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# The Ramsar Convention: A new window for environmental diplomacy?

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*The Ramsar Convention is an international environmental treaty with the mission: “the conservation and wise use of wetlands through local, regional and national action and international cooperation, as a contribution toward achieving sustainable development throughout the world”. Focusing on international cooperation, this report examines the potential of the Ramsar Convention to take a more robust diplomatic role in countries that share transboundary wetlands and have a degree of conflict with one another. A total of 234 transboundary wetlands are listed with the Convention. Many are located in countries presently experiencing conflict with one another or, at the least, do not trust one another. The Convention has the potential to play a more active diplomatic role in these countries to help build capacity for more effective governance which, in turn, can enhance the environmental security of citizens. This report makes some recommendations for enhancing the environmental peace-building nature of the Ramsar Convention.*

## The Author

Landscape ecology, environmental planning/design and public policy with a focus on biocultural landscapes, biodiversity conservation and ecological mapping describes the multidisciplinary career of Pamela Griffin. Training includes an MS in biology, graduate certificate from the Landscape Institute (Boston, MA), GIS certification and a Legal Services Corporation post-graduate program. She is also a certified landscape historian with Maine Historic Preservation Commission. Research has focused on the intersection between nature and culture and she has written about wetlands and cultural landscapes. Environmental design projects include clients such as USFWS with a focus on cultural restoration and educational landscapes. She teaches at the college level and has been a life-long advocate for underserved populations. Work at IEDS focuses on diplomatic potential of transboundary wetlands of the Ramsar Convention.

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*“Water presents a ripe opportunity for proactively utilizing the transboundary and non-substitutable qualities of water as a cornerstone of confidence building and, potentially, peacemaking among states and groups within societies. In regions with unsettled interstate relations, shared water resources appear to present avenues for confidence building that can in turn support predictable and more enmeshed relations among potential adversaries” The Wilson Center*

The mission of the Ramsar Convention is “The conservation and wise use of all wetlands through local, regional and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world”. From its inception the convention has recognized the fundamental importance of conserving transboundary wetland ecosystems, defined as wetlands that cross political boundaries of 2 or more countries. Migrating waterfowl and other animals that reside or breed in wetlands have no conception of political boundaries. Wetlands have enormous biological significance as providers of drinking water, irrigation, pollution filtration, groundwater replenishment, flood control, a carbon sink and habitat for fish, birds and plants. Only tropical rainforests contain more biodiversity and productivity than wetlands.

Established in Ramsar, Iran in 1971, the Ramsar Convention, formally known as, “The Convention on Wetlands of International Importance especially as Waterfowl Habitats”, is an intergovernmental treaty. As the first modern, global, nature conservation convention and the only international agreement addressing a particular ecosystem, Ramsar is an international network that addresses wetland conservation on a transnational scale and in an ecocentric manner. The Convention has widespread international support, at this time 160 countries have ratified the treaty.



*Biya Hai Lake (11,482' above sea level), Pudacuo National Park, Yunnan Province, China; A Wetland of International Importance.  
Photo by Pamela Griffen.*

## Introduction: What does water conservation have to do with building long-term peace?

Life depends on water. Access to water continues to accelerate into one of the biggest issues of our day in many parts of the world, especially the developing world. Only 3% of the world's water is freshwater and much of that is polluted. Two to five million people a year die from water-related illnesses. Eight of the 10 most water-stressed nations are among the 50 poorest nations in the world. More than a billion people lack access to safe drinking water and 3 billion lack sanitation. Twenty per cent of agricultural lands are salt laden due to poor water quality (UN 1997). Climate change can be expected to worsen conditions in some areas of the world, especially desertification in the Middle East and North Africa. Egypt already imports 95% of their water and Sudan imports 77 %. Globally, freshwater use rose 6 fold from 1990 – 1995 (The Ramsar Convention Manual 2006). Modifications to water resources (such as dams and groundwater extraction) proceed at an unprecedented rate, often in an unsustainable manner. At the heart of these problems is unsustainable population growth. War exacerbates all of these problems.

Effective institutional structures to conserve and ensure fair and equitable distribution of water are essential. The international framework of the Ramsar Treaty helps countries build institutional capacity to address wetland system and to work with neighbors that share transboundary wetlands. This enables true environmental diplomacy.

Recent research has addressed the environmental diplomacy potential of transboundary water conservation. For example, Carius (2011) has found that "Cooperative water management initiatives, as they are the most available and analyzed examples, may best demonstrate the potential of efforts to use environmental management to build peace". Wolf (2007) and Carius (2004) found that mediation over transboundary water supplies has contributed to building confidence, and even cooperation, among adversaries, perhaps even preventing conflict. In 2007, Ali states that mitigating transboundary issues has proved a source of trust/confidence-building when countries are in conflict over other matters. Capacity-building through technical assistance and policy tools is inherent in the process of developing management expertise and is a major factor in a state's ability to govern effectively was found by van der Zaag (2000). Finally, Odom (2011) found that institutional capacity to absorb or react to environmental change lies at the heart of conflict prevention.

Water conservation and its connection to conflict is a complex international issue. Each wetland system has unique ecological, as well as social, constraints. For example, the Mesopotamian marshes shared by Iran and Iraq are in the process of restoration and there is talk of a shared conservation park in this area that has witnessed border conflicts since the 17th century (Stevens 2007). Research reveals that countries, by and large, cooperate over water supplies (Wolfe 1998,

Yoffe 2003). Rationality seems to prevail when it comes to water access: it is this property that makes water a key player in environmental diplomacy.

The vital nature of water may be why countries at war in other arenas have signed treaties to share water. Pakistan and India have cooperated for years over the waters of the Indus River (Bhushan 2003, Rajen 1999). Jordan and Israel held 'Picnic Table Talks' to discuss water. Both agreements were maintained during states of war. So far in human history virtually no war has been fought solely over water. To be sure, tensions rise when access to water is threatened and lack of adequate water has fueled existing tensions; however, successful negotiations over water sharing has been the rule rather than the exception (Wolf 2007, Mandel 1992). The key question is, will this pattern prevail in the face of what appears to be a worsening of conditions due to effects such as climate change and unchecked population growth.

This paper examines the role of the Ramsar Convention as an international environmental treaty within this environmental diplomacy model. The issue addressed is: does working together on a science-based mission, water conservation, help create trust and confidence that can spill-over to other shared political arenas? Can a science mission transcend political rivalries? Evidence suggests this is possible; for example: at this time Israeli and Palestinian scientists are working together on shared projects despite that the political situation could hardly be tenser.

Environmental stress has caused and perpetuated conflict; however, as discussed, the sustainable management of natural resources can mitigate conflict and provide the foundation for greater stability and sustainable livelihoods. A holistic approach to water conservation, emphasizing economic development and joint management, has been shown to alleviate community uncertainty and contribute to preventing conflict (Yoffe 2003). Holistic methods employed by the Ramsar Convention have the potential to help prevent conflicts as well as contribute to lasting peace in post-conflict situations. Furthermore, the ecosystem approach to wetland conservation protects the whole system. This is compared to prior international conservation projects that were focused on the conservation of single species.

With the capacity to confront issues, such as transboundary pollution that threatens shared water systems, the broader goal of sustainable development is addressed by the Convention. The Participatory Management (Participatory Skills, Handbook Number 5 2006) process ensures local community voices are heard and helps maintain long-term support for conservation plans. Attention to poverty reduction contributes to long-term environmental protection by providing alternative or sustainable economic development options for local communities. Technical and policy services are available to guide biodiversity conservation, enhance ecological processes and develop a national legislative and management framework to carry out conservation objectives. Limited economic assistance is available to help achieve conservation goals.

As countries are increasingly forced to deal with transboundary wetland issues, a framework for cooperation, with the capacity to address problems at multiple scales, has evolved (Turton 2005, Savenige 2000) and the Ramsar Convention has a key role in this system. International cooperation, required by Article 5 of the Convention, is regarded as one of Ramsar's key pillars of the Convention stated as the goal: "to enhance the conservation and wise use of wetlands using effective international cooperation through inter alia the active application of the Guidelines for international cooperation under the Ramsar Convention" (Handbook 20). One of the key outcomes of this are 14 formal transboundary management plans; for example, the Rhin superieur is co-managed by France and Germany and the Niimi National Park and Delta du Saloum (which share a border) are co-managed by Gambia and Senegal.

Sovereign countries that sign on to the treaty become a Contracting Party and agree to enforce its obligations. In particular, Contracting Parties accept responsibility for the following:

1. Designate at least one 'Wetland of International Importance' (at this time there are 1953 designated wetlands);
2. Work towards the wise use of wetland resources (resources used to benefit people while maintaining ecological character) through national planning;
3. Cooperate with neighbors when wetland resources are transboundary to achieve shared accountability.

There are presently 160 countries that are Contracting Parties to the Convention and 1953 Wetlands of International Importance (The Ramsar Manual). Many Wetlands of International Importance (at present 234 are designated transboundary) cross borders. Many of these countries lack trust, or are in direct conflict with one another at some level, especially where adequate resources for communities are threatened.

The Ramsar Convention is already actively building cooperation around the world and has many successes that include the 13 formal transboundary management plans mentioned above. However, its work often passes quietly under the radar in diplomatic circles. This paper examines the potential within the Convention for an expanded role in environmental diplomacy. Examining the resources within the convention for building or maintaining a continuum of cooperation among countries when conflict is ongoing or threatening, this report seeks to answer the following:

1. Can implementation of the treaty help prevent conflict?
2. Can parts of the treaty mitigate existing conflicts?
3. What can the Convention contribute to a sustainable peace?

## History of the Convention

The international movement to preserve wetlands began in the 1960s, led by ornithologists concerned with global loss of migratory waterfowl habitat, thus embedding transboundary issues in the mission. Initial key conferences addressed conservation and management issues with the intent of developing an international body dedicated to habitat conservation. Participants included International Union for the Conservation of Nature and Natural Resources (now the World Conservation Union, IUCN), the International Council for Bird Preservation (now Birdlife International) and the International Waterfowl and Wetlands Research Bureau (now Wetlands International). These key players struggled to develop consensus about issues such as methods to identify and conserve wetlands, issues of sovereignty (such as whether governments or NGOs should be the key participants) and enforcement mechanisms.

A final draft of the treaty was presented in 1971 and signed by 18 attending nations in Ramsar, Iran. Addressing wetlands as an ecosystem was a significant development in the field of international conservation. The prevailing notion of conservation focused on individual species rather than the ecosystem supporting the species. Initial tasks for participating countries included developing inventories of their wetlands. Six hundred wetlands were initially listed. A focus on waterfowl and fish conservation and their transboundary nature was acknowledged. The World Conservation Union (IUCN) accepted host responsibilities and the United Nations Educational, Scientific and Cultural Organization (UNESCO) agreed to be the repository, with no actual authority, of the instrument.

When Greece signed on in 1975 as a Contracting Party, the Convention was ratified and triennial meetings of the Conference of the Parties (COP) were set. The first official COP was held in 1980. Events of that decade included the adoption of protocol to amend the treaty and criteria to identify Wetlands of International Importance. A framework to implement the convention known as the Paris Protocol defined the powers of COP and established Guidelines for Wise Use of Wetlands and a permanent secretariat. 'Towards the Wise Use of Wetlands' was published. A set of amendments known as "The Regina Amendments" were enacted and included the creation of the Standing Committee and the Wise Use Working Group.

The Fourth meeting of COP kicked off the 1990s. The Montreaux Record was adopted identifying threatened wetlands where changes in ecological character were, or were likely, to occur. Regional meetings and the Scientific and Technical Review Committee were organized. Additional fish-oriented criteria to identify wetlands were adopted. A memorandum of cooperation with the Convention on Biological Diversity (CBD) was signed. The definition of ecological character and guidelines for maintenance were refined. 'The Economic Value of Wetlands' was published. Official partners were noted including: Birdlife International, IUCN, Wetlands International, and the World Wide Fund for Nature. The 'Wetlands for the Future' with the United States Fish and Wildlife Service was published. By 1999 the number of contracting parties had risen to 114 with almost 1,000 wetlands listed.

In the new millennium, the Ramsar Toolkit, comprised of nine pamphlets with technical and management information, was published. The Ramsar Technical Report series, the 3rd Edition of the Ramsar Handbook and a 17 volume handbook for Wise Use of Wetlands followed. A close working relationship with the Man and Biosphere Programme developed. A focus on inventory and management assistance continued. Working closely with the UN Millennium Assessment, the Wise Use concept was refined to include the capacity to deliver ecosystem services to alleviate poverty. Recognition of sustainability as the capacity of an ecosystem to deliver services to dependent life, as well as the evolving nature of change in wetlands, widened the definition of Wetlands of International Importance. The effect was to focus even less on species identification and more at landscape/seascape level parameters. These changes addressed wise use in the face of increasing environmental change.

The Convention has adapted to shifting global concerns by working closely with the broader mandate of the Convention on Biological Diversity, the UN Commission on Sustainable Development (Hails 1996) as well as the Millennium Assessment (Bridgewater 2008). A shift in attention to poverty reduction, emphasizing sustainable development, promoted the benefits of wetlands for people, not just wildlife. The Wise Use doctrine was redefined as ‘the sustainable use of wetland ecosystem goods and services, especially water, for the benefit of biological diversity and human well-being through maintenance of their ecological character by implementing an ecosystem approach’. Local communities were recognized as sources of information for Wise Use and were provided stakeholder participation through development of Participatory Management procedures. The Montreaux Record continued to identify threatened wetlands and developed integrated management plans to alleviate problems while its mandate was slightly refocused to recognize that it is the character of wetlands to change.

Over this period of time, the Convention has evolved and now presents 5 main bodies:

1. Contracting Parties: the Convention is directly responsible to the Parties and the Conference of Contracting Parties (COP) meets every three years;
2. The Standing Committee: the authority between COP meetings;
3. The Secretariat: daily administration under the authority of the Standing Committee;
4. The Scientific and Technical Review Panel (STRP): technical expertise for Convention issues;
5. International Organization Partners: a formal working relationship exists with UNESCO, Man & Biosphere Program, Birdlife International, Wetlands International, World Wide Fund for Nature, and International Water Management Insurance. In addition, formal agreements exist with Ducks Unlimited, the Convention on Biological Diversity, and the Global Environment Fund



(Implementing agencies – World Bank, UNDP, UNEP, World Conservation Monitoring Center)

The United States became a party to the Convention in 1987. Acting through the United States Fish and Wildlife Service (<http://www.fws.gov/international/dic/global/pdf/Ramsarfactsheet20090515.pdf>), the US National Ramsar Committee (<http://www.ramsarcommittee.us/index.asp>) was formed to support the goals and objectives of the Ramsar Convention within the United States and 30 wetlands of International Importance have been designated.

