly Blijinski, the Deputy Chief. PM meeting with Alexander Kalashnikov, USAID/CAR/Tashkent, and presented our working program for the country.		Tajikistan counterpart arrived to write her report.
TH	25	Tashkent	Tajikistan ‘Desk Exercise.’		
FR	26	Tashkent	Downloading maps, NEAP plans, documents in connection with our mission. Preparation of ‘official letters’ by Mission to all of the state agencies visited during our stay.		
SAT	27	Ugam-Chatkal National Park, & Chatkal Reserve.	Field visit to Ugam-Chatkal National Park, and Chatkal Nature Reserve. Talks with the national park director and staff.		Within easy driving distance of Tashkent, both the National Park and Nature Reserves are places of important biodiversity in the region, being the habitats and diverse ecological and botanical importance.
SUN	28	Ugam-Chatkal, and return to Tashkent PM.	The Chatkal reserve is quite small in area, but with an extraordinary large and diverse flora of endemic and endangered species.		By road at park and return to Tashkent early PM.

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Day, Date		Location	Schedule	Appointments	Notes
MO	29	Samakand	Started longer field trip to the Samakand-Bukhara region. Enroute, stopped at the Zeravshan Nature Reserve where Bukara deer are raised and released. Meeting with director and senior staff.	With a small group of eleven deer, they get two young each season. This does not appear to be money well spent, since the deer's natural habitat (riparian forests) are almost all gone, only fragments remain. This is true for almost all of the Red Book species.	By road.
TU	30	Bukhara	AM meetings at Samakand Uni, and held meetings with the departments of biological Science Dept. Continued on to Bukara, arriving early AM next day.		By road.
WD	31	Zaamin Nature Reserve	On the far side of the range is the Zaamin Nature Reserve that has a valley that contains a vast cave complex, and where the foot prints of early dinosaurs can be seen on the face of rocks (ancient sedimentary layers thrust up by the vast earth movements a few million years ago). The prints are thought to be from the first birdlike dinosaurs. Base for the great National Park and Biosphere nature reserve. An important Snow Leopard habitat.		Truly a wonderful place, full of wildlife, high mountains and semi-nomadic herders who live far from the motor roads, in a way of life little changed over thousands of years. There are great possibilities for eco-tourism here.
June					
TH	1	Nuratau Nature Res. Djizak Region.	Wildlife habitat, long-term nature reserve (wild sheep).		There are great possibilities for eco-tourism here as well.
FR	2	Bukhara	AM and PM returning to Bukhara.		Returning to Bukhara late PM.
SAT	3	Tashkent	AM Bukhara – PM return to Tashkent (10 hr. drive).		Freeway travel quite good.
SUN	4	Tashkent	AM spent on E-mail contacting Turkmen counterpart and obtaining program outline. Met USDA scientist regarding his work in biological weed control in the region, and his field monitoring plots results.		From USDA lab in Montpellier, France.
MO	5	Tashkent	Report writing.		
TU	6	Tashkent	Report writing.		
WD	7	Tashkent	Took day off instead of Sunday. Late PM to airport for flight to Ashgabad.		
TH	8	Ashgabad	AM meeting with Director of Desert Institute, Dr. Atamaradov, to confirm our local program. Paid a courtesy call on Embassy (USAID Mission in Process of moving), gave a briefing to designated staffer, and the Embassy Environmental Specialist. Joined by Ms. Nina Kavetskaya from the Almaty Mission. She will join us to the Caspian to investigate reports of a huge seal die off. Obtained official letters from Embassy requesting assistance to facilitate teams visit to various agencies and institutes in-country.		

