PN. ACC-007
90595

Environmental Policy and Technology Project

Contract No. CCN-0003-Q-00-3165-00

Note: A separate report was also prepared and submitted that did not contain cost figures in Appendix F.

STUDY DESIGN

Ukraine Biodiversity Conservation Strategy & Protected Area Mangement Demonstration

September 1995
Delivery Order 9, Task U3

Prepared for:
U.S. Agency for International Development
Regional USAID Mission to Ukraine, Belarus & Moldova

Bureau for Europe & the New Independent States
Office of Environment, Energy & Urban Development
Environment & Natural Resources Division

Prepared by:
Ukraine, Belarus & Moldova Regional Office
Environmental Policy and Technology Project
For the New Independent States of the former Soviet Union

A USAID Project Consortium Led by CH2M HILL

PREFACE

Under the 1992 Freedom Support Act, the United States Congress initiated a program to provide various forms of assistance to newly independent states (NIS) of the former Soviet Union. Cooperative Agreements were signed between representatives of the U.S. government and each country in which assistance is to be undertaken. The U.S. Agency for International Development (USAID) was given responsibility to coordinate all U.S. government assistance to the NIS under the Act.

Through competitive bidding, USAID awarded a multi-year contract to a team managed by CH2M HILL International Services, Inc. (CH2M HILL) to support implementation of an environmental assistance program to republics of the former Soviet Union. Under this contract, termed the Environmental Policy & Technology (EPT) Project, CH2M HILL is to assist USAID's missions in Moscow, Kyiv, and Almaty undertake a program to promote environmental improvements in the NIS. The USAID mission in Kyiv supports environmental, and other, assistance programs to Ukraine, Belarus, and Moldova. These western republics of the former Soviet Union are termed WESTNIS. CH2M HILL has established an office in Kyiv from which to perform services in the WESTNIS region under the EPT Project.

This report was prepared as a contractually required deliverable under a contract between USAID and CH2M HILL. Although work on this report was conducted in cooperation with the assisted governments and USAID, the findings and recommendations are those of the CH2M HILL team. They do not necessarily represent official positions of the governments of the assisted countries nor of the United States of America.

The CH2M HILL team includes the following organizations:

- Center for International Environmental Law
- Clark Atlanta University/HBCUMI Environmental Consortium
- Consortium for International Development
- Ecojuris
- Environmental Compliance, Inc.
- Harvard Institute for International Development
- Hughes Technical Services Company
- International Programs Consortium
- International Resources Group, Ltd.
- Interfax Newsagency
- K&M Engineering
- Ogden Environmental and Energy Services Company
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NOTE

English-language Ukrainian geographic names have been transliterated from the Ukrainian pronunciation of such names. For example, the city often spelled as "Kiev" is presented herein as "Kyiv"

This report presents opinions and findings of its authors, and does not necessarily reflect those of USAID or CH2M HILL.

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ACKNOWLEDGEMENTS

The design team thanks all of those individuals from the Ukrainian Ministries, institutes, national parks, non-governmental organizations, and other organizations who took time from their schedules to meet with us, on short notice, during the preparation of this report. In particular, we would like to express our thanks to the staff of the Central Board on National Parks and Nature Reserve Management of the Ukraine Ministry of Environmental Protection and Nuclear Safety for their extra effort in helping us to understand the status and needs of Ukraine's protected area system.

The team would like to thank the following individuals for their information and assistance: Phil Brylski, Kathleen Stephenson, and Jocelyn Albert of the World Bank; Ken Newcombe of the Global Environmental Facility; James Osborn, Natalya Gordienko, Marshall Fisher, and Ken Baum of the U.S. Agency for International Development (USAID); Kenton Miller of the World Resources Institute; William Eichbaum of the World Wildlife Fund -- U.S.; and Francesca Grifo of the American Museum of Natural History.

The design team would also like to thank the staff of CH2M HILL in Kyiv their assistance in organizing our meetings, travel plans, and report production.

Finally, the team would like to thank Bruce Leighty of the USAID-funded Biodiversity Support Program in Washington D.C. for his counsel and advice in the preparation of this report.

ACRONYMS AND ABBREVIATIONS

AAS	Academy of Agricultural Science (part of the National Academy of Sciences)
GIS	geographic information systems
GOU	Government of Ukraine
ha	hectare
MOA	Ministry of Agriculture
MOF	Ministry of Forestry
MEPNS	(Ukraine) Ministry of Environmental and Nuclear Safety
NAS	National Academy of Science (of Ukraine)
NIS	Newly Independent States of the former Union of Soviet Socialist Republics
NGO	Non-Governmental Organization
RLP	Regional Landscape Park
USAID	U.S. Agency for International Development

SUMMARY

Under the auspices of the U.S. Agency for International Development (USAID), a three-person design team visited Ukraine in May and June 1995 to design a possible USAID assistance project that would lead to (i) preparation of a national biodiversity conservation strategy, (ii) development of a protected area management demonstration site, and (iii) compliance with international environmental obligations, especially regarding biodiversity conservation. These three project components are viewed as interrelated activities that together strengthen the foundation for long-term efforts to conserve biological diversity and promote sustainable development in Ukraine. In so doing, they contribute to USAID's strategic goals of promoting democratic reforms and a market-oriented economy within Ukraine and other New Independent States of the former Soviet Union.

Towards a Ukrainian National Biodiversity Conservation Strategy

Preparation of a national biodiversity conservation strategy represents a critical stage in the evolution of a nation's conservation policy and science. The development of a national strategy in Ukraine will provide multiple benefits, including: enhanced in-country opportunities to synthesize and share existing scientific data; more efficient allocation of domestic financial resources; improved opportunities for Ukraine to receive international assistance for conservation activities; streamlined national biodiversity conservation planning efforts; and increased attention to the special characteristics of Ukraine's biodiversity.

Ukraine is well poised to develop such a strategy. Relevant institutions within the country (including the government ministries, the scientific institutes, and non-governmental organizations) have expressed a strong interest in participating in developing a strategy. Extensive scientific information on biodiversity is available within Ukraine. The legal support for such a strategy, although still incomplete, is developing rapidly. Many existing biodiversity conservation initiatives in Ukraine can readily contribute to the strategy development process. In short, Ukraine's state of readiness for preparing a national biodiversity conservation strategy is very high.

Four options for developing a national strategy are available: a consultant-led effort; a process involving consultants and local experts; a facilitated process emphasizing broad multi-sectoral and multi-disciplinary participation; and in-country preparation. Of these, the third is recommended as the preferred method in Ukraine. This method of strategy development has the best chance for long-term acceptance and success, builds in-country capacity, assists in the allocation of internal resources, and is more likely to gain acceptance from external donors. Moreover, this approach offers important opportunities for demonstrating fundamental democratic principles in the effort to reach consensus and define priorities.

USAID could assist Ukraine in the process of preparing a national conservation strategy through such a broad participatory approach by providing support for: process design and management; data collection and synthesis; review of relevant legal issues; enhancement of computer

equipment and skills; conducting workshops and meeting; and document preparation and publication.

A Model for Improved Protected Areas Management In Ukraine

Improvement of protected areas management is key to expanding the capacity of in-country agencies and institutions to protect and manage biodiversity. Ukraine's system of protected areas and other land units devoted to nature conservation has been neglected in the past, but is now expanding rapidly in response to growing environmental awareness within the country. A demonstration project would provide Ukraine's officials, land managers, scientists, and general public with opportunities to implement broadly applicable principles of protected area design and management while exploring new opportunities to make such areas an integral part of the socioeconomic as well as biophysical landscape.

Efforts to improve Ukraine's protected area system currently face several significant constraints. The legal basis for protected areas management is vague and inconsistent. There are currently no clear criteria for establishing protected areas, and management authority is vested in several agencies as well as local governmental bodies. Professional training opportunities have been limited, while encroachment, ecosystem degradation, intensive commodity production, and other factors continue to threaten protected areas.
An effective demonstration site offers opportunities to overcome these and other constraints.

Three main criteria are important when choosing a site for conducting a protected area management demonstration. The site should (i) contribute to national biodiversity conservation goals identified by Ukraine; (ii) provide opportunities to test, evaluate, and disseminate integrated solutions to biological conservation problems; and (iii) have sufficient resources to ensure that project objectives can be achieved. Using these and additional secondary criteria, three candidate sites were identified at which a demonstration project could be undertaken using USAID support: Kinburnska Kosa Regional Landscape Park, Carpathians Biosphere Reserve/Stuzica Reserve, and Azovo-Sivashky National Park.

Using USAID support, final selection of a demonstration site (from among these or other candidates) should be undertaken through a short but thorough participatory process, and appropriate management activities should be identified at that time. Subsequently, integrated management plans and expansion of environmental education programs should be developed and implemented. Support should also be given to strengthen the Central Board for National Parks and Nature Reserve Management within the Ukrainian Ministry of Environmental Protection and Nuclear Safety.

International Environmental Agreements and Cooperation

Ukraine is party to some 28 agreements relating to the environment. These include the Convention on the Protection of the World Cultural and Natural Heritage and the Convention on Biological Diversity. In addition, Ukraine is considering signing and ratifying many of the international environmental agreements signed on its behalf by the former Soviet Union. Many

of these will (and in effect do) affect the status of biodiversity conservation policy within Ukraine, including the Convention on International Trade in Endangered Species (CITES), the Convention on Wetlands of International Importance (the Ramsar Convention), the Convention on Migratory Species (the Bonn Convention), and the Convention on the Conservation of European Wildlife and Natural Habitats (the Berne Convention).

Ukraine is encountering difficulties as it becomes party to these international environmental agreements. The Supreme Rada (parliament) has not enacted implementing legislation. National and local agencies are confused over their authority to implement and enforce these agreements. Some agreements, such as the Ramsar Convention, require that fees be paid before countries can become party to them. Ukraine currently lacks the funds to pay these fees, or to properly implement particular agreements.

To begin to overcome these problems, USAID should support the establishment of a Working Group to identify priorities for the implementation of international agreements and, if necessary, to prepare implementing legislation for specific treaties.

Conclusion

In Ukraine, as throughout the world, biological diversity faces an array of intense anthropogenic threats. However, Ukraine possesses a highly dedicated and motivated corps of officials, scientists, and citizens who are working to strengthen the vital connections between ecological integrity and socioeconomic well being. Through development of a national biodiversity conservation strategy, Ukraine can define its conservation priorities in an open and democratic manner. Through a demonstration protected areas management project, efforts to safeguard Ukraine's most significant repositories of biodiversity can be enhanced. Through improved implementation of international agreements, Ukraine can share more effectively in the world's growing commitment to environmental quality. Together, these interrelated activities can help to ensure a sustainable future for the people of Ukraine.

As a result of the study, the following are to be produced or procured, and delivered to parties as indicated:

(i) A detailed annotated draft Biodiversity Conservation Strategy outline, to be delivered to USAID. *The detailed outline is presented in Appendix C herein.*

(ii) A report on the preliminary selection of demonstration sites for development of a model protected area management plan, to be delivered to USAID. *This is presented in Section 3 herein.*

(iii) A report on overall findings and conclusions to support draft scope(s) of work for future activities on the project, to be delivered to USAID. *The report on overall findings and conclusions is presented herewith. A draft scope of work for consideration by USAID for support is presented as Appendix F herein.*

(iv) Procurement of computer equipment necessary to support this task, to be delivered to an appropriate Ukrainian biodiversity conservation or protected area management agency, or research institution. *Appendix D presents an overview of computer needs and a recommendation as to the recipient agency. The computer hardware and software will help the recipient develop a national biodiversity conservation strategy. The EPT Project contractor will procure and deliver such equipment following receipt of approval from USAID/Kyiv, and the USAID/Washington Contracting Officer's Technical Representative to do so.*

(v) Draft and final Project Reports. *A draft of this report was submitted to USAID/Kyiv on 5 June 1995. The report herein, together with the study team's Trip Report, becomes the final Project Report.*

1.2 STUDY RATIONALE

Biodiversity provides a vast array of direct and indirect benefits to people. Those components of biodiversity that have actual or potential utility or value for humanity are referred to as *biological resources*. Such resources, in the form of food, fiber, medicinals, and other goods, provide sustenance and shelter for people and the basis for local and national economies. Beyond providing direct and obvious benefits, biodiversity also serves to maintain the ecological and biophysical processes upon which economic health and environmental quality depend. Biodiversity's values extend to include less tangible qualities, including the scientific, cultural, and spiritual benefits that derive from contact with life's variety.