## Site Selection and Classification System

Wetlands are broadly defined to include rivers, lakes and coastal regions, as well as typical wetlands such as freshwater marshes and estuaries. Conservation is sought to benefit people and wildlife alike; for example while, attention to wetland wildlife is the unique contribution of the Convention, the cultural significance of wetlands, such as the religious value of the Ganges, is also recognized and addressed within the treaty.

Contracting Parties are required to designate at least one site as a Wetland of International Importance. The identified wetland must have international significance in terms of its ecology, botany, zoology, limnology or hydrology. Criteria to determine international significance have been developed and supplemented with Guidelines (Strategic Framework 2008). Contracting Parties are encouraged to develop a comprehensive national wetland inventory. If the ecology of any listed wetlands significantly changes for the worse, countries are expected to work with the Bureau to take action to prevent or remediate such changes. If the ecological character is lost, the site can be taken off the list.

Categories are based on the concept of Biogeographic Regionalism where regions are identified using precise biological and physical parameters. Wetlands are also broadly defined: areas of marsh, fen or peatland; water may be natural or artificial, permanent or temporary, static or flowing, or fresh; brackish or salt water includes coastal water where the low tide depth is less than six meters and adjacent riparian/coastal zones within the wetlands/islands/bodies of marine water may be deeper than 6 meters at low tide (Article 1.1 and 2.1). Principal Types are defined to designate Wetlands of International Importance: shallow marine, sandy shores, estuary waters, intertidal flats/marshes/forests, coastal brackish lagoons, permanent rivers, freshwater/brackish lakes, freshwater marshes, seasonal freshwater marshes and non-forested peatland (2008 Strategic Framework).

Criteria for identifying Wetlands of International Importance are based on one or a combination of the following:

1. Representative, rare or unique wetland of a biogeographic region (most often);
2. Sites of international importance for conserving biological diversity of plants

and animals present:

Supports vulnerable, endangered, or critically endangered species or threatened ecological communities;

Important for maintaining biological diversity of a particular biogeographic region;

At a critical life cycle stage or provides refuge during adverse conditions.

3. Specific criteria based on:

Waterbirds: regularly supports 20,000 or more waterbirds or regularly supports 1% of the individuals in a population of one species or subspecies of a waterbird;

Fish: Supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contribute to global biological diversity. Or, an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland, or elsewhere, depend;

Other taxa: if it regularly supports 1% of the individuals in a population of one species or subspecies of wetland-dependant non-avian animal species. (Third edition, COP10, 2008).

All data describing wetlands of international importance, including wetland types, are recorded in the Ramsar Sites Database (maintained by Wetlands International: <http://ramsar.wetlands.org/>) with ecological, biological, socio-economic, and political data as well as maps for all identified sites.

## Transboundary Wetland Systems: A Biogeographic Approach

The ecosystem approach to conservation is reinforced by the requirement to place the wetland within a greater biogeographic region. This is accomplished 'using a scientifically rigorous determination of regions as established using biological and physical parameters such as climate, soil type, vegetation cover etc.' (<http://www.ramsar.org/cda/en/ramsar-documents-guidelines-strategic-framework>). Applying this analysis, many bioregions are transboundary: ecologically coherent wetlands that cross national boundaries. Article 5 and Resolution VII.19 of the Convention encourages countries sharing a wetland system to cooperate. Contracting Parties designate existing sites as "Transboundary Ramsar Sites." This is not a distinct legal status for the shared ecosystem and it imposes no additional obligations of any kind, it merely creates a potential framework for shared management. Authority to determine the nature of collaborative management is on the hands of participating countries. (Handbook 20, International Cooperation). Hungary and

Slovakia were the first to declare a transboundary site, the Baradla Cave System and Domica Ramsar Sites, and develop a cooperative management plan.

Currently 234 Ramsar sites are listed as transboundary, although it is important to note that most of the transboundary neighbors have not listed the cross-border site with the Convention. There are 13 formal Ramsar transboundary wetlands that are cooperatively managed. The Prespa Basin in the Balkans which includes frontier areas in Albania, Greece and FYROM, is an example of a successful Ramsar transboundary project. The sustainable management plan, which also addressed local socio-economic issues, was initiated in the Greek part of Prespa and developed with local community input. This encouraged Albania and FYROM to join forces and develop a transboundary management plan, despite political difficulties between these countries (Malakou 2000). A recent addition is the Iron Gates Natural Park in Romania is located along the border with the Republic of Serbia and was listed in April 2011 as a transboundary wetland.

Addressing systems as transboundary creates opportunities but also complications. Increasing globalization has often exacerbated cross-border problems and conservation is complicated by differing laws between countries. Multilateral (or bilateral) environmental agreements attempt to address these problems by promoting shared management with a cooperatively developed plan. Implementation of a plan may include nature conservation, cultural preservation, shared economic development and/or reduction of political tensions over resource use. Water cooperation may drive economic development (Carius 2011). A regional approach to ecosystem management can enhance economic opportunities of cooperating countries with projects such as trade development or shared sustainable harvesting of natural resources (Drame-Yaye 2007). Capacity building may be augmented or the focus may be building trust and confidence among neighbors. There is no 'one size fits all'. The result is a set of unique conservation initiatives, such as the Mediterranean Wetland Initiative (<http://www.medwet.org/>), a coalition of countries bordering the Mediterranean Sea that addresses regional wetland conservation issues.

Additional empirical research is needed to further examine the effect of transboundary conservation projects on conflict (Carius 2011). Many transboundary sites exist in conflict prone areas, providing a wealth of potential research. Not all are Ramsar wetlands, however, five Central Asian countries: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan share hundreds of water-based projects. The organization "Friends of the Earth Middle East" promotes water and waste management between Israel, Jordan, and the Palestinian territories. In the Himalayan region, Bhutan, China, India, Kyrgyzstan, Nepal and Pakistan struggle to conserve the shared high altitude wetlands.

Specific Ramsar transboundary agreements have commenced in conflict prone areas and include Africa's first formal transboundary site between Gambia and Senegal that includes the Niimi-Salorim National Park and the Delta de Saloum. A transfrontier wetland exists between Burkina Faso and Mali called the Complexe

Kokorou-Namga and one exists between Benin and Nigeria called the Zone Humide du Moyen. Belarus and Lithuania work together to conserve the Kotra and Cepkelai sites. Hungary and Slovakia jointly conserve the Ipoly Valley and Poiplye. Have these projects ameliorated conflict? It seems likely that they have built trust between countries and helped build capacity. Perhaps a closer analysis is warranted such as that undertaken by Oregon State University's Transboundary Freshwater Dispute Database (paper forthcoming).

## Environmental Security: Ramsar's Potential Contribution

"The management of water conflicts is an essential challenge of nations in the pursuit of environmental security" (Kliot 2001). When environmental conditions are so degraded that healthy life cannot be supported, a state of environmental insecurity exists for the affected populations. Environmental change and energy security are now recognized as high politics by many as they provide the foundation for long-term security and well-being of countries (Conca and Dabelko 2010). When access to resources, especially water, is threatened, a community's existence is precarious. Water is essential for agriculture; therefore, water insecurity immediately translates to food insecurity. Environmental insecurity is most critically felt by the poor, primarily in developing nations, who are often dependent on natural resources for their livelihoods. When catastrophic environmental change, such as a flood or earthquake, is layered on a community with an already tenuous political infrastructure, disaster usually results, exacerbating environmental insecurity. One does not have to peer far into the past to see this illustrated: witness the 2010 and 2011 floods in rural Pakistan or the earthquake in Haiti.

Redefining security to include protection against environmental threats is of fairly recent origin (Dabelko and Dabelko 2011). This repositioning, or widening, of the nature of security to include threats to life-sustaining resources, such as water, was recognized by the 1987 World Commission on Environment and Development and has since been reinforced several times by the United Nations and the United States Department of Defense (US Department of Defense's 2010 Quadrennial Defense Review).

The Middle East and North Africa have the least secure water supplies according to The Water Risk Index developed by the British consultant Maplecroft (Maplecroft.com). The Middle East, with 370 million citizens and rapidly growing, only has .7% of the world's freshwater. Yemen may be the first country to actually run dry (Finlay 2010). The Niger Inland Delta is an insecure region for its residents due to changes in climate and resource availability from season to season and from year to year. Water insecurity is one of Pakistan's biggest killers: one third of Pakistanis are without clean water and waterborne illnesses claim 1.2 million citizens a year, 630 children a day (Muhammad Qasim: the International News).

Countries, such as Bahrain, have adapted to systemic low water supplies through expensive desalination infrastructure; however, few are prepared for the rapid

changes in resources predicted by advancing climate change and the increased threat to environmental security. The predicted accelerated hydrologic cycle will increase extreme events including glacial melt, heat waves, flash floods, and long term systemic changes such as increasing desertification (Michel et al 2009). Key regions predicted to experience substantial water stress include South and East Africa (including the Great Lakes Region), the Middle East and Central, Southeast and South Asia (Carius et al. 2004).

There have been a few times when water insecurity has led to violent protest such as in Cochabamba, Bolivia in 2000. In that case, the marketing of water placed financial stress on local access and provoked a violent protest. A state of emergency was declared and the army called. Protests over water access have also erupted in China, Pakistan, Somalia, India, Kenya and in the United States. These examples illustrate how closely connected environmental security can be to overall national security.

Environmental insecurity has the potential to widen into regional conflict or provoke environmental refugees into seeking a more secure environment elsewhere (Beeler 2006). Presently there is no situation illustrating this in greater disastrous detail than in Sudan where over 50 years of civil war has been exacerbated by water scarcity, increasing desertification made worse by the lack of effective governance to address multiple environmental issues. Could early intervention, addressing environmental stressors such as water access, have mitigated some of the conflict? Once conflict becomes ingrained in a society it becomes extremely difficult to ameliorate. The conflict is over more than water scarcity, however, the capacity and trust-building nature of securing water supplies may have mitigated some problems such as fewer environmental refugees.

Methods to address environmental insecurity are debated. One concern is that the military, rather than development agencies, may lead negotiations over issues such as shared water resources. Many less-developed nations fear this approach may hamper economic development (by restricting their access and use of natural resources) or be used to serve interests of richer countries by giving them more control and access to local resources (Conca and Dabelko 2002).

One essential ingredient to address environmental stress is resilient political institutions that can manage resources effectively in the face of scarcity or rapid change (Carius 2011, Wolfe 2011). If the rate of environmental change exceeds a community's ability to adapt, security is threatened because governments lack the capacity to cope with the problem (Yoffe 2003). Threats to water access seldom trigger outright war; however, given predictions that climate change will pose increased threats to adequate water access, it is not known whether this fairly benign pattern will continue. A contributing preventive factor is a proactive approach to water management that can react to rapid change and be flexible enough to reduce the likelihood of conflict in these areas of the world. The contribution to capacity building as well as trust among neighbors via a proven system

of integrated management of transboundary systems can be significant.

## Legal Status of Ramsar as an International Environmental Treaty

A primary purpose of environmental treaties is to prevent or manage human impact on natural resources (Conca and Dabelko 2010). The Convention treaty is an intergovernmental document intended to be legally binding among its Contracting Parties. No hard rules applicable to all protected areas exist; rather general principles and performance standards are relied upon to develop individualized approaches to national strategies (de Klemm 1993). Success is dependent upon transparency that builds trust among participants.

In a global setting, where countries tightly guard their sovereignty, especially in regards to natural resources, enforcement options are limited. No sanctions exist for violating Convention standards and there are no mandates to hold countries accountable. Treaty success is based upon participation. If punitive sanctions for disregarding treaty protocol were a possibility, few countries would sign on. Nevertheless, Contracting Parties are bound by a tradition of international law that recognizes the instrument as a solemn treaty with a moral obligation shared among participants (conversation with Professor Martin Rogoff, University of Maine Law School). A primary enforcement tool is political and diplomatic discomfort if the treaty is broken.

The Stockholm Declaration of 1972 is regarded as having set the initial standards for international environmental law and multiple treaties have since arisen since. Laws applicable to the Ramsar Convention exist as hard and soft law in a complex web of rules, regulations and principles from different institutions tasked with mediating hydropolitics. One clear message, reinforced by several conventions, is that countries have the sovereign right to exploit their own resources; however, they also have the responsibility to not cause ancillary damage to the environment in other countries. Treaties to conserve transboundary areas provide a framework to develop and enforce joint measures to support this outcome. (de Klemm 1993). There are few adjudicating bodies that address violations of international environmental treaties. The International Court of Justice is a potential adjudicating body although both parties must consent to its jurisdiction and the Court only hears very specific disputes (see 1997 decision on dam on the Danube between Hungary and Slovakia).

The Convention is regulatory in nature and effect: it provides a system of checks and balances intended to conserve international wetlands. Many countries accept the inherent limitations on their sovereignty in transboundary agreements (such as listing on the Montreaux Record) in exchange for financial support. Support to develop conservation legislation and binding legal rules within a country is also available. Some countries, including Spain and Uganda, have embodied Ramsar obligations into national law, policy or both, thereby implicating their own judiciary for enforcement measures (Shine and deKlemm 1999). As awareness within a

country increases, national standards are often tightened and participation in the international framework can help justify locally controversial enforcement of conservation measures.

The efficacy of conservation rules via multilateral environmental treaties lies in largely untested ground during conflict. The Ramsar treaty does not address applicability during war. Other environmental treaties have slightly more useful language, but none have been tested in an international court of law. The Convention on Biological Diversity states that conservation mandates apply to activities carried out by a party under state control outside the territory which has the potential to apply to military activities. Article 32 of the Draft Covenant of the IUCN seeks to clarify that peace-time environmental commitments apply during conflict. A draft Convention on Prohibition of Hostile Military Activities in International Protected Areas calls for enforcement by the UN Security Council (Bunker 2004). These measures await an enforcement attempt for clarification and could potentially provide protection to Ramsar sites affected by war in the future.

## Other International Environmental Treaties

When issues are wider than wetland conservation, resources of other multilateral environmental agreements may enhance problem-solving as well as reduce redundancies within the international system (Koester 2002, de Klemm 1993). The principle international conventions addressing conservation and sustainable use of biodiversity are the following:

- World Heritage Convention (1972) (<http://whc.unesco.org/en/conventiontext>);
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, 1973) (<http://www.cites.org/>);
- Convention on the Conservation of Migratory Species of Wild Animals (CMS, 1979) (<http://www.cms.int/>);
- Convention on Biological Diversity (CBD, 1992) (<http://www.cbd.int/>);
- UN Convention on the Law of the Sea (UNCLOS) ([http://www.un.org/depts/los/convention\\_agreements/texts/unclos/closindx.htm](http://www.un.org/depts/los/convention_agreements/texts/unclos/closindx.htm)).

The World Heritage Convention is organized under the auspices of the United Nations Educational, Scientific and Cultural Organization (UNESCO). It recognizes that certain properties (cultural and natural) are the concern and common heritage of all of humanity and should be conserved. With quite specific obligations the Convention provides relatively good protection to designated sites. A significant amount of their success is related to adequate financial incentives as well as significant prestige.