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Day, Date		Location	Schedule	Appointments	Notes
FR	9	Turkmanbassy	In company of Ms. Kavetskaya.		By car to Turkmanbassy on the southern Caspian (634km) and ten-hour drive. Had car trouble, and arrived at 01:30.
SAT	10	Turkmanbassy	Morning meeting with Caspian Project scientists, and discussed the seal die off problem. Approximately 500 seals washed up, but came from the northern Caspian, brought down by currents. No local pollution or other causes. No lab results. Later met with Zapovednik director and scientists. Visited government lab that conducted water testing for the large oil refinery located on the shores of the Caspian. Reported no spills or pollution in the outflow waters used to cool the refinery operations. Later site inspections prove them correct.	Director stated no problems, getting funding, but under questioning admitted that there were regular pay gaps for months, and no monitoring being carried out in the protected areas, or the Caspian. That they had no direct contact with other regional components of the Caspian Project.	
SUN	11	Ashgabad	AM return drive back to Ashgabad, arriving late PM.		
MO	12	Ashgabad	Full day field trip to the Desert Institute's field research and monitoring station, with the director of the station and another scientist trained at UC Davis.	Externally funded monitoring by UC Davis and another US University.	
TU	13	Ashgabad	Tour to large Agroforestry area near President's Palace and nearby forestry project under direction of the President.		
WD	14	Ashgabad	AM meetings with department heads of the Academy of Sciences. PM spent trying to obtain visa extensions for Kazakhstan. 5 hours spent at Kazakh and American Embassy.		
TH	15	Ashgabad	Debriefing on the NEAP program which is to be effective August 2000 in AM, PM back at Kazakh Embassy. Met and had talks with Pavel Erokhin, a marine biologist, who collaborates with Susan Wilson of the International Mammal Institute. Both he and Susan had collected samples of a number of washed up seals for analysis. The general findings did not indicate oil spill or any other form of pollution from off shore drillings. They pointed to other causes. With no lab results present, it was not possible to learn further except that virus or bacteria might be secondary causes to the main cause of death.		
FR	16	Ashgabad	Report writing.		
SAT	17	Ashgabad	Report writing.		
SUN	18	Ashgabad	Tour with Firuza (protected area).		
MO	19	Ashgabad	Downloading project files.		

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Day, Date		Location	Schedule	Appointments	Notes
TU	20	Ashgabad	Visited map office for country maps. Met UNDP representative in PM.		
WD	21	Ashgabad	Visited European & Asian Development Banks on their project environment components. PM meeting with member of the Turkmen Caspian Project (who did the sampling testing on the washed up seals at Turkmanbassy). Not able to pinpoint case of death since their lab could not test for viral or bacteria, and their lab was short of chemicals for other testing. Same problem with the lab at Turkmanbassy. Environment does not seem to be a high priority of the governments of the CAR.		
TH	22	Ashgabad – Tashkent	Kazakh Visas AM. PM flight to Tashkent.		
FR	23	Tashkent	Arrived Tashkent 03.30. (No direct flight available to Almaty, had to fly to Tashkent and to Almaty from there.)		
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.		