The aim of preparing a national biodiversity conservation strategy is to develop a broad conceptual framework within which specific conservation priorities can be identified and actions recommended. To achieve this goal, existing knowledge of biodiversity must be coordinated, the current status of biodiversity and conservation efforts assessed, and future needs explored and ranked. Domestically, the preparation of a national strategy serves to develop a common body of basic information on biodiversity, to promote open discussion and debate over conservation

policy, and to build consensus on future actions. At the same time, development by Ukraine of a national biodiversity conservation strategy demonstrates to other countries, donor organizations, and other external institutions the nation's long-term commitment to the protection and sustainable use of its biological inheritance.

As in any country, development in Ukraine of a scientifically sound network of protected areas represents a critical component of its commitment to conservation goals. However, mere designation of protected areas does not ensure that biodiversity can be conserved within them, nor that social and economic goals have been well integrated into their management. The improvement of protected areas management thus becomes a focal point for expanding the capacity of Ukraine's agencies and institutions to protect and manage biodiversity. Assessment of the status and needs of Ukraine's protected areas system is also a central feature of an overall national biodiversity conservation strategy. Using this assessment to develop a site-specific model of innovative and appropriate protected area management practices can thus provide a foundation for more general improvements in Ukraine's emerging protected area system.

Ukraine's legal structure -- including both its domestic legislation and its international agreements -- is an essential element in efforts to conserve biodiversity. International agreements create uniform standards and define obligations that should influence priorities for internal conservation actions (including the designation and management of protected areas). Specifically, the 1992 Convention on Biological Diversity (following the Earth Summit in Rio de Janeiro) provides an international framework for the protection and sustainable use of biological resources. The Convention includes provisions for the development of national biodiversity conservation strategies. Other international, regional, and bilateral agreements establish rules for the conservation of specific areas, habitats, species, and resources.

The three study components described in this report are interrelated activities that together strengthen the foundation for long-term efforts to conserve biological diversity and promote sustainable development in Ukraine. These three components together form a strong basis for Ukraine's future efforts to conserve biodiversity. Development of a national biodiversity conservation strategy will also both incorporate and fulfill provisions of many international agreements to which Ukraine is party. Any USAID biodiversity assistance to Ukraine in keeping with the project as designed in this report can be leveraged against other international donor efforts that are outlined in Appendix E. With a national biodiversity conservation strategy, Ukraine will be better-positioned to seek international donor funds, such as those of the Global Environment Facility.

1.3 STUDY METHODS AND ACTIVITIES

The study was prepared by a three-person U.S.-based team:

- Biodiversity Specialist, with a background in conservation biology and conservation planning (Curt Meine)

- Conservation/Protected Area Specialist, with experience in conservation biology and protected area management (James Tolisano)

- Legal Specialist, with experience in international treaty negotiations and legal issues pertaining to the development of a biodiversity conservation strategy (Christopher Wold).

Further details on these personnel are presented in Appendix A. The team was supplemented by Bruce Leighty, an observer from the USAID-financed Biodiversity Support Program (BSP), who provided technical guidance and insights from national biodiversity strategies developed in similar settings. The BSP observer did not participate in the drafting of this report. A description of the study team's activities is presented in the separate report to USAID: *Trip Report -- Ukraine Biodiversity Strategy & Protected Area Management Assessment, 20 May - 5 June 1995.*

The three U.S. specialists met with representatives from Ukraine's Ministry of Environmental Protection and Nuclear Safety (MEPNS) in Washington, D.C. prior to travelling to Ukraine. These meetings established the general framework for the assignment, and initiated basic background document identification. The team then visited Ukraine over a two-week period in late May and early June 1995. The trip included site visits to protected areas in the Carpathian Mountains of west Ukraine, and along the Black Sea coast in southern Ukraine.

In Ukraine, the U.S. team met with a range of potential stakeholders (see Appendix B) likely to be interested in, or participate in, preparation of a national biodiversity conservation strategy. The goal of such meetings was to identify crucial issues and constraints, and to outline an appropriate process for producing the strategy. The meetings and field visits were also intended to allow the team to establish appropriate criteria for selecting a site at which a model protected area management demonstration project could be developed.

Technical documents and other pertinent information was gathered from readily available sources in the course of undertaking the study. Relevant documents are listed in the *Bibliography* section of this report. Some information from these documents was used when preparing this report.

Throughout the study, the U.S. team emphasized the identification of Ukrainian priorities and needs for developing a national biodiversity conservation strategy and model protected area project. These priorities and needs were then matched to USAID's strategic objectives as outlined in the agency's Country Action Plan for Environmental Assistance to Ukraine.

Section 2

TOWARDS A UKRAINIAN NATIONAL BIODIVERSITY CONSERVATION STRATEGY

This section presents a review of biodiversity protection issues in Ukraine, and an approach to developing a national biodiversity conservation strategy. *Biological diversity* (or *biodiversity*) refers to the variety and variability of life in all its forms. The term embraces the variety of genetic materials within species, the variety of species in all taxonomic groups, and the variety of communities and ecosystems within which species evolve and coexist. *Conservation* seeks to sustain this variety and the evolutionary and ecological processes that support it (Wilson 1988; IUCN 1994)

2.1 UKRAINE'S BIOLOGICAL DIVERSITY

2.1.1 Biodiversity Status and Threats

Ukraine's array of biological diversity reflects its varied biogeographical conditions. Three primary bioclimatic zones -- forest, forest-steppe, and steppe -- extend across the country, roughly from northwest to southeast. In the south, the Azov and Black Seas provide more moderate conditions that allow for the presence of typical Mediterranean species and communities. These zones harbor approximately 4,500 species of higher plants, 44,000 known invertebrates, 200 fish, 37 reptiles and amphibians, 344 birds, and 101 mammals (World Bank 1993; MEPNS 1994).

Forest cover, including tree plantations, occupies approximately 10 million hectare (ha) or 12 percent of the nation's land base. Most of the original forests have been modified by centuries of genetic modification and economic use. Steppe grasslands cover about 6.6 million ha, although very little of this can be described as natural. Wetlands account for another 300,000 ha, including major complexes at the deltas of the Danube and Dnipro rivers and at Sivash Bay at the north end of the Crimean Peninsula (World Bank 1994b).

Ukraine contains a number of biological features of special note. It is a "center of origin" for rare agricultural crop varieties. Ukraine contains most of Europe's remaining original steppes. Two major migratory bird "flyways" span the country. Several "Wetlands of International Importance" occur within the territory of Ukraine (although Ukraine has not yet signed the Ramsar Convention [see Section 4 for more details] as an independent nation). The 150,000 ha of wetlands in the Ukrainian portion of the Danube Delta contain 150 species of nesting birds and 72 species of fish. The forested regions are home to some of Europe's most impressive populations of large mammals, including brown bears, wolves, moose, and marten. Ukraine's portion of the Carpathian Mountains is notable for the high incidence of endemism: some 80 percent of Europe's vascular flora can be found there (MEPNS 1994: World Bank 1994b). The Carpathians also harbor some of the most extensive tracts of remaining original forest in Europe.

emerging realization found expression in 1992 with adoption of the global Convention on Biological Diversity. More than 150 nations, including Ukraine, are now signatories to the Convention (IUCN 1994).

Ukraine has a special stake in the conservation of its biological diversity and biological resources, and unique opportunities to ensure a sustainable future for its people through conservation actions. For example, the conservation of biodiversity within Ukraine's rich agricultural soils is essential for maintaining the ecological processes that support their productivity (World Bank 1994a). This may incidentally allow Ukraine's farming sector to reduce its dependence on purchased inputs, to grow crops in a less environmentally damaging manner, and to recognize the great value of its remaining steppe and steppe-forest habitats and its indigenous crop varieties.

Ukraine has had to devote much of its limited funds for environmental protection to more immediate problems, including pollution control and the effects of radioactive contamination. These will continue to be high priorities. However, protection of environmental quality and the reduction of threats to biodiversity overlap to a substantial degree, and indeed apply across the landscape. Conversely, efforts to conserve biodiversity will yield additional environmental and economic benefits for future generations.

Ukraine has attached great importance to the protection and sustainable use of its biotic inheritance. In its draft *National Program of Environmental Protection and Rational Use of Natural Resources* (1994), the loss and deterioration of biological diversity were recognized by Ukrainian environmental specialists as threats to human health and to the productivity of natural resources. Such reductions were specifically cited as critical criteria and indicators, to be taken into account in setting nature protection priorities for the future.

The recent implementation of democratic principles in Ukraine allows opportunities for wide participation in the formulation of conservation policy, while public investments undertaken now can maintain and perhaps restore significant portions of Ukraine's biological legacy. The protection of biological diversity and the sustainable use of biological resources are goals easily overlooked and undervalued during times of scarce financial resources. However, there is indication that Ukraine's officials, scientists, and public recognize that, in securing their inheritance now, they can spend less and gain more over the long run.

2.2 IMPORTANCE OF A NATIONAL BIODIVERSITY CONSERVATION STRATEGY DURING ECONOMIC TRANSITION

Development of a national biodiversity conservation strategy represents a critical stage in the evolution of a nation's conservation policy and science. The very process of preparing a national biodiversity conservation strategy allows Ukraine to advance toward greater integration of scientific information and the application of that information to improved resource protection and management practices. In the absence of a national strategy, data on biological diversity may be left unconsolidated, and approaches to conservation may continue to be fragmented. This, in turn, increases the long-term risk that biodiversity will continue to decline, and that biodiversity's values will continue to be lost.

In Ukraine, development of a national biodiversity conservation strategy will offer multiple, significant benefits, and will play a key role during its period of social, economic, and political transition. In addition to scientific benefits, development of a national strategy would:

- allow for more efficient allocation of limited financial resources in conservation planning
- provide a coherent statement of the rationale and priorities for biodiversity conservation in Ukraine for domestic and foreign investment
- place Ukraine in a more competitive position to receive international support for conservation actions
- provide opportunities to overcome actual or potential stalemates within Ukraine's biodiversity conservation planning efforts
- document and highlight the special characteristics of Ukraine's biodiversity for a broader domestic and foreign audience.

2.3 FEATURES OF PREPARING A NATIONAL BIODIVERSITY CONSERVATION STRATEGY

The preparation of national biodiversity conservation strategies is still an evolving art, and different countries have developed different approaches to preparing strategies based on their particular biogeographical, socioeconomic, and institutional circumstances (Miller, in press). In all cases, national biodiversity conservation strategies grow out of the fundamental recognition that problem-solving in the arena of biodiversity conservation requires broad synthesis of existing information, a willingness to engage in interdisciplinary approaches, and open discussion of future options and priorities.

There is no single formula for undertaking a national-level biodiversity strategy exercise. Experience in other countries suggests that several basic approaches exist, with many variations on each. Recent reviews of these varied strategies and priority-setting exercises reveal an emerging consensus about the best features of a national biodiversity strategy planning process and some of the underlying values entailed in such efforts (Johnson, in press; Miller, in press). Essential characteristics of a comprehensive and effective national biodiversity conservation strategy include the following:

- **Broad participation:** The best strategy development efforts involve the broadest participation of stakeholders in the process. In particular, processes that are multi-sectoral (government, non-governmental, and scientific organizations) and multi-disciplinary (biologists, economists, social scientists, policy, and institutional specialists) result in the most comprehensive and broadly supported recommendations. It is important that participants in the process include likely implementors of the actions recommended. Communication and outreach techniques are utilized to inform the broader public and non-participants about the status of the strategy development process.

- **Transparency:** An open, easily understood process lends credibility to the eventual priorities, and reduces charges of bias.

- **Clear goals and objectives:** The successful outcome of the strategy development process is dependent upon the establishment of clear goals and objectives for the effort. This helps to keep the diverse stakeholders focused on the outcome.

- **Use of information:** Successful strategy development is assisted by the full use of relevant and available information.

- **Official recognition:** A deliberate attempt to achieve approval from relevant policy-makers as part of the strategy development process facilitates implementation of the final recommendations.