CITES seeks to resolve the difference between legitimate trade in renewable resources with protecting endangered species. Trade in species and specimen of

wild plants and animals is allowed when it does not threaten survival of those species. Though not ecosystem protection per se, it has the most concrete obligations and a model rigid protection system which may provide an enforcement model for other Conventions.

CMS, historically perceived as somewhat vague, in recent years has effectively worked with other conventions to focus protection on terrestrial, marine and avian migratory species.

As the most recent Convention, the CBD is designed as an umbrella organization of the other conventions with the mandate to reduce the global decline in biodiversity. It is a comprehensive resource for building national systems for biodiversity conservation and is also based on the holistic ecosystem approach. Focusing on increasing efficiency in the system of environmental treaties, the CBD seeks to eliminate redundancy and fill gaps in coverage, while addressing conservation and development via sustainable use. A key function is a process-oriented body whereby the development of protocols and legal principles are facilitated with a realistic evaluation of contemporary environmental global issues. The Convention makes clear that sovereign rights are limited to preventing damage to other states, 'codifies' sustainable development, protects indigenous cultures and provides a legal framework for biotechnology. With the synergy between Ramsar's Wise Use and the CBD's Ecosystem Approach, the two treaties have a close formal relationship outlined by a series of Joint Work Plans (Secretariat of CBD 2008). When implementation of CBD programs includes wetlands, the Ramsar Convention is included as a stakeholder, thereby bringing its expertise to the table (CBD Technical Series No. 47).

The UNCLOS is the only Convention that makes reference to protection of the (marine) environment in armed conflict whereby states are obliged to act to 'ensure that such vessels (warships, naval auxiliary and other vessels or aircraft) act in a manner consistent, so far as is reasonable and practicable, with the Convention' (Bunker 2004). This convention has successfully evolved to facilitate equitable sharing of marine water resources and is an accepted part of international foreign policy. In this manner, it can serve as a model for other conventions (Kliot 2001).

This list is not inclusive. Several other related conventions exist including the United Nations Framework Convention on Climate Change (<http://unfccc.int/2860.php>) which coordinates climate change mitigation and the 1997 United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses ([http://untreaty.un.org/ilc/texts/instruments/english/conventions/8\\_3\\_1997.pdf](http://untreaty.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf)) which provides a framework for negotiations between countries that share an international water resource.



## Diplomatic Opportunities of the Ramsar Convention

The essential diplomatic opportunity of this international environmental treaty is, perhaps, best summed up by Conca and Dabelko as 'The Cooperation Imperative'. Cooperation is imperative when the alternative is conflict that is costly in terms of life, wasted use of limited resources, and the devastating effect on the environment. With over 40 years experience managing and facilitating cooperation, the Convention has developed the potential capability to prevent or stop conflict. The global reach of the Convention infrastructure is a key component of this tool. Countries continue to tightly guard their sovereignty; however, the realities of transnational environmental impacts, given climate change and population pressures, often force a more regional approach to management. A realistic diplomatic goal of Ramsar is to help states with shared wetland resources achieve enhanced environmental security through effective natural resource management. The intent is to move neighboring countries to a place where cooperation is expected and war is improbable, with countries such as the United States and Canada providing the model. War is unthinkable between these two friendly neighbors, which is not to say that cross-border tensions do not arise.

While the Convention has been criticized for its limited scope of wetland conservation (Koester 2002), there may be strength in this limitation that contributes to conflict prevention, especially with unsettled nations experiencing a myriad of issues. The singular focus on an essential resource, while other existing conflicts may have more subtle and complicated forces, may prove a useful introduction to negotiation. This limited focus may enable parties to cooperate on a primarily scientific mission. Building trust in this limited arena is, perhaps, the most important diplomatic goal of the Ramsar transboundary conservation mission. Limited may be the arena: this does not diminish its overall importance in the peace/conflict continuum.

Cooperative management of shared water resources that seeks to integrate local/indigenous stakeholders into the process, by soliciting their views and sharing expertise, is more likely to lead to long term positive results (Pimbert 1995, World Commission on Dams 2000, Verschuuren 2007, Wolf 2000). It seems common sense that communities are more likely to participate in long-term conservation plans if their voices are heard during the process. Community participation also contributes to successful enactment of sustainable socio-economic development (Bowmer 2007). The Convention has developed a system of 'Participatory Management' that provides a framework for local and indigenous communities to participate in conservation planning. Over 40 countries in South America participated in the system (Participatory Management Planning: Ramsar Handbook #5). By giving a voice to all parties that rely on a water resource and providing an intergovernmental forum to bring attention to transboundary issues, different voices are heard that help promote an agreeable, long-term resolution of conservation issues. When the conflict includes wildlife, such as destruction of farmland by elephants, participatory management is also more likely to lead to a successful outcome for all (Messmer 2000, Parr 2008).

Different strategies to foster communication between neighbors with shared resources, especially water, have been evaluated. A focus on interests/needs rather than rights has proven successful with the Jordan River negotiations as well as the US-Mexico sharing of the Rio Grande serving as good examples (Wolf 2007). Ramsar is in an optimal position to help prioritize interests/needs between nations, given their range of experience, trust garnered over the years and myriad of tools available. For example, participatory mapping of resources has proven useful for gathering, analyzing and presenting data from multiple parties. This data can then be presented in an unbiased manner as 'interest-based' rather than 'rights-based' to help develop consensus to move forward. Rather than forcing a decision, such as relocation of communities to site a dam, the intent is to cultivate an equitable resolution, whereby a peaceful resolution of issues enables interests of all affected parties to be met.

Who determines which local voices are valid and how they make this decision is a challenge to Participatory Management. Nevertheless, in an age of internet-driven protest, giving voice to previously ignored populations and enabling them to link with environmental advocates, there is an argument that this approach is becoming increasingly necessary (Conca 2006). Recent protests in the Middle East, where technology enabled fast and efficient communication, illustrate that it will become increasingly difficult for governments to keep conflicts local. This applies to environmental-based conflicts. Governments may be increasingly forced to deal with environmental security at a local level and the Convention has the capacity to provide the infrastructure for dispute resolution as described above, to address these needs when water resources are threatened. However, this process is challenged when countries such as China are able to bypass consultation with local communities by hiring multinational corporations that do not solicit local community input, to build projects such as Three Gorges Dam.

A fish farm that provides an immediate livelihood, but in the long run pollutes water supplies, ultimately makes a community worse off in the longer run. If such a wetland is listed with Ramsar, it may get listed in the Montreaux record, providing the Convention with another diplomatic opportunity. Adopted by the 4th meeting of the COP in 1990, the Record lists sites where changes in ecological character have occurred, are occurring or are likely to occur. In this capacity, the Convention can provide funds/plans for restoration. As pollution increases and drinking water becomes more scarce, conflict potential increases. For example, restoration work, prompted by listing in the Record, can access grants to mitigate pollution and also provide for associated livelihoods such as research positions and park rangers. Or, a restoration plan may address shared resource use, such as sustainable access to grazing lands, in exchange for environmental protection in other areas.

Iran has successfully worked through the Montreaux Record to alleviate some of their pollution problems thus providing a regional example of conservation leadership. The Azraq Oasis in Jordan was also placed on the Montreaux Record. The Ramsar Advisory Mission studied the threats, recommended solutions and

restoration was funded by the Global Environment Fund. The Parc National des Mangroves in the Democratic Republic of Congo is listed on the Montreaux record. With the deep systemic challenges of the region, activities of the Convention can be but a small contribution; however, management assistance and funding may contribute to essential capacity-building that can build trust in the region.

## Policy Recommendations: The future of water diplomacy, building the cooperation habit

The Ramsar Convention tends to fall under the radar when it comes to environmental diplomacy issues. The application of complex international environmental law in regards to hydrology and the difficulty of mediating between different national environmental strategies often relegates the Convention to a limited role (Verschuuren 2007). Nevertheless, decades of quiet steady work conserving water has earned it a greater role in environmental diplomacy. International treaties play a key role in helping countries develop resilient institutions to address environmental challenges (Wolfe 2011). Projects with the attention of involved governments or international institutions and integrated into a larger political picture are more likely to succeed. The Ramsar Convention, as an intergovernmental institution, is able to address these issues.

Given their effective engagement of the 160 Contracting Parties and the development of programs such as Participatory Management, the Convention has potential to take a more proactive role is using transboundary conservation as a peace-building tool. Water management brings a unique set of challenges to every site; therefore, policy recommendations should address a wide range of ideas. Some of the objectives below are currently being used in Convention work; we include them through a strictly peace-building lens to evaluate whether they can be emphasized in order to make a greater contribution to conflict mitigation and peace-building.

1. Work with researchers such as Carius, Wolf, IEDS etc., to analyze how environmental cooperation over water resources affects regional peacemaking. Existing Ramsar sites can provide a wealth of data in this effort. Existing assessment tools, such as Peace and Conflict Impact Assessments (PCIA) are not tailored to the Ramsar methodology, but may provide a useful model. The PCIAT is developed to analyze how conservation initiatives exacerbate conflict or promote peace. (Hammill and Bescancon 2007). Also see Yoffe 'Basins at Risk' database( 2003), algorithms developed by van der Zaag (2002) that attempt to quantify and make transparent the concept of 'equity' in regards to sharing international water supplies and Tamas (2003) conflict indicators related to water scarcity. Some specific research areas include:
  - Participatory and action oriented research (see IEDS goals) are an identified need and Ramsar projects can provide extensive field data to support this research. For example, analyze short and long term ef-

fectiveness of Ramsar projects in Pakistan/India or Iran, where trans-boundary tensions exist to evaluate the role of wetland conservation in solving or exacerbating tensions.

- Contribute to understanding the relationship between water scarcity and other existing tensions.
  - Contribute empirical data to understanding whether water stress causes cooperation.
2. Identify indicators of resilience and vulnerability of water systems and associated communities/governments in relation to climate change to develop systemic methods of countering these effects. For example, many developing nations are predicted to suffer from increasing desertification which will steadily wear away at tenuous state development. Wealthier nations, such as China, with more power to enforce mechanisms to address increasing desertification, will address the problem differently than developing nations such as Afghanistan. As a mechanism for international cooperation, the Convention can facilitate capacity building as well as encourage participation by a diversity of groups to mitigate some of the impacts of climate change.
  3. Seek holistic solutions to transboundary water issues. Water management often entails multiple objectives; for example, seek greater efficiency of available resources by decreasing demand rather than attempting to increase supply. This is especially important for countries that need water for irrigation and whose supply, especially from fossil aquifers, is declining. Saudi Arabia and Bangladesh are experiencing serious aquifer shortages. Transboundary aquifers are not part of the Ramsar Mission. Perhaps the Convention should consider adding them to their definition of wetlands.
  4. Actively seek more formal transboundary agreements especially at a regional level (more than 2 countries). Build in flexibility to adapt to changes from potential conflicts; for example, the Amu Darya Basin which includes Afghanistan, Iran, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan seems particularly suited to benefit from such regional capacity-building measures.
  5. Future problems, promising to become even more complex, require cooperation among workers in related fields to address conflict issues. The Convention's work could be built into larger conflict prevention projects; for example, work closely with the United Nations Environment Program Post-Conflict unit, the UN Development Program Bureau for Crisis Prevention and Recovery, as well as USAID. The UNEP mandate seeks to ensure that countries rebuilding from conflict identify the sustainable use of natural resources to guide reconstruction. Furthermore, the UN has called for natural resource allocation to be integral to peace-building strategies. The Convention's expertise in water

resources can support peace-making work and could be written directly into peace agreements (see discussion about Ecuador and Peru peace agreement in Ali 2007, p.9). USAID has a natural resource recovery unit which seems particularly amenable to the Ramsar mission.

6. Consider advocating for a supranational agency to enforce and address conflicts over water. Actively support international efforts to build mechanisms to resolve conflicts such as those being undertaken at the UN.
7. Seek enforcement mechanisms to protect watersheds when conflict break out; however, avoid outright militarization of protected areas.
8. Encourage greater participation in the IUCN International System of Protected Areas for Peace. There are currently two Ramsar transboundary sites that are part of this program: Cano Negro in Costa Rica (shared border with Nicaragua) and Libenga in the Congo (shared border with Democratic Republic of Congo).

## Conclusion: An enhanced window for diplomacy

Transboundary water management is conflict management. The nature of conflict is increasingly complicated in today's world and multi-dimensional responses are essential to meet the challenges. Conflict is increasingly triggered by local and internal factors such as poverty and institutional instability (Wolf 2007, Michel 2009). The Ramsar Convention's contribution to environmental diplomacy could well be stated as seeking peace through shared water management. When borders are porous due to institutional instability, conflicts tend to spill over into neighboring states. Peaceful sharing of transboundary water resources requires effective institutions that recognize these complexities to develop and deliver water management systems. Effective agreements can contribute to a government's legitimacy and help to sustain peaceful conditions among its own people and with its neighbors. Human existence depends on a healthy ecosystem.

Perhaps the key role of the Convention is provision of a global infrastructure for the world community to address wetland conservation through national action and international cooperation. This delivers the capacity to confront problematic transboundary issues, such as cross border pollution, which then supports the goal of regional sustainable development. Available technical and policy services guide biodiversity conservation, help enhance ecological processes and offer assistance to develop a national legislative and management framework to carry out conservation objectives. By its nature, the Convention work is building capacity for effective governance -- which is essential for peace.

Water systems will experience increased stress in the face of climate change. The accelerating rate of change focused on earth's hydrological cycle, predicts increased water stress in many regions of the world. International institutions that facilitate cooperation are essential to meet rapidly changing conditions. For

example, in South Asia, a period of heavy glacial melt followed by a diminishing water supply is predicted and appears to be ongoing as once again, in 2011, Pakistan is experiencing devastating floods which have contributed to destabilization of the national government and increased regional conflict. Compounded by increased population growth in many parts of the world, maintenance of water systems and healthy wetlands will be increasingly challenged. The amount of resilience in natural and political systems will determine the extent to which these stressors will be surmounted. Time to address these problems exists, although it is limited; hence a more proactive preventative role for Ramsar can be critical. The task: keep nations away from the point where water shortages become so extreme that conflict is triggered.

The Convention has garnered a degree of trust through its 40 year history. In 1971 the world could not have imagined the nature of today's environmental problems, especially through the lens of climate change. The Convention persists and has evolved with the times. Its key strength is the ecosystem-based approach to conservation and the capacity to address trans-national issues, enabling it to help solve the linked environmental problems between development and security. The Convention has all the tools needed for an increased role in water diplomacy. Nevertheless, the question that exists is whether the infrastructure of the Convention is adaptable enough to meet coming environmental challenges. Whether the treaty can adequately address future pressures on transboundary wetland resources, given the increased rate of change from climate change impacts, compounded by conflict that is exacerbated by such change, is the challenge for the treaty.

