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BIODIVERSITY ASSESSEMENT UPDATE FOR SERBIA AND MONTENEGRO

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Biodiversity 119 Assessment 2005 Update: Serbia/Montenegro

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INTRODUCTION

This Biodiversity Assessment Update is prepared for the U.S. Agency for International Development (USAID) Serbia and Montenegro Mission in response to the Foreign Assistance Act (FAA) Section 119 and Automated Directives System (ADS) 201 requirements on Environmental Analysis for Biodiversity Conservation. The original report was prepared in May 2002 by Loren L. Schulze and DevTech Systems, Inc. This report provides the Biodiversity Assessment Update for the Mission's next Strategic Plan. The strategy period remains open according to the recent strategy guidance from the Agency and E&E Bureau. An update of the Biodiversity Report will be necessary if the conditions to conserve biodiversity change significantly and/or the actions by the Mission are found to have a significant impact on the biodiversity. However, the SOs will be designed for a 5 year period.

The Assessment was conducted by **Alicia P. Grimes**, USAID/EGAT; **Mohammad A. Latif, P.E.** USAID/EE/REO; **Jelena Vujadinovic-Colic**, ACDI/VOCA /Environmental Officer; and **Vasilije Buskovic, M.Sc.**, Institute for Nature Protection and Consultant, Biodiversity Specialist, Montenegro. Jeff Ploetz on behalf of the BEO Compliance Unit (BCU) (ECSS/Devtech System, Inc.) provided necessary support to revise the update. The team interviewed various individuals and organizations (see appendix III), gathered relevant information, performed the required analysis, and prepared the Biodiversity Assessment Update in compliance with the FAA Section 119 requirements addressing:

- (1) The actions necessary in Azerbaijan to conserve biological diversity [FAA Section 119 (d) (1)], and
- (2) The extent to which the actions proposed for support by USAID meet the needs thus identified [FAA Section 119 (d) (2)].

The final draft report was submitted electronically by A. Grimes to Mark Pickett, USAID/Serbia-Montenegro MEO on June 30, 2005. Initial comments on the Montenegro portion were received from Vladan Raznatovic on August 9, 2005 with final comments on September 7, 2005. Final comments on the Serbian portion were received from Mark Pickett, on August 26.

All comments received were analyzed and incorporated in the update as necessary. The team is thankful to all those who contributed to this work including all those interviewed.

The following are attached and complete the Serbia and Montenegro FAA 119 update:

Table 1. Principal Donor Activities in Serbia

Table 2. Principal Donor Activities in Montenegro

Appendix I. Areas of Special Importance for Conserving Biodiversity in the FRY, including maps of protected areas, forest distribution, and the Annotated Ramsar List for Serbia and Montenegro.

Appendix II. Selected Biodiversity Maps produced through the CRDA project

Appendix III. Contacts

Appendix IV. Principal References

PART I. REPUBLIC OF SERBIA

A. Importance of Biodiversity and Actions Necessary for Conservation

1. Importance of Biodiversity in Serbia

The biological diversity of Serbia, both in terms of ecosystems and species is extremely high. The Balkan and Pannonian regions of Europe were an area of refuge for numerous species during the period of glaciation—offering numerous habitats due to geomorphology (mountains, canyons, caves) as well as climatic transition. Hence, ancient “relic” and “endemic” species exist which are found only in Serbia or the Balkans. (For more details see Schulze, *et. al.*, 2002: original FAA 119 Assessment).

The socio-economic importance of Serbia’s biodiversity is extremely significant, but not recognized. Genetic diversity of wild relatives of commercial agricultural crop and livestock species provides an insurance policy and base for future agricultural and drug development (for example there are several wild varieties of crab apples, common pear and cherry trees). Diversity of fungi, wild berries and game species has and continues to contribute to livelihoods. Wetlands and migratory bird habitat has contributed to hunting, fishery and tourist revenues. Forest cover has helped regulate water regimes and air quality.

Critical Habitats

For the purposes of biodiversity conservation, sustainable land use planning and natural resources management (NRM), it is useful for the FAA 119 Biodiversity Assessment (119 assessment) to outline critical habitats and areas of particular interest. The May 2002 119 Assessment report gives a general list of areas of special importance for biodiversity (See Appendix 1). A list and map of protected areas and RAMSAR sites are also included in the May 2002 assessment, as well as in Appendix 1 of this report. The Institute of Nature Protection has a map which includes planned protected areas but this was not available at the time of the assessment team’s visit. (This would be useful for the Mission to obtain).

Since the assessment, an additional wetland in Serbia has been classified as a RAMSAR site: Slano Kopovo (est. 22/07/04). This is a special nature reserve in Vojvodina with rare and representative examples of salt habitats, and a freshwater depression. It is one of Serbia’s most important bird habitats and regularly supports more than breeding and migrating 20,000 water birds, particularly ducks, cranes, geese and shorebirds as well as a significant number of vulnerable, threatened and endangered species. Unfortunately, the ecosystem is threatened by decreases in water levels due to channel and dam construction on the Tisza River which has lowered groundwater levels as well as agricultural activities. An updated description of Serbia and Montenegro’s RAMSAR sites and their threats are provided in Appendix 1 on critical areas.

Another interesting area to note is the Stara Planina Transboundary Park bordering Bulgaria. It is worth mentioning due to the transboundary activity and the potential results demonstrated there in the area of local governance. Municipalities and communities from both sides of the border have been convening (through the support of the Regional Environmental Center) to set priorities for sustainable development which incorporates

conservation values. This is a potentially very interesting model for community-based natural resources management and development.

2. Threats to Biodiversity: Serbia

The 119 assessment prepared in April/May 2002 identified four general categories of threats to both Serbia and Montenegro: Habitat Degradation, Illegal extraction or poaching, Alien Invasive Species and Pollution. This update found that these types of threats continue, but provides more specific detail.

a. Direct threats/impacts:

As an indicator of environmental degradation, 600 plant species and 270 animal species are under various categories of threat in Serbia (National Environmental Strategy and Action Plan-NESAP). Inventories of fauna are incomplete or inadequate at this time. Decline in biodiversity is directly attributed to:

- Substantial loss of natural habitat due to expanding agriculture (particularly on the Pannonian Plains); drainage of swamps and marshes. The trend of this conversion has slowed in recent years, but it's impacts are still being felt.
- Loss of Habitat and Species due to illegal construction, unregulated tourism, expanding transportation networks and water infrastructure (dams).
- Loss of Habitat and species due to inadequate Protected Areas Network.
- Degradation of forests due to excessive utilization and lack of sustainable forest management which takes into account biodiversity and adequate regeneration.
- Excessive unregulated use and/or Illegal poaching and hunting of animal species, particularly large mammals and birds.
- Overgrazing, particularly in mountain areas.
- Perceived/suspected (unregulated) over-harvesting of Non-Timber Forest Products from forests and meadows, especially edible fungi and snails.
- Industrial pollution and other point source pollution affecting rivers and lakes; solid and hazardous waste.

Agricultural land occupies about 65% of Serbian territory, which was originally covered with forests, shrubs, steppe vegetation and marshes. The original vegetation was removed to obtain areas for either mountain pastures or lowland arable land. Marshes were drained and steppes were irrigated for agricultural crops. These activities have significantly decreased, but the remaining natural vegetation is still endangered by overgrazing by livestock, especially in the mountains.

The degradation and loss of forest cover have increased in the past decade, due to illegal forest cutting, uncontrolled livestock grazing and forest fires. Current forest management does not ensure proper silvicultural treatment, and therefore forest quality and health are declining (the low standing volume per hectare is one of the indicators: 101 m³/ha). The intensity of forest cut is unevenly distributed due to lower transport costs, accessible forests have been overused, and inaccessible forests are not maintained. At the same time the afforestation rate has decreased by 12% a year because of poor financing.

The construction of dams across rivers has destroyed valuable valley ecosystems (i.e. Drina, Piva, Djerdap) and their biodiversity due to 1) new artificial ponds that have created different ecosystems, and 2) physical interruption of species migration, (no fish corridors were constructed). Dyke systems that were constructed to prevent floods changed the water regimes and also caused a loss of wetland communities.

Illegal hunting and fishing increased in recent years and still show no signs of slowing. The illegal export of birds in particular continues and the perception is that it is still an acute problem. Even though there is a lack of monitoring and data on affected populations, people interviewed expressed concerns about foreign poachers and their methods, in some cases documenting incidents with photographs. While it has been expected that implementation of the Convention on International Trade in Endangered Species (CITES) will help to reverse these negative trends, there is still no impact due to continuing institutional constraints and weaknesses, especially inability of Serbia to do effective monitoring. This is due to lack of funds, lack of qualified people, and inadequate equipment.

Some of the most expensive hotels, with the highest standards, are in the Kopaonic National Park area and are ecological disasters. In most areas with high seasonal tourism, a strong negative impact on natural resources derives from illegal and uncontrolled construction in absence of land use permits from the local authorities; the pollution of rivers in the vicinity of tourist resorts; high levels of energy consumption; and a lack of facilities for the proper management of both solid and liquid waste.

Up to 400,000 tons of hazardous waste is freely disposed annually in Serbia. Serbia has 180 landfills but only one of them meets European Union (EU) criteria. These landfills have local impacts on biodiversity, as well as significant effects on groundwater and substantial effects on tourism and human health.

b. Threats due to Institutional/Legal and Socio-Economic factors

Much of the root causes driving the trends and impacts from threats above are based on legal, institutional and market failures which provide no incentives for conservation and sustainable use.

1. Continued uncertainty regarding status and related issues affecting governance overall:
The general undercurrent of uncertainty and lingering affects from a difficult transition, conflict and international sanctions has impacted progress in institutional stability, reforms and investments necessary to advance environmental protection. Changes in administrations have reflected shifting priorities in development objectives. Overall, environmental protection is receiving a lower priority. This is reflected for example in the “down-grading” of Ministry of Environmental Protection to the Directorate for Environmental Protection which now has less of a voice concerning planning and development investments, issues and actions. Furthermore there is an acute conflict between environmental and development objectives. For example, it is not clear to what extent protected area planning and zoning is being incorporated into revised Physical

Plan for the republic. Protected area boundaries and plans are currently not being recognized by developers. This is an extremely acute problem at the moment.