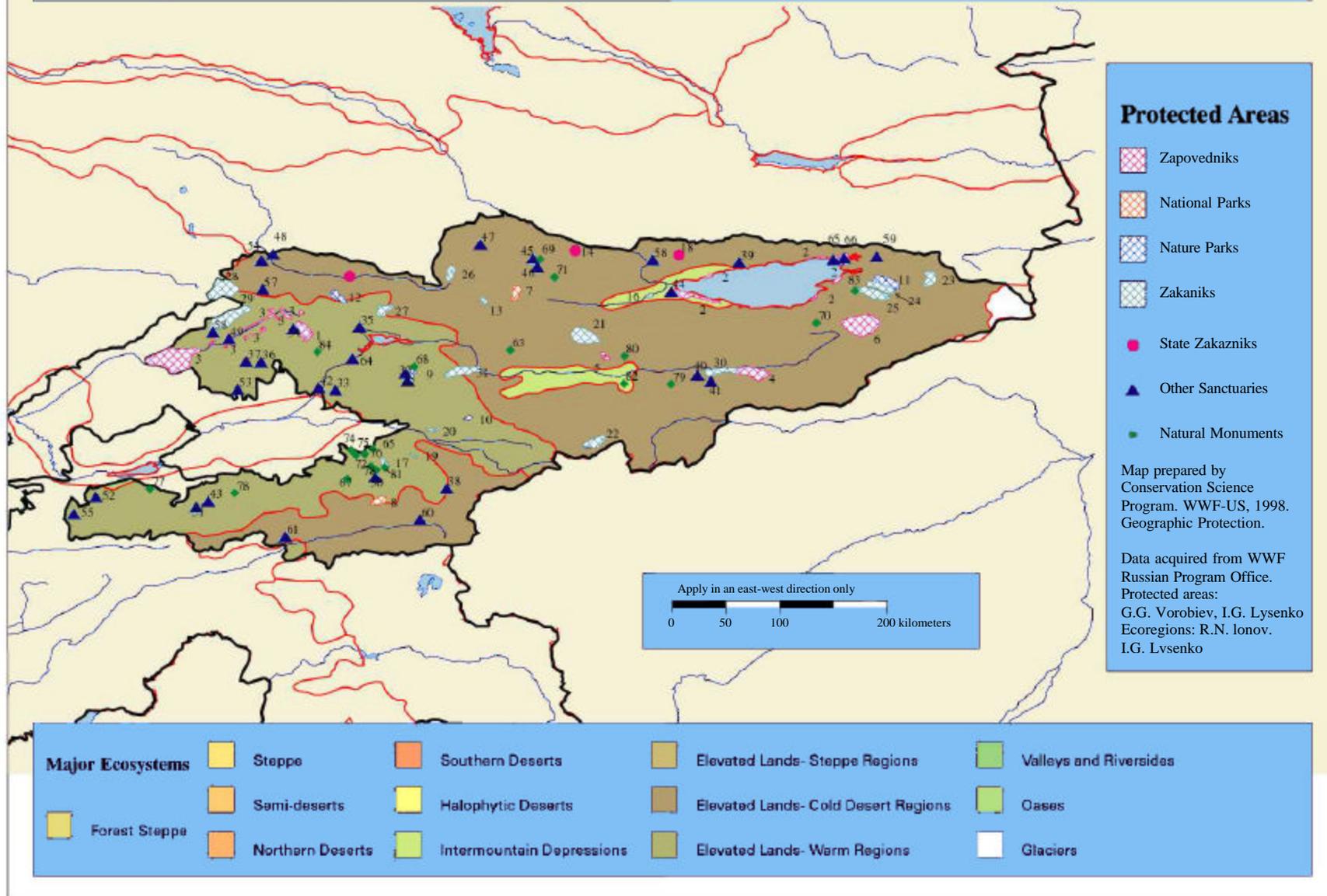
2000 BIOFOR C.A.R. Regional Biodiversity Assessment