To speak of water diplomacy is to get to the very heart of the cooperation imperative. The models of future water availability predict significant change in the near future. Some countries will get too much, some not enough and some just right. In those situations where water will become increasingly scarce, the world community is faced with a choice: work together to ensure efficient use and equitable sharing for all or suffer the consequences.

*"In the end, our common future depends on environmental health: our common peace as well (Geoffrey Dabelko)"*

## APPENDIX

### Environmental diplomacy potential: A prioritization of Ramsar transboundary sites

#### *Methodology*

There are 234 Wetlands of International Importance (from a total of 91 countries) that are listed as transboundary sites because the wetland ecosystem identified by one country extends into another country. In most other cases, the country that shares the border does not list the wetland with Ramsar. We examined each of the 234 transboundary sites for environmental diplomacy potential to help answer the questions in the introduction: Can implementation of the treaty help prevent conflict, mitigate existing conflict and/or contribute to a sustainable peace

The countries are ranked according to the Global Peace Index which ranks the relative peacefulness of 153 countries using 23 indicators, such as number of internal and external wars fought, deaths from war, military expenditures and relations with neighboring countries. The Index gathered data from a variety of sources including the Uppsala (University) Conflict Data program which has gathered data describing ongoing violent conflicts since the 1970s (and related data since 1945), the Economist Intelligence Unit and the Stockholm International Peace Research Institute. One criticism of the ranking is the use of the amount of military expenditures which gives countries that rely on other countries for defense (most notably the US) a higher ranking. Overall, however, the index used indicators that described the type of conflict situation where we seek to engage these environmental initiatives. Information about ongoing conflicts was gathered from the International Crisis Group (<http://www.crisisgroup.org>), Political Economy Research Institute (<http://www.peri.umass.edu>), the Heidelberg Institute for International Conflict Research ([http://hiik.de/en/konfliktbarometer/pdf/ConflictBarometer\\_2010.pdf](http://hiik.de/en/konfliktbarometer/pdf/ConflictBarometer_2010.pdf)) and Global Security (<http://www.globalsecurity.org>).

In deliberating the ranking, some countries lowest on the Global Peace Index were eliminated: Denmark, Luxemburg, Finland, Canada, Norway, Sweden, Belgium, Germany, Switzerland, and Portugal because there was no international conflict to address. Although Czech Republic and Slovenia were high on the Index, they were not eliminated because a potential role for environmental peace-building, such as building trust among neighbors, exists.

In addition to this overall ranking according to the existing relative peacefulness, each site is categorized according to the situation Ramsar-based environmental diplomacy may address. This is a closer focus on existing relations between countries (that share a wetland). These categories, which are not mutually exclusive, are as follows:

**Category 1. Existing violent conflict:** Any violent conflict between countries that share wetland ecosystem such that collaborating on a conservation plan may have a spillover effect.

**Category 2. Territorial disputes:** Any border dispute between countries that share wetland ecosystem.

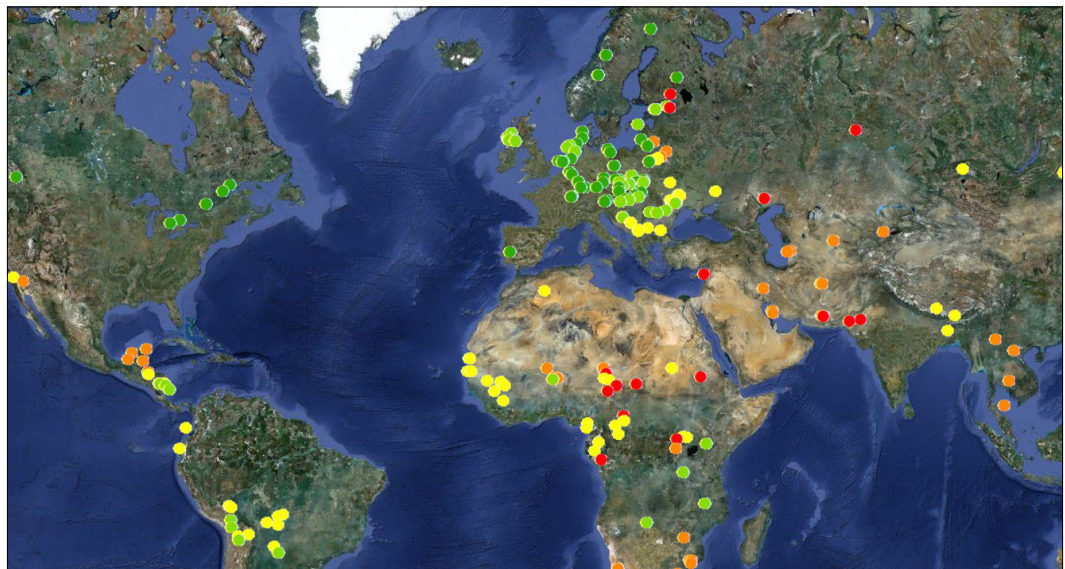
**Category 3. Economic challenges/poverty/need for capacity-building:** Challenges such as vast wealth differences between neighbors, regional poverty, and need to develop capacity for more effective governance (usually based on lack of finances).

**Category 4. Lack of trust:** When countries that share border are not able to work together based on a historic lack of trust which may or may not be expressed in violent conflict.

The list starts with countries identified by the Global Peace Index as least peaceful, therefore, potentially able to most benefit from environmental diplomacy. Summary descriptions of the transboundary wetland shared by the two countries are excerpted (and often shortened) from the Ramsar database maintained by Wetlands International (<http://ramsar.wetlands.org/>).

### *Interactive Map*

To view an interactive map of 234 Ramsar Transboundary Wetlands visit: <http://www.uvm.edu/ieds/node/798>.





## *Ranking*

### 1. Contracting Party: Sudan

#### **Transboundary Neighbor: Ethiopia**

**Site Listed:** Dinder National Park: National Park, UNESCO Biosphere Reserve. A large complex of about 40 wetlands, or “mayas”, and pools formed by meanders and oxbows that are part of the Rahad and Dinder river drainage systems bordering the frontier with Ethiopia in southeastern Sudan. Both rivers and their tributaries, coming from the Ethiopian highlands across the flat plain of the Park, are seasonal and flow from June to November, peaking in August. The local population practices agriculture and pastoralism and many are nomadic within the park during dry and rainy seasons. Illegal fires set by non-local nomadic grazers, poachers, and honey collectors are cited as among the chief threats to the site.

**Discussion:** Oil and water issues continue to plague all sides in this regional conflict. Efforts to demarcate the porous boundary with Ethiopia have been delayed by fighting. Developing a formal transboundary conservation management plan would help the new government develop capacity and begin to build trust with Ethiopia.

**Category 1, 2, 3, 4**

### 2. Contracting Party: Democratic Republic of the Congo

#### **Transboundary Neighbor: Angola/ Congo**

**Site Listed:** Parc national des Mangroves. Two plateaus bordered by swamplands along the Zaire River, including coastal and riverine waters, inland ponds, and swamps. Human activities include fishing, gathering medicinal plants, and subsistence cropping. Threats include extensive fuel wood cutting, refinery pollution, and uncontrolled urban development.

#### **Transboundary Neighbor: Uganda, Rwanda**

**Site Listed:** Parc national des Virunga: World Heritage site. Lying at the equator and situated in the African Rift Valley, the site contains most tropical biotopes and boasts some of the most substantial concentrations of wild mammals in Africa, or indeed in the world. The Park fringes several biogeographical regions, includes volcanoes recent in origin and still active, and two large lakes. The area is important feeding and wintering ground for migratory birds and is one of the few places where mountain gorilla can be studied in their natural environment. The large mammals include endangered and endemic species. Archaeologically important, the oldest stone tools in the world have been discovered along the lake shores. Human activities include tourism, conservation education, fishing, hunting, subsis-

tence farming and agroforestry (fuelwood). There is a research center in the park.

**Discussion:** The war in DRC is described by the Political Economy Research Institute as the deadliest conflict since the end of the Cold War. The world's largest peace-keeping force is in the DRC. A civil war, tribal conflict, and rebel gang fighting has drawn in neighboring states of Burundi, Rwanda, Uganda, the Great Lakes region and Sudan. Heads of the Great Lakes states and UN pledge to end conflict, but unchecked localized violence continues unabated. The location of the boundary in the broad Congo River with the Republic of the Congo is indefinite except in the Pool Malebo/Stanley Pool area located in eastern Congo. There have been successes with the existing research center. A trans-national park encompassing the Congo River would formalize the already porous border and development of an integrated management plan with affected communities may, in time, become viable.

**Category 1, 2, 3, 4**

### 3. Contracting Party: Russia

#### Transboundary Neighbor: China

**Site Listed:** Lake Khanka, Nature Reserve. The Russian portion of an extensive coastline includes a transborder freshwater lake (with China), and adjacent floodplains subject to periodic fluctuations. A diverse aquatic and marsh vegetation is supported, as are several relict plant species surviving since the Tertiary era. It is an important area for breeding, feeding and staging birds, including globally threatened and endemic species. Large numbers of Anatidae (ducks, geese, swans, etc.) occur during migration periods. Rice is the principal crop in the surrounding area. Human activities include hay production, livestock grazing, and hunting of birds and fur-bearing mammals.

**Site Listed:** Khingano-Arkharinskaya Lowland, Nature Reserve, Wildlife Refuge. The site is a unique wet forest-steppe (prairie) ecosystem set in the Amur River Valley and includes vast floodplains with rain-fed rivers, islands, beaches, levee systems, oxbow lakes, and marshes. Vegetation is dominated by wet meadows with herbs and includes dry meadows, grass fens, reedbeds, and various other aquatic plants. The flora of the area is represented by 700 species of vascular plants, ten of which are nationally vulnerable. Migrating waterbirds include various species of ducks and geese, and the area is of particular importance for breeding populations of rare and threatened birds. Fifteen regionally rare bird species occur at the site. Human activities include agriculture, haymaking, and cattle grazing.

**Site Listed:** Zeya-Bureya Plains. Wildlife Refuge, Nature Park. Extensive floodplains of the Zeya and Bureya rivers consisting of islands, beaches, a complex of levees, oxbow lakes, marshes, and old river terraces. Vegetation consists of wet meadows with herbs and includes dry meadows, grass fens, and patches of

oak forest. Various rare animal and plant species occur at the site. The area is important for large numbers of migrating and breeding waterbirds, including rare species. Human activities include agriculture, livestock grazing, and sport fishing.

**Discussion:** Shared conservation initiatives may keep the two countries engaged to build trust and cooperation. The 400 year-old border dispute over the alluvial islands at the confluence of the Amur and Ussuri Rivers and a small island on the Argun River, ended in December 2008 with a 340 square kilometer piece of land being officially placed under the Chinese flag. The half-Russian, half-Chinese island is a hundred kilometers from the city of Khabarovsk. It has two names: the Russian half is called Bolshoy Ussuriysky Island, the Chinese half is now known as “the Island of the Black Bear.”

#### **Category 4**

##### **Transboundary Neighbor: Kazakstan**

**Site Listed:** Tobol-Ishim Forest-steppe, State Nature Reserve, Temporary Wildlife Refuge, Nature Monument. A region of birch and aspen forests interspersed with wetlands consisting of freshwater lakes and rivers with marshy areas of meadow and steppe, most of which are ploughed. Vegetation includes reed and sedge beds, peatlands, and mosses. The hydrologic regime of the lakes is characterized by a 20- to 50-year inundation cycle determined by climate variations. These cycles cause dynamic changes in salinity levels and vegetative communities. The wetland mosaic supports a rich and significant diversity of habitats and species. At least 20 rare and endangered waterbird species occur. The area is situated on a major migration route used by millions of birds each spring and autumn, and is important for large concentrations of breeding and molting waterbirds and colonial shore birds.

**Site Listed:** Volga Delta: UNESCO Biosphere Reserve, Strict Nature Reserve, Wildlife Refuges. It is one of the largest deltas in the world and characterized by a highly braided morphology, creating over 1,000 channels in the lower delta. The site covers the seaward edge, and is composed of extensive areas of open water, numerous islands, reedbeds, and other aquatic plants. 70% of the world catch of sturgeon come from the Volga tributaries, which are a vital link in the life cycle of other commercially important fish. During mild winters, the delta supports up to 750,000 waterbirds, including swans, geese and ducks, and summer molting ducks reach 400,000 individuals. Breeding wetland birds include the endangered pelican *Pelecanus crispus*; herons, *Ardea cinerea*; and egrets, *Egretta alba* (thousands of pairs each). The delta is a major staging area for many species of waterbirds, raptors and songbirds. The rise in the Caspian Sea level has caused a northward retreat of the foredelta.

#### **Category 3, 4**

##### **Transboundary Neighbor: Mongolia**

**Site Listed:** Torey Lakes: Biosphere Nature Reserve, International Protected Area, Strictly Protected Area, Important Crane Area, Anatidae Network Site. The largest enclosed soda lakes in the trans-Baikal are an example of natural wetlands of the Mongol-Manzurian steppe. The hydrologic regime is characterized by cyclical changes in inundation and wide variations in water level. The area includes terrestrial steppe ecosystems, rivers, numerous islands, arable land, and human settlements. The site is an important breeding, feeding and staging area for internationally important numbers of numerous species of migratory waterbirds, and it supports important populations of rare and threatened species. The site supports a highly diverse flora including numerous species endemic to Siberia or the Trans-Baikal. The fauna consists of elements of taiga, tundra, broad-leaved forests, and steppe zones; 305 bird species (include 90 breeding species), 42 mammal species, various reptile, amphibian, and fish species, and over 590 species of insects occur at the site. 16 bird species are vulnerable. Fishing and animal husbandry are vital to the local population. Other activities include recreation, traditional agriculture, and a shorebird-ringing programme. Agricultural intensification may have an adverse effect upon wetland ecosystems in the future.

#### **Category 4**

##### **Transboundary Neighbor: Estonia**

**Site Listed:** Pskovsko-Chudskaya Lowland: Nature Reserve, Ornithological Reserve, Nature Monuments. A system of interconnected freshwater lakes set in a large glacial depression. The site includes marshes of various types, floodplain meadows, rivers and streams surrounded by coniferous and mixed deciduous forests, agricultural land, and human settlements. The area, on an important bird migration route between the Baltic and the White Seas, links breeding areas in the tundra and northern taiga. Internationally important populations of breeding, migrating and molting waterbirds, including several rare and endangered species, are supported. The lakes are highly productive spawning, nursery and feeding areas for fish. The wetlands are an important supply of drinking water and support a rich biodiversity, including numerous rare and endangered species of plants and animals. Human activities include transport, recreation, and commercial and sport fisheries.