Essential values and assumptions that can provide the foundation for a comprehensive and effective national biodiversity conservation strategy in Ukraine include the following:

- **It is a Ukrainian document:** In undertaking a strategy development process that is appropriate for Ukraine, it must be kept in mind that the final product is a Ukrainian document -- an expression of a national consensus for conserving the natural heritage of Ukraine for the use and enjoyment of present and future generations.

- **It is for all biodiversity:** Biodiversity is important wherever it occurs. The process of developing priorities should encourage biogeographic representation as an important objective. The focus should not be limited to those areas known to contain high levels of species richness or endemism, or areas where unique species of special concern are found.

- **It is holistic:** The conservation of biodiversity must take into account not only biology, but socioeconomic, institutional, and political factors as well. Moreover, a biodiversity strategy should not be seen as just a protected area strategy; it should entail other sectors as well (e.g., agriculture, forestry, water, and economic development).

2.4 CONSTRAINTS AND OPPORTUNITIES FOR PREPARING A BIODIVERSITY CONSERVATION STRATEGY IN UKRAINE

Every country faces a unique set of constraints and opportunities in developing a national biodiversity conservation strategy. Ukraine's readiness to prepare a national strategy is examined below under four broad categories: institutions, science, law, and existing conservation initiatives.

Management of the MEPNS; the ministries of Forestry, Agriculture, and Fisheries; the Environmental Policy Commission of the Supreme Rada; and the institutes of the National Academy of Sciences. Confirming the commitment of these institutions to development of a multi-sectoral, multi-disciplinary, participatory process will be a critical next step in developing the national strategy.

2.4.1.3 Assessing Strengths and Weaknesses

Without exception, all government ministries, scientific institutes, and non-governmental organizations contacted during preparation of this study report expressed strong interest in, and support for, development of a national biodiversity conservation strategy. However, understanding of the actual process of national strategy development was limited, and information on other national strategies and how they were prepared was largely unavailable. At the same time, there was marked interest in learning more about the process, and especially about the process surrounding Bulgaria's National Biological Diversity Conservation Strategy (U.S. Agency for International Development 1994). (Representatives of the Institute of Biology of the Southern Seas in Odesa, in particular, demonstrated an eager awareness of Bulgaria's work).

The pattern of relationships among the institutions contacted was inconsistent. Occasional expressions of inter-institutional antagonism and mistrust surfaced. Further understanding of these differences is required, but none of these differences appeared so serious as to be considered a critical obstacle in moving forward with a national strategy process. The need for a national strategy has been discussed previously within Ukraine, and attempts have been made to initiate a process. Many individuals, in all sectors, volunteered that a neutral outside facilitating body would be welcome and h[illegible]pful in moving forward toward a consensus-based strategy.

Ukraine's non-governmental organizations will be key to achieving the goal of developing a broadly accepted national strategy. The status of NGOs in Ukraine has ebbed and flowed in recent years in response to the highly dynamic environmental and socioeconomic conditions within the country. Especially after the Chornobyl nuclear power accident, environmental NGOs provided a legitimate avenue of dissent under the prior regime. After the government changed, participation in environmental NGOs began to decline, and many of their leaders joined the new government. Under the ensuing period of transition, the NGO community has to a certain extent splintered. Although weakened, experience in Bulgaria and elsewhere suggests that environmental NGOs in Ukraine remain eager and able to contribute to the strategy development process, and that the process itself can serve to promote democratization through the active participation of the NGOs.

At this juncture, the various stakeholder institutions and organizations are limited primarily by their scarce financial resources. Eventually other logistical problems, such as difficulties in communication and transportation, must also be taken into account. The most significant point at present is that all organizations consulted by the study team are eager and willing to contribute to the preparation of a national biodiversity conservation strategy.

2.4.2 Status of Scientific Information and Institutions

In any country, development of an effective national biodiversity conservation strategy must be based upon a critical appraisal of the status of in-country scientific information. This involves not only the quality and accessibility of existing information, but the capacity of scientific institutions to gather and synthesize biodiversity data, to work together in combining and applying knowledge, and to provide decision-makers with accurate information and analysis.

2.4.2.1 Scientific Readiness

In general, Ukraine's scientific readiness for preparing a national biodiversity conservation strategy is extremely high. Ukraine has a well developed system of scientific institutes, and deep scientific traditions in botany, zoology, ecology, marine and aquatic biology, forestry, agricultural sciences, and other fields. The existing body of scientific information relevant to development of a national biodiversity conservation strategy is impressive. Science appears to be highly respected by the general public and by decision-makers. In particular, there appears to be a very high level of collaboration between scientists and ministries involved in the implementation of conservation policy.

The primary repositories of information on Ukraine's biodiversity are the institutes of the National Academy of Sciences of Ukraine, including the Institute of Botany (Kyiv), the Institute of Zoology (Kyiv), and the Institute of Biology of the Southern Seas (Odesa). Other key institutions include the Academy of Agrarian Sciences (Kyiv), the Azov-Black Sea Ornithological Station (Melitopol), and the MEPNS Scientific Centre of the Ecology of the Sea. These institutions provide a base for a high number of specialists in botany, zoology, ecology, marine biology, ornithology, and other disciplines.

In terms of basic biodiversity data, Ukraine has benefitted from a strong national commitment to field research. Virtually all major taxonomic groups have been thoroughly studied. Inventories of flora and fauna are highly complete (although consistent monitoring has been difficult to implement). The herbarium at the Institute of Botany in Kyiv is the oldest in the former Soviet Union, and the second largest (after the collection at St. Petersburg). The Institute of Zoology includes a Laboratory on Endangered Species that focuses on species listed in the Red Data Book. Red Data Books have been prepared for the country's plants and animals. A "Green Book" has been prepared that describes the rare and relict plant communities and is used to identify areas deserving formal protection.

Although contacts with colleagues from other nations (and even within Ukraine) have been relatively limited, many Ukrainian scientists have gained an advanced understanding of emerging principles in applied ecology and conservation biology. Individual scientists are applying geographic information system (GIS) technology to conservation-related analysis and planning in Ukraine, although GIS is not used widely or consistently. In general, there appears to be a greater familiarity with GIS capacities in Ukraine than there was in Bulgaria at a similar stage in the strategy development process.

concepts have been translated into resource management planning should be assessed. For example, has the generally high level of interdisciplinary scientific understanding of ecological processes produced useful examples of watershed- or ecosystem-level management?

- *What is the relationship between universities and the scientific institutes in biodiversity-related research?* The potential contributions of university scientists to the development of a national biodiversity conservation strategy should be assessed. This is an especially important consideration in bringing regional perspectives into the design of a strategy process.

- *To what extent has the status of Ukraine's biodiversity been assessed at various levels of biological organization (genetic, species, community, ecosystem) and in different geographic regions?* Many biodiversity conservation strategies and projects have focused primarily on the species level, and are constrained by inconsistent geographic coverage. Ukraine's constraints and opportunities need further assessment in order to guide the strategy development process.

2.4.3 Status of Legislative Measures

The conservation and sustainable use of biodiversity must be based upon a legal system that:

- clearly identifies standards for the conservation and use of biological resources
- delegates responsibility for implementation and enforcement
- deters violations of the law through a compliance and enforcement regime.

Standards must reflect conservation goals and be biologically meaningful. In addition, they must be enforceable. Duties and responsibilities must be defined clearly to ensure implementation and enforcement. Any law also requires effective enforcement and compliance which removes the economic incentive for violating the law. Thus, a national biodiversity conservation strategy must include an assessment of laws to ensure that they include these elements.

2.4.3.1 Existing Laws

Ukraine has many existing laws relating to the conservation of biodiversity that incorporate above-listed goals to varying degrees. These include laws on protected areas, the protection of animals, and forestry:

- **Law on Environment and Nature Reserves:** This is the primary law regulating protected areas. It attempts to unite habitat and species conservation with human economic needs. It includes ten different protected area classifications, including strict nature reserves *(zapovednyky)*.

- **Law on Fauna:** This law regulates the conservation and use of wild animals, including hunting, fishing (sport and commercial), and uses of wildlife generally. The law also

regulates activity regarding biological resources, including a complete prohibition of use of a species, and allows the MEPNS to establish special rules for the protection of rare and endangered species. It also requires a consideration of impacts prior to development of projects.

- **Law on Forests:** This law dedicates all forests to the Forest Fund and, thus, state control. The state then manages the Forest Fund to increase forest yield, conservation, and reforestation to increase forest use. The Forest Law requires protection of rare species of trees and other plants, and also regulates other types of forest use.

Other Ukrainian measures relevant to the conservation and sustainable use of biodiversity include laws on mining, ecological expertise (similar to environmental impact assessment), water, and land. Other measures now being considered include laws on ecological education, the regulation of waste, and the use of bonds as a condition of permit approval for certain activities. The bond would pay for environmental damages in case the permitted activity harms the environment.

2.4.3.2 Strengths and Weaknesses in the Legal System for Biodiversity Conservation

In general, Ukraine has a sound basis for developing a legal system for the conservation of biodiversity. Some elements of a successful legal foundation are missing, however. The Forest Law and others fail to clearly define the agency responsible for implementation and enforcement of the law. For example, some laws include provisions for public participation, but do not explain the manner in which citizens can participate. Also, many of the laws refer to conservation or sound conservation principles, but do not elaborate specific tasks or standards for implementing those general goals.

In addition, the laws do not define clearly prohibited and permitted activities. According to protected area managers, this is a particular problem in conserving the very resources for which the protected areas were created. Moreover, the laws are not integrated. Thus, they do not reflect a common understanding of the goals and purposes of other laws. For example, the laws do not require consultation between the Ministry of Forests and the MEPNS on matters concerning rare and endangered species that occur in Forest Fund lands. In addition, a law specific to the protection of plants is being considered. Logically, laws to protect other forms of wildlife should be developed simultaneously.

2.4.4 Initiatives Contributing to the Development of a National Biodiversity Conservation Strategy

A primary challenge in developing a national biodiversity conservation strategy is to understand how best to take advantage of, and effectively incorporate, existing biodiversity conservation initiatives. This is an essential part of the planning process. Gaining full understanding of existing efforts allows planners and participants to assess accurately their needs and opportunities, to coordinate actions, to leverage funds, and to avoid duplication of effort.

In Ukraine, many institutions -- including the state and local governments, scientific institutions, and non-governmental organizations -- are already making important contributions to biodiversity conservation. These efforts should be examined in moving toward development of a comprehensive national strategy. It is possible that such efforts may allow the process of strategy development to be shortened. In any case, knowledge of the these initiatives is required to minimize potential overlap or conflict in encouraging national consensus. Put positively, Ukraine has an impressive array of conservation programs and projects underway, and many of these will provide vital information in developing the national strategy.

Among the existing initiatives that would need to be examined and folded into the strategy development process are the following.

- the Global Environmental Facility (GEF) of the World Bank has two projects within Ukraine: the Transcarpathian Biodiversity Protection Project and the Danube Delta Biodiversity project (see Section 3)

- the Black Sea Programme of the World Bank supports environmental protection and management efforts on the Black Sea at the regional scale

- under the Black Sea Programme, the Institute of Biology of the Southern Seas of the National Academy of Sciences of Ukraine has recently prepared a comprehensive *Report on the Biodiversity of the Ukrainian Black Sea Area*

- the MEPNS Laboratory of Reserve Management and Protection of Biodiversity in Odesa has completed the first phase of a comprehensive national inventory of Ukrainian wetlands

- the Agricultural Academy of Sciences (Kyiv) has undertaken projects using GIS to advance sustainable agriculture projects in buffer zones around selected natural areas

- EcoCentre, a Kyiv-based national NGO, has prepared a national-scale design for a system of core reserves, buffer zones, and connecting corridors to enhance the existing protected areas system

- in March 1994, a Decree of the President of Ukraine was issued "On the Reservation of Valuable Natural Territories for Nature Conservation Purposes" to provide for the withdrawal of valuable natural areas during the process of land privatization

- the MEPNS Central Board on National Parks and Nature Reserves is now being expanded to enhance its capacities to protect and manage biodiversity within protected areas.

These and other initiatives provide a strong foundation upon which a national biodiversity conservation strategy can be elaborated. At the same time, the abundance of opportunities

presented by such projects will demand careful planning and outreach efforts as the strategy development process proceeds.