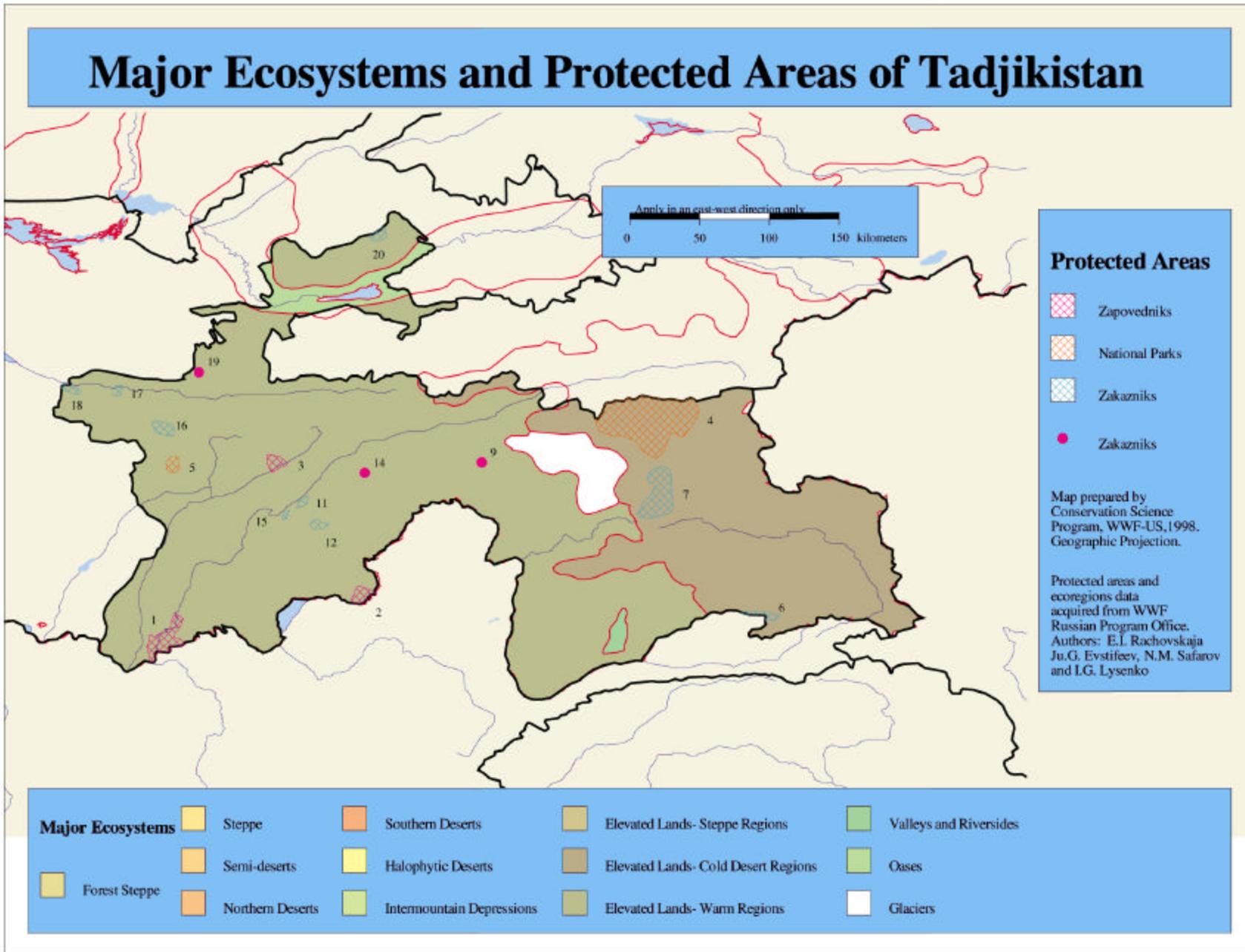
Day, Date		Location	Schedule	Appointments	Notes
TH	6	Enroute	No bookings made by UA to Lufthansa, standby for two flights. Ended up spending day 06:30 – 19:30 in Frankfurt. Baggage was left in Almaty.		
FR	7	Washington DC	Arrived Washington without bags.		
SAT	8	Washington DC	Bags delivered in late PM.		
SUN	9	Washington DC	Day off.		
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.		

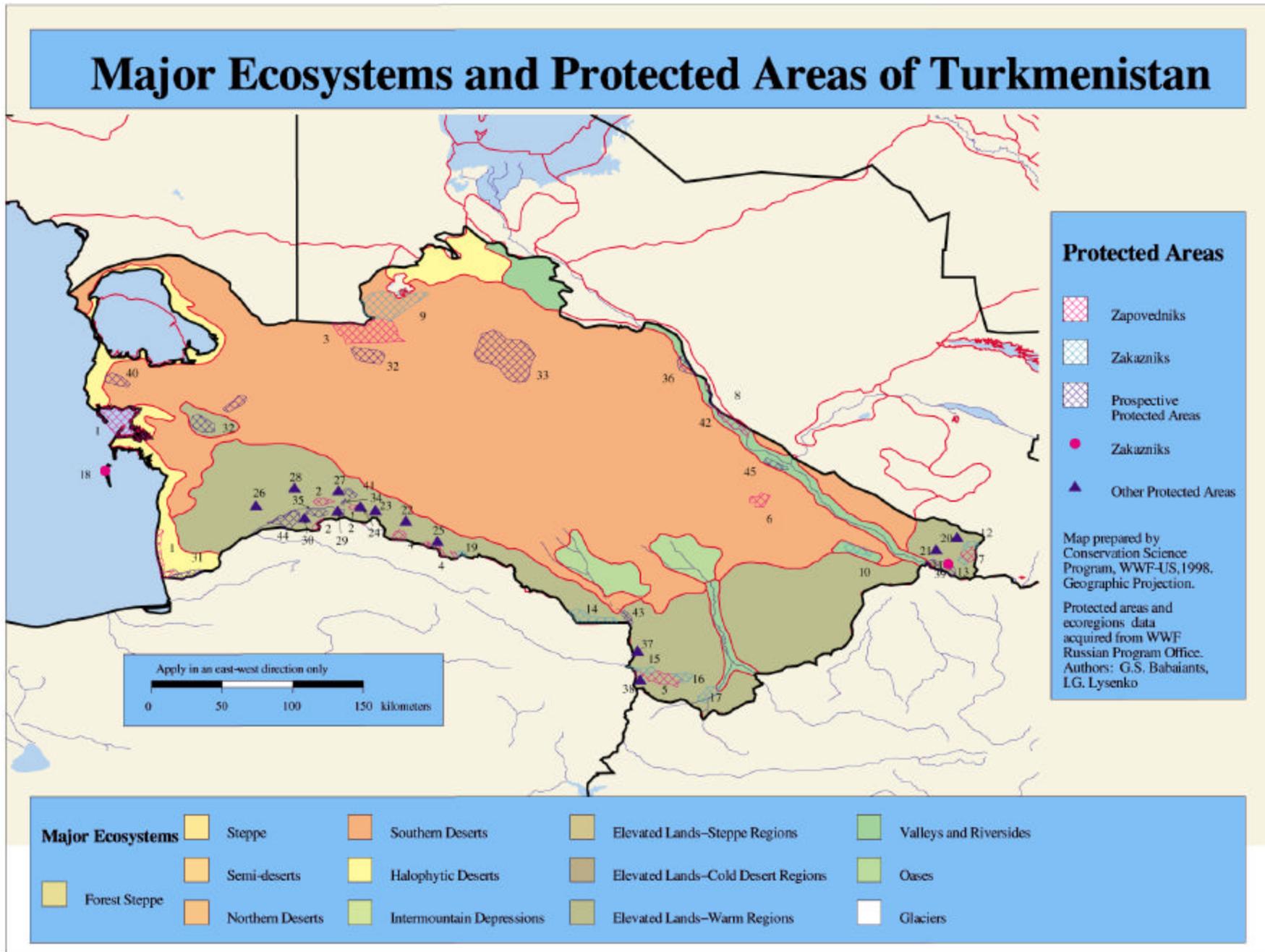
Major Ecosystems and Protected Areas of Kazakhstan