**Site Listed:** Kurgalsky Peninsula: Temporary Nature Reserve. This is the shallow waters of the Gulf of Finland, numerous islands, and the Kurgalsky Peninsula, which is covered with mires and pine forest. Habitats include patches of broad-leaved and mixed forests, coastal meadows and marshes with alder and oak, Sphagnum fens, floodplains, dry meadows, and reedbeds. The site exhibits a high species diversity of flora and fauna, supporting numerous species of regionally or globally threatened plants, mammals, birds, amphibians and reptiles. The wetland supports large migrating and breeding populations of numerous species of waterbirds. The local population is engaged in the fisheries or seafood industry.

## Category 3, 4

### 4. Contracting Party: Pakistan

#### Transboundary Neighbor: India

**Site Listed:** Indus Delta: The fifth largest delta in the world formed under largely arid climatic conditions and characterized by high river discharge, moderate tides, and evidently the highest wave energy of any river in the world. The fan-shaped delta consists of creeks, estuaries, mud, sand, salt flats, mangrove habitat, marshes, sea bays, and straits and rocky shores. Its 129,000 ha. of mangrove, mostly *Avicenna marina*, comprises 97% of the total mangrove area in the country and is said to be the 7th largest mangrove forest in the world. The area is rich in archaeological and religious heritage. Some 40 settlements in the area, with about one million people, find livelihoods largely from fishing.

**Site Listed:** Rann of Kutch: part of the great Thar desert and comprising stabilized sand dunes, with broad inter-dunal valleys, integral with the large Rann of Kutch across the frontier with India, which includes permanent saline marshes, coastal brackish lagoons, tidal mudflats, and estuarine habitats. Some 500,000 agro-pastoralists live in 330 villages/hamlets in the site area, and rich archaeological remains include three giant temples dating from 1375-1449. Scarcity of water remains the potential threat to the ecosystem. WWF-Pakistan and Sindh authorities have carried out work with GEF funding and a management plan (not transboundary) is in preparation.

**Discussion:** In 1971 both Pakistan and India became Contracting Parties to the Ramsar Convention. To date, India has 25 Wetlands of International Importance and Pakistan has 19. Pakistan has 2 Wetlands of International Importance that are listed as transboundary with India: The Indus Delta and the Rann of Kutch. India has no transboundary wetlands listed. Several water-related environmental issues exist including large-scale mangrove destruction (especially in India), heavy upstream pollution from Karachi, drought with increasing desertification, seasonal flooding (2010/2011 monsoon floods in conflict area) indicating worsening climate change impacts (primarily glacial melt followed by dry season), fishing issues and oil exploration.

There are also several long-standing intertwined conflicts. The Siachen glacier in Kashmir remains the world's largest and most highly militarized territorial dispute with portions administered by China (Aksai Chin), India (Jammu and Kashmir), and Pakistan (Azad Kashmir, and Northern Areas). The Indus River water sharing treaty (from 1960) has recent calls for reforms. The largest irrigation system in world implicates Tulbul Navigation and Wullar Barrage conflict. Disputes over the Sir Creek Estuary at the mouth of the Rann of Kutch prevents maritime boundary delimitation; Sir Creek is a 60 mile long estuary between state of Gujarat in India

and Sind in Pakistan; 1965 arbitration assumed Sir Creek boundary through the middle of the channel was agreed upon. Pakistan later claimed the boundary was located on the east bank of the estuary and India claimed it went through the middle of the channel (via Middle Channel Principle, Pakistan disputes channel is navigable therefore principle not valid); Political boundary situation exacerbated by transitory nature of estuary (channel has been generally shifting west toward Pakistan). Pakistani maps continue to show Junagadh claim in India's Gujarat State.

Both countries have cooperated over water resources, despite long-standing differences. There have been numerous agreements over the years including a fairly stable Indus Water Treaty. India also has a very progressive Ocean Policy. There have been numerous instances in the recent past where both (nuclear-armed) countries have been on the brink (and spilled over at times) of war.

Both are active participants in the Convention. Ramsar-based initiatives are an opportunity for back-channel diplomacy to enable Pakistan and India to focus on shared wetland issues and thereby build greater trust between parties that could catalyze wider conflict resolution.. One approach: both countries declare area a Wetland of International Importance and develop an integrated plan to develop coastal zone and boundary issue becomes moot.

#### **Category 1, 2, 4**

##### **Transboundary Neighbor: Iran**

**Site Listed:** Jiwani Coastal Wetland: a very significant area of mangrove forests extending westward to the Iranian frontier, contiguous with Iran's Govater Bay and Hur-e-Bahu Ramsar sites. Fishing is the most important human activity, practiced by clans that have migrated from Iran and from farther east in Pakistan as well as descendants of traders and soldiers from North and East Africa and the Gulf. Provincial plans to grant fishing concessions to a US industrial fishing firm and offshore drilling rights to a foreign oil company are viewed with concern by conservation authorities.

**Discussion:** Severe water shortages exist in the region and are exacerbated by climate change. Given that both Iran and Pakistan list this transboundary site, coordinating on scientific mission could build trust.

#### **Category 4**

### **5. Contracting Party: Israel**

##### **Transboundary Neighbor: Syria/Lebanon**

**Site Listed:** Hula Nature Reserve: A human-made wetland created as a result of an attempt to restore part of the drained Hula Lake and swamps. Located in

the Jordan Rift Valley, the site consists of open water, permanent and intermittent pools with fringing reedbeds, freshwater marshes, and riparian forest and wet meadows. Human activities at the site are limited. To preserve the open meadows, buffalo grazing has been introduced. A visitors center runs a conservation education program.

**Discussion:** Ongoing tension/conflict in region between Israel and neighbors; Syria wants Israel to return land from the 1967 war (Golan Heights and land in Jordan River Valley) and Israel wants Syria to reorient away from Hezbollah, Iran and Hamas. On and off peace treaty talks continue. Water conflicts existed previous to 1967 war. Part of the 1967 seizure is on the Sea of Galilee, which is Israel's main water supply; hence the sensitivity. Although (2011) unrest in Syria prevents diplomacy at this time, a bilateral agreement between Syria and Israel on water issues alone could provide a degree of trust-building that may contribute to wider peace talks. Both nations are affected by drought and water quality issues. A formal transboundary park called the Jordan Valley Golan Heights Environmental Preserve has also been proposed (Hoff 2009) and would be an excellent source of trust-building that may contribute to a larger Peace Park between the two nations.

#### **Category 2, 4**

## **6. Contracting Party: Central African Republic**

### **Transboundary Neighbor: Congo**

**Site Listed:** Les Rivières de Mbaéré-Bodingué (no more information available at this time)

**Discussion:** Fragile states, internal political instabilities with fighting and violence overlap states within the region, leaving refugees and rebel groups; Issues include diamond mining, extreme poverty and militia groups.

#### **Category 1, 2, 3, 4**

## **7. Contracting Party: Nigeria**

### **Transboundary Neighbor: Niger/Chad/Cameroon**

**Site Listed:** Lake Chad Wetlands in Nigeria: Bordered by Niger to the north, Chad to the northeast, and Cameroon to the south. The site comprises a disjointed complex of permanent freshwater marshes (formerly inundated as part of Lake Chad), some rivers and their deltas, and the remaining part of Lake Chad. The main feature, Lake Chad, is an historically large, shallow lake whose size has varied greatly over the centuries. The major vegetation types include grasses, sedges, floating macrophytes, and shrubs, which form important habitats for a great variety

of Palearctic migrating waterbirds, including the vulnerable Marbled Teal. The lake supports some indigenous fish species and is economically important, providing water, fish and other resources to the surrounding populations. Agriculture is also greatly practiced around the wetlands. Threats to the site include recession of lake waters due to climatic influence and upstream dam construction, and the consequent continuing desiccation of the wetlands. The only element of management in the area is provided by the Kanuri traditional rulers, who see to the sale of fishing rights in ponds and stretches of water as well as farming rights on the receding lakebed.

**Discussion:** The International Court of Justice ruled in 2002 on the Cameroon-Nigeria land and maritime boundary but the parties formed a Joint Border Commission to resolve differences bilaterally and have started to demarcate the border less-contested sections of the boundary, starting in Lake Chad in the north. Nigeria initially rejected cession of the Bakasi Peninsula; the ICJ ruled on an equi-distance settlement of Cameroon-Equatorial Guinea-Nigeria maritime boundary in the Gulf of Guinea, but imprecisely defined coordinates in the decision. The unresolved Bakasi allocation, and a sovereignty dispute between Equatorial Guinea and Cameroon over an island at the mouth of the Ntem River all contribute to the delay in implementation. Several villages along the Okpara River are in dispute with Benin. Lake Chad Commission continues to urge signatories Cameroon, Chad, Niger, and Nigeria to ratify delimitation treaty over lake region, which remains the site of armed clashes among local populations and militias. Northern Nigeria is especially contentious.

#### **Category 2, 3, 4**

## **8. Contracting Party: Chad**

### **Transboundary Neighbor: Cameroon, Niger and Nigeria**

**Site Listed:** Partie Tchadienne du lac Tchad; A vast expanse of water bordered on the northwest by a cordon of dunes, on the northeast by an “erg” of shifting sand dunes, and on the south by flat lowlands. Lake Chad is shared with Cameroon, Niger, and Nigeria, and the Chadian portion covers a great variety of wetland types, including open waters, islets and sandbanks, polders, oases and temporary and permanent “natron” or alkalai pools. The endorheic lake, as the only expanse of water of similar magnitude in the Sahara, is of immense importance to all life in the region and fulfills most of the Ramsar Criteria. The site supports internationally important numbers of waterbirds and is essential for some 150 fish species, and is the only place in the country that supports the endemic Kouri Ox, which is threatened by extinction through interbreeding. The lake also regulates the variability of annual water supply, recharges groundwater, and helps to control flooding. Of 300,000 fishermen in Chad, more than half of them live around Lake Chad, and the production of spiruline (“blue algae”) and natron is economically important, as



is the raising of cattle, sheep, and camels, and some agriculture.

### **Transboundary Neighbor: Cameroon**

**Site Listed:** Plaines d'inondation du Logone et les depressions Tupouri is one of Africa's largest wetlands, characterized by a succession of rivers, lakes, floodplains and permanent and temporary ponds. The different ecosystems support typical faunal and floral associations, among which are some locally threatened plant species such as the African Palmyra palm and the Néré (*Parkia biglobosa*). The site also hosts important Occidental Palearctic and Ethiopian migratory species such as the Black Crowned-Crane, the Spur-winged Goose and *Dendrocygna* species. The floodplains also play an essential role in providing spawning and nursery sites for numerous fish families, which are exploited by the locals throughout the year, using different fishing practices according to season and location. Animal raising, subsistence agriculture (rice, sorghum, taro), a faunal reserve in the northern part, and oil prospecting are other land-uses in the site are some of the threats arising from within the site, while irrigation, oil mining and cement production threaten the site's integrity from outside. A management plan is envisaged under the GEF/ World Bank/ UNDP Lake Chad Basin Commission project.

**Site Listed:** Réserve de faune de Binder-Léré A variety of wetland types, including lakes, permanent and temporary streams, and swamps at the Chad-Cameroon border. The renowned Gauthiot Waterfalls, which are venerated by the indigenous Moundang people, prevent the rich fish fauna from moving from the Niger river system to the Lake Chad basin. The site hosts a number of endangered species such as the manatee, crocodiles, hippos, and cheetahs and is a feeding ground for many waterbirds including *Dendrocygna* spp, *Balearica pavonina*, *Pelecanus rufescens* and *Plectropterus gambensis*. Fishing is a very important activity for local people. Agriculture, hunting and livestock raising are also carried out. In the surrounding areas, a number of activities threaten the site or have the potential to do so, including oil exploration, gold and cement mining, and a cotton factory. An environmental information and training program is being carried out to integrate an environmental component in primary school curricula.

**Discussion:** Civil war in Sudan overlaps into Chad as both states step up border patrols with refugees and rebel groups in both countries. Chad has mediator role regarding border patrols/refugees. Lake Chad Commission urge signatories Cameroon, Chad, Niger, and Nigeria to ratify delimitation treaty. Chadian Aozou rebels reside in southern Libya. Chad rejects Nigerian request to redemarcate boundary, the site of periodic cross-border incidents. The main threats to the site arise from poaching, oil exploration, over-grazing, illegal fires and contamination by pesticides. Environmental/water issues include deforestation, poaching, water extraction, pesticide pollution, oil extraction and industrial pollution.

**Category 1, 2, 3, 4**

## 9. Contracting Party: Burundi

### Transboundary Neighbor: DRC/Rwanda

**Site Listed:** Delta do la Rusizi within the Great Lakes Region; Comprising the Rusizi delta and northern shore of Lake Tanganyika, part of the lower Rusizi plain, the site is considered an “ornithological paradise” for its stopover and nesting places for migratory waterbirds and makes an ecological connection between Lakes Tanganyika and Kivu. The use of cattails in basketry forms an important source of revenue for local people, and customary fishing is practiced in the lakes of the delta. Rice and cotton growing is carried out in the surrounding area, and the use of fertilizers and pesticides is seen as a potential threat to the biodiversity of the delta and lake.

**Discussion:** Fragile democracy after Civil War. Tutsi, Hutu, and other conflicting ethnic groups, associated political rebels, armed gangs, and various government forces continue fighting in the Great Lakes region, transcending the boundaries of Burundi, Democratic Republic of the Congo, Rwanda, and Uganda to gain control over populated and natural resource areas. Government heads pledge to end conflict, but localized violence continues despite UN peacekeeping efforts. Environmental/water issues include water quality. A formal transboundary agreement with DRC and Rwanda would help attract funding for an integrated management plan that could address a degree of trust-building among countries, provide funding for park rangers, address looming pollution problem and help develop a market for local products, especially baskets.

**Category 1, 2, 3, 4**

## 10. Contracting Party: Mauritania

### Transboundary Neighbor: Senegal

**Site Listed:** Parc National du Diawling. A saline floodplain in the lower delta of the Senegal River dotted with marsh-pools and sand dunes. The site includes three coastal lagoons and an estuarine zone of mangroves providing feeding grounds for fish, shrimp, and prawns. Numerous bird species have been recorded: cormorants, storks, spoonbills, egrets, Ardeidae (herons, bitterns, etc.), and African and European Anatidae (ducks, geese, swans, etc.) and waders. Mammals include warthogs, jackals and patas monkeys. The last gazelles have disappeared recently. Human activities include controlled traditional exploitation (gathering, harvesting, fishing, grazing). Infestations of *Salvinia molesta* and *Typha australis* led to a Ramsar Advisory Mission in 2001 and listing in the Montreux Record in 2002.

**Category 3, 4**

## 11. Contracting Party: Guatemala

### Transboundary Neighbor: Mexico

**Site Listed:** Parque Nacional Laguna del Tigre. Added to the Montreux Record, 16 June 1993. Biosphere Reserve, Protected Biotope. An extensive complex of low-lying, seasonally flooded forest, slow-flowing rivers, marshes, permanent lagoons, and seasonal water bodies forming part of Guatemala's largest wetland. Most of the large vertebrates of Guatemala, and species limited to the Yucatán and El Petén peninsula, are supported. A group of families whose activities include maize and bean cultivation, hunting and fishing, inhabit the site. Several areas of archaeological importance have been identified. Included in the Montreux Record in 1993 due to threats by illegal hunting and wood cutting. Subject of a Ramsar Advisory Mission in 1997.