2.4.5 Primary Issues and Needs in Developing a National Biodiversity Conservation Strategy

In moving towards the development of a national biodiversity conservation strategy, specific provision should be made to address a number of key issues and needs for the different sectors described above. The foundation upon which an eventual strategy is built can be strengthened by addressing these needs at an early stage.

2.4.5.1 Institutional Considerations

The following items pertain to the need to facilitate participation of key Ukrainian institutions in initial stages of developing a national biodiversity conservation strategy process. These steps are intended to enhance the long-term capacity of these institutions to work together in the full strategy development process.

- **Inventory:** An inventory of key institutions, departments, and personnel, including NGOs, should be undertaken.

- **Identification of essential stakeholders:** Out of the pool of potential participants (see Appendix B), essential stakeholders should be identified to ensure their participation in the initial stages of process design.

- **Identification of goals and objectives:** Early agreement on the goals and objectives in developing a Ukrainian national biodiversity conservation strategy should be achieved among essential stakeholders.

- **Defining roles and responsibilities:** The roles and responsibilities of early participants need to be clearly articulated and broadly understood at an early phase.

- **Dissemination of information on strategy development:** An investment of time will need to be made to explain and explore the process of biodiversity strategy development and how it will work. Especially helpful will be exposure to the experience of other countries, including specifically Bulgaria, in developing national strategies.

- **Movement toward consensus on an appropriate process:** In consultation with institutional representatives, a process should be agreed upon that ensures open participation in strategy development.

- **Development of communication methods:** To provide information on the goals of, and progress towards, a national strategy process, effective means of communication should be established.

- **Initiation of data preparation:** To move efficiently toward a national strategy, consultation should be held with various institutions to identify, gather, and prepare essential biodiversity data.

2.4.5.2 Science Needs

Ukraine's vast store of scientific information on biological diversity will be a significant strength in its efforts to prepare a national conservation strategy. To ensure that these intellectual resources are effectively and efficiently utilized, the following needs should be addressed:

- **Assessment:** A more comprehensive assessment of the status of existing knowledge and research on Ukraine's biodiversity is needed. The questions in Subsection 2.4.2.2 above should provide guidance for such an assessment. The assessment should specifically include a review of current GIS capability and needs.

- **Outreach:** Efforts should be made to contact additional scientific institutions, including universities, and to provide them with information on the preparation of national biodiversity conservation strategies.

- **Organizing data:** Other national strategies should be consulted, and advice should be sought in-country, as to the most effective means of channelling existing scientific information into the strategy development process.

2.4.5.3 Legal Needs

The legal aspects of national biodiversity strategies are integral to their successful development and implementation. The following legal issues need be to addressed in the early stages of strategy development in order to ensure that public opinion and social values are reflected in the overall process.

- **Communication:** Increased communication is needed among the environmental and natural resource agencies concerning their goals and legal authority. In addition, better communication is needed among legal experts and scientists to ensure that legal standards are biologically meaningful and legally enforceable.

- **Assessment:** A fuller assessment of strengths and weaknesses in the framework of Ukrainian laws is needed.

- **Standards:** Attention needs to be given to the lack of clear legal standards and other provisions essential for effective conservation legislation. Efforts should focus on clearer definition of:

  - specific responsibilities for specific authorities within each law
  - integration of concepts of ecology into specific tasks for implementation of the laws

- integration of laws to provide a consistent approach to conservation of biodiversity and biological resources
- more specific requirements for public participation and inter-agency consultations on matters of mutual interest and expertise.

2.4.5.4 Existing Biodiversity Conservation Initiatives

To ensure that existing initiatives in Ukraine are adequately considered prior to pursuing a comprehensive national biodiversity conservation strategy, the following steps should be taken.

- **Inventory:** Pertinent ongoing biodiversity conservation projects, programs, and initiatives should be assessed and examined for their potential association with the national conservation strategy.

- **Incorporating existing initiatives:** Methods of incorporating the goals, activities, and findings of existing conservation initiatives in a Ukrainian national biodiversity strategy should be determined.

2.5 DEVELOPING A NATIONAL BIODIVERSITY CONSERVATION STRATEGY FOR UKRAINE

The interest in methodologies for developing national level biodiversity conservation plans is high and has resulted in the definition of guidelines based on early country experience around the world (Johnson in press; Miller in press). Experience of the USAID-funded Biodiversity Support Program in developing the Bulgarian Biodiversity Conservation Strategy, and conclusions reached by others who have examined similar efforts in other countries, will be instructive when preparing a national biodiversity conservation strategy in Ukraine (U.S. Agency for International Development 1994; Miller in press).

2.5.1 Steps in a National Biodiversity Conservation Strategy Process

Several steps are typically involved in preparing a national-level biodiversity conservation strategy. The following thoughts are offered should USAID provide Ukraine with technical assistance in defining its biodiversity strategy and action plan. For the process to be successful, it must be designed with substantive input from key Ukrainian stakeholders. Thus, the following outline of a strategy development process is at best tentative, pending further consultation with stakeholders from Ukraine. It is intended to be an indication to USAID of the possible process for planning purposes only.

- establish management structure and oversight

- design a detailed strategy development process (perhaps through a steering committee/pre-workshop design meeting with key stakeholders)

- assess existing knowledge (gather background information, commission papers, perhaps form working groups in key topical areas) and establish guidelines for information to be collected
- conduct a strategy workshop
- produce a draft strategy document with geographic priorities
- receive comments on draft strategy
- develop an action plan (defining geographic and programmatic priorities, responsible agencies, and follow-up activities)
- publish background papers and final Strategy/Action Plan in English and Ukrainian.

2.5.2 Options for Developing a National Strategy

There is no single formula that has been, or can be, applied in preparing national biodiversity conservation strategies. However, it is possible to define four very broad approaches that have been used in other countries, and that might be adapted to the particular circumstances of Ukraine:

- single consultant or consultant team efforts
- consultant efforts supplemented with local participants
- externally facilitated processes
- in-country efforts.

A brief summary of each approach is presented below, with comments on their relative strengths and weaknesses.

2.5.2.1 Consultant (Usually Foreign)

Description: Most often undertaken at the request of a donor agency, biodiversity assessments can be compiled by a technical consultant or team of consultants relying on background documents and selected in-country interviews to define the status of biodiversity conservation and corresponding needs and priorities.

Strengths: This approach offers quick results. It is best adapted for single (donor) agency use where objectives are narrowly defined. The resulting assessments are cursory, but good consultants will usually define well the primary issues, offer an overview of the situation in-country, and make recommendations for investment/project selection. These exercises are relatively inexpensive, unless large teams of private sector consultants are used.

Weaknesses: Because this is essentially a non-participatory technique, ownership of the recommendations is limited to the consultant and perhaps their patron and clients. In-country

support and commitment is narrow. In-country capacity is not strengthened. Alternative perspectives and opinions are usually not defined, as consultant interviews tend to concentrate on a limited number of individuals.

2.5.2.2 Consultant plus Local Experts

Description: Some biodiversity assessments have been organized by foreign consultants or organizations and selected in-country specialists chosen to supplement their study.

Strengths: The addition of local experts allows for more meaningful dialogue and perspective on the issues and conclusions. The assessment technique is essentially the same as in the previous approach, but often more thorough, incorporating local knowledge and sources to a greater degree. Results are achieved relatively quickly. In-country capacity is modestly improved because local experts will usually obtain the results of the assessment for in-country use. The budget requirements are moderate.

Weaknesses: This technique shares many of the same weaknesses as the previous approach, concentrating on expert opinion rather than participation. Local consensus and commitment to the findings are difficult to achieve. Goals and objectives are often determined by the consultants' time and experience, and not necessarily by in-country priorities.

2.5.2.3 External Facilitation of Local Process

Description: Very different in look and objective from the above, this technique concentrates on external facilitation of in-country dialogue and participation to arrive at a consensus document of national priorities. The process is as important as the product. The best versions of this technique emphasize multi-sectoral and multi-disciplinary involvement. A neutral external party facilitates the process, coordinates activities, organizes meetings, and generally keeps the process moving.

Strengths: Broadly participatory, the results are able to gain broad support and acceptance in-country. The resulting priorities represent something of a national consensus that helps prioritize internal allocation of resources and focuses requests for external donor assistance. The document can be used as a indicator of national priorities for a variety of donors. In-country capacity is increased through participation in the process. The use of an external facilitator avoids charges of bias against internal stakeholders.

Weaknesses: Broad participation and the focus on process take more time, effort, and money. Skilled facilitation is required. Budget requirements are moderate-to-high depending upon the size of the country, the complexity of local conditions, and in-country capacity.

2.5.2.4 In-country Preparation

Description: In-country preparation of biodiversity strategies has been undertaken in a number of situations. These are usually organized by a central Ministry, and the process and results vary widely.

Strengths: In theory, this is the ideal approach; in practice, the results are sometimes less than optimal. In-country preparation is owned by local participants. Goals and objectives are determined in-country and in-country capacity is utilized.

Weaknesses: Broad generalizations are difficult in this case, but central agencies sometimes lack the authority or degree of neutrality necessary to facilitate an open process. Resource constraints may limit participation beyond the capital city. External influence may be the driving force behind the decision to prepare a national strategy and the organization of the effort may thus be thinly disguised to comply with prospects for external assistance.

2.6 RECOMMENDATIONS AND RATIONALE FOR A PREFERRED APPROACH TO BIODIVERSITY CONSERVATION STRATEGY PREPARATION

Based on an assessment of specific conditions in Ukraine and experience with the preparation of national biodiversity strategies elsewhere, it is recommended that technical assistance be offered to Ukraine in the form of an externally facilitated process focusing on broad participation and multi-sectoral and multi-disciplinary involvement. This type of exercise has the best chance for long-term success, builds in-country capacity, assists in the allocation of internal resources, and gains acceptance of external donors as an indication of national priorities. A suggested strategy document outline and possible implementation steps and budget for this approach is presented in Appendices C and F respectively.

The most commonly cited obstacle in the preparation of national biodiversity studies, strategies, and action plans is conflict over identification of the lead agency responsible for the planning effort (Miller in press). The use of an external facilitator, if perceived as a neutral party with relevant experience, avoids this primary constraint. In Ukraine, the MEPNS has experience in the coordination and communication of environmental studies with other ministries and institutes within the government. However, it is a young agency that has not consolidated its position to the extent necessary that it can easily facilitate a broad-based discussion of a biodiversity strategy. The tradition of democratic participatory processes has not yet been deeply ingrained within Ukrainian institutions, nor is there practical experience in leading such an effort without reverting to more centralized forms of decision-making. The likelihood of success in a reasonable time frame would be greater if an external facilitator could be found.

The development of a strategy by a consulting individual or team, with or without local experts, would not achieve the degree of participation that is recognized as a hallmark of the best efforts to develop national strategies (Johnson in press; Miller in press). The resulting product might remain separate and detached from most of the major stakeholders who are involved in

biodiversity conservation issues within Ukraine. There is also a distinct possibility that external donors would not recognize such a strategy as broadly representative of Ukrainian priorities and would either reject it as a guide to national priorities, or insist that a strategy geared to the donor's standards be produced. This would result in multiple and wasteful duplication of strategy-forming efforts. A comprehensive and broad-based participatory effort would result in a single document of Ukrainian priorities suitable for submission to multiple donors as an indication of the country's priorities.

The potential benefits to Ukraine will be greatest if a comprehensive, deliberative, and participatory-based Strategy and Action Plan is developed. Ideally, such a strategy would and should be developed in-country. However, current circumstances in Ukraine suggest that prospects for successful development of a strategy would be improved through external facilitation. This view has also been confirmed by many of the key in-country stakeholders.

Finally, promotion of democratic processes is among the chief goals that USAID hopes to achieve in its foreign assistance interactions. There is no better way to demonstrate democratic principles than through a broad-based participatory development of a strategy and action plan. Of the possible options outlined above, the externally facilitated process is the most democratic. Virtually no one in the natural resources sector of Ukraine will be unaffected by the development of a national strategy, either by direct participation, or through observation of a democratic process in action. It will be a lasting model for dozens of Ukrainians, who will learn by participating in a very real and tangible way.

2.7 SUGGESTED TECHNICAL ASSISTANCE FROM USAID

The following technical assistance needs represent the essential requirements entailed in the preferred approach described above. Appendix F contains a description of expected inputs, outputs, implementation schedules, and estimated costs related to these needs.