2. Serious lack of host country agency coordination and serious conflict between development and environmental objectives. As environment has not been a priority, there is particular institutional ‘confusion’ and fragmented jurisdiction over different subsectors. The lack of coordinating mechanisms such as the National Environmental Strategy and Action Plan (NESAP) and Biodiversity Conservation Strategy and Action Plan (BSAP) to guide cross sectoral planning and investments during the last 5 years has not helped. These processes have recently been launched (NESAP apparently 1 year ago and BSAP to be launched shortly) and are a positive development. However coordination still seems to be problematic, including amongst donors. For example, the UNDP representative the team met with was unaware of the NESAP process that is currently underway in Serbia by the European Agency for Reconstruction (EAR). The lack of a centralized agency to oversee protected areas hampers coordination among individual public enterprises which administer forests and protected areas.
3. Inadequate implementation and enforcement of environmental laws; This includes legislation related to Environmental Impact Assessments (EIAs), environmental protection and sustainable use. Currently there is a lack of secondary legislation, guidelines and means to implement newly reformed laws. This is compounded by a lack of knowledge due to inadequate monitoring of environmental quality. With respect to biodiversity specifically, inventories and monitoring systems for major species groups are incomplete and a complete lack of monitoring of biological communities. Monitoring and enforcement of standards and regulations is adversely affected by fragmented institutions, inconsistent nature of legal and organizational frameworks with limited mandates, insufficient human and financial resources, lack of modern inspection equipment and low fines. The situation is further aggravated by inadequate incentive systems and lack of access to environmental information by the public.
4. Lack of public awareness about environment and biodiversity issues. Environmental attitudes are partly demonstrated by behaviors which include dumping of solid waste at random throughout the landscape. Citizens and communities are particularly unaware of the value of biodiversity and the extent of the threats and their implications. People are passive about getting involved in decision-making or advocacy or taking responsibility for their actions. Businesses, municipalities and public institutions which allow rapid development of tourist, transportation and other infrastructure without any regard to environmental impact are disregarding costs to future generations and society.
5. Lack of adequate and effective protected area and forest management: The current system of protected areas in which forests and parks are administered by public enterprises continues to be problematic. As mentioned in the original 119 Assessment for Serbia/Montenegro, enterprises currently rely on financing gained from natural resources extraction for their entire budget (excluding staff salaries). This potentially sets up a conflict of interest for sustainable use and is aggravated by a lack of systems

for checks and balances. In addition Protected Areas are understaffed and are not employing integrated state of the art planning and management approaches such as zoning and use based on inventories; clear goal-setting and budgeting, participation and community partnerships, or GIS and monitoring.

In the forestry sector, where revenues generated from timber harvesting, hunting and non-timber forest product collection can be high, the situation is particularly acute. Serbia and Montenegro's forest resources are threatened by over-harvesting, illegal logging, forest fires and pest infestations. Excessive cutting of trees in mountainous areas is in part responsible for increased erosion and flood occurrence. Statistics suggest that the estimated annual increment of the growing stock exceeds the annual cut by more than 100 percent (Arcadie Capcelea et.al. 2003)), but observations and perceptions do not support this. It also does not imply sustainable management at all sites. With the low density of roads, accessible sites are over-harvested.

Institutionally, Serbia's forestry law has not been updated nor effectively implemented since 1991 and is considered inadequate (National Report to UNFF 5, 2004), as are overall approaches to forest administration, planning and management. Planning which should be conducted using forest inventories, use of GIS, reduced impact harvesting and mapping. The overabundance of sawmills, and potential for collusion regarding pricing also hamper sustainable forest management.

Hunting is a particular popular pastime or livelihood but there appears to be a lack of enforcement or regulation. Animal populations are perceived to be declining. Large mammals and birds in particular are at risk in Serbia. Foreigners which come to the area to hunt have been caught with excessive numbers of game, particularly birds, some caught by questionable methods.

6. Lack of financing and authority at municipal and local levels. Opportunities to develop and invest in municipal development according to community values are hampered by a lack of budgetary control and decision-making authority at the local levels. This hampers local environmental action.
7. Lack of a strong environmental NGO sector. Environmental NGOs have been strong actors in democracy-building in the E&E region, rallying around causes and confronting public institutions to take action. Serbia has a smaller number of active environmental NGOs which may reflect environmental attitudes among the public.

3. Conservation Actions undertaken by Host Country, Civil Society, Donors

Since the original 119 assessment was developed and delivered, a significant amount of activity has taken place in the donor, host government and NGO community in the environmental sector. Some of these actions have had positive impacts, some negative and some negligible to date in terms of impact. These actions can be examined in the areas of policy and legal reform, institutional change, and donor investment/ implementation.

Policy/legal reform:

Several environmental policies have been developed or revised. Four of these are harmonized with EU standards and have been adopted. In addition to meeting EU directives, these also conform to Aarhus convention and stipulate a requirement for public participation, information dissemination and transparency. These laws are:

- Law on Environmental Protection
- Law on Strategic Environmental Assessment (Dec. 2004)
- Law on Environmental Impact Assessment (Dec. 2004)
- Law on Integrated Pollution Prevention & Control (IPPC).

In addition, the Ministry of Agriculture, Forests and Water Management has been working on a new Forest Policy for Serbia from 2003-2005 with the help of the FAO. As of December 2004, a draft of this forest policy was under public debate and was expected to be adopted by the Serbian Government in the first half of 2005. The law was developed through a participatory process involving a wide range of stakeholders from industry, wood processing, private land owners and environmentalists. An additional result from this process was the development of 3 new private forest associations, where there were none before. This is an important development, since private forestry has received little attention and stakeholders have been disorganized. It has implications for such things as the SME in the forest production and processing sector. It would also be important to examine this law with respect to Non-timber Forest Product extraction policy.

Institutional changes:

Restructuring of key line Ministry responsible for Environmental Protection: In June 2002, the Serbian Government upgraded the environmental authority from a level of directorate to a Ministry. However, further institutional changes under the *current* government included a restructuring of line agencies which included dismantling the Ministry of Environment and Environmental Protection and creating the Directorate of Environmental Protection under the Ministry of Science and Environmental Protection. This is generally seen by donors and NGOS (e.g. EAR and REC) as a disappointing or negative action (downgrading of authority), primarily because it lowers the relative political voice and influence of this section responsible for biodiversity and environmental protection. It also signals that environment is a lower priority for the Republic overall. Another change is that “water” now falls under the jurisdiction of the Ministry of Forests, Agriculture and Water, and some see the separation of that responsibility as furthering fragmentation.

Capacity of Ministry/Directorate staff increased: Capacity has been improved at the Directorate of Environmental Protection through programs sponsored by the European Agency for Reconstruction, EAR (see donor table below). Feedback, including by the Regional Environmental Center (REC), has been that this has had a positive impact. Additionally, the FAO has been providing capacity building to the Directorate of Forests on new policy reform and modernized administrative approaches.

Reform/Establishment of new Environmental Protection Agency (EPA) under the Ministry of Science and Environmental Protection: The purpose of this institution is to bring

coherence to environmental monitoring by the 16 institutes (S.Davies, personal communication).

Expanding Area under Protection: The Institute of Nature Protection of Serbia has been conducting studies and surveys to provide documentation for the legal justification of establishing additional new protected areas. Currently, about 6.5% of Serbian is under some form of protected status. According to the Institute, the goal is to increase this area to 9% of the total territory by the end of the year, and to 11% by 2010. While this is a positive indicator in terms of biodiversity conservation at the republic level, it has had a negligible impact so far, since it is not official nor is it clear whether such plans will appear in the new physical plan or be approved by the government or by Parliament, or whether the mechanisms will be in place for effective management of these areas.

Establishment of regional waste dumps: During the team's visit Mayors of all Serbian municipalities convened to establish regional waste dumps and implement a national waste management strategy. The government will invest CSD 60 million in the construction of regional dumps that will span areas around 200,000 people, with a goal of clearing up piled waste by 2010. Discussions with EU to finance the project were held on May 25, 2005.

Donor Investment/project implementation: The EU, through the European Agency for Reconstruction, has been the principal donor providing assistance in the area of legal and institutional strengthening in the environmental sector so far. Other sources for environmental financing have been grants through the Global Environmental Facility (GEF), and individual European nations, including Finland, and Italy. Table 1 summarizes the principal donor activities in Serbia.

Table 1. Principal Donor Activities in Serbia

Donor/Implementer	Project	Timeline/cost	Issues addressed
EU/European Agency for Reconstruction (EAR)	National Environmental Strategy and Action Plan (NESAP)	In process for one year. New Law on Environmental Protection mandates that it is adopted by Parliament by end of 2005.	National priority setting in Environment, including biodiversity
European Agency for Reconstruction (EAR)	Capacity Building Project	Sept. 2003-Sept.2005 with poss. extension. 3.8 Million Euros.	Strengthening of Directorate of Env. Protection; Establishment of Env. Protection Agency; TA nature protection; 5 Local Env. Action Plans (LEAPs)
European Agency for Reconstruction (EAR)		105 Million Euro	Water Monitoring Equipment to Hydrometeorological Institute
Food and Agricultural Organization of the United Nations (FAO)	Institutional Development and Capacity Building for the National Forest Programme	Not available	Development of new forest policy which is expected to be adopted by the Serbian Government by 2005
UNDP/GEF Ministry of Science Directorate of Environmental Protection	Biodiversity Strategy and Action Plan (BSAP)	Awaiting final approval from HQ, predicted to begin mid-June 2005 and to take one year	Gap analysis, priority setting, national planning including financing for biodiversity cons.
UNDP/GEF	National Capacity Self Assessment		
UNDP/GEF (Regional)	Danube Regional Project (DRP)	On going since 2001.	Gov. and NGO strengthening to implement the Convention for the Protection & Sus. Use of the Danube.
World Bank/GEF (Regional)	Nutrient Reduction/Danube River Basin	Grant recently approved in Washington DC.; Needs assessment for Serbia/Mont. Scheduled for Sept. 05	Agric. nutrient pollution in the Danube watershed; public awareness; technology; policy & regulatory improvements
UNESCO, IUCN, Swiss Agency for Dev & Cooperation, Institute for Nature Protection, REC (Transboundary)	Transboundary project: West Stara Planina (with Bulgaria)	On-going since 2001. In 2003, contract was extended to 2006.	Conservation and sustainable use; capacity building; municipalities; transboundary cooperation
UNEP with CenORT, Ecological Tourism in Europe and Zasavica Nature Reserve	Tourism Management Plan for Zasavica NR, pilot project	Not available (appears to be modest in funding)	Capacity-building: management planning for authorities/managers of Zasavica Reserve
Finnish Government			
Italy	Balkan Project (Progetto Balcani)	2004-2005 little information available (modest)	Training and twinning project for park authorities
USAID	Community Revitalization through Democratic Acton CRDA) program	Small percentage of larger 17.5 million USD project	Small grants to municipalities/associations for environmental activities as requested.

4. Conclusion: Actions Necessary to Conserve Biodiversity: Serbia

While there has been an increase in actions in the environmental sector in Serbia since 2002, the Republic (and Federal state) still lags far behind most Central & Eastern European (CEE) countries in effective environmental protection. Lingering affects from a difficult transition, primarily conflict, war and sanctions has caused major setbacks in political, institutional and social stability which has negatively impacted environmental management and development. Primary government institutions including the Ministries responsible for environment and natural resources have not been stable and fragmentation of responsibility, accountability, communication and implementation prevails.

Assistance by the international community has largely been focused on immediate priorities related to conflict, stability, governance and reconstruction. Priorities in the environmental sector have focused on analysis and assessments related to pollution and hazardous substances, the water sector and a substantial effort on institutional restructuring and policy reform. While actions in these areas do benefit biodiversity, biodiversity and natural resources conservation and management have not been at the top of the environmental priority list (although more so very recently). Hence degradation of these valuable resources has continued since 2002, from habitat loss and overuse.

Much of the primary investments by donors have been in the area of capacity building of government institutions and policy and legal reform. While these areas are critical, they have had little immediate impact on direct threats.

Specific Actions :

Strengthen national (republic-wide) planning and intra-agency coordination through the conduct and implementation of the Biodiversity Strategy and Action Plan (BSAP).