### Transboundary Neighbor: Honduras

**Site Listed:** Punta de Manabique: Area of Special Protection. Located in the Honduran Gulf on the Caribbean coast, the site includes a) marine; b) marshes and swamps; c) coastal; and d) terrestrial ecosystems. The marine area is shallow with a sandy bottom and a few patches of corals; the main vegetation here is *Tallasia*. The marshes and swamps serve as refuge for many species such as manatees (*Trichechus manatus*). The swamp is characterized by detritus and peat which have been transported by the Motagua River, the largest of Guatemala. The main plant communities are *Chrysobalanus icaco*, *Symphonia globulifera*, *Phragmites comunis* and *Manicaria*. There are several threatened and vulnerable mammal species such as *Allouatta palliata*; *Tapirus baiirdii*, *Tayassu tajacu*, *Tayassu pecari* and *Panthera onca* are also found in the area, as are *Crocodylus acutus* and *Iguana iguana*. Expansion of the grazing areas, use of pesticides and fertilizers, and development of tourist resorts present some threat. Access to the area is difficult, and the main economic activity, although restricted to a very small area, is fishing in shallow waters. Hunting of wildlife such as iguanas is also important, as well as grazing and rice plantations in the borders of the wetland. The management plan for the area is being prepared by FUNDARY (Fundación Mario Dary) with the support of CONAP (El Consejo Nacional de Areas Protegidas).

**Discussion:** Lack of economic opportunity in region: As a result numbers of Guatemalans leave their country for work in Mexico or the US. Indigenous groups marginalized.

**Category 3, 4**

## 12. Contracting Party: Bahrain

### Transboundary Neighbor: Saudi Arabia

**Site Listed:** Hawar Islands. An archipelago of 16 small desert islands and islets in the Gulf of Bahrain, surrounded by shallow seas with extensive seagrass beds. The islands are in relatively pristine condition because access is severely restricted by the coast guard and military. The islands support one of the worlds largest concentrations of the Socotra Cormorant, and significant numbers of Greater Flamingo and Black-headed Gull. Notable marine species in the surrounding waters include the endangered dugong and several species of marine turtles.

**Site Listed:** Tubli Bay, Natural Reserve at Ras Sand. A sheltered bay with extensive intertidal mud/sand flats south of the capital city Manama. The only remaining natural mangrove stand in the country is located at Ras Sand in the southwest corner of the site. It is an important nursery area for commercially-important prawns and fish and an important staging and wintering area for up to 45 species of waterbirds. Land use within and around the site is limited to small-scale commercial fishing, recreation and cultivation.

**Discussion:** Extreme regional water-shortages. Although Bahrain has effectively managed the situation to this point, the situation is predicted to worsen due to climate change. Bahrain is an integral part of the Arab Spring and is currently (2011) experiencing new demands for democratic reform. 70% of the population is Shiite and they have been marginalized in the past. Even before the Arab Spring, Bahrain was viewed as a model of Arab reform with the US as principal benefactor. Establishing cooperative management regimes will help develop regional working relationships for managing Middle East water. Participating in the Convention can help build democratic principles and transparency into water policies.

#### Category 4

### 13. Contracting Party: Mexico

#### Transboundary Neighbor: United States

**Site Listed:** Humedales del Delta del Río Colorado; Baja California, Sonora; Shorebird Reserve. A system of natural and artificial wetlands consisting of intertidal wetlands, brackish deltas, riverine environments, and permanent, fresh-water lakes and ponds, set in one of the largest hydrographic basins in North America. Human activities include fishing, hunting, agriculture, scientific research, environmental education, ecotourism, and ranching. Small settlements of indigenous people are present. The delta, intensively modified due to agriculture and the lowering of the water table, represent the main threats.

**Discussion:** Prolonged drought, population growth, and outmoded practices and infrastructure in the border region have strained water-sharing arrangements with the US; nationals from Central America slip into Mexico seeking work or transit into the US. Extreme violence from drug trafficking.

## Category 1, 4

### 14. Contracting Party: Niger

#### **Transboundary Neighbors: Benin and Burkina Faso**

**Site Listed:** Parc National Du W: World Heritage site, National Park. Part of transboundary protected area shared by Benin, Burkina Faso, and Niger and contiguous with the Ramsar site of the same name in Burkina Faso. Located in the biogeographical region of the Sudanese wooded savannah, vegetation consists of annual grasses, woody savannah, and gallery forest. There is a rich avifauna, including numerous species of wintering migratory waterbirds, e.g, Anatidae (ducks, geese, swans, etc.), storks, and Ardeidae (herons, bitterns, etc.), and important numbers of elephants, buffaloes, lions and antelope are supported as well as an economically valuable fishery. The Niger River is a critically important source of domestic and irrigation water.

#### **Transboundary Neighbor: Burkina Faso and Mali**

**Site Listed:** Complexe Kokorou-Namga. Part of a transfrontier wetland, shared with Burkina Faso and Mali, the site comprises a suite of four permanent and semi-permanent marshes and pools in a former tributary of the river Niger. Internationally important for a number of reasons, it is particularly valued for its support to waterbirds, with nearly 50,000 representatives of 56 species counted in 2000. Three ethnic groups inhabit the region, largely Muslim with a richness which includes veneration of a serpent considered to be a protective spirit for Kokorou and the people living there. Deforestation and over-grazing, as well as desertification, are considered to be threats. The site has been included as a demonstration project under the African-Eurasian Migratory Waterbird Agreement (AEWA) funded by GEF.

#### **Transboundary Neighbor: Chad, Nigeria, Cameroon**

**Site Listed:** Lac Tchad (Lake Chad), though much reduced in area in recent years, is still the fourth largest lake in Africa (after Victoria, Tanganyika, and Nyassa) and apparently the third largest endorheic lake in the world (after the Aral and Caspian seas). The Niger portion of the shallow lake is extremely rich in biodiversity, particularly in migratory birds but also in its 120 species of fish. In an arid and semi-arid environment of very little rainfall, the supply of water depends upon the rainfall fluctuations in the wider catchment, which have generally not been favorable in recent years. Serious drops in fish production in recent decades remain ominous despite very recent encouraging signs. Traditional nomadic livestock practices present a threat in terms of desertification and require improved management.

#### **Transboundary Neighbors: Benin, Nigeria**

**Site Listed:** Zone humide du moyen. A transfrontier wetland along the left bank

of the river Niger some 55km west of the city of Gaya, SE of the capital Niamey, the site comprises the river and its floodplains with their permanent and seasonal ponds and watercourses. The site is internationally important by the representative criterion as well as by four of the waterbird and fish criteria, in particular for providing refuge for several fish species that have disappeared elsewhere along the river. Inundation occurs over a 4-5 month period beginning with rains in August through to the arrival of floods from upstream in November, and the site thus plays a key role in the hydrological cycle of the region. Vegetation is dominated by *Echinochloa stagnina* which provides pasturage for livestock of local communities, in addition to their traditional pursuits of diversified agriculture and fishing. Tourism is beginning in the area, and the local population has instituted no-hunting mechanisms to encourage birdwatching. Though the land is state-owned, the local population has age-old rights of use. A regional management plan for parks and reserves in the area is under development among Benin, Burkina Faso, and Niger.

#### **Transboundary Neighbor: Benin**

**Site Listed:** Zone humide du moyen Niger II. A 25km stretch of the river Niger along the border with Benin in the southwest of the country, with associated floodplains and pools. The area is extremely important for the presence of hippo grass *echinochloa stagnina*, a quality forage plant, and the grass *anthephora nigritana* which provides habitat for thousands of waterbirds as well as pasturage. Threatened species include the white-tailed mongoose, the pale fox *vulpes pallida*, and the African manatee *Trichechus senegalensis*, and the permanent pools provide refuge for several fish species that have disappeared elsewhere along the river. The hydrological regime is characterized by a period of flooding of 4-5 months, beginning in August with local torrential rains and again in November with floods coming down from upstream. The rich alluvial soils provide agricultural and pastoral livelihoods, but unwise practices, as well as invasions of the cattail *typha australis*, present potential threats. The land is largely state-owned but the population has long-standing usage rights.

**Discussion:** Much of Benin-Niger boundary, including tripoint with Nigeria, remains undemarcated, and International Court of Justice ad hoc judges have been selected to rule on disputed Niger and Mekrou River islands. Lake Chad Commission continues to urge signatories Cameroon, Chad, Niger, and Nigeria to ratify delimitation treaty over the lake region, which remains the site of armed clashes among local populations and militias

**Category 2, 3, 4**

## **15. Contracting Party: Iran**

#### **Transboundary Neighbor: Afghanistan**

**Site Listed:** Hamun-e-Saberi & Hamun-e-Helmand; Sistan & Baluchestan; Added

to the Montreux Record, 4 July 1990. Protected Area. Bordering Afghanistan and forming a single wetland complex with Hamun-e-Puzak, it is located in a closed drainage basin and consists of two shallow, predominantly freshwater lakes and associated wetlands. There is increasing pressure from urbanization and agricultural irrigation. Listed on the Montreux Record in 1990 because wetland water levels were critically affected by drought problems due to dam construction and water diversion schemes on the Helmand River in Afghanistan.

**Site Listed:** Hamun-e-Puzak; Sistan & Baluchestan; Added to the Montreux Record, 4 July 1990. The Iranian portion of the vast Hamun-e-Puzak wetland, the majority of which lies in Afghanistan, consists of a complex of shallow freshwater lakes with rich submergent vegetation and extensive reedbeds. Human activities include livestock grazing and agricultural irrigation. Placed on the Montreux Record in 1990 because of the possibility that water inflow could be reduced by the construction of a dam on the Helmand River in Afghanistan. Subject of a Ramsar Advisory Mission in 1992.

**Discussion:** Iran objects to Afghanistan limiting flow of dammed waters on Helmand River during drought; thousands of Afghans continue to reside in Iran.

#### **Transboundary Neighbor: Pakistan**

**Site Listed:** Govater Bay and Hur-e-Bahu. The riverine and estuarine wetlands of the lower Sarbaz River, including permanent freshwater pools and marshes, mangrove swamps and intertidal mudflats, and also the sandy beach of the adjacent Gulf of Oman coast in the extreme southeast of Iran (Persian Baluchestan) to the border with Pakistan. The site supports the westernmost population of South Asian species Marsh crocodile *Crocodylus palustris*, and is also important for wintering waterfowl, notably *Pelecanus crispus*, shorebirds, gulls and terns. The site is also a BirdLife International "Important Bird Area".

#### **Transboundary Neighbors: Iraq**

**Site Listed:** Shadegan Marshes & mudflats of Khor-al Amaya & Khor Musa. An extensive delta on the border with Iraq, forming part of the largest lowland in Iran, and composed of the floodplains of major rivers draining 11.5 million hectares. The site includes fresh and brackish sedge marshes, tidal flats, creeks, sandbanks and a low island. The delta is fed by overflow channels of the Karun River, irrigation canals and local rainfall. The area is important for breeding and wintering waterbirds and is possibly the most important wintering site in the world for Marbled Teal. The wetland is bordered by salt flats, rice fields, date palms and human settlements. The site was placed on the Montreux Record in 1993 because of chemical pollution from the Iran-Iraq war.

**Discussion:** Iraq has begun restoring these extensive marshes. Iran has begun building a dyke that will threaten war the Al-Hawizeh marsh. Creation of a maritime boundary with Iraq remains in hiatus until full sovereignty is restored in Iraq. War-

related problems not specifically associated with official Ramsar sites.

### **Transboundary Neighbor: Turkmenistan**

**Site Listed:** Alagol, Ulmagol & Ajigol Lakes; Mazandaran; Added to the Montreux Record, 16 June 1993. Ulmagol and Ajigol are seasonally-filled freshwater lakes, fed by autumn and winter rains, which become desiccated in drought periods. Placed on the Montreux Record in 1993 due to high levels of disturbance from wildfowl hunters and the extraction of water for irrigation purposes, which has lowered lake levels considerably, especially during summer

**Site Listed:** Gomishan Lagoon; Golestan. A coastal lagoon at the extreme south-east of the Caspian Sea, at the edge of the Turkmen steppe, separated from the sea by a narrow sandy barrier which is frequently overrun by the sea. The government-owned area provides for fishing and hunting, and some livestock grazing, for some 40,000 inhabitants of the region, in parts of the site and its catchment. Caspian sea-level fluctuations have had some adverse effects. A Ramsar SGF-funded study has provided vital management information on species populations. Subject of Ramsar Advisory Missions in 1992 and 1997. Chronic water shortages and quality in the region.

**Discussion:** To prevent outbreak of conflict in this tense region, develop shared management regime, seeking input from local communities. This is an opportunity for constructive engagement between countries with shared environmental problems. Source of trust-building in region and opportunity to engage in transparent, democratic processes. Iran's participation in the treaty signals opportunities for regional conservation leadership.

### **Category 2, 3**

## **16. Contracting Party: South Africa**

### **Transboundary Neighbor: Mozambique**

**Site Listed:** Turtle Beaches/Coral Reefs of Tongaland: Marine Reserve. An important transition zone between true reef and non-limestone substrates with reef communities. Known to support 16 species of coral, 1,200 species of fish, five species of marine turtles, 41 species of marine mammal, and 49 species of bird. The flora is predominantly algal, and many species reach the southern limit of their distribution. General water recreation is a popular activity.

**Site Listed:** Kosi Bay: Nature Reserve. Four interconnected lakes subject to tidal influence, an estuarine channel, and three extensive swamps. Fresh water is derived from three permanent rivers. Principal habitats include swamp and mangrove forest, reedbeds, dune systems with associated woodland, and coastal grassland. The site supports a diverse bottom-dwelling invertebrate fauna (30 species) and a rich fish fauna, including eight endangered species. Several birds,



mammals, butterflies, and plants are endemic, threatened or endangered. Large areas of swamp forest have been subjected to non-sustainable slash and burn cultivation practices. Human activities include subsistence farming and fishing.

**Site Listed:** Ndumo Game Reserve: Nature Reserve. Situated at the junction of the Usuthu and Pongolo floodplain systems, the site forms the largest floodplain system in South Africa, consisting of five wetland types, from fresh to brackish, permanent to ephemeral lakes, marshes and pools, as well as riparian and gallery forest. Well known for its abundant bird life and diversity of species, internationally important numbers of several species are supported, including many that are rare or vulnerable. Human activities include controlled harvesting of reeds and sedges, low-density tourism, an important fishery, illegal black and white rhinoceros hunting, and collecting river water for sale in nearby communities. A large agricultural irrigation scheme is operating erratically south of the reserve in the catchment area.