- Technical assistance in management and design of strategy process. Includes costs outlined in Tasks 1 and 2 in Appendix F.

- Technical assistance on collection, synthesis, and preparation of background information. Includes costs outlined in Task 3 in Appendix F.

- Review of international obligations and their consistency with national law and the need for additional legislation in support of a national biodiversity conservation strategy. This assistance need is outlined in Section 4 below.

- Enhancement of relevant computer skills, including use of GIS applications. See Appendix D.

- Coordinating and conducting a strategy workshop and follow-up action plan meeting. Includes costs outlined in Tasks 4 and 6 in Appendix F.

- Preparation, editing, translation, publication, and dissemination of strategy document and background papers. Includes costs outlined in Tasks 3, 5, and 7 in Appendix F.

Section 3

A MODEL FOR IMPROVED PROTECTED AREAS MANAGEMENT IN UKRAINE

This section presents:

- a review of the existing national parks and protected area system in Ukraine
- criteria for the selection of candidate park management sites
- candidate sites for the establishment of demonstration national park management activities
- possible park management strategies and activities which could be carried out in a demonstration project.

Identification of appropriate and high priority sites was determined through limited site visits to evaluate typical park management operations and potential demonstration sites. Discussions with representatives from MEPNS and other appropriate institutions allowed for the consideration of additional high priority sites.

3.1 SYSTEM OF PROTECTED AREAS IN UKRAINE

3.1.1 Existing Status

Degradation of environmental conditions in Ukraine throughout this century has stimulated recognition of the important role that biological and ecological factors play in the physical, economic, and spiritual health of Ukrainian people (MEPNS 1994). As a result, the government established the new Central Board on National Parks and Nature Reserve Management within the MEPNS, and gave it responsibility for managing existing and proposed new protected areas. At the same time, the government authorized 15 strict nature reserves *(zapovednyky)*, four national parks, and three biosphere reserves. A recent Presidential Decree will add 61 additional protected sites to this total (GOU 1994; MEPNS 1994).

The ambitious nature conservation efforts being initiated by the government of Ukraine are presently constrained by limited finances, inadequate infrastructure in both the MEPNS Central Board and protected area sites, and limited experience in the development and implementation of protected area management plans.

Several international donor agencies are presently assisting Ukraine with biodiversity protection measures. The Global Environment Facility (GEF) is currently supporting two projects in Ukraine through the end of fiscal year 1996. The GEF Transcarpathian Biodiversity Protection Project (World Bank 1993) is designed to provide support for technical research, ecological education, protected area planning, and infrastructure development in a portion of the

Carpathians Biosphere Reserve on the border with Slovakia and Poland. The project, valued at $580,000, includes additional support through a trust fund established by the MacArthur Foundation. The GEF Danube Delta Biodiversity Protection Project (World Bank 1994) is designed to provide institutional strengthening, wetlands restoration, public awareness and local community participation, and protected area expansion southwest of Odesa along the Black Sea. The project, valued at $1,500,000, is designed to complement related activities being carried out in Romania.

3.1.2 Policy and Legislative Basis for Protected Areas in Ukraine

Ukraine's Law on Environment and Nature Reserves is the primary statute regulating protected areas in the country. Ukraine has approached the conservation of habitat and species by establishing protected areas that differ according to the level of economic activity that is permitted. In a strict nature reserve, or *zapovednyky*, all economic activity is prohibited. Only scientific research is permitted in these areas. A national park can include different protected area classifications that permit different levels of economic activities. Three zones are typical in an authorized national park: a strict reserve zone, a recreation zone, and an economic zone.

For example, the Carpathians National Park in the Carpathian Mountains contains each of these three zones. People live in the economic zone and graze cattle, produce agricultural crops, and cut trees on their property and conduct other economic activities. In the recreation zone, people are not permitted to maintain a residence, but they are permitted to graze cattle. In addition, the regional office of the MEPNS maintains orchards and conducts forestry experiments. Scientific research takes place in the strict reserve zone.

The Law on Environment and Nature Reserves also includes provisions for biosphere reserves as part of the global network of protected areas developed under the UNESCO Man and Biosphere Program. Ukraine has designated three Biosphere Reserves: Askanya-Nova (33,307 ha), Carpathians (38,930 ha), and Chernomorsky (87,348 ha). The Carpathians Biosphere Reserve includes six disjunctive units. The units are combinations of strictly protected areas and zones of economic activity. The individual units of the Carpathians Biosphere do not fit the classic conceptual framework for biosphere reserves in which a core area is surrounded by concentric rings of buffer zones permitting increasingly intensive economic activity. For example, one unit of the Carpathians Biosphere Reserve has no form of protected area along its perimeter. Another unit includes different zones, but is not characterized by zones forming concentric circles.

Other types of protected areas have been established in Ukraine, including regional landscape parks, natural landmarks, and botanical gardens.

At present, the government has authorized 15 strict nature reserves, four national parks, and three biosphere reserves. These sites cover approximately 2.4 percent of the total land area of Ukraine. The recent Presidential Decree, as noted above, will substantially expand the number of protected sites. The protected areas of Ukraine presently are managed by a variety of institutions, including the MEPNS, the Ministry of Forests, the Ministry of Agriculture, and academic institutions. A recent decree directs all governmental bodies to transfer management and control of protected

areas to the MEPNS, but this process is incomplete. However, the government has been actively strengthening the newly created Central Board on National Parks and Nature Reserve Management within the MEPNS in recognition of the significantly expanded authority which this Board will now assume for overall protected area management in the country. The Central Board has increased its staff from four to more than thirty, and anticipates further increases in personnel in the coming year. The Director of the Central Board operates under the jurisdiction of a Deputy Minister for the MEPNS, although a great deal of autonomy exists for this unit. The current annual budget for operation of the protected area program by the Central Board is approximately the equivalent of $US820,000, with additional funds allocated for staff and infrastructure support in Kyiv.

The Law on Environment and Nature Reserves allows for the creation of buffer zones around each classification of protected areas. The law states that the buffer zone should be large enough to prevent economic activities from harming the territories adjacent to them. The actual size of the buffer zone thus is not expressly stated. The intent is to base such designations on the characteristics of the protected area and the nature of the economic activities. In the Carpathian region the buffer zone is generally interpreted to encompass one kilometer extending in a radius from the boundary of the strict reserve.

3.2 CONSTRAINTS AND OPPORTUNITIES FOR IMPROVEMENTS IN PROTECTED AREAS MANAGEMENT IN UKRAINE

3.2.1 Policy and Legal Issues

The policy and legal framework for protected areas in Ukraine offers an opportunity for developing an integrated protected area system based on sound ecological principles, while at the same time meeting human needs. Ukraine presently appears to be successfully integrating strictly protected nature reserves with human economic activity at several sites. Moreover, an additional buffer zone tier can be created to ensure that adjacent economic activity does not harm the values for which the protected area was established.

The time to act appears to be now if significant progress to protect the remaining biological heritage of Ukraine is to be made. However, many legal and policy challenges exist. Laws relating to conservation of habitats and species are very general, and do not provide strong legal standards to prohibit certain activities in the protected areas. For example, officials from protected areas have lamented that alleged violators of protected area laws often escape without penalty because the laws regulating land uses are too vague to enforce. Ukraine must develop more specific language that defines responsible authority for implementation and enforcement of habitat and species protection laws. This legislation also must create a clear legal standard for the conservation of biodiversity which citizens can understand, managers can implement, and judges can interpret and apply.

The Ministry of Forestry is reluctant to transfer protected areas under its control to the MEPNS in accordance with the Presidential decree. Although the MEPNS has management responsibil-

themselves ensure the long term viability of biological diversity and ecosystem functions. This is particularly true in Ukraine, where the size of most protected areas is too small to guarantee the viability of their populations and functions. Biodiversity conservation in Ukraine will achieve its most significant results if conservation measures are extended to include ecologically sustainable land use practices in buffer zones that surround protected areas. While this fact is well understood by protected area management personnel in Ukraine, the state of agricultural and forest land use has not yet fully addressed the importance of modifying land use practices to encompass essential ecological values.

Existing protected areas are already experiencing adverse impacts from encroachment by local land users, and ecosystem degradation from both point and non-point source pollutants. In the Carpathian Biosphere Reserve, livestock owners consistently graze their herds within the reserve boundaries, placing sensitive plant communities at significant risk. Wetland communities at the mouth of the Dnipro River and in Sivash Bay are at risk from industrial contaminants and sediment from agricultural runoff.

Agriculture is seen as a leading cause of most environmental degradation in Ukraine (World Bank 1994a). Environmental problems related to agriculture may be more widespread than industrial pollution problems because the latter are usually more concentrated. The principal problems are soil erosion and water runoff, which contribute silt and plant nutrients to water bodies; contamination from agrochemicals, especially those in solution; and manure storage and usage, which contaminate ground and surface water with bacteria and nitrates. These additives to soil and water disrupt system functions and alter species composition in both anthropogenic and undisturbed communities. Unfortunately, the impact of agricultural practices on biodiversity conservation was not identified as a priority in recent multi-lateral sectoral analysis of development potentials for the agricultural sector (World Bank 1994a).

However, these impacts have been identified as critical concerns by Ukrainian sources, and alternative measures for achieving agricultural goals are rapidly being studied and promoted. Several research programs are already actively promoting the value of ecologically sound agricultural systems. These alternative systems reduce reliance on outside soil and water inputs, work with a greater diversity of locally adapted plant species, and attempt to mimic surrounding natural plant community processes. Farmers are also being encouraged to adopt cropping systems and mechanical practices that can reduce soil loss and stabilize productivity.

Forestry practices in Ukraine continue to emphasize maximum production, often at the expense of watershed and biological conservation values. The selection of forest harvest sites does not appear to account adequately for on- and off-site ecological impacts, and is resulting in significant erosion and degradation of downstream aquatic and terrestrial ecosystems (World Bank 1994a). Forest harvest equipment emphasizes "whole log" extraction, and discourages more ecologically benign systems that can reduce the amount of bare soil and subsequent erosion and loss of site productivity. However, representatives of the Ministry of Forestry and the associated Institute for Mountain Forest Economy are investigating alternative harvest systems that would result in less disruption of ecosystem dynamics. A strong interest has been expressed to develop

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professional and technical information exchanges with U.S. and other foresters who have more extensive experience applying ecologically appropriate forest management systems.

The MEPNS Central Board is faced with a critical need to take advantage of these advances in sustainable agriculture and forestry in order to put into place land use practices in buffer zones that can accommodate both the conservation of biodiversity and economic needs. Many local communities that surround protected areas do not yet fully recognize the ecological values and economic potentials of such areas. The potential to establish strong working partnerships with local users is very high right now, and several communities are already actively seeking these kinds of mutually supportive relationships with protected area management authorities.

3.2.4 Revenue-generating Potential

The Law on Environment and Nature Reserves allows managers of protected areas to charge fees for use of a protected area. This provision also grants the state agency or other institution managing a protected area the right to retain those fees for use in managing the area. The funds are not returned to the central treasury, but can be used directly by the managing authority to cover operation costs.

This provision provides excellent opportunities for generating revenue in protected areas. For example, not only could a protected area charge a fee for visiting the area, it also could develop commercial economic activities within the economic zone of a protected area (excluding the *zapovednyky*).

At the same time, improvement of income-generating opportunities for other residents living near protected areas can be encouraged in a manner that will enhance conservation objectives. Nature-based tourism can bring a significant amount of new income into local communities, and stimulate a diverse array of associated service and supply businesses. Outreach programs provided through the protected areas to local land users can promote ecologically appropriate forestry, improved grazing practices, and such money-making ventures as native plant cultivation and sales. All of these ventures can establish a strong local and national base of support for the protected areas and conservation initiatives.

3.3 CANDIDATE SITES FOR DEMONSTRATING ENHANCED PROTECTED AREA MANAGEMENT PRACTICES

A wide variety of potential sites for applying protected area management practices exists in Ukraine. Should USAID support a protected area management demonstration project, efforts will involve the following, which are outlined in more detail below:

- **Site selection:** the selection of one or more sites through which innovative protected area management practices can be demonstrated, evaluated, and replicated

- **Management:** coordinated assistance to strengthen the operation of the new MEPNS Central Board on National Parks and Nature Reserve Management.