This process, to be funded through a UNDP/GEF grant, is an immediate need to bring actors together to focus on priority setting and to use collective action to influence decision-making at higher levels of government. The BSAP should be integrated into and/or inform the NESAP and should involve participation from key stakeholders including NGOs and municipalities. It is an ideal opportunity for a public awareness campaign. The process should result in priority setting and budget projections complete with timelines and responsible parties. It should take into account the studies and proposals for additional protected areas as well as institutional and legal reforms in progress and lay out additional actions.

Correct weaknesses in monitoring and enforcement of environmental protection standards and ensure implementation of new EIA procedures.

While hampered by fragmented institutions which are also reorganizing, EIA procedures have been improved with new laws efforts and their application and enforcement must be carried out to mitigate immediate threats to Serbia's environment, particularly in the housing and infrastructure construction sector. This will likely involve continued civil service reform and efforts to reduce corruption generally and new definitions for public private cooperation on environmental protection. New laws must include a provision of economic instruments to provide incentives to businesses to invest in mitigation measures. Efforts should also include a major public awareness campaign informing the public of new regulations and

their importance through major news media outlets and wide availability informative materials through strategic outlets at municipal levels. Equipment and human resources need to be significantly upgraded for implementation and monitoring to be effective.

Dissemination of Technologies and Best Practices for Environmental Mitigation

Technologies: Technologies for Mitigation exist and must be extended to agricultural and livestock operations, processing facilities, municipalities and other businesses. This can be done at any time and does not have to wait for governmental or policy reform. For example, demonstration projects and transfer of technology for slaughterhouses could introduce best practices such as waste segregation, recycling, ventilation, rational water usage and appropriate combination of unit processes (e.g. screening, dissolved air flotation, aerobic treatment, etc). One would hope that the WB GEF loan for nutrient reduction would touch on some of this, but bilateral donors, including USAID has had far more immediate results with public-private partnership programs in the region as well as through some of its Mission programs in its support to improving competitiveness of enterprises. This is an immediate “action cluster” that could be taken in Serbia which would have direct positive results on biodiversity and the environment.

Continue Policy Reform and Development of Secondary Legislation:

New laws on Nature Protection need to be finalized and adopted and secondary legislation developed for most all legislation. Secondary legislation and management guidelines for non timber forest products and wildlife are critically needed for conservation and sustainable use. Ratification of the Bern Habitat Directive and Bonn Convention on Migratory Species are priorities for harmonization with EU and further international cooperation on transboundary biodiversity issues (Ratification of these conventions are apparently stalled due to “the Serbia/Montenegro status issue,” but advancement toward them and their ratification are nevertheless important conservation needs).

Biological Inventories and Data:

Complete Red Book of fauna (volume 2), needs to be completed to establish accurate baselines for species and their status and to establish adequate monitoring systems. It is hoped that financing will become available from EU donors during or after the BSAP for this priority. If a lack of local scientific experts is hindering this process, Serbia should look toward neighboring countries such as Bulgaria for cooperation in these assessments.

Creation of additional protected areas, now documented by the Institute for Nature Protection, needs to be “marketed” to other government agencies and incorporated into the Physical Plan for Serbia.

It would be important for the Institute to launch a public awareness campaign and for the Directorate of Environmental Protection to hold public hearings on these plans to avoid conflict with local communities and other stakeholders and to get their endorsement and early involvement. Local acceptance would be critical to success.

Improvement of Sustainable Forest Management:

Serbia’s forest resources are threatened by over-harvesting, illegal logging, forest fires and pest infestations. Excessive cutting of trees in mountainous areas is in part responsible for increased erosion and flood

occurrence. It is hoped that when the *National Forest Programme and new Forest Policy* are completed and adopted, they will serve as guides for sector reform which will improve forest management, particularly on public forests. It will be critical for Serbia to implement sustainable forest management policies and practices to strengthen a vertical integration of supply chains. This would include assistance to relevant local authorities in improving and harmonizing the legal and regulatory framework governing forest management and timber exports. Serbia should arrange necessary training in prudent modern forest management practices and implement mandated reforms in forest organization and management at the Raion (regional) level.

Use of GIS technology for forest sector planning is being introduced in Montenegro with Finnish government support, but it is not clear whether this support is being contemplated yet for Serbia.

Appropriate monitoring in forestry, timber harvesting and logging roads is necessary to determine whether management plans are being followed and that the forest stand treatments are achieving the desired results. Monitoring should ensure that loggers, harvesters and road builders adhere to conditions set forth in their contracts designed to minimize environmental impacts and that harvesting and transportation do not create unanticipated environmental problems (monitoring of soil erosion, soil fertility, stream water quality, groundwater level, vegetation and wildlife changes). It should also document any changes in forest composition, site conditions as well as external conditions such as land use changes, illegal activity or fires and pest outbreaks which may impact the ecosystem and productivity.

For private forests, support to the new forest associations to further articulate and reach their goals will be critical to supporting SMEs in the wood processing sector and at least a modest industry which can target niche markets or diversify to multiple uses of private forests such as ecotourism, NTFP and game management or other activities if viable.

Substantially increase Environmental Education and Public Awareness: Many of the actions presented above mention a need for public outreach and awareness on issues as well as actions being taken by the government on environment and biodiversity. This is critical to avoid conflict and to foster a democratic process of participation and dialogue in policy formulation, territorial planning and natural resources management. Environmental Awareness is needed at many levels and can become a source of pride as Serbia moves away from a conflictive past and into a future of redefining itself. Environmental awareness can give hope and purpose to youth and future generations. Motivation and skill set development at higher education levels in curricula can lead to new niches in the workforce to address environmental concerns in development and business. The long term outlook for successful tourism and agricultural sectors will depend on environmental sustainability, particularly in the European context and this awareness is paramount. Dialogue and channels of communication must be opened and supported for people to discuss and explore these important topics.

PART II: MONTENEGRO

A. Importance of Biodiversity in Montenegro and Actions Necessary for Conservation

1. Importance of Biodiversity in Montenegro

While Europe is full of mountains and opportunities for alpine recreation and sightseeing, Montenegro offers one of the last available opportunities to experience accessible ecologically rich mountains, intact ecosystems and old world villages that have not been encroached by modern development.

Montenegro's diverse landscape has not only an asset to tourism but has resulted in significant biodiversity given Coastal, wetland and various types of forest ecosystems in the mountains and hills. Unique cave fauna in the Karst region include not only endemic species but also endemic genera and families (entire taxonomic groups at a larger scale found only here).

Montenegro is categorized by Conservation International (major US based NGO) as a biodiversity "hotspot" in the Mediterranean Basin, but uncontrolled clear cutting, extensive wildfires, and environmental deterioration threatens its high levels of biodiversity.

Critical Habitats:

Lake Skadar (Skadarsko Jezero National Park and ecosystem), a transboundary feature shared with Albania, is one of the most important wintering sites for waterfowl in Europe. The wetland system, a RAMSAR site, also has a number of endemic reptiles and 930 types of fresh water algae. The Tara River basin with a surface area of 182,000 hectares, is registered as a UNESCO Biosphere Reserve, and within it Durmitor National Park is a World Natural Heritage site. With its dramatic canyons and massives, Durmitor contains 18 glacial lakes which are evolving into peat bogs and over 1,400 species of vascular plants and rich montane fauna. Durmitor mountain is considered one of the biodiversity centers of the Balkans. Also as UNESCO World Heritage candidate site is Biogradska Gora National Park. Located on the mountain of Bjelasica, it harbors primeval forests which are thousands of years old.

Several wetlands, marshes and saltpan areas on the Coast are critical habitats for endemic and rare salt-tolerant plants, birds, mollusks and other marine fauna.

2. Threats to Biodiversity

The 119 assessment prepared in April/May 2002 identified four general categories of threats to both Serbia and Montenegro: Habitat Degradation, Illegal extraction or poaching, Alien Invasive Species and Pollution. This update found that these types of threats continue, but provides more specific detail.

a. Direct threats/impacts:

While hard data is lacking for many species groups, indications are that biodiversity is on the decline in Montenegro. One example concerns bird populations. The Reports on International Waterfowl Census (IWC) on Skadar Lake revealed a dramatic change in over-wintering population numbers between 1999 and 2005. A drop of nearly 800% was recorded from 250,000 to 35,000. In Durmitor, waterfowl species declined from 172 species prior to 1990's to less than 40. (Society for the Protection of Birds).

The principal reasons for biodiversity decline are as follows:

- Substantial loss and degradation of mountain forest habitat due to illegal logging and uncontrolled clear-cutting, development of tourist, transportation and water infrastructure.
- Loss of coastal habitat and species due to rapid tourism and infrastructure development along the coast (especially, Budva, Ulcinj, along Bojana River, Port Milena and Velika plaza, Tivat (Solila Saltpans) and Buljarica).
- Excessive unregulated use and/or illegal poaching, fishing and hunting of animal species, particularly birds (migrating waterfowl—mostly foreign/Italian hunters). Illegal fishery practices near Bar and Ulcinj, but also in sensitive ecosystems; Overfishing and accidental killing of protected species such as Dolphin.
- Gravel mining in the Moraca River
- Severe/extensive river and coastal pollution from waste water from Aluminum Plant in Podgoriza and Steelworks in Niksic, as well as from tourist and urban infrastructure. Eutrophication caused by polluters on Boka Kotorska Bay, Bojana River and Skadar Lake.
- Loss of Habitat and species due to inadequate Protected Areas Network
- Overgrazing, particularly in mountain areas.
- Perceived/suspected (unregulated) over-harvesting of Non-Timber Forest Products from forests and meadows, especially edible fungi and snails.

Rapid construction of tourism infrastructure on the Coast and uncontrolled clear cutting/illegal logging in forests are having profound environmental impacts in Montenegro at this time. Coastal ecosystems are unique habitats, extremely fragile and confined to a limited area which is competing with beach tourism along the Adriatic Coast. Forest cutting is reportedly out of control with 100s of sawmills suspected as “illegal”. Clear cutting has an immediate impact on habitat and also increases the danger of catastrophic wildfires. Unique biodiversity in rivers and lakes are being destroyed by sewage and other forms of pollutants in waste waters such as heavy metals from the Aluminum plant, as well as siltation from gravel mining and illegal construction.

b. Threats due to Institutional/legal and Socio-Economic factors

Much of the root causes driving the trends and impacts from threats above are based on legal, institutional and market failures which provide no incentives for conservation and sustainable use. These include:

1. Low political priority for Environmental Protection: Despite Montenegro's vision of being an "Ecological State" the environment has been a low political priority. This is due to several factors including excessive political orientation to profit-making sectors and adherence to historic social values at the expense of environment, lack of pressure from civil society which suffers from inadequate access to environmental information, lack of public awareness or concern, lack of accountability of state-owned industry as a major polluter. Under the new Government in Montenegro, the Ministry of Environmental Protection and Physical Planning has expressed stronger commitment to addressing environmental legislation and complying with EU directives, but only a limited amount of action has occurred in terms of new legislation and its adoption and implementation.
2. Lack of data and qualified personnel in biodiversity: Because of Montenegro's small population, it is lacking in scientists and specialists in a number of principal plant and animal groups, namely mammalogists, herpetologists (amphibians and reptiles), entomologists (insects) and certain marine groups. Institutional set up does not provide specializations for these specialists. Currently the University of Montenegro does not offer MSc and PHD programs in Biology (National Report to SAP BIO 2004). The Red Book for fauna has not been done, some ecosystems and species have never been documented and the last national forest inventory was done in 1979. Fortunately the UNDP and Government of Finland are supporting data collection and the use of GIS in forestry in Montenegro (see next section).
3. Inadequate implementation and enforcement of environmental laws: As in Serbia, the consensus is that EIA laws are not effectively carried out in Montenegro. This is due to a lack of human and financial resources at the inspectorates as well as just a general lack of implementation and enforcement capability and commitment. Development and construction interests are strong in Montenegro with strong financial and investment implications that are likely over-powering environmental concerns, procedures and measures that may be seen as obstacles as opposed to being part of sustainable development process. A lower priority given to environment means a lack of investment in proper equipment for environmental monitoring as well. In biodiversity there is a complete lack of data and a baseline on its biodiversity with no way to track environmental changes. Enforcement is also hampered by fragmented institutions, unclear responsibilities and inadequate co-ordination both horizontally (between sectors) and vertically (from municipality to republic) creating both gaps and overlaps. Corruption and fraud at the institutional and individual levels are unfortunately another factor. Negligible sanctions for pollution (low fines) versus lack of financial incentives for investments in environmental improvements do nothing to change behavior.
4. Lack of a Integrated Coastal Zone Management Strategy: The lack of a clear coastal zone management strategy which integrates environmental concerns including biodiversity, and which coordinates agencies, guides investors and informs the public has resulted in chaotic development and a lack of effective environmental mitigation which could threaten its tourist industry. The Montenegrin coastal zone is increasingly threatened by market pressures for further tourism development, by illegal construction

and by already overburdened municipal services, like water supply and wastewater and solid waste collection and disposal. Citizens with resources now feel free to build where they want, especially along the coast. Although many of these areas have appropriate zonings, builders apparently do not pay the necessary fees and taxes. Therefore, many houses were improperly sited and may have harmed the environment, as for example on the highly scenic island opposite Budva along the coast.

Coastal resources in Montenegro are threatened by untreated sewage and uncontrolled solid waste and oil spills, especially in tourist-related areas such as Kotor. Early efforts to protect Gulf of Kotor were hampered by a lack of funds. Preliminary investigations have revealed that water, sediments, flora and fauna of the Adriatic Sea are severely polluted. Given that tourism is considered to have the greatest potential in the economy of Montenegro, there is an urgent need to reduce pollution on the coastline. In municipal systems, 44 percent of the wastewater receives some kind of treatment, but this relatively high percentage is due to Podgoriça, which has an advanced wastewater treatment plant. Rural areas in Montenegro have a much lower level of sanitation and solid waste disposal services than urban areas. Health risks exist due to serious cases of polluted sources (Ministry of Finance of Montenegro MONDIS website, 2005). Critical biodiversity habitats such as marshes and salt pans with rare flora are threatened or in the process of being destroyed until an integrated management plan for the coastal zone is implemented.

5. Ineffective Protected Area Management: Many of Montenegro's protected areas in the coastal areas lack management bodies entirely as well as management plans (National Report for SAP BIO, 2004). Management plans which do exist for protected areas are considered inadequate to protect biodiversity and there is no sign of their active implementation or of much participatory involvement by local communities. Financing is a major problem. Annual expenditures for direct operating costs alone for protected areas average around 200,000 Euros per year and field work, 32,000 Euros/year. Unfortunately, this does not cover program costs and needed capital investments such as those related to public outreach and environmental education (signage/interpretation and trails/zoning) and tourist and biological management.
6. Ineffective Forest Management: State Forestry enterprises have gone bankrupt and forest sector reform cannot come quickly enough. Hundreds of illegal sawmills, uncontrolled clear cuts including in protected areas, and damaging wildfires have had a critical and adverse impact on Montenegro's forest ecosystems and forest products. Corruption is suspected to be rampant. European donors are lending support to salvage the situation.
7. Overall Lack of Public Awareness: Lack of public awareness is exemplified by everything from random disposal of solid waste thrown down embankments, to a lack of knowledge of protected areas and the importance of biodiversity, by planners, municipalities, investors and builders.

3. Conservation Actions undertaken by Host Country, Civil Society, Donors

Since the original 119 assessment was developed and delivered, a significant amount of activity has taken place in the donor, host government and NGO community in the environmental sector. Activity also increased after the enacting of the Charter of the Community of States Serbia and Montenegro and proclamation of the Community of States in February 2003. Actions can be categorized generally into policy/legal reform, institutional reform, civic action and implementation of donor projects.

Policy/legal reform:

The following pieces of legislation have been developed and conform to EU Directives. Primary and secondary legislation EIA and SEA is in conformity with EU requirements (JUGOLEX Project Document 6/03).

- Law of Environmental Impact Assessment (EIA) in final process of adoption by government
- Law on Strategic Environmental Assessment (SEA)
- Law on Integrated Pollution Prevention and Control (IPPC)

The following legislation and related guidance is underway:

- Primary and Secondary legislation related to Emission Limit Values (ELV) and environmental standards
- Best Available Techniques (BAT) guidance notes and pilot project

Institutional Actions:

New Coastal Wetland sites identified for Protection: The Coastal Management Agency has identified new wetland/coastal sites for protection. Working with the GTZ Integrated Coastal Management Project, it is hoped that these new sites will be incorporated into the new Physical Plan for the Coastal Area of Montenegro.

Management Plans of four National Parks adopted: Government approved mid-term (five-years) management plans for each of four national parks under The Public Enterprise for National Parks of Montenegro. In compliance with these management plans The Public Enterprise for National Parks of Montenegro adopted operational (annual) management plans for 2005. Local communities living in national parks as well as general public were not included in the preparation and adoption of both, midterm and operational management plans.

Preparation of database for biodiversity: A national team with members from relevant institutes, faculties, national parks and the Ministry of Environmental Protection has recently begun to prepare a database for biological diversity in the Republic under the EU Regional Emerald Project. This involves diagnostic studies to develop a typology for important habitats. This documentation is eventually expected to conform to European directives under Natura 2000 (as per meeting with Ministry of Environmental Protection and Physical Planning). The UNDP & Finnish governments are supporting the collection

and sharing of forestry, biodiversity and spatial data through the use of GIS technology. This is actually the beginning of an extensive undertaking which should involve interagency coordination and harmonization of agency IT facilities and policies. This is actually a critical step in the Republic's biodiversity conservation as it will allow for a critical baseline to be established and impacts to be monitored.

Strategy for sustainable forest management, including conditions for certification: The Ministry for Forestry, Agriculture and Water Management of Montenegro is preparing a Sustainable Forest Management Strategy (UNDP TOR BSAP S/M 2005). This is of critical importance as 45% of the Republic's territory is under forest cover. Lux Development has been providing assistance during the past year on restructuring and modernizing the entire state forest sector, including planning, seedling production, procurement, processing and harvesting. Inventories and data analysis is being upgraded through the introduction of GIS technologies by the UNDP and Finland which should further inform the strategy and its implementation. In addition, a Working Group of stakeholders has formed and has been developing a national standard for forest certification in Montenegro which is a first step for creating the conditions for voluntary forest certification by forest producers and exporters, who want to tap into Western European markets.

Civil Society Actions:

Citizens in Montenegro are reported not to be accustomed to take action related to environmental problems. Yet there have been number of cases of citizen protests in the past few years: in Zelenika against the port; the regional land-fill in Grbalj; the municipal landfill in Budva and the Maksim building in Podgorica. The Society for the protection of birds (NGO) also communicated to the public and authorities facts and laws related to Skadar Lake's biodiversity and protected status in reacting to a decision being made on issuing bird hunting permits for the critical area. A most notable case was citizen action in protest of the development of hydropower facilities (Buk-Bijela and Srbinje-Foca plants) in the Tara River Canyon which would have serious impacts in this Biosphere Reserve.

Donor Investment/Project implementation:

Montenegro has managed to attract some key donor investments in biodiversity and environment recently. A number of these projects go beyond policy and institutional reform and actually proceed with actions on the ground through NGO grants or pilot projects to address immediate environmental concerns. Table 2 summarizes the principal donor activities in Montenegro.

Table 2. Principal Donor Activities in Montenegro.

Donor/Implementer	Project	Timeline/cost	Issues addressed
EU/Government of Finland	Project JUGOLEX Phase II: “The Sustainability Strategy of the Ecological State of Montenegro”	2003 1.1 million Euros	Development of Environmental Legislation in S/M which is EU compliant
United Nations Development Programme (UNDP) with Rockefeller Bros. Fund and Gov. of Montenegro	Sustainable Tourism Project		Extending methodologies and facilitating development of sustainable, environmentally friendly tourism in mountain regions to the North
UNDP/GEF	Improvement of Protected Areas in the Dinaric eco-region	November 2005	Develop an efficient co-management model for the sub-system of Protected Areas in South-East Dinarides that belongs to Montenegro
UNDP/Gov. of Finland With Ministry of Agriculture, Forestry and Water Management (MAFWM) and Ministry of Env. Protection and Spatial Planning (MEPSP)	GIS: Environment and Forestry data collection and mapping	2005-2006	Create a base for GIS. Collect forestry and biodiversity data and prepare appropriate map layers. Contributes to Natura 2000 Directive and Bern Convention (Emerald and Corine)
Stability Pact/REREP Government of Switzerland Regional Environmental Center; IUCN	Support to the Network of Transboundary Protected Areas that are important for Biodiversity. (4.3.23. Promotion of Networks and Exchanges in SE countries)	since 2000	Community based actions; transboundary protected areas; capacity building of local stakeholders, exchange of knowledge and experience among neighboring countries
World Bank/GEF Block B Grant Institute for Strategic Studies; Netherlands Royal Haasgoonen	Albania/Montenegro Lake Shkoder Integrated Ecosystem Management Project PDF B: (i) Social Assessment, (ii) Transboundary diagnostic analyses	Full scale project in the period 2006-2009: 5 Million USD from a GEF Grant, and 3 Million Euro from co-financing/parallel projects. PDF B activities in 2005: 450.000 USD ((i) and (ii))	Improving management of shared natural resources and through sustainable agriculture, fishing and other activities around Lake Skadar
World Bank & GEF Governments of Albania and Montenegro	Albania/Montenegro Lake Shkoder Integrated Ecosystem Management Project	2006-2009 5 Million Euro from a GEF Grant, and 3 Million Euro from co-financing/parallel projects	Improving sustainable agriculture, fishing and forestry around Lake Skadar
World Bank/GEF	Tara and Lim River Basin Flood Management Project		Forestry component: reforestation of critically eroded areas

World Bank	Montenegro Environmentally Sensitive Tourist Areas Project	Approved Sept 2003, currently active	Little information available
Luxembourg (Lux Development)	FODEMO Project (Forest Sector Dev. Project in Northern Montenegro)	From May 2003-2006	Forest Sector Restructuring/Developing National Standards for Forest Certification
GTZ	Integrated Coastal Management Program	2005	Baseline Studies for Physical Plan; estimation of values for nature protection

Table 2 continued

Donor/Implementer	Project	Timeline/cost	Issues addressed
Gov. of Italy (regional)	Balkan Project (Progetto Balkani)	2004-2005 Modest funding	Capacity building for the Ministry on protected areas
USAID	Coastal Development and Environmental Activity	Oct 2004-Sept 2006 8 million USD	Improved Sewage disposal off coast of Budva, Kotor and Cetinje
USAID	Community Revitalization through Democratic Action (CRDA)	Small grants/portion of 17.8 million USD Project; Project extended by current SOW ending FY05	Grants to local associations and municipalities for environmental activities

4. Conclusion: Actions Necessary to Conserve Biodiversity: Montenegro

While there have been a number of environmental initiatives taken by government supported by donors in Montenegro, much more needs to be done to stem the degradation of the environment. Increased coordination between governmental agencies, both local and at the republic level is badly needed to eliminate conflict and overlap. In addition, a concerted public awareness effort in numerous areas for various audiences and more organized participatory planning is critically needed. This would include the participation of the private sector in planning and development of appropriate incentives for environmental mitigation and investments.