**Discussion:** After long civil war in Mozambique, the country is rebuilding. Economic inequality between South Africa and neighbors can be a source of tension.

### Category 3

#### Transboundary Neighbor: Zimbabwe/Mozambique

**Site Listed:** Makuleke Wetlands: National Park. An excellent example of a floodplain vlei type, most of which lies within the Kruger National Park, bordered by Zimbabwe and Mozambique to the north and east. Prominent features include riverine forests, riparian floodplain forests, floodplain grasslands, river channels and flood pans. Flood pans are depressions in the floodplains which are intermittently filled from floods and rains - they are of great importance in this ecosystem as they hold water right into the dry season, thus acting as a refuge point for wildlife and waterbirds during both winter and summer months, and there are 31 of them found on these floodplains, where herds of Hippopotamus (*Hippopotamus amphibious*) are found. The floodplains attenuate floods, resulting in reduced flood damage in downstream areas of Mozambique, are important for groundwater recharge, and maintain riparian and floodplain vegetation. In the Makuleke Region of the National Park there is an attempt to harmonize biodiversity protection with the interests of rural dwellers through cooperation between the Community Property Association of Makuleke community, South African National Parks Board, and many government departments. The proclamation of the Great Limpopo Transfrontier Park (GLTP) in 2002 through an international treaty between South Africa, Mozambique, and Zimbabwe aims at jointly managing the bordering National Parks and conservation areas, and the Ramsar site will benefit from that protection status.

#### Transboundary Neighbor: Namibia

**Site Listed:** Orange River Mouth. Added to the Montreux Record, 26 September 1995. Transboundary area of extensive saltmarshes, freshwater lagoons and

marshes, sand banks, and reedbeds shared by South Africa and Namibia. Important for resident birds and for staging locally migrant waterbirds. The upper Orange River serves as a domestic water source and is experiencing increasing demand. This could severely restrict the amount of water reaching the site. Following the collapse of the saltmarsh component of the estuary, the site was placed on the Montreux Record in 1995. The rapid degradation was the result of adjacent diamond mining activities and flow regulation of the Orange River as a result of dam construction.

**Discussion:** A long standing border conflict with Namibia over river demarcation continues to simmer; Environmental concerns include numerous dams.

**Category 2, 3**

## 17. Contracting Party: Honduras

### **Transboundary Neighbor: El Salvador, Nicaragua**

**Site Listed:** Sistema de Humedales de la Zona Sur de Honduras: A complex of seven coastal areas totaling 69,711 hectares along the Honduran portion of the Golfo de Fonseca, along the Corredor Biológico Mesoamericano Pacifico de Honduras. Various species of mangrove form the predominant vegetation in this area of typical marine-coastal ecosystem influenced by the fluctuation of the tides. Several lagoons in the rainy season provide refuge for both migratory and non-migratory birds, as well as spawning grounds for various species of tortoise, molluscs, crustaceans, and fish. The area is important to the nearby people for its mangrove wood for construction, as well as for traditional fishing and grazing activities. Subject of Ramsar staff visit in September 2000.

**Discussion:** Disputed area called “The Bolsones”, exists along El Salvador-Honduras border. In 1992, the ICJ advised a tripartite resolution to maritime border in Gulf of Fonseca, giving Honduras access to ocean; El Salvador continues to claim small island off Honduras while Honduras claims island off coast of Belize; Initial attempt to create maritime park failed.

**Category 2, 3**

## 18. Contracting Party: Cambodia

### **Transboundary Neighbor: Thailand**

**Site Listed:** Koh Kapik and Associated Islets: Wildlife Sanctuary. Alluvial islands immediately off the mainland of Koh Kong Province. Two major rivers flowing into the area bring a freshwater influence and create sand flats in some places. The site is classified into two wetland types (Estuarine waters, and Intertidal mud, sand, or saltflats). The area plays a critical role in providing a nutrient source supporting

coastal fishery in the near-shore and offshore waters of Cambodia. The remaining relatively-intact mangroves are said to have assumed increased importance in providing nursery and feeding grounds for various invertebrate species since the substantial removal of mangrove forests in nearby Thailand.

**Discussion:** Boundary issues between countries and (Cambodian) access to sacred temple; Several regional disputes in region ( Malasia, Laos, Burma). Concern over Chinese construction of 13 dams on Salween River. There is regional momentum to create transboundary resources'

## Category 2

### 19. Contracting Party: Kyrgyz Republic

#### Transboundary Neighbor: China

**Site Listed:** Chatyr Kul: State Reserve. A saline high altitude lake (3,530m asl.) in the Tien Shan Mountains with pristine ecosystem. The main inflow runs from the Ak-say river and the lake plateau is bound between the edges of At-Bashi (4,700m) and Kakshalto ridges (5,500m) with permanent snowfields and glaciers, forming the border between Kyrgyzstan and China. It is one of the few habitats for Pamir Brown-headed Gulls, a breeding area for Bar-headed geese, and crucial for nine species of moulting ducks, especially Tadorna ferruginea, representing about 40% of the global population. A significant population of IUCN Redlisted Argali Sheep (*Ovis ammon*) is also found grazing at the plateau. The absence of ichthyofauna, high transparency and shallowness of the lake support luxuriant growth of submerged macrophytes like *Potamogeton* and high population of rare invertebrates like *Gammarus krevetki*. Located near the Torugart Pass, the lake basin was once a part of the Silk Route, and remnants of a 10th century caravanserai can still be seen. Over hundreds of years, local nomads have been using the lake area for grazing horses in summer.

## Category 3, 4

### 20. Contracting Party: Belarus

#### Transboundary Neighbor: Ukraine

**Site Listed:** Prostyr: A complex of near-natural sedge and reed fen mires together with black alder groves and scrub formations along the banks and floodplain meadows between the rivers Pripyat, Prostyr and Styr, continuing as a transboundary wetland across the Ukrainian border. Discussions with Ukrainian authorities are continuing towards uniting Prostyr in a Belarusian-Ukrainian transboundary Ramsar site, including Ukraine's Prypiat River Floodplains and Stokhid River Floodplains Ramsar sites, with development of a joint management plan.

## Transboundary Neighbor: Lithuania

**Site Listed:** Olmany Mires Zakaznik: National Landscape reserve. One of Europe's largest natural complexes of bogs and transitional mires, the site is particularly important for nesting and migrating waterbirds and a key nesting site for the globally threatened Spotted Eagle *Aquila clanga*. The mires play a crucial role in the hydrological regime of the Pripyat river; sparse population and limited accessibility have contributed to the site's functional integrity and its large numbers of flora and fauna species present. The reserve is situated on the nation's largest military aviation training area, but military activities, largely localized, are said not to have caused any degradation of natural communities and by limiting civil development activities have actually helped to preserve the site's natural characteristics. Berry and mushroom collection and recreational fishing are permitted in coordination with military schedules.

**Discussion:** 1997 boundary treaty with Ukraine remains unratified over unresolved financial claims, preventing demarcation and diminishing border security; boundaries with Latvia and Lithuania remain undemarcated despite EU financial support.

### Category 2

## 21. Contracting Party: Uzbekistan

### Transboundary Neighbor: Turkmenistan

**Site Listed:** Lake Dengizkul. The largest saline wastewater closed water body in the SW part of the Kysylkum desert, with typical ecological conditions of natural lakes situated in the deserts of Central Asia. The lake, dried up by the mid-1950s because of overuse for irrigation, has been refilled since 1966 and is very important for maintaining a biodiversity of wetland-dependent species in a largely arid region. It is of crucial importance for migrating and wintering waterfowl, as it is situated on the route of bird migrations from Western Siberia and Kazakhstan to Indo-Pakistani wintering grounds. Lake Dengizkul is also the habitat of many vulnerable and endangered species, especially as it supports more than 1% population of the endangered White-headed Duck (*Oxyura leucocephala* Scop.). Commercial mining of gas in the vicinity of and on Lake Dengizkul is the main human activity, and this enabled the provision of the population with fuel and thus preserved trees and shrubs, which are important components of the desert ecosystem. However, excessive inflow of drainage water significantly influenced the water level in the lake and the floods have destroyed some habitats recently.

**Discussion:** Military bases for Afghan operations are controversial. Radical Islamist underground developing in response to brutal leader: Karimov. In general, uncertainty and conflict, especially at borders. Regionally, highly interdependent countries with social and economic ties. Post-soviet state: arbitrary rules/corruption,

borders guarded. Big water issues including upstream manipulation by Tajikistan and Kyrgyzstan. World Bank involved in supporting local decision-making.

### Category 2, 3

## 22. Contracting Party: Thailand

### Transboundary Neighbor: Laos

**Site Listed:** Bung Khong Long: Non-Hunting Area. One of the largest lakes in northeastern Thailand along the Laos frontier, the site supports nationally vulnerable and endangered fish and birds and is important for some 33 species of wintering migratory waterbirds. It also qualifies under both of the Ramsar fish criteria, supporting a number of endemic species and acting as a vital food source and spawning ground for the important subsistence fishing industry.

### Transboundary Neighbor: Laos/Burma

**Site Listed:** Nong Bong Kai Non-Hunting Area. A beautiful small lake (also known as Chiang Saen), surrounded by mountains and low hills, in the extreme north of the country adjacent to the Lao and Burmese frontiers, the site is of major importance for both local and migratory birds, particularly waterbirds, including globally vulnerable species such as Baers Pochard (*Aythya baeri*); some 15 species nest in the site during October to March. Local communities are permitted to practice fishing and harvest lotus flowers and fruit within the non-hunting area, and orchards and tourist resorts in the surrounding area provide job opportunities; residential and resort development are beginning to impact wildlife, however. Birdwatching is actively pursued in the area.

**Discussion:** Continuing border committee talks, significant differences remain with Burma over boundary alignment and the handling of ethnic rebels, refugees, and illegal cross-border activities. Demarcation with Laos complete except for certain Mekong River islets and complaints of Thai squatters. Regional skirmishes. Thailand has opportunity for regional conservation leadership.

### Category 1, 2

### Transboundary Neighbor: Malasia

**Site Listed:** Princess Sirindhorn Wildlife Sanctuary (Pru To Daeng Wildlife Sanctuary): Wildlife Sanctuary. The largest remaining peat swamp forest in Thailand, situated in the extreme south, the site supports a high diversity of flora and fauna, including 217 bird, 52 reptile, and 62 fish species, some of which are nationally vulnerable or endangered; 106 species of butterfly are supported, as well as 60 mammal species, including 13 species of bats. The site is a popular tourist destination, and surrounding communities depend upon direct and indirect use of the forests resources for low-intensity exploitation, such as fisheries and

melaleuca harvesting for charcoal. Development in the 1980s, principally clearing for brief rice cultivation (followed in each case within two years by soil acidification) to the loss of two-thirds of the forest area, was curtailed by Sanctuary status in 1991. A management plan has been approved by the Royal Forest Department, and research and visitors facilities are in place.

**Discussion:** Disputes with Malasia include a 1 km segment of the Golok River. Working with Ramsar on transboundary plans is an opportunity for Thailand to exhibit regional conservation leadership.

#### **Category 2, 4**

### **23. Contracting Party: El Salvador**

**Transboundary Neighbor: No information at present**

**Site Listed:** Complejo Guija (no more information)

**Discussion:** in 1992, the ICJ ruled on the delimitation of “Bolsones” (disputed areas) along the El Salvador-Honduras boundary, and the OAS is assisting with a technical resolution of undemarcated bolsones; in 2003, the ICJ rejected El Salvador’s request to revise its decision on one part of the bolsones; the 1992 ICJ ruling advised a tripartite resolution to a maritime boundary in the Gulf of Fonseca with consideration of Honduran access to the Pacific; El Salvador continues to claim tiny Conejo Island, not mentioned by the ICJ, off Honduras in the Gulf de Fonseca.

### **24. Contracting Party: Congo**

**Transboundary Neighbor: Democratic Republic of Congo**

**Site Listed:** Libenga: part of the International System of Protected Areas for Peace. Located in the north and extending to the border with the Democratic Republic of Congo (DRC) at the level of River Oubangui, the site consists of River Libenga (325 km long), marshes on both sides of the river, small streams, floodplains, and swamp forests. It plays an important role in biodiversity maintenance, hydrological regulation, and socio-economy of the zone. The river is an important refuge for the hippopotamus population coming from River Oubangui where they face some threats. A wide variety of endemic and migrant fish species inhabit these waters, and the prairies around the river serve as a refuge for some migratory birds (Marabou Stork and Pelicans) and migratory buffalos. The river is important for local transportation. Fishing and palm wine exploitation constitute the main economical activities. The site has no management plan at present but benefits from national and local resource management measures such as restrictive hunting seasons and limitation of exploitation of certain zones to clan residents. River Libenga con-

tinues to benefit from the program of control of aquatic invasive species that was initiated by the government in 1998.

**Discussion:** Boundary dispute in Congo River.

**Category 1, 2, 3**

## 25. Contracting Party: Uganda

### **Transboundary Neighbor: Tanzania**

**Site Listed:** Lake Mburo-Nakivali Wetland System: National Park (partly). A system of open and wooded savanna, seasonal and permanent wetlands, and five lakes, of which Lake Mburo is by far the largest. The system is a unique habitat, lying at the convergence of two biological zones, giving it very high biodiversity. It supports globally threatened species of birds such as the Papyrus Yellow Warbler and Shoebill, and provides refuge to 22 species of Palaearctic and Afro-tropical migrant birds during adverse conditions. It supports two of the endangered cichlid fish species which have gone extinct in the main lakes, and it is the only area in Uganda in which the Impala is found. The site is also of immense socio-economic value as a source of water for domestic use, livestock and wildlife; pasture for the local herds during droughts; fish; and materials for crafts and thatching. The park is also used for tourism and scientific research. Hunting, habitat destruction and over-fishing are the main threats to the area. The Wetland Inspection Division in collaboration with Uganda Wildlife Authority is to develop a management plan for the site.

**Site Listed:** Sango Bay-Musambwa Island-Kagera Wetland System (SAMUKA): Important Bird Area. A mosaic of wetland types including the biggest tract of swamp forest in Uganda, papyrus swamps, herbaceous swamps interspersed with palms and seasonally flooded grasslands, sandy, rocky and forest shores, and three rocky islets about 3 km offshore in the Sango Bay. The area lies in the transition between the East and West African vegetation zones and this biogeographical ecotone makes it biodiversity rich. The system supports huge congregations of waterbirds, hosting an average of 16.5% of the population of Grey-headed Gulls (*Larus cirrocephalus*), and hosts globally endangered mammals such as Elephant, Black and White Colobus Monkey and a subspecies of the Blue Monkey. It is a source of fish to the people of the area, of medicinal plants, of grazing and of raw materials for building and making crafts including luxurious sofa chairs and mattresses. Tourism has been developed on Musambwa Island. Relatively inaccessible, Sango Bay forests have had no immediate threats; however, as overexploitation of resources and grazing depletes the rest of the landscape, forest reserves become the immediate retreat for the surrounding communities. The site contains Stone Age artifacts, internationally known as the Sangoan industry, which dates to about 200,000 years ago.