3.3.1 Site Selection

Selection of one or more suitable sites for applying protected area management practices must involve a critical review of existing or newly proposed protected areas to identify an appropriate site or combination of sites that can fulfill a wide range of objectives.

3.3.1.1 Criteria for Site Selection

Recognizing recent legislative action granting the MEPNS Central Board full responsibility for the management of the nation's system of national parks and nature reserves, it is expected that the Central Board will take a central role in site selection and implementation of the proposed protected area activities. A USAID-financed activity could provide a mechanism for coordinated discussion of potential sites that will enable the full range of appropriate stakeholders in Ukraine protected area management -- including representatives from the MEPNS Central Board and other appropriate GOU and NGO entities -- to apply the following criteria, in order of priority.

3.3.1.1.1 *First Priority Criteria*

Final site selection for the proposed protected area management activities should, at a minimum, fulfill the following three criteria:

- **The site will contribute to national biodiversity conservation goals identified by Ukraine:** The site(s) selected should represent areas of high biological or ecological significance that have been previously identified as areas of important concern by the MEPNS or other appropriate government institutions. Specifically, the selected site should reflect an area that has been targeted by the MEPNS Central Board as a high priority for development of improved management capabilities, and that reflects a commitment on the part of the government of Ukraine to continue activities initiated beyond the life of any USAID assistance. High biological or ecological "significance" should be reflected in a weighted assessment of such factors as the capacity of the site to provide important or essential habitat for threatened, endangered, rare or endemic species; areas of high species richness or abundance; important breeding areas; critical migratory zones; or locations encompassing a wide variety of landscape features or ecosystem types.

- **The site will provide an opportunity to test, evaluate, and disseminate integrated solutions to biological conservation problems:** The essential purpose of the selected site should be to serve as a demonstration of integrated management techniques that can be applied in a protected natural area and its surrounding buffer zones to combine biological conservation objectives with sustainable land use and economic success. In order to serve as a practical demonstration, the site should apply principles and strategies that will be applicable in other areas of Ukraine, including areas that may reflect different ecological, social, or institutional conditions. Results of the activities carried out should enable the MEPNS and other government and non-government groups to learn valuable lessons that can be applied in other sites. The presence of such model protected areas

will become increasingly important as the MEPNS Central Board expands its protected area program in the coming years.

- **The site should have sufficient resources, including those provided under USAID assistance, to ensure that demonstration project objectives can be achieved:** Site evaluations should consider whether the existing staff and infrastructure will be adequate to accomplish the project objectives. (Possible USAID financing may help cover the costs of some of these staff development and infrastructure needs for the first year). However, the site should be assessed to determine if the proposed project finances will be sufficient to meet these input needs within the time frame in which the activities will be implemented. Site evaluations should include an analysis of:

  - the number and technical capabilities of national and local personnel, including technical, administrative, and management staff allocated for full or part-time project operations

  - the type and extent of education and training necessary to perform essential technical, management, or administrative tasks

  - supportive materials available to enable these staff to carry out their work, including transport, communication equipment, field monitoring and enforcement tools, computers, and other office supplies.

3.3.1.1.2 *Supplemental Criteria*

The following criteria, although less important that those identified above, may be relevant for evaluating the suitability and probability of success for a demonstration site, and may be useful to consider, particularly in cases where any doubt or hesitancy exists in finalizing any site selection:

- **National and international prominence or visibility:** There may be some value in identifying sites that already have some measure of national or international interest. More prominent areas may enable the government to attract other investment interests that can strengthen the overall management objectives. National or international visibility can also increase outside participation in the management activities, and improve the chances of achieving the activity objectives.

- **Opportunities to apply or advance existing scientific knowledge and programs:** Site selection should be based on the ability of proposed demonstration activities to take advantage of a useful base of existing technical data or knowledge about the area, or should reflect a previously expressed interest by government, non-government, or other relevant stakeholders in developing such a data base for this specific location.

- **Opportunities for collaborative activities and partnerships with other government or non-government groups:** The implementation of protected area management

3.3.1.2 Candidate Sites

A preliminary review of possible sites for implementing USAID-supported protected area management activities identified three candidates that would meet the first priority criteria identified above. However, these sites are only three out of dozens of possible choices. They are described below only to provide an example of the potential applications of protected area management demonstrations. A more thorough review and evaluation process may be necessary in order to finalize site selection and determine component activities that should be carried out at the site. The final site selection process should incorporate perspectives from a wide range of potential stakeholders with direct experience of the conditions and needs in each area.

3.3.1.2.1 *Kinburnska Kosa Regional Landscape Park*

The Kinburnska Kosa Regional Landscape Park is situated in the southern coastal part of Ukraine, and occupies a strip of land of the Kinburn Peninsula southeast from Odesa across the Dnipro River delta (Titar 1994). The area forms a portion of the Chernomorsky (Black Sea) Biosphere Reserve. A variety of estuarine and lagoon habitats merge with a large expanse of intact native steppe ecosystem, and relict woodlands. The area, especially the adjacent Yagorlitsky Bay, is important from a migratory and resident bird conservation perspective. Ownership of the site is granted by the state to the Pokrovka village authority of Ochakiv District.

Approximately 1,000 people permanently inhabit the area of the park. Most live in the village of Pokrovka. Many of these residents have expressed strong enthusiasm for development of the park and associated facilities. A large percentage of the area is occupied by a local community forestry association. Other areas are used by a fisheries cooperative, a holiday hotel, and a youth camp. As a result, local participation in the management of the area would be significant, and the site represents an excellent opportunity to link biodiversity conservation with a strong demonstration of integrated protected area management.

Ultimate jurisdiction for the site is held by the MEPNS through its regional department in Mykolayiv. The site provides outstanding opportunities for environmental education, and the development of nature-based tourism. A considerable amount of scientific research has been carried out in the area. Management practices are presently directed towards: restoration of natural values being degraded through forest harvest, overfishing, and other uses; sustainable development of the local economy; and national and international cooperation to maintain the Northern Black Sea migratory flyway for waterfowl (Titar 1994). A considerable amount of infrastructure is already in place in the area, although additional inputs will be required.

3.3.1.2.2 *Carpathians Biosphere Reserve/Stuzica Reserve*

The Stuzica Reserve forms one unit with the Carpathians Biosphere Reserve. It is located on the border with Slovakia and Poland at a range of between 770-1269 meters in elevation. The reserve contains a remarkable diversity of vascular plants, many of which are rare or endemic.

Of principal importance are the extensive areas of beech and spruce forests which are of great significance in studying the history of the East Carpathian vegetation (World Bank 1993).

Management authority for the reserve rests with the MEPNS, although day to day management is still vested in a multitude of different agencies and institutions, including the Ministry of Forestry. Line management functions are still complex. Activities and major work groups reflect the orientation of the managing agency, and active management of the forest harvest areas in the buffer zones has been poorly regulated (World Bank 1993). Very little infrastructure is presently in place in the reserve, although a great deal of supportive staff and infrastructure exist for the other reserve units. The proposed activities would complement limited funding that has been allocated to this area through the GEF Transcarpathian Biodiversity Protection Project, which extends through fiscal year 1996.

3.3.1.2.3 *Azovo-Sivashky National Park*

The Azovo-Sivashky National Park encompasses approximately 57 square kilometers of seashore, islands, and coastal lakes and wetlands in and near Sivash Bay at the western end of the Azov Sea. It is located in the southeastern portion of Ukraine where the Crimean Peninsula meets the mainland near the town of Genichesk. The park is divided into three sections: the Beruchi Peninsula along the Azov Sea, Churyuk Island, and Koyuktuk Island. The latter two areas, in central Sivash Bay, are strictly protected. The park contains some of the most important remaining coastal wetlands in Europe, including some of the region's most significant shorebird and wading bird habitat. It is also an important stopover point for birds using the Northern Black Sea flyway. The entire area was listed as a Wetland of International Importance under the Ramsar Convention (see Section 4 for more details) when Ukraine was still a member of the Soviet Union (World Bank 1994a).

The park was officially designated only two years ago. Management authority for the park rests with the Ministry of Forestry, although the strict reserves within the park are administered by other entities, and the MEPNS takes an active role in reviewing park management. The park receives few visitors. The Beruchi Peninsula portion of the park is intensively managed for game production, and special fees are charged to non-Ukrainian hunters. The park is divided into three management zones. The scientific zone is closed to visitation. Scientists from a number of institutions, including the Azov-Black Sea Ornithological Station in Melitopol, use these areas for research. The economic zone is used by hunters, beekeepers, grazers, and other resource users. The recreational zone attracts sea-goers from southern Ukraine, although visitation is light. The park's existing infrastructure is limited.

In general, this is a sensitive area where additional financial inputs might be used to expand the boundaries to include other threatened portions of Sivash Bay, to develop ecotourism and educational facilities, to meet basic material management needs, and to improve the level and extent of scientific research taking place in the area.

3.3.1.3 Final Site Selection Process

USAID could facilitate a short but comprehensive participatory process in order to allow the full range of stakeholders to be given a voice in the final selection of the site or sites in which protected area management activities are to be demonstrated. While management jurisdiction for all national parks and nature reserves has been transferred to the MEPNS Central Board, there will likely be other institutions and agencies which will play a role in the implementation of any demonstration activities. These institutions could include other ministries, particularly the Ministry of Forestry and the Ministry of Agriculture, scientific institutions, and NGOs. The final site selection for protected area management demonstration would be enhanced if these stakeholders are recognized and then given an opportunity to identify and justify a particular site. If the total number of stakeholders identified is greater than three, it is recommended that final site selection be based on a rapid appraisal of the two or three most highly ranked sites by an independent review team. The steps that should be taken in this process include the following:

- Identify the full range of stakeholders who should be included in any protected area review process[1].

- Request that each stakeholder propose 1-2 possible sites for consideration as the final site to be selected for protected area interventions.

- Employ a non-partisan entity to facilitate a one-day workshop in which representatives from each stakeholder are allowed to present information on proposed sites. Presentations should address the three first priority criteria identified above, and include any other criteria that are deemed appropriate to the final decision. Presentations should also outline the protected area development and management activities that would be carried out as part of any USAID-supported project. Participants in the workshop should be provided with an opportunity to assign weighted values to each area presented.

- An independent review team comprised of 2-3 non-partisan members should then conduct a rapid ground appraisal of the two preferred (highest ranked) sites.

- Upon completion of these field visits the review team should present their findings and site recommendation to the stakeholder participant group, and establish consensus on the site selection and proposed component activities to be carried out during the life of the project.

The final site selection process should be designed to be completed rapidly and with limited outside technical assistance. It is anticipated that 1-2 technical advisors with experience in protected area management design and operation be contracted for about one month to organize and facilitate the planning workshop, coordinate site visits, and report final site selection.

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[1] At a minimum, it is expected that this group would include representation from the MEPNS, ministries of Forestry and Agriculture, National Academy of Sciences, Academy of Agricultural Sciences, and Institute of Ecology (EcoCentre).

Additional technical services will be required to cover workshop expenses, and prepare a written overview of the component activities that will be included in the selected demonstration site. A written overview of the component activities should include an itemized budget describing predicted annual costs over the life of the project. The overview should also include a description of responsibilities to be held by all participating agencies and organizations.

3.3.2 Possible Management Activities

Personnel from the MEPNS Central Board, existing protected area management staff, and representatives from other government and non-government groups have identified to the study design team a wide range of management activities that could be considered for inclusion under a protected area management demonstration project. The most consistent assistance requests emphasized the need to develop the following capabilities.

3.3.2.1 Develop Integrated Protected Area Management Plans

Achieving the multiple objectives of establishing protected areas will require preparation or refinement of area management plans. While several existing protected areas in Ukraine are applying 10-year management plans that prescribe immediate and long-term management actions, many areas lack such plans. Where appropriate, current scientific data from field surveys, inventories, or other research efforts should be synthesized along with applied principles from conservation science and related social science disciplines to prepare or update the 10-year management plans. These comprehensive 10-year plans should, in turn, be used to prepare annual operating plans for each year through the life of the project. Annual operating plans would include such applied tasks as:

- defining the number and type of personnel required to operate the area
- describing staff development needs
- outlining planning and decision-making procedures
- describing security and enforcement practices, identifying infrastructure requirements, and identifying measures to encourage local residents or groups to participate in park management.