Specific Actions:

Continue to make legal framework consistent with EU requirements. Montenegro is making some moves in this direction, but the finalization and adoption of legislation appears to be slow. Gaps in legislation concerning the planning system, adequately incorporating biodiversity in early phases of the procedure is considered a key problem and a result of developing of zones in biologically sensitive areas along the coast.

Promote integration as opposed to fragmentation in institutions across sectoral lines for permitting, mitigation and monitoring of construction to conserve biodiversity. As indicated above, fragmented responsibility has lead to a failure in implementing environmentally sound planning and development of infrastructure which is a major threat to biodiversity.

Adopt Integrated Coastal Zone Management: The State Union Serbia and Montenegro should aim to follow the principals and actions outlined in the Draft Protocol on the Integrated Management of Mediterranean Coastal Zones (UNEP MED WG. 276/3/2). This includes the development of a national strategy for integrated coastal zone management. GTZ has been supporting the development of a Coastal Zone Management program which includes protected areas for biodiversity. It will be critical that these results are integrated into the Physical Plan and coordinated with planning efforts at the highest level of government as well as with municipalities. More generally, the development and

implementation of an integrated coastal zone management program is required (Ministry of Finance of Montenegro and National Aid Coordinator, Montenegro Donor Information System website, 2005).

Water (supply and quality), waste water, biodiversity conservation, and other environmental problems in the coastal areas of Montenegro need to be addressed in the short term because this region has been identified as a key element in the country's growth strategy through the tourist industry. Donors, including USAID and KfW/GTZ have been supporting municipal water companies through technical assistance and infrastructure improvements. GoM is working with the WB to develop a proposal for funding to address the long term coastal water supply needs. If implemented, the project would include transporting water from Skadar Lake to the Coastal Municipalities. Based on the available data and various studies, local experts have reported that utilizing water from the Lake would not have a significant impact on the biodiversity of the whole Lake. However the Team Leader and REO disagree with this view and feel the project may indeed pose a significant impact on the local ecology and biodiversity given the fact that Lake Skadar is a Ramsar Site which consists of primary habitat for migratory birds. If the project is financed by the WB, a proper Environmental Impact Assessment would be required, especially addressing identification of significant biological impacts. USAID Mission needs to follow up on this issue should the WB fund this project.

Sewage disposal issue has been considered as particularly important for further development of the Coastal region and particularly for development of high level tourism. There are no waste water treatment facilities and raw sewage is discarded through outfalls in the sea. Situation is particularly serious at the Boka bay even after the sewage main from old town Kotor is transferred in the open sea. USAID through Coastal Development and Environment project addressed some of the burning issues such as emergency outfalls of the pump stations in Kotor and Budva. EU funded Wastewater Feasibility Study for the Coastal Region of Montenegro that provides clear outline for addressing the issue in the short term and long term.

Implement the Strategic Framework for Development of Sustainable Tourism in Northern and Central Montenegro. Having adopted this framework in Sept of 2004, The Government of Montenegro should put serious resources into devising and taking actions to adhere to this framework which promotes both environmental and social sustainability into tourism development. It promotes local stakeholder development and entrepreneurial activity which is in line with preserving the principal destination assets such as biodiversity and natural landscapes. Given the little experience Montenegro has had with non-coastal tourism, cooperation between the Ministry of Tourism and donor community and close coordination between donors is needed to facilitate the implementation of pilot projects that are commercially viable and can be "scaled up". Successful pilots in these regions of the country will provide for a more even and broad-based economic growth in those communities (and stem depopulation) and fulfill Montenegro's goal to be recognized as a desirable tourist destination and ecological state.

Strengthen national (republic-wide) planning and intra-agency coordination through the conduct and implementation of the Biodiversity Strategy and Action Plan (BSAP).

This process –to be funded through a UNDP/GEF grant is an immediate need to bring actors together to focus on priority setting and to use collective action to influence decision-making at higher levels of government. The BSAP should involve participation from key stakeholders including NGOs and municipalities. It is an ideal opportunity for a public awareness campaign. The process should result in priority setting and budget projections complete with timelines and responsible parties. It should take into account the studies and proposals for additional protected areas as well as institutional and legal reforms in progress and lay out additional actions.

Narrow Gaps in Knowledge and Build Capacity among key institutions responsible for biological inventories: The most important information gaps are missing inventories of biodiversity, and related public statistics. Since Montenegro was isolated from the international community for over 10 years, it is critical for staff to plug back into international projects and catch up with the latest trends and methods for natural resource management and biodiversity assessment. Modern techniques and methodologies for biodiversity protection need to be introduced to the Institute for Marine Biology and the Institute for Nature Protection as priorities, as these are the organizations responsible for preparing missing inventories and official records based on data.

Strengthen Protected Areas Management: Montenegro’s protected areas are threatened by a lack of effective management, due to institutional structuring, lack of personnel including at the field level, inadequate financing and lack of effective management planning and implementation.

Correct weaknesses in monitoring and enforcement of environmental protection standards and ensure implementation of new EIA procedures. While EIA procedures supposedly have been improved with new laws their application and enforcement must be carried out to mitigate immediate threats to Montenegro’s environment, particularly in the tourism and housing construction sectors as well as water and road infrastructure. There is no indication of any improvement in EIA procedures. This will likely involve continued civil service reform and efforts to reduce corruption generally and new definitions for public private cooperation on environmental protection. New laws must include a provision of economic instruments to provide incentives to businesses to invest in mitigation measures. Efforts should also include a major public awareness campaign informing the public of new regulations and their importance through major news media outlets and wide availability informative materials through strategic outlets at municipal levels. Equipment and human resources need to be significantly upgraded for implementation and monitoring to be effective.

Dissemination of Technologies and Best Practices for Environmental Mitigation Technologies: Technologies for Mitigation exist and must be extended to construction operations, processing facilities, municipalities and businesses.

PART III. Extent to which Actions Proposed by USAID meet the needs Identified In Serbia and Montenegro

(Note: for this entire section USAID/Serbia/Montenegro has the authority, capacity, knowledge and creativity to correct, expand build upon any points or ideas recommended. This exercise is meant, in part, to give the Mission ideas on how it can articulate the ways in which its programs relate to environment an contribute to conservation. USAID Assessment Team 2005).

A. Current On-going Projects/Programs (contributions and some issues):

Since the May 2002 Biodiversity Assessment, there have been several USAID programs which have been contributing to Conservation and Environmental Needs in Serbia Montenegro. In addition to projects and specific examples noted below, it is important to note that overall USAID contributions toward democracy, stability, and economic growth have very positive indirect benefits to conservation and biodiversity, because the management and protection of natural resources is predicated on a stable government, sound policy frameworks, transparency, accountability and transparency, an active civil society and vibrant private sector, economic incentives, and a free independent media. These contributions should not be discounted for their contributions to environment overall.

Sustainable Enterprise Development Project (SEDP): The SEDP aims to strengthen enterprises by making them more competitive, thereby contributing to economic growth. Among the competitive clusters identified are the wood processing (furniture) sector, tourism, and non-timber forest products (i.e. wild berries, mushrooms).

At the time of the team's visit the SEDP program was re-evaluating its investment in assisting wood processing enterprises due to major structural and market issues in the sector. There are potential positive (beneficial) and negative (adverse) environmental issues associated with working this complex industry due to both the problems related to overuse and illegal forestry as well as the important role of private sector businesses in providing incentives for better use and management. In Montenegro SEDP is seeking to collaborate more strongly with the Lux Development Forestry Project which, given complex issues in the sector, would probably be a good partnership that would provide downstream linkages to production and participation in policy and structural reform decisions which are taking place in the forestry sector.

The SEDP program has contributed to Serbia's substantial turn-around in the Tourism sector through a 10 step (marketing and promotion) plan for the sector. Unfortunately, these steps do not include any reference at all to highlighting Serbia's natural beauty, parks, caves or biodiversity among its best assets, yet the photos shown clearly portray beautiful natural landscapes. The plan does it make any reference to coordinating with potential product providers of rural or ecotourism assets, nor to be aware of the implications of a healthy environment.

The Community Revitalization through Democratic Action (CRDA) Program: CRDA has definitely made some positive contributions to biodiversity/environmental needs in Serbia/Montenegro. It supports strengthening community leadership at the local level, working with associations and municipalities, and promoting citizen participation at the local level, all which potentially strengthens local environmental action. The program has also promoted a more environmentally responsible use of public resources (CRDA-E). CRDA implementers, IRD and CHF worked on a common project to produce biodiversity maps of Montenegro which are incorporated in all environmental reviews for potential impacts of CRDA and other Mission projects. Examples of the maps used in the identification of potential impacts by the CDEA project are provided in Appendix II.

In Serbia, in 2003, ACDI/VOCA supported a project known as "Adaptation of the aquarium" This was an infrastructure project to improve functioning and efficiency of a freshwater aquarium in order to provide basic conditions for *ex situ* protection of *Umbra cramerii*, Walbaum 1792, a native Serbian Danube fish species, as well as for reintroduction of this vulnerable Red list status fish into native habitats.

Over the past three years CHF has implemented a total of 393 projects in Montenegro, 53 of which are classified as environmental in nature under the CRDA program. These have included improving solid waste management in municipalities through the use of trucks and dumpsters. For example, one municipality in Northern Montenegro cleared up 26 "wild" dump sites using truck and dumpster provided by the project. Others improved disposal of household coal ashes in separate containers provided by the project so that garbage containers would not regularly catch fire. These activities are often coupled with public awareness activities co-funded by communities. Other activities have supported "Green Schools" education program through curricula development on energy efficiency.

In addition, CHF/Montenegro has been cooperating with the UNDP in Durmitor on assisting with sustainable tourism to increase awareness in local communities about such issues as hunting, waste water treatment, construction permits and environmental impacts, as well as to strengthen financial management/financing and to pilot activities. Additionally the project has supported 2 small reforestation efforts, erosion control in the Tara River basin, and fish re-stocking for a sports fishing association.

On the Montenegrin Coast, the CRDA project (implemented by IRD) has made direct contributions to biodiversity needs by supporting the creation of detailed biodiversity maps for rare and endangered flora. These maps have been extremely useful in implementing Reg. 216 requirements for infrastructure and other projects which may be carried out in sensitive areas. An additional benefit has been that in carrying out Reg. 216 responsibilities toward biodiversity using these maps, awareness has been raised among beneficiaries of biodiversity issues and the importance of these concerns. Environmental projects implemented by IRD have included sewage system reconstruction and extensions, waste management, and environmental awareness projects.