**Discussion:** Regional conflict persists.

**Category 1, 2, 3, 4**

## 26. Contracting Party: Liberia

### **Transboundary Neighbor: Guinea**

**Site Listed:** Gbedin Wetlands. Situated in the north of Liberia, the area is largely a swamp, also including a man-made wetland with irrigation system that includes channels, ditches, dams and drainages. The paddy fields provide a good feeding ground for many bird species including Palaearctic and Nearctic migrants as well as resident breeders such as the Plover *Charadrius dubius*, Bar-Godwit *Limosa lapponica* and the Forbes' Plover *C. forbesi*. The endemic otter shrew *Micropotamogale lamottei* also occurs in the area. The suitability of the swamp for rice cultivation prompted the government in 1960 to solicit technical assistance to introduce modern agricultural methods to local rice farmers in order to discourage shifting cultivation. The project, the Gbedin Swamp Rice Project, has employed a large number of local people, especially up to the onset of the civil war in 1990. The site is currently used for subsistence farming (rice), hunting and fishing, while the surroundings are used for logging and mining, as well as multiple crop farming. The use of fertilizers and pesticides are potential threats.

**Discussion:** Over 14 years of war since independence; destitute; UN presence; corruption; domestic fighting among disparate rebel groups, warlords, and youth gangs in Guinea, Liberia, and Sierra Leone have created insurgencies, street violence, looting, arms trafficking, and ethnic conflicts and refugees in border areas; the Cote d'Ivoire Government accuses Liberia of supporting Ivorian rebels.

**Category 1, 2, 3, 4**

## 27. Contracting Party: Nepal

### **Transboundary Neighbor: India**

**Site Description:** Koshi Tappu: Nature Reserve. A section of the Sapta Kosi River and its floodplain of extensive mudflats, reedbeds, and freshwater marshes. An important staging area for waterbirds, the site supports several species of notable birds (including the Bengal Falcon, Oriental White Ibis, and White-tailed Eagle), and notable mammals, such as the panther. Located in a densely populated area, the site is subject to livestock grazing and attempts by local people to re-establish themselves in the reserve. Land use in surrounding areas includes subsistence fishing and rice cultivation.

**Discussion:** The ecological function and services of Himalayan mountain wetlands are essential for the sustainable development of more than 10 coun-



tries in Asia, which concerns at least 140 million people who live in the mountain ranges, and 1.4 billion people live downstream. Unfortunately, the environmental trend in the region caused by both economic development on the ground, and the global warming clearly indicate significant degradation of the ecosystem function and services. To stop such trend, or mitigate its negative impact needs urgent trans-boundary cooperation. Among a number of initiatives to look at this issue, Himalayan Initiative is one of them. This document is to provide a brief review of the Himalayan Initiative, and to provide recommendations, through analyzing the initiative development against the “guidance for the development of regional initiative in the framework of the Convention on Wetlands” adopted in the 8th Conference of the Parties (Ramsar Resolution VIII 30). Results indicate that innovative partnership and networking which mobilizes political wills, stakeholder involvement, financial resources, is the pre-requisites condition to achieve the goal of the initiative.

Other issues include human encroachment for subsistence survival in reserve and a disputed boundary. India maintains a strict border to restrict Maoists (Bhujju et al. 2007, Ramsar Convention).

#### **Category 1, 2, 4**

## **28. Contracting Party: Papua New Guinea**

### **Transboundary Neighbor: Indonesia**

**Site Listed:** Tonda Wildlife Management Area: Wildlife Management Area; Shorebird Network Site. Flat, coastal plains subject to seasonal, freshwater flooding. The site, bordering Indonesia, includes tidal river reaches, mangrove areas, grassland, and savannah woodlands. An important wetland for over 250 species of resident and migratory waterbirds and as a refuge during drought. Most of the world population of *Numenius minutus* stage on the plains during migration. Sixty-three species of fish are supported. About 1,500 subsistence gardeners and hunters live in the area. Visitors come for fishing, birdwatching, and deer or *Lates calcarifer* hunting. The site is contiguous with the Wasur National Park Ramsar site in Irian Jaya, Indonesia.

**Discussion:** The ecosystem on both sides of the border are listed with the Convention. Transboundary management of the two listed ecosystems would help build trust.

#### **Category 1, 4**

## **29. Contracting Party: Guinea**

### **Transboundary Neighbor: Sierra Leone**

**Sites Listed:** Niger Source. Covering the headwaters of the river Niger from its

source near the frontier with Sierra Leone northward to Bandéya, the site is marked by savannah and forest vegetation with marked dry and rainy flood seasons. An extraordinarily important site, since the enormous basin of 4,660km river depends upon the quality and quantity of its flow, it also supports an impressive biodiversity, including the threatened endemic freshwater catfish *Arius gigas* and a number of migratory waterbirds. Subterranean circulation of water in parts of the site aids in groundwater recharge and merits further study. Traditional fishing, grazing, and agriculture are practiced within the site.

#### **Transboundary Neighbor: Mali**

**Site Listed:** Niger-Tinkisso. An extensive area of river and freshwater ponds and marshes between and around the Tinkisso river and the Niger as far as the frontier with Mali, centering upon Siguiri, particularly representative of the most important wetland types of West Africa. The Western Giant (or Derby) Eland, thought to be extinct in Guinea, has been rediscovered within the site but remains threatened, and appreciable number of both waterbirds and molluscs are reported. Water quality is generally good, but the effects of mining (particularly gold mining) and pesticide runoff from cotton culture will bear close watching.

#### **Transboundary Neighbor: Mali/Cote d'Ivoire**

**Site Listed:** Sankarani-Fié. The basin of the Sankarani river west of the country's frontiers with Mali and Côte d'Ivoire, characterized by savannah and dry forest and enormous floodplains along the length of the river. The area is the most productive of fish in the region, especially important as a spawning ground because of its calm and deep currents protected by gallery forests - the taste of the fish of the river Fié is said to be particularly prized by connoisseurs. Hippopotami have become numerous within the site because of water retained by the Sélingué dam.

#### **Transboundary Neighbor: Senegal**

**Site Listed:** Gambie-Koulountou. UNESCO Biosphere Reserve. A semi-arid region at the border with Senegal, comprising the floodplain of the Koulountou River, the Gambia River's main tributary, and a number of smaller, often temporary watercourses and ponds. These water bodies support numerous species, including 80 species of mammals, 330 of birds, as well as reptiles and amphibians, which find an important refuge in the site especially during the dry season. The vegetation, varying through savanna, forest, woodland, and aquatic species, plays an important role in preventing erosion and siltation of the wetlands, while humus deposition increases the floodplain's fertility, allowing rice cultivation to take place. Fishing and animal raising are also significant activities, while non-timber forest products are collected for several uses, with *Borassus aethiopum*, raffia and bamboo being the most exploited species. In the core area of the Badiar Biosphere Reserve, no activity other than conservation is allowed to take place, but in the periphery, a co-management system is in place to allow the varied communities to make use of the site. Bush fires, illegal fishing, pesticide use, and slash and burn

agriculture constitute some of the main threats to the site.

**Site Listed:** Gambie-Oundou-Liti. Nature Reserve. A mountainous site in the Fouta massif that plays an important hydrologic role as the origin of numerous water courses which flow into surrounding countries and are regulated by three protected forests. Floodplains, savannas, gallery and mountain forests are important habitats, reproduction, resting and feeding sites for some threatened species such as lions, chimps and wild dogs, and for many more mammal, raptor and waterbird species for which there is still little information available. Agriculture (subsistence and fruit trees) and animal raising are the main land uses, while apiculture and fishing are less developed. Water is considered a public good with water courses and sources managed communally, based on the Water Code. There is a high tourist potential in the area that remains to be exploited, with several interesting cultural and natural attractions, including underground mosques, mysterious tombs, smoky caves, giant bees, waterfalls and warrior “tatas” or fortified houses. One of the main threats to the site, as well as to downstream wetlands, is the projected Sambagallo dam, which will flood part of the Kabéla forest.

**Discussion:** Domestic fighting among disparate rebel groups, warlords, and youth gangs in Guinea, Liberia, and Sierra Leone have created insurgencies, street violence, looting, arms trafficking, ethnic conflicts skirmishes, deaths, and refugees in border areas. In 2003, Guinea and Sierra Leone established a boundary commission to resolve a dispute over the town of Yenga.

**Category 1, 2, 3, 4**

## 30. Contracting Party: Ecuador

### Transboundary Neighbor: Colombia

**Site Listed:** Reserva Ecológica de Manglares Cayapas-Mataje: Nature Reserve. Located on the Pacific coast near the border with Colombia, between the rivers Cayapas and Mataje, the site is a complex of estuaries and mangrove forests within the Choco-Darien-Western Ecuador hotspot, a region recognized worldwide for its high level of biodiversity, numerous endemic species, and priority for conservation. Sedge marshes, tidal brackish marshes, peatlands or guandales, as well as humid tropical forest add to its richness. The high productivity of phytoplankton and mangrove forests sustains a diverse wildlife, with reportedly 6 species of mangrove, 68 of fish, 22 of reptiles, 145 of birds and 53 of mammals, including several threatened taxa at national or global scale, such as the black mangrove *Avicennia germinans*, the Neotropical Otter *Lutra longicaudis*, the Jaguar *Panthera onca*, the Blue-fronted Parrotlet *Touit dilectissima* and the American Crocodile *Crocodylus acutus*. The Afro-Ecuadorian population at the site is involved in fishing, gathering of mussels and crustaceans, subsistence agriculture and livestock raising, and recently, ecotourism. Archaeological remains of the Tolita culture (ca. 500 BC-AD

400) are abundant. The area has been affected by the construction of numerous shrimp pools and the establishment of crop plantations. Following designation as a Nature Reserve in 1996, a management plan is in preparation with local involvement. WWF International's Living Waters Programme and the Fundación Natura assisted Ecuador in making this designation.

**Discussion:** Civil disorder in Colombia creates regional disturbance including refugee crisis into surrounding states, especially Ecuador. In 2007 Ecuador was the most unstable democracy in Latin America; Skirmishes between indigenous populations and intransigent elites. There is oil wealth.

**Category 2, 4**

## 31. Contracting Party: Montenegro

**Transboundary Neighbor: Albania**

**Site Listed:** Skadarsko Jezero: 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. Subject of a Ramsar Advisory Mission, 2005.

**Category 3, 4**

## 32. Contracting Party: Cameroon

**Transboundary Neighbor: Nigeria/Chad**

**Site Listed:** Waza Logone Floodplain; Includes two National Parks and UNESCO Biosphere Reserve. The floodplain of the lower Logone River in the extreme north of the country, between Nigeria and Chad, within the Lake Chad basin between Lake Maga and Lake Chad. Said to represent 10% of the surface area of major inland wetlands in the West African Sahel, the area is home to more than 100,000 people who depend upon wetland products for fishing, seasonal grazing, and agriculture. Two decades of poor rainfall and the construction of the Maga Dam in 1981 for rice irrigation caused severe disruption to the ecological character of the floodplain, but an important rehabilitation project, begun in 1988 and a collaboration among IUCN, the governments of Cameroon and the Netherlands, and the CML of Leiden University with contributions from other institutions such as WWF and the EC, has shown good results in demonstrating the feasibility of the partial

rehabilitation of the floodplain.

**Discussion:** Extreme regional water shortages. In 2002, the International Court of Justice ruled on an equidistance settlement of Cameroon-Equatorial Guinea-Nigeria maritime boundary in the Gulf of Guinea, but a dispute between Equatorial Guinea and Cameroon over an island at the mouth of the Ntem River, imprecisely defined coordinates in the ICJ decision, and the unresolved Bakasi allocation contribute to the delay in implementation. Creation of a maritime boundary in hydrocarbon-rich Corisco Bay with Gabon is hampered by dispute over Mbane Island, administered and occupied by Gabon since the 1970s. Chad rejects Nigerian request to redemarcate boundary, the site of periodic cross-border incidents. Control of resources is a major issue and a transboundary park system may seek equitable distribution based on needs/interests.

### Category 2, 3, 4

## 33. Contracting Party: Peru

### Transboundary Neighbor: Bolivia

**Site Listed:** Lago Titicaca (Peruvian sector), Lake Titicaca, in the Central Andes, is the world's highest navigable freshwater lake, at 3810 m above sea level, shared between Peru and Bolivia. The wetland is a permanent freshwater lake, with associated marshes and extensive areas of emergent aquatic vegetation. There are a number of endemic fish species present and the site is extremely important for migratory shorebirds and Andean waterbirds, including three species of flamingo. Algae and submergent and floating vegetation is abundant, and the dominant emergent species is the "totora" *Schoenoplectus tatora*, which can reach up to seven meters. When the "totora" drifts away from the shore, it forms islands which are used by some members of the Uro community to live on. Most of them are fishermen and hunters, but they also make crafts to sell. Whilst subsistence fishing is the main use of the lake by the local communities, the surrounding areas are used for agriculture.

### Transboundary Neighbor: Ecuador

**Site Listed:** Santuario Nacional Los Manglares de Tumbes. The greater part of the wetlands comprise creeks (1,800ha) and streams while the remainder is mangroves (1,172ha). The inclusion of Manglares de Tumbes in the Ramsar List is a very important step forward in the conservation of mangroves, not only because it is at the southernmost limit of this type of wetland on the Pacific coast of South America, but also because of the ever-increasing rate of mangrove destruction for shrimp and fish farming. The area is important for the population of the vulnerable American crocodile and otter, both endangered in Peru. Waterfowl are also important in this area, as there are a number of species which do not occur elsewhere in the country. The wetland serves as a source of food for the local community's

roundabout.

#### Category 4

### 34. Contracting Party: Bangladesh

#### Transboundary Neighbor: India

**Site Listed:** Sundarbans Reserved Forest: World Heritage Site. At the confluence of the Ganges, Brahmaputra and Meghna rivers, the largest contiguous mangrove forest in the world. The wetland is remarkable for protection from the tidal surge generated from the cyclonic depression in the Bay of Bengal. Abundant fish and biomass resources are harvested by local communities. Artifacts and festivals within the site have high Hindu religious and cultural importance. Reduction in fresh water flow due to water diversion, the construction of dykes combined with the pollution of the industries and the ports of Khulna and Mongla have affected the plant and fish population. There are 8 research field stations that provide data for ongoing studies and research. Recently an information center was established at Khulna and a management plan is under preparation.

**Site Listed:** Tanguar Haor: Bangladesh's most important freshwater wetland. The floodplain of the Surma River, one of the main tributaries of the Brahmaputra at the base of the Meghalaya Hills in adjacent India. The area harbors some of the last vestiges of natural swamp forest and is totally flooded in the monsoon season, apart from artificial hillocks upon which homesteads are constructed