3.3.2.2 Strengthen and Expand Environmental Education Programs

Protected area management agencies have a responsibility to help people living in communities that surround such areas understand the ecological and economic importance of the reserves. Protected area management strategies should include development of a detailed ecological education plan, including development of interpretive centers, non-formal education and communication skills development for park ranger staff, production of printed and audio-visual educational materials, and support for local nature-based NGOs.

of the infrastructure necessary to accomplish the management demonstration objectives established for the selected site will be required prior to initiating any site activities.

It is expected that one or more of these activities will be included in a protected area management demonstration project. However, identification of specific activities to be supported by USAID will be dependent on the needs and feasibility of success in the site selected. This assessment should result from the final site selection process described above.

3.4 OPPORTUNITIES TO ASSIST DEVELOPMENT OF THE CENTRAL BOARD ON NATIONAL PARKS AND NATURE RESERVE MANAGEMENT

A USAID-support protected area management demonstration project should include provisions to provide commodity support and professional development opportunities for staff of the MEPNS Central Board. The rapid increase in personnel, and management and planning responsibility being assigned to the Central Board, is not being matched by an increase in financial support. Specifically, the Central Board would benefit from basic office supplies, including desks, filing cabinets, copying equipment, computers, and software (see Appendix D).

In additional, provisions should be made to enable selected members of the Central Board to participate in international conferences and other relevant meetings. These activities will provide opportunities for staff to broaden their exposure to new ideas in the fields of conservation biology, protected area management, and sustainable land use practices. Additionally, relevant literature in each of these fields should be available to Central Board staff, including subscriptions to appropriate international journals.

3.5 SUGGESTED TECHNICAL ASSISTANCE FROM USAID

Development of a national biodiversity conservation strategy, coupled with a protected area management demonstration, will provide Ukraine with important experience in the preparation of annual and long-term site management plans, staff development strategies, environmental education programs, and measures to increase the participation and support from local communities surrounding protected areas. This experience can form a base from which lessons can be learned and applied to other sites within the protected area system. It can also serve as a reference point for experience and program implementation through which the MEPNS can leverage additional Ukrainian or international funds to meet its growing needs. Commodity provisions (see Appendix D) to the MEPNS Central Board will enable the rapidly increasing staff to have access to computer and software technology, equipment, and professional development necessary to enable these personnel to carry out their expanding responsibilities.

A suggested protected area management project demonstration for possible USAID support is outlined below. Appendix F presents a description of expected inputs, outputs, implementation schedules, and estimated costs of such a project.

- **Final site selection for protected area management activities:** Support two non-Ukrainian experts for about one person-month to coordinate and facilitate the selection of a site in which protected area management demonstration activities can be carried out. Contracted specialists would be responsible for working with representatives from the MEPNS Central Board on National Parks and Nature Reserve Management, and other appropriate stakeholders, to prepare the finalized design for activities to be included in a protected area management demonstration, including budget, financial analysis, and implementation plan. Selected specialist(s) should have experience in the design and operation of protected areas, workshop facilitation skills, and natural resource management project design and management. Support should also be provided to cover administrative and operational costs for a one-day workshop of up to 10 local participants in Ukraine. Costs to be incurred will include participant transport, meals and incidental expenses, communications, copying, and presentation materials.

- **Implementation of protected area management activities in a selected demonstration site:** The scope of this support requirement will depend upon the outcome of the final site selection process, following which the scope should be documented to USAID.

- **Development of the Central Board for National Parks and Nature Reserve Management:** Support to cover commodity purchases and disbursement, including computers and software, office supplies, including desks, filing cabinets, copying equipment, international travel to professional meetings, and journal subscriptions. A list of possible computer hardware and software needs is presented in Appendix D.

Section 4

INTERNATIONAL ENVIRONMENTAL AGREEMENTS

This section presents a listing of international environmental agreements and cooperation, including those pertaining to biodiversity, to which Ukraine is signatory; an evaluation of Ukraine's current status concerning such agreements; and suggestions for possible USAID support with regard to the agreements.

4.1 INTERNATIONAL ENVIRONMENTAL AGREEMENTS SIGNED BY UKRAINE

4.1.1 Overview

International law offers important tools for the conservation and sustainable use of biodiversity, protection of the atmosphere, and the regulation of activities relating to nuclear energy and weapons, among other areas of concern. As a general rule, international environmental agreements, as well as regional and bilateral agreements, help support policies -- and the laws necessary to carry out those policies -- that form part of a system of national law. The prestige and respect given to international standards, as well as the coercive power of the international community, can have a significant impact on the implementation of measures within an individual country.

Specifically, international law provides common rules among nations for regulating specific activities. Such harmonization allows governments and private citizens to avoid differing regulatory programs in different countries, and thus to reduce transaction costs. In addition, a country's reliance on international, regional, and bilateral agreements creates opportunities for cooperation with other nations. Many countries face similar problems. Participation in international and other agreements allows experts from different countries to share their experiences and successes in resolving problems. Technical assistance and exchange of information are common benefits of participation in international agreements.

Moreover, participation in international and regional agreements provides access to financial assistance for implementation of the agreement's provisions. For example, Thailand's experience in curbing the trade in protected plant species illustrates how international environmental law and financial assistance can be used to strengthen domestic law and conserve important components of biodiversity. Many parties to the Convention on International Trade in Endangered Species of Flora and Fauna (CITES), to which Thailand is a party, imposed trade sanctions against Thailand because it was failing to enforce the provisions of CITES. Due to its noncompliance, many species of rare orchids were becoming endangered. With the technical and financial assistance of the CITES Secretariat, Thailand enacted better legislation and enforcement methods, and the trade in rare orchids has slowed considerably.

Other international environmental agreements also offer Ukraine potential technical, financial and legal support. The Convention on the Protection of Wetlands of International Importance,

and the Convention on Biological Diversity, among others, have mechanisms by which Ukraine might obtain funds for implementation of its international obligations.

4.1.2 Status of International Environmental Cooperation by Ukraine

The international environmental treaty process in Ukraine is initiated by the MEPNS when it prepares a statement indicating the necessity for participation in an agreement. If the government agrees, it asks the Ministry of Foreign Affairs to prepare the necessary documents for accession. Upon signature of the President and ratification by the Parliament, an international agreement becomes binding law in Ukraine. As a matter of international law, these international obligations prevail over national law to the extent that inconsistencies exist.

To date, Ukraine is party to about 28 agreements (see Table 4-1 at the end of this section) relating to the environment. These agreements can be generally placed into five categories:

- habitat and species protection
- atmosphere
- pollution control and prevention
- oceans
- nuclear weapons and nuclear accidents.

In addition, Ukraine is considering the signing and ratifying of many international environmental agreements signed on its behalf by the former Soviet Union. The MEPNS has indicated its support for: ratification of CITES; the Convention on Wetlands of International Importance, Especially concerning Waterfowl Habitat (the Ramsar Convention); the Convention on Migratory Species (the Bonn Convention); and the Convention on the Conservation of European Wildlife and Natural Habitats (the Berne Convention). In addition, Ukraine participates in regional agreements, such as the Convention to Control Pollution of the Black Sea. Other regional agreements under consideration include: an agreement with Hungary and Romania to protect transboundary rivers from pollution; an agreement with Belarus and Russia to protect the Dnipro River; an agreement with Poland and Slovakia to manage an international nature preserve; and an agreement with Russia to protect significant ecological areas in their border regions.

4.1.3 Issues Associated with Implementation of International Environmental Agreements by Ukraine

As Ukraine becomes party to an increasing number of international environmental agreements, it is encountering several problems. First, the Supreme Rada has failed to enact legislation that specifically implements Ukraine's international obligations. Thus, many international obligations cannot be implemented by the responsible authorities in the MEPNS and cannot be enforced by the MEPNS or citizens.

Second, national and local governmental bodies are confused over their authority to implement and enforce international obligations. For example, in the Carpathians Biosphere Reserve,

The first task of the Working Group with regard to biodiversity would be to identify priorities for implementation of international conventions. This could include an assessment of the benefits and costs of participation in a convention, as well as an assessment of existing Ukrainian legislation for consistency with Ukraine's existing and anticipated international environmental obligations. Based on these assessments, the Working Group also could assign to a law-drafting committee the task of preparing implementing legislation for specific treaties.

With regard to other international treaty obligations, the Working Group might need to break into smaller units relating to specific types of agreements. Due to the large number of treaties relating to nuclear issues, nuclear treaties may need to be eliminated from consideration or could be the focus of a separate working group.

USAID assistance to the Working Group should include the following:

- Support for:
  - 1-3 non-Ukrainian experts (3-5 person-months) on international treaty processes and international and regional agreements relating to the conservation and sustainable use of biodiversity. These experts would provide technical expertise on relevant agreements as well as comparative expertise on the legal regimes of other countries.
  - 3-5 non-Ukrainian experts (5-7 person-months) on international treaty processes and international agreements relating to, for example, oceans, air emissions, and nuclear issues. These experts would provide technical expertise on relevant agreements as well as comparative expertise on the legal regimes of other countries.
- Support for Ukrainian experts:
  - highly knowledgeable in international and regional agreements relating to the conservation and sustainable use of biodiversity
  - highly knowledgeable in international and regional agreements relating to, for example, oceans, air emissions, and nuclear issues.
- Support for Ukrainian and non-Ukrainian experts in drafting environmental laws.
- Logistical and administrative services and equipment to support operation of the Working Group activities.

Appendix F presents a description of expected inputs, outputs. implementation schedules, and estimated costs.

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Appendix A

STUDY TEAM MEMBERS

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Curt Meine is an independent conservation biologist, environmental historian, and writer. He served as principal writer of *Conserving Biological Diversity in Bulgaria: The National Biological Diversity Conservation Strategy*, developed under the auspices of the Washington, D.C.-based Biodiversity Support Program. Dr. Meine is currently working with the Crane Specialist Group of the World Conservation Union's (IUCN) Species Survival Commission to coordinate development of the Global Action Plan for Cranes. Recently, Dr. Meine has been working extensively with the U.S. Fish and Wildlife Service and the U.S. Bureau of Land Management on planning and implementation of ecosystem management. He received a B.A. degree in English and History from DePaul University in Chicago, Illinois and an M.S. and Ph.D. in Land Resources from the Institute for Environmental Studies at the University of Wisconsin-Madison

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Appendix B

LIST OF CONTACTS AND INSTITUTIONAL AFFILIATIONS

Names marked with an asterisk (*) indicate those whom the study design team would recommend as potential invitees to a national biodiversity conservation strategy workshop. This indicates that the team found these individuals to be especially useful sources of information. This listing should not be seen as prescriptive.

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Appendix C

SUGGESTED OUTLINE FOR A UKRAINIAN NATIONAL BIOLOGICAL DIVERSITY CONSERVATION STRATEGY DOCUMENT

The following outline is offered as a starting point in the refinement of a structure that responds to the particular circumstances, needs, and opportunities for preparing a national biodiversity conservation strategy for Ukraine. It is based in part on the outline used in development of national strategies in Bulgaria and elsewhere. It is recommended that this outline be used as the basis for further discussion during the strategy development process.

I. Introduction

This section of the strategy document should provide a general introduction to the concepts of biodiversity and its conservation. It should provide the rationale for the protection and sustainable use of biological diversity, and should highlight the special role that a national strategy can play within the Ukrainian social and political context.

A. The conservation of biological diversity in Ukraine
B. The significance and value of biodiversity
C. The need for a national biodiversity conservation strategy

Boxes

- The biodiversity conservation agencies
- Environmental NGOs
- The legal basis for biodiversity conservation

II. Ukraine's Biological Diversity

This section of the strategy document should provide a basic overview of the status of biological diversity and biological resources within Ukraine. It should explicitly treat biodiversity at the genetic, species, and community/ecosystem levels and describe the most significant gaps in scientific understanding of Ukraine's biodiversity.

A. Ukraine's physical and biogeographic characteristics
B. An overview of biological diversity
    1. Ecosystem diversity
        a. Representative communities and ecosystems
        b. Unique communities and ecosystems

Maps

- Area of cultivated land
- Chemical pollution
- Distribution of radioactive contamination

IV. Current Biodiversity Conservation Measures in Ukraine

This section of the strategy document should provide an up-to-date review of existing conservation programs and measures in Ukraine. It should serve to inform not only the Ukrainian audience for the strategy, but non-Ukrainians interested in the status of conservation within the country.