An example of the use of the Biodiversity maps produced under the CRDA project comes from the Water Supply System Extension in Boljevici. During the preparatory phase of

this project and based on Biodiversity maps it was found that the endangered plant *Loroglossum hircinum* was located in the vicinity of the future project site. This species is protected according to decree provided in official Gazette of the Republic of Montenegro No 36/82. However, further site visits concluded there were no threats to the species since the location of the pipeline to be built was at safe distance from the natural habitat of the species.

Coastal Development and Environmental Activity (Montenegro): In FY 2004, the US Congress earmarked \$12 million for economic development and environmental programs in the coastal region of Montenegro. USAID/Montenegro responded by financing improvements to wastewater facilities (pipes and pumping stations) in Budva, Kotor and Centinje, in order to direct current emergency overflows away from beaches and shoreline areas (See Appendix II for CDEP maps 4, 5 and project location map KW3). These interventions were designed to ensure discharge of sewage out to the deep sea, rather than the near shore lessening adverse environmental effects to humans and marine/shoreline flora and fauna thus making the coast more attractive to tourists which in turn brings more income along the coastal communities. In addition to the benefits of lessening environmental impacts along the coast from sewage, program management also used the “biodiversity map” & best practices approaches to mitigate any other potential environmental impacts through compliance with USAID Environmental Procedures, i.e., Regulation 216, which includes effective public information and public participation process. This was particularly important since some activities were to be carried out within a UNESCO World Heritage site and near a wetland.

B. Future Programming:

The Draft Strategy Framework for Serbia/Montenegro, developed April 15, 2005 outlines a structure for future programming. It indicates that USAID’s Mission is to seek to support Serbia and Montenegro in their goal to be democratic, prosperous, and moving towards Euro-Atlantic integration. It provides three Strategic Objectives (SOs), which reflect the State Department priorities on the economic growth sector:

- SO1: Essential democratic policies and institutions produce a transparent market economy
- SO 2: Broad-based private sector growth achieved through improved enabling environment and enterprise development at local level;
- SO3: Conditions for political stability and economic development established at the Republic and sub-regional level.

Detailed information on actions proposed by the USAID Serbia/Montenegro are not available in written format and hence, conclusions are based on brief interviews with available Mission personnel. It is evident that at this time, some programs will continue, but have revised objectives which emphasize economic growth and job creation as a priority. For example, the CRDA program will emphasize local economic development and place less emphasis on social sector activities. Other programs will end, and still others created to support the new strategic framework.

The Mission's strategic framework is in its final draft stage and it is important that it does not discount the important contributing and enabling factors to sustained economic growth from environment and social sector/democratic reforms. There was some concerns raised by the Bureau Democracy team that specific important areas such as independent media and civil society were not adequately captured at the SO level. For the purposes of this assessment, it is important to note that environmental issues also play a significant role in both democracy and economic growth.

Emphasizing the link between sustained economic growth and the environment in Serbia and Montenegro is critical for sustaining economic results for several reasons. First environmental problems carry a great cost to society in terms of health and natural resources damage (environmental 'externalities'). This cost must be borne by society (both now and by future generations) in terms of greater health costs, mitigation costs, legal actions and lost tourism revenues. Second, the natural resources sector is rich in a number of assets which provide revenue-generating opportunities including foods (wild berries, mushrooms, wild cultivars/genetic resources), timber, wild game (hunting) aesthetic value (beauty/tourism/real estate value), ecosystem services such as water supply and air quality, and tourist assets such as rivers (rafting), caves (exploring), birds (watching).

C. Recommendations for Potential Contributions to Environmental Sector:

Continue to Integrate/expand Biodiversity Concerns in implementing requirements of Initial Environmental Examinations per 22CFR216 (Reg. 216):

The biodiversity maps financed by USAID/Montenegro and used for mitigating biodiversity impacts from USAID activities as required by Reg. 216 has been a very successful model which deserves dissemination at the Agency level, especially for infrastructure projects but for other projects as well. This approach should be continued as appropriate. The maps, a significant investment, are also an excellent opportunity to raise public awareness, and USAID should consider reproduction and wider dissemination of these to municipalities, planners and protected areas.

Also related to 216 under the SEDP project and other current/future economic growth activities involving collection, processing, marketing exporting of natural resource products such as wood, wild berries, and mushrooms, USAID should consider the downstream environmental concerns--not only to meet legal requirements for USAID--but also to consider supplies of natural resources and consider contributing to expanding the information base of inventories and distribution chains in order to maintain a sustainable supply for sustainable enterprises and to build capacity on "greening the supply chain" which will be of great concern and interest to Western European markets.

As usual, an Environmental Review (ER) and Screening Process should be used by implementers to identify the significant environmental impacts (physical environment, biological environment and social environment) during design, implementation and operation of facilities. An ER should be conducted for each activity prior to beginning of the project. The ER process will ensure that the Best Management Practices (BMPs) to mitigate biological environmental impacts including a threat to critical habitat of

endangered and threatened species, are undertaken in the field, and that a site-specific analysis is conducted, environmental consequences are assessed, potential impacts mitigated, and also indirect and cumulative effects are considered for each phase of the activity.

Sustainable Enterprise Development should consider Environmental opportunities:

In Montenegro, USAID should pay close attention to the UNDP Sustainable Tourism Framework development and model in Central and Northern Montenegro. There are obviously clear niche opportunities for ecotourism and established approaches on how to plan and carry these out using a “competitive cluster” approach that expands to all related enterprises and stakeholders and results in not only job creation but rural development.

Also in Montenegro, under the SEDP project concerning the wood sector, USAID implementers should be supported in dovetailing with the Lux Development Forestry Sector project (FODEMO) as this project aims to restructure the sector with an aim to sustainable forestry. USAID should support the field testing of a national standard for forest certification which is being piloted so that the private sector can eventually take advantage of markets in Western Europe which are increasingly demanding (environmentally) certified products. This would contribute to competitiveness in the long run. Voluntary certification by producers and exporters can be a viable alternative in a sector with a bad reputation.

In Serbia, enterprise development needs to consider both the environmental impacts of its programs as well as the opportunities (sustainable rural tourism, niche markets). The new CRDA program, when emphasizing economic development, has the opportunity for development of environmentally friendly tourism at the local level, through planning of strategic use of local natural assets (i.e. parks, caves, streams) and partnerships between municipalities, parks, hotels, tourist operators and NGOs. A project to watch is the Stara Planina trans-boundary park, where municipalities from Bulgaria and Serbia are joining to decide on strategic use and plans for development based on conservation and sustainable natural resource use. Additionally, successful pilot models supported by USAID in Bulgaria with municipalities and businesses (small hotels, crafts people, cheese producers, horse rentals, etc) surrounding Rila and Central Balkan National Parks can be easily visited for capacity building purposes (study tours).

Integrate Environmental topics into Media Programming:

The media plays a critical role in educating both the business communities and citizenry at large on numerous issues. USAID supports Independent Media programs in Serbia and Montenegro. Any USAID efforts in this area to improve the situation open the door for a venue for dialogue on environmental issues.

For example, USAID/Montenegro Independent Media Program (MIMP) implemented by the IREX (NGO) has engaged in business reporting following a multifaceted approach providing a venue for successful entrepreneurs. USAID also has supported the development of other innovative television programs which seek to demystify fields such as the stock exchange, banking and tourism (USAID Program News Bulletin). There is a

tremendous opportunity for USAID to contribute to environmental awareness linked to economic growth by including related topics. Topics could include environmental issues ranging from the importance of environmental management for tourism development, eco-tourism niche markets, the costs of environmental damage and discussions on incentives, socially responsible investing, and policies related to environmental mitigation by the private sector.

Broaden Civil Society beneficiaries to include Environmental NGOs:

In Serbia, there is a very lopsided or disproportionate number of Environmental NGOs (very few) compared with NGOs overall (lots of human rights NGOs etc). Environmental NGOs have typically played a strong role in advocacy and civil action, including during recent events in Montenegro. USAID could consider including Environmental NGOs in their target beneficiaries, given the potential linkages to economic growth and democracy in the environmental sector.

Incorporating Environment into Judicial Activities:

Implementing the Rule of Law (ROL) in the Environment Sector is as important as it is in other sectors. There are numerous law enforcement failures, and consequently the valuable natural resources of Serbia and Montenegro are being stolen and lost. The team was not able to assess levels of prosecutions related to environmental crimes, or at what point the system is breaking down along the enforcement chain; however it is likely that environmental crimes are not being effectively prosecuted, and that there is ample opportunity for capacity building of judges and lawyers in this field, so that new environmental laws can be effectively implemented and the environment protected (and you might create a number of jobs and professions in the process!).

Appendix I: Areas of Special Importance for Conserving Biodiversity in the FRY, including maps of protected areas, forest distribution, and the Annotated Ramsar List for Serbia and Montenegro.

**Excerpt from the 2002 Biodiversity Assessment:
Areas of Special Importance for Conserving Biodiversity in the FRY**

An analysis of the factors that have given rise to the rich diversity of ecosystems, species, ecological processes, and genetic variation within species in Serbia and Montenegro points toward some general categories of areas that should be of particular importance to the conservation of biodiversity (REC, 2002). These include:

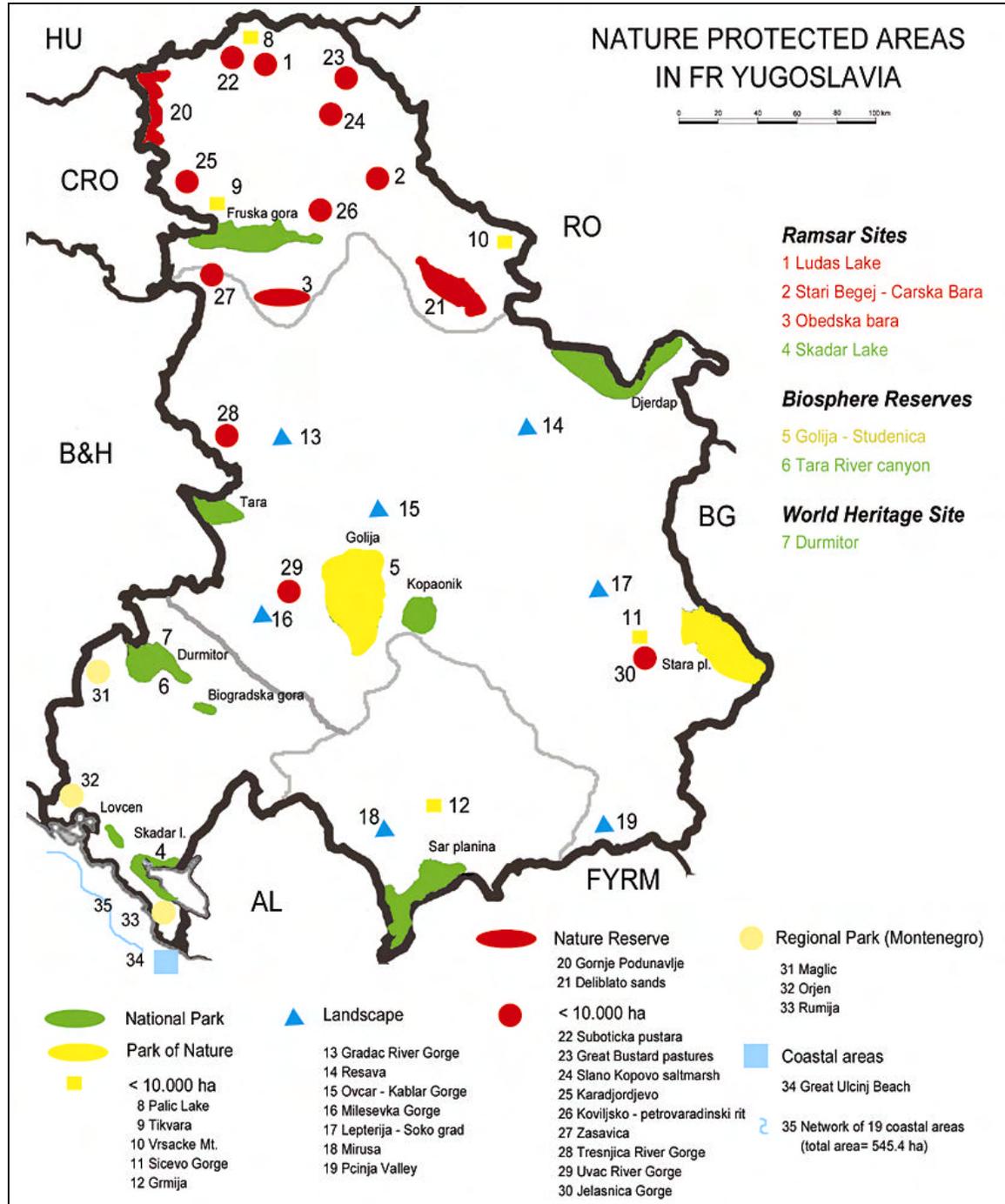
- Preserved forest ecosystems representing the different types of forest found in the FRY;
- Forest areas in which monitoring for stand composition, growth rate, health, and other factors has taken place over the long term. Such areas could be forest preserves that have not been cut or managed, or stands managed for timber, or both. (Example: preserved and managed stands in Tara National Park that have been surveyed and monitored every 10 years for about 40 years);
- High mountain regions with characteristic mountain ecosystems well-represented or preserved; some of these mountain regions form borders between the S and M and neighboring countries (Albania, Bulgaria and Bosnia and Herzegovina), and so will require transboundary conservation efforts (Examples: Montenegro: Bioc-Maglic-Volujak, Prokletije; Serbia: Kopaonik, Sar Planina, Stara Planina);
- Mountain regions in which traditional human activities have maintained and even increased biodiversity through centuries of maintaining the open pastures of mountain meadows. These areas are potential candidates for Biosphere Reserve status under the UNESCO Man and the Biosphere program (examples: Golia Mountain, Stara Planina);
- Gorges and canyons that have been identified as important refugial centers for relict and endemics species (Example: Montenegro: Tara River Canyon, Canyon of River Moraca and its tributary Canyon of river Mrtvica; Serbia: the canyon of the Lazareva Reka in eastern Serbia);
- Remaining steppes and sands of Vojvodina (Examples: Deliblato Sands, Subotica-Horgoš's Sands);
- Wetlands (swamps, marshes, ponds) in Vojvodina, many of which provide habitat for migratory birds from elsewhere in Europe and have been identified as wetlands of international importance under the Ramsar Convention (Examples: Suboticka wetlands and Ludas Lake, Stari Begej-Carska Bara, and Obedska Bara);

- Karst regions in most of Montenegro and parts of Serbia (SW and E), with their numerous caves and pits, which support an exceedingly rich fauna of cave dwelling invertebrates, many of them narrow endemics;
- Coastal and inland saline lands and sea shore sands (Example: Velika Plaža near the city of Ulcinj and Tivat Salinas, both in Montenegro);
- Mountain bogs around mountain and glacial lakes;
- Traditional roosts and breeding sites of rare birds (Examples: nesting islands for the Dalmatian pelican in Skadar Lake; roosts and breeding sites for the Griffon Vulture (*Gyps fulvus*);
- Skadar Lake, the largest lake in the Balkan Peninsula, a transboundary conservation area and wetland of international importance.

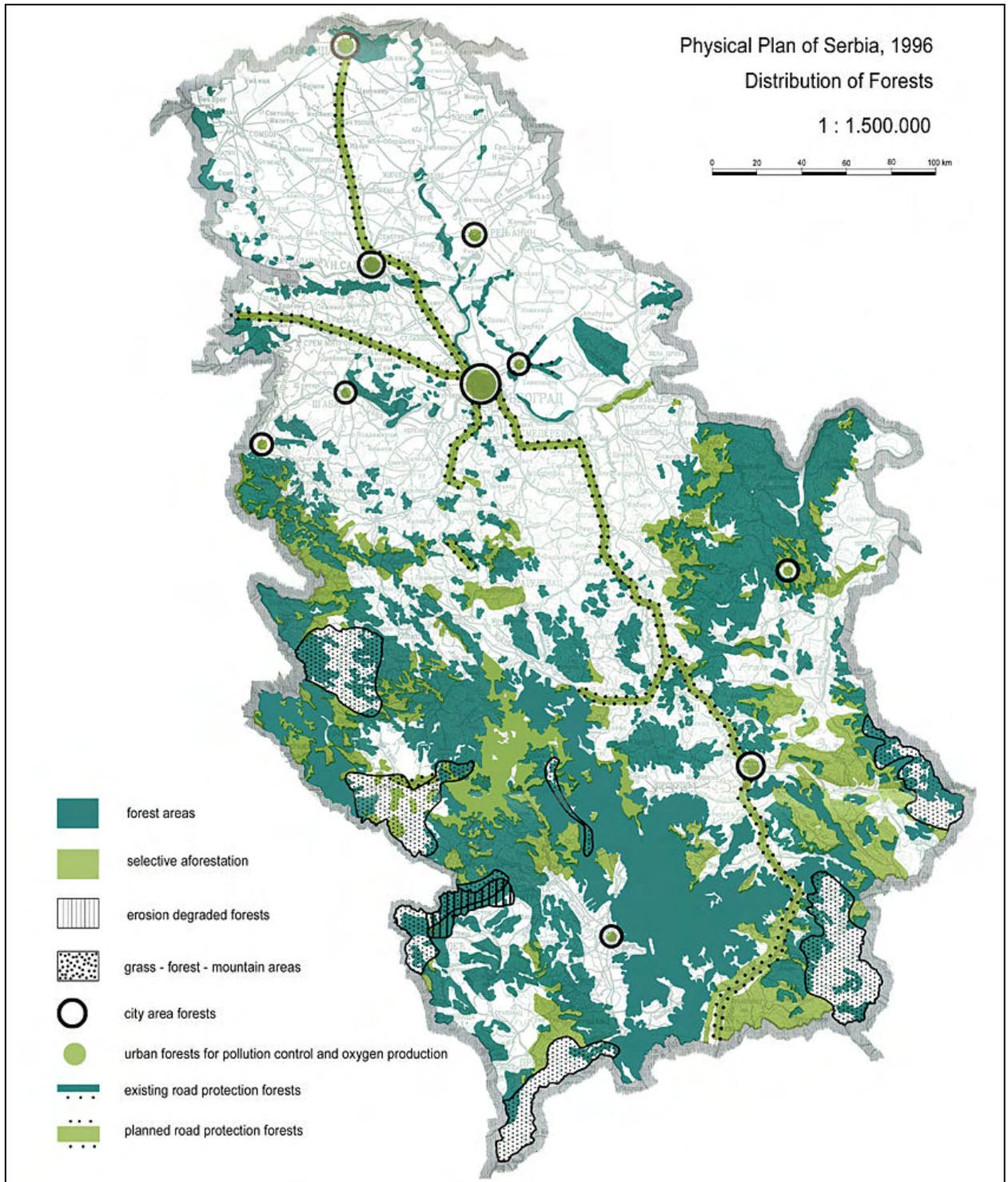
Major Protected Areas (excluding State Forest Lands) in the FRY.

Note: see <http://www.natureprotection.org.yu/mapa.html> for updated Serbian protected areas

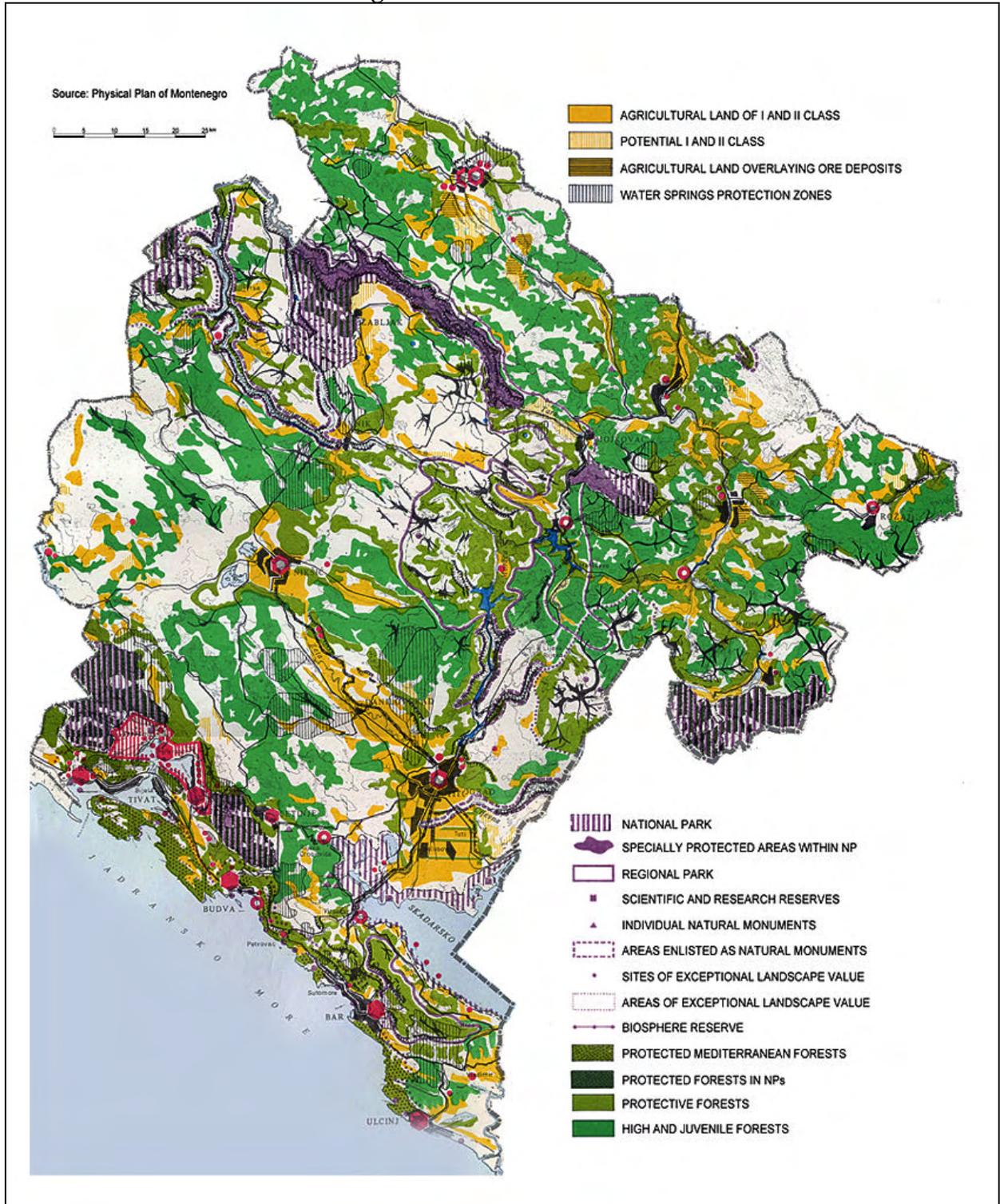
Critical Habitats and Protected Areas



Distribution of Forests in Serbia.