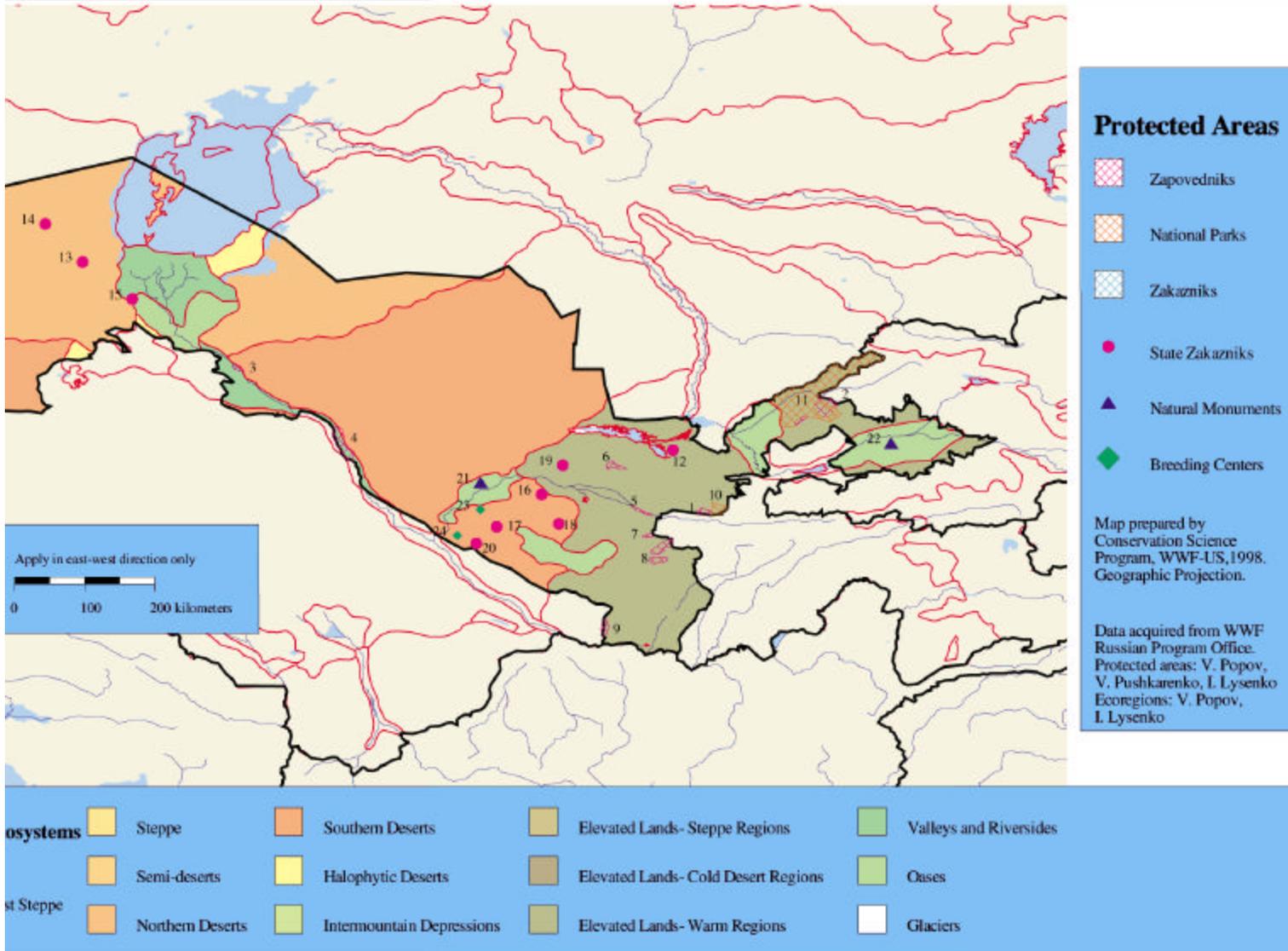
Major Ecosystems and Protected Areas of Kyrgyzstan