A. International agreements and cooperation
B. The legal basis for biodiversity protection
C. The Ukrainian protected areas system
D. Sustainable use of Ukraine's biological resources
E. Scientific research programs
F. Programs to sustain the biodiversity of the Black and Azov Seas
G. *Ex situ* conservation programs and institutions
    1. Museums
    2. Taxonomic collections
    3. The Institute of Zoology Laboratory on Endangered Species

Boxes

- Ukraine's scientific institutions
- Cooperative conservation efforts in the Black Sea
- Cooperative conservation efforts in the Carpathians
- Relevant international treaties and agreements
- GIS and conservation of biological diversity

Maps

- Ukraine's protected area system

V. A Program to Conserve Ukraine's Biodiversity

This section of the strategy document should provide a well organized summary of the recommendations offered in the background papers and discussed at the strategy workshop.

A. Land protection and resource management
    1. Improving the protected areas network
    2. Conservation of biodiversity on non-reserved lands
    3. Sustainable use of biological resources
    4. Land reclamation and restoration

5. *Ex situ* conservation
    a. captive propagation
    b. taxonomic collections
    c. gene banks

B. Domestic legislation
C. International agreements
D. Administration and policy
E. Research and technical support
F. Training and education
G. Sustainable economic development (including ecotourism)
H. Toward implementation of the program

VI. An Action Plan for Biodiversity Conservation in Ukraine

This section of the strategy document builds upon the program described in the previous section to describe specific high priority actions. The actions recommended will reflect both topical and geographic priorities, and will attempt to integrate biodiversity conservation needs with socioeconomic constraints and opportunities. Although it is impossible to predict which measures the Ukrainian stakeholders will identify in the course of the strategy development process, the items below are suggested as possible broad categories for consideration.

A. Developing the network of protected areas
B. Developing the science of conservation biology
C. Training needs
D. Regional cooperation in the protection of the Black and Azov Seas
E. Improving environmental education
F. Ecotourism and sustainable economic development
G. Enacting effective legislation

Appendix D

COMPUTER NEEDS AND RECOMMENDATIONS

As part of the scope of work for this study, USAID requested an initial review of computer needs and recommendations of assistance for up to $10,000 worth of computer hardware and software.

It is clear that virtually any agency responsible for biodiversity conservation and protected area management will be able to make productive use of additional computer equipment. In terms of assisting in the development of a national biodiversity conservation strategy, the placement of two to three desktop computers and supporting software at the MEPNS Central Board for National Parks and Nature Reserve Management warrants strong consideration. The following stipulations should accompany such support:

- computer equipment should be housed at a central location in the Board's new facility
- initially, the computers should be used specifically to produce materials related to the development of the strategy (general use can be permitted when computers are not in use for strategy-related products)
- computer access should be made available to all participants in the strategy process, including non-Central Board staff
- design characteristics used in the selection of equipment should allow for possible upgrade in support of GIS applications.

Appendix E

POSSIBILITIES FOR WORLD BANK, GEF, AND USAID COORDINATION IN SUPPORTING THE CONSERVATION OF BIOLOGICAL DIVERSITY IN UKRAINE

While performing work on this project, the study design team learned that USAID and the World Bank share a mutual interest in strengthening the protected area system and supporting development of a national biodiversity conservation strategy in Ukraine. Initially, it was hoped that it would be possible for the design team and the World Bank staff and consultants to collaborate on preliminary documents. However, conflicting objectives and timetables precluded immediate collaboration. Nonetheless, future coordination is still highly desirable and will benefit both parties and, most important, Ukraine.

The World Bank is currently promoting and assisting in the development of a GEF proposal by Ukraine. As part of the application process, the GEF (a separate institution from the World Bank) requires a proposal and some indication of national priorities on the part of the country applying. A national biodiversity conservation strategy is considered an excellent indicator of national interest and priorities, and supports GEF's objectives under the Convention on Biological Diversity to encourage development of such strategies. However, rushing a "draft" national strategy to completion under the timetable proposed for submission of the Ukrainian proposal to GEF would undermine the effort to develop a more participatory and thus more widely accepted strategy document.

Consultation between the study design team, USAID, and the World Bank concluded that it would be in the best interest of all parties for the World Bank to encourage the development of a list of national conservation priorities by the Ukrainian Ministry of Environmental Protection and Nuclear Safety, rather than attempt to write a preliminary strategy in the near term future. Such a list would serve as an excellent background document for eventual development of a national strategy, and avoid confusing and diminishing the enthusiasm of potential participants in a future strategy process.

Clearly, there is a trade-off between submitting an immediate proposal to GEF (under the assumption that proposals submitted early will stand a more favorable chance of being accepted for funding) and waiting for a comprehensive strategy document to be prepared. It is the opinion of this study design team that the prospects for GEF funding are uncertain at present. Two GEF projects have already been funded in Ukraine, and progress toward implementation of at least one of these projects has been slow. Moreover, a tropical bias is often seen in GEF funding decisions.

From conversations with GEF and World Bank staff, it appears that the chances of obtaining future GEF funding would be greater if Ukraine can distinguish itself by engaging in a comprehensive and fully participatory strategy development effort. To date, few other nations have submitted strategies to the GEF that agency considers strong statements of national priorities (rather than the priorities of a single agency or handful of agencies in country). The likelihood of

funding may also improve if proposals are prepared based on the need to protect an ecosystem type that is best represented in Ukraine. The study design team's conclusion is that development of a national biodiversity conservation strategy with USAID support, based on multi-sectoral involvement, will allow Ukraine to be in a stronger position to secure funding from the GEF. In the meantime, Ukraine's immediate proposal to GEF should be strengthened by the prospect of USAID support for a participatory strategy development process, and by Ukraine's strong interest is pursuing the development of a national biodiversity conservation strategy.

Regarding enhanced protected area management, the World Bank is pursuing options for supporting additional protected area sites. Hence, communication is essential if future USAID initiatives on protected area demonstration sites and the still-evolving plans of the World Bank are to be coordinated. There is considerable potential for coordination and leverage of other donor funds at the sites under consideration for USAID support. This potential should be developed in the implementation of any activities under a proposed scope of work.

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Appendix F

IMPLEMENTATION PLAN AND BUDGET FOR SUGGESTED USAID-FUNDED BIODIVERSITY ASSISTANCE PROJECT

In the version of this document submitted to USAID, this appendix contains estimated costs for implementing the suggested assistance project. Versions of this document available to others do not include such costs. The cost opinions presented below, and any resulting conclusions on project financial or economic feasibility or funding requirements, have been prepared for guidance in project evaluation and implementation from information available at the time the opinion was prepared. Final project expenses and resulting feasibility will depend on actual labor and material costs, competitive market conditions, procurement requirements, actual site conditions, final project scope, implementation schedule, continuity of personnel and engineering, and other variable factors. As a result, the final project cost may vary considerably from the cost opinions presented below.

COMPONENT 1: DEVELOPING A UKRAINIAN NATIONAL BIODIVERSITY CONSERVATION STRATEGY AND ACTION PLAN

Task 1: Establish a management structure and implementation organization

a) Inputs:
- contractor/grantee management and oversight
- biodiversity conservation specialist with expertise in strategy development
- interpreter services
- travel (1 trip)

b) Outputs:
- administrative and management structure
- hiring of in-country coordinator

c) Implementation schedule: 1st year, 1st quarter

d) Estimated costs: $40,000

Task 2: Prepare design of strategy development process

a) Inputs
- contractor/grantee management and oversight
- biodiversity conservation specialists (2)
- travel (1 trip, 2 people)

b) Outputs
- preliminary design for strategy process
- preliminary list of workshop participants
- identification of authors of background papers

c) Implementation schedule: 1st year, 2nd quarter

d) Estimated costs: $60,000

Task 3: Assess and prepare technical background information

a) Inputs
- contractor/grantee management and oversight
- GIS training and coordination
- travel (1 trip)

b) Outputs
- assembling of relevant information
- establishment of topical working groups
- establishment of guidelines for paper preparation
- commissioning and review of background papers
- arrangement for GIS support
- preliminary planning of workshop
- development of tentative workshop agenda

c) Implementation schedule: 1st year, 2nd-3rd quarter

d) Estimated costs: $85,000

Task 4: Conduct a national biodiversity conservation strategy workshop

a) Inputs
- contractor/grantee management and oversight
- site visits and selection
- workshop materials
- travel and stipends for workshop participants
- 3 facilitators
- 2 interpreters
- travel (1 trip, 4-5 people)

b) Outputs
- 1-week strategy workshop
- materials for development of strategy document
- identification of follow-up steps

c) Implementation schedule: 2nd year, 1st quarter

d) Estimated costs: $115,000

Task 5: Produce a draft national strategy document

a) Inputs
- contractor/grantee management and oversight
- translation of documents
- technical writer/editor
- draft document production

b) Outputs
- draft strategy document
- editing of background papers

c) Implementation schedule: 2nd year, 2nd-3rd quarters

d) Estimated costs: $100,000

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Task 6: Develop a follow-up national action plan

a) Inputs
- contractor/grantee management and oversight
- action plan workshop/meeting
- interpreter services
- travel (1 trip)

b) Outputs
- identification of conservation priorities

c) Implementation schedule: 2nd year, 4th quarter - 3rd year, 1st quarter

d) Estimated costs: $115,000

Task 7: Publish and disseminate the national strategy and action plan

a) Inputs
- contractor/grantee management and oversight
- travel (1 trip)

b) Outputs
- published strategy document and background papers
- dissemination of strategy document and background papers

c) Implementation schedule: 3rd year, 2nd quarter

d) Estimated costs: $60,000

Total Estimated Costs for Component 1: $575,000

COMPONENT 2: DEVELOPING A MODEL FOR IMPROVED PROTECTED AREAS MANAGEMENT IN UKRAINE

Task 1: Select a final site for model protected area management activities

a) Inputs
- contractor/grantee management and oversight
- 2 non-Ukrainian experts (0.75 person months)
- 1-day workshop for up to 10 participants
- travel (1 trip, 3 people)

b) Outputs
- selection of final site
- preparation of finalized project design

c) Implementation schedule: 1st quarter of 1st year

d) Estimated costs: $40,000

Task 2: Implementation of Protected Area Management Activities in a Selected Demonstration Site

a) Inputs
- contractor/grantee management and oversight
- forthcoming as part of final site selection process

b) Outputs
- forthcoming as part of final site selection process

c) Implementation schedule: beginning 2nd quarter of 1st year

d) Estimated costs: $260,000

Task 3: Institutional Development of the Central Board for National Parks and Nature Reserve Management

a) Inputs
- contractor/grantee management and oversight
- 2 non-Ukrainian experts

b) Outputs
- institutional and professional development, including office supplies, computer hardware and software, international travel, journal subscriptions

c) Implementation schedule: 1st year

d) Estimated costs: $25,000

Total Estimated Costs for Component 2: $325,000

COMPONENT 3: STRENGTHENING THE IMPLEMENTATION OF INTERNATIONAL AGREEMENTS AND COOPERATION IN UKRAINE

Task 1: Establish a Working Group on Biodiversity Treaty Obligations.

a) Inputs
- 1-3 non-Ukrainian experts (3-5 person months)
- support for Ukrainian members of the working group
- support for law drafting groups comprised of Ukrainian and non-Ukrainian experts

b) Outputs
- identification of international treaty obligations for which adequate implementing legislation already exists
- drafting of required implementing legislation
- input into the national biodiversity strategy process

c) Implementation schedule: first year of project implementation

d) Estimated costs: $50,000

Task 2: Establish a Working Group on Treaty Obligations.

a) Inputs
- 3-5 non-Ukrainian experts (5-7 person months)
- support for Ukrainian members of the working group
- support for law drafting groups comprised of Ukrainian and non-Ukrainian experts

b) Outputs
- identification of international treaty obligations for which adequate implementing legislation already exists
- drafting of required implementing legislation

c) Implementation schedule: first year of project implementation
d) Estimated costs: $100,000

Total Estimated Costs for Component 3: $150,000

TOTAL ESTIMATED COSTS FOR ALL THREE COMPONENTS: $1,050,000