Distribution of Forests in Montenegro.



The Annotated Ramsar List: Serbia and Montenegro

The Annotated Ramsar List of Wetlands of International Importance

SERBIA AND MONTENEGRO / SERBIE-ET-MONTÉNÉGRO / SERBIA Y MONTENEGRO



The Convention on Wetlands came into force for the Socialist Federal Republic of Yugoslavia on 28 July 1977. UNESCO has informed the Ramsar Bureau that on 3 July 2001 the Federal Republic of Yugoslavia accepted the Ramsar Convention as a successor State to the SFR of Yugoslavia, as of 27 April 1992. The country's name was officially changed to Serbia and Montenegro as of 4 February 2003. Serbia and Montenegro presently has 5 sites designated as Wetlands of International Importance, with a surface area of 40,837 hectares.

site; date of designation; region, province, state; surface area; coordinates
site; date de désignation; région, province, état; superficie; coordonnées
sitios; fecha de designación; región, provincia, estado; área; coordenadas

Ludaško Lake. 28/03/77; Vojvodina; 593 ha; 46°04'N 019°48'E. Regional Park; Nature Reserve. One of the few remaining natural lakes of the Panonian Plain. The shallow lake is fringed by extensive reedbeds and surrounded by marshland. The area is important for numerous species of breeding waterbirds, and an ornithological research station is located at the site. Principal human activities include fishing, hunting, reed cutting, and recreation. Ramsar site no. 137.

Obedska Bara. 28/03/77; Vojvodina; 17,501 ha; 44°44'N 020°00'E. Nature Reserve. A seasonally inundated area of the Sava River floodplain, with marshes, ponds, wet meadows, and an oxbow lake. Vegetation includes reedbeds and *Salix-Populus* and *Quercus* woodland. The area is important for various species of breeding waterbirds. River regulation has adversely affected fish stocks at the site. The lake is subject to rapid siltation and nutrient-enrichment, resulting in the expansion of reedbeds and *Salix* scrub, to the exclusion of open water areas. Ramsar site no. 136.

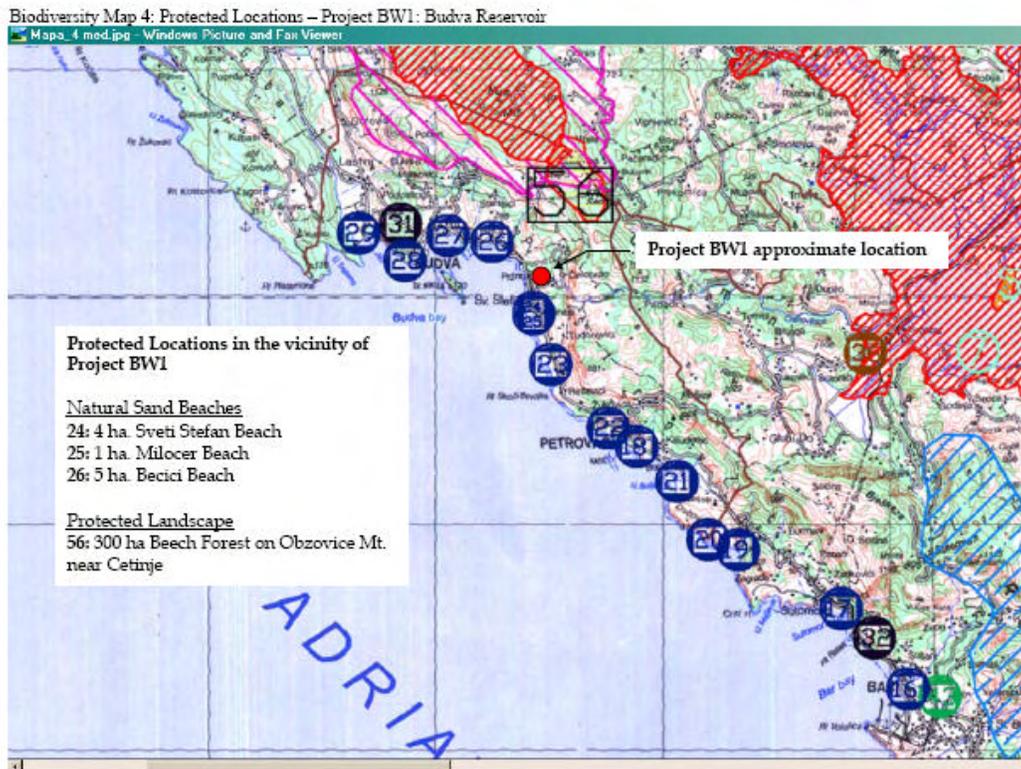
Skadarsko Jezero. 15/12/95; Montenegro; 20,000 ha; 42°12'N 019°17'E. National Park; Ornithological Reserve, Scientific Reserve. A natural freshwater lake of tectonic-karst origin, supporting a lush wetland vegetation of various reed, sedge and willow species. The site includes woodlands and sub-Mediterranean communities. The diverse fauna includes endemic invertebrates, numerous fish species, and mammals. The site is important for nesting, staging and wintering waterbirds of various species, some of which are globally threatened. Large numbers of waterbirds occur during spring migration. Human activities include fishing, hunting and poaching. Ramsar site no. 784.

Slano Kopovo. 22/07/04; Vojvodina; 976 ha; 45°38'N 020°13'E. Special Nature Reserve; IBA. The site, left over from the draining of an ancient meander of the Tisza River, is a rare and representative example of salt habitats but presents also, on its eastern side, a smaller freshwater depression. It is one of Serbia's most important bird habitats and regularly supports more than 20,000 waterbirds, breeding and migrating. It is especially suitable for cranes, ducks, geese and shorebirds and supports a significant number of vulnerable, threatened and critically endangered species such as *Numenius tenuirostris*, *Anser erythropus*, *Branta ruficollis*, *Oxyura leucocephala*, *Aquila heliaca*, *Falco naumanni*, *Otis tarda*, the rodent *Spermophilus citellus*, and plant communities such as the rare *Thero-Salicornietea* specific to salty grounds. The area is threatened by a decrease in water level, as the drying up of the depressions during summer and autumn is becoming more frequent, caused chiefly by the development of a channel web and dam construction on the Tisza which has lowered the level of the underground waters. Other negative factors are plowing of pastures, use of chemicals and artificial fertilizers for agriculture. Human activities include regulated hunting, livestock husbandry, agriculture, and the use of mud for curing ailments. There is a high potential of scientific research and conservation education. Church remnants from the 9th-11th centuries exist on site. Conservation priorities concern the sanitation and improvement of the water regime. Ramsar Site no. 1392.

Stari Begej/Carska Bara Special Nature Reserve. 25/03/96; Serbia; 1,767 ha; 45°15'N 020°23'E. Special Nature Reserve. The site, a remnant of the once flooded area in the lower Begej River, is a mosaic of fishponds, swamp, marsh, forest, meadow, and steppe intersected by rivers, canals, and embankments. Vegetation consists of salt-tolerant communities, a rich aquatic flowering plant community, and steppe vegetation. Of the 250 recorded bird species, 140 species nest at the site and 100 pass through on migration. Notably, all eight European heron species and *Anser anser* nest at the site. The diversity of biotopes gives rise to high species diversity at the site and includes various rare, endangered, or vulnerable fish, birds, plants, amphibians, reptiles and mammals. Human activities include recreation, birdwatching, sport fishing, and some traditional agricultural. There is an important commercial fishery nearby. Ramsar site no. 819.

Appendix II: Selected Biodiversity Maps produced through the CRDA project

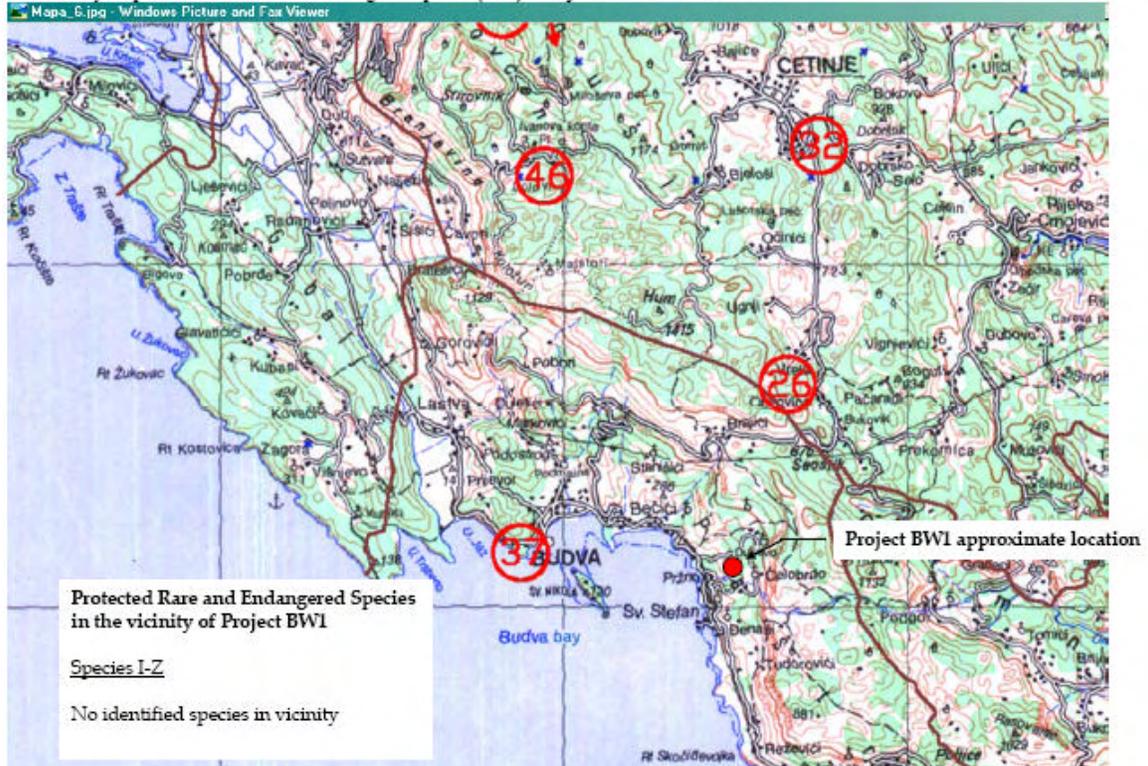
Note: Selected maps are excerpts from DCN: 2005-MON-002, Environmental Review Document for the CDEA - Project BW1: Budva Reservoir location



Biodiversity Map 5 : Protected Rare and Endangered Species (A-H) – Project BW1: Budva Reservoir



Biodiversity Map 6: Protected Rare and Endangered Species (I - Z) – Project BW1: Budva Reservoir



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Appendix IV. Principal References

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