Major Ecosystems and Protected Areas of Uzbekistan



ANNEX E

North Caspian Biodiversity Summary

1. The Caspian Sea may be much cleaner now than at any time in the recent past due to the decline of major industries in littoral and upriver zones (in Aktau the number has declined from 20, including pesticide, uranium and plastics factories, to 2 since the early 90s) and decreased use of agricultural pesticides, resulting from economic hardships in the countries involved (though the Volga river situation is uncertain). Recent laboratory analyses seem to confirm lower levels of contaminants although considerable accumulations exist in sediments from the pre-independence era. This gives a window (of perhaps 20 years) to ensure that the appropriate policy and institutional structures are in place and the capacity is built to maintain the ecological health of the region.
2. In the Caspian Sea, the northern area is particularly vulnerable, since a) this is where the principal inflow is (Volga and Ural rivers), and b) the shallow depth increases susceptibility to the effects of sea level rise and increased salinity caused by global and local climate change. For example, warmer winters may lead to lack of ice pack formation resulting in high seal mortality and warmer summers may increase algal blooms leading to eutrophication.
3. For biodiversity, the North Caspian is important for:
 - a) Fish species, notably sturgeon, for which the sea area is a major nursery, and the rivers important spawning grounds
 - b) Caspian seal, the major population of which breeds in the North Caspian
 - c) Breeding and migratory wetland bird species, including globally threatened species
 - d) Desert ecosystems inland from the coastal zone

The north Caspian Sea area has a special status as a fish nursery. Otherwise there is only one protected area (zakaznik) near the Russian border.

4. Threats include:
 - a) Sea level rise and other effects of climate change
 - b) Contaminant discharge and accumulation, particularly from the Volga river
 - c) Desertification and landscape degradation
 - d) Loss of sensitive habitats, such as wetlands, saxaul forests and steppes
 - e) Loss of fish spawning grounds, due to dams and siltation
 - f) Illegal harvesting of sturgeon stocks

5. Institutions

Local government authorities responsible for biodiversity have poor access to information (including information from higher government levels and donor programs, such as CEP) and resources (funding for salaries, vehicles and gasoline). Reorganizations are sometimes frequent and arbitrary, resulting in loss of experienced and dedicated personnel. Authorities are finding it difficult to abandon a Soviet-style command and control mentality, focusing on enforcement and inspection, for which capacity is very limited (e.g. 14 fisheries inspectors for 1,300 km of shoreline in Aktau). Regulatory and management roles are not separated, and education, information and technical assistance roles are limited. In Aterau, 180,000 ha have been allocated to the Association of Hunters and Fishermen for licensing and management. Fisheries authorities are in better shape due the high economic returns to the sturgeon industry.

NGO development is at a very early stage. Caspian Nature is the most developed and has a strong lobbying role against oil exploration in the area, although the organization has personnel and communication problems. ISAR is playing an important role in Aterau to develop the nascent NGO sector.

The oil companies have contracted a number of ecological and environmental studies with local organizations and individuals. The recent announcement of the discovery of large, exploitable oil deposits will signal the launch of a much increased social and environmental program, that will offer significant opportunities for cooperation and collaboration.

The multi-donor Caspian Environmental Program (CEP) provides a framework for planning and investment in the Caspian, with the development of an International Framework Convention for the Protection of the Marine Environment of the Caspian. GEF funding supports the transboundary diagnostic analysis (TDA) of status and threats, as well as a Strategic Action Program. Regional thematic centers for sea level change and biodiversity conservation are based in Kazakhstan (the latter in Aterau). However, the CEP has been slow to get moving and the first three years are envisaged for strategic planning activities. The biodiversity center recently held its second annual meeting, and has come up with a list of priority projects (for Kazakhstan, see attached).

6. Recommendations

- a. Continue support to ISAR to develop NGO capacity, including small grants program for ecological initiatives
- b. Explore opportunities for community-based management of local natural resources on a pilot basis, including wetland management, community forests and ecotourism, that can be linked to direct economic returns for local populations. Dune stabilization through planting of saxual and tamarisk is one option.
- c. Link the above to policy reforms, such as the retention of local revenues for re-investment in environmental management, e.g. EIA fees, hunting and fishing license fees as an incentive for improved management.

- d. Consider supporting environmental education and awareness initiatives, in partnership with oil companies, local governments and NGOs (such as Caspian Nature). This could include environmental clubs and field trips for school and youth societies. Specific areas of focus could include:
 - Decision makers and politicians to highlight the complementarity and interdependence of environmental and economic development goals
 - Increase transparency of communications through public forums, hearings and workshops
 - Partnerships with international conservation NGOs in environmental education
- e. Strengthen partnerships between local government, NGOs and private sector through
 - Planning and implementing local initiatives
 - Joint training and exchange visits with neighboring areas and countries

This will help clarify appropriate roles and responsibilities and increased efficiency of working together

- f. Develop training programs, exchange visits and potential twinning relationships with organizations and sites in US that have similar environments, issues and challenges as the north Caspian. Examples could include San Francisco Bay, Chesapeake Bay and Gulf Coast ecosystems.
- g. Provide funding and TA/training to leverage CEP on improved understanding of Caspian ecosystems and long-term monitoring, including sensitive habitats and indicator species, with particular attention to involving local communities/NGOs.
- h. Exchange/twinning programs for academic institutes/universities in ecological studies and monitoring, including specific areas, such as seal research.
- i. Integration of biodiversity and sensitive areas into ongoing policy and regulatory dialogue for environmental assessment, including experience from oil exploration in the Caspian and elsewhere, as well as relevant international experience. Need to incorporate local information and priorities, to get bottom-up feedback into the process and to involve and elucidate the roles of local populations.
- j. Develop regional partnerships and information sharing between NGOs and other organizations to share experiences and lessons learned. Facilitate communication through e-mail, newsletters, etc. Explore opportunities through BSAP programs, seeking to expand beyond just academic communities.

- k. Global Climate Change research on sea-level fluctuations, desertification mitigation, habitat modification, etc. Could include ecological modeling and risk/sensitivity analyses.

7. Other issues.

Sturgeon fisheries. In the last 15 years, sturgeon stocks have declined by up to 80%. Spawning grounds in the rivers have declined by up to 50% due to flooding and siltation, and access to these grounds have been limited by siltation of channels in river deltas and damming of rivers. The Ural is now the most important spawning ground. Illegal harvesting of sturgeon for caviar is widespread. While this is clearly a major problem, it is not recommended that USAID get heavily involved the area because i) this is a major component of CEP, funded by World Bank, and the capacity of the Fisheries Institute at Astrakan is much greater than in Kazakhstan; ii) there is controversy about the approach of hatchery production and returning fingerlings to the sea (no homing abilities); iii) intractability of issues of illegal poaching by “caviar mafia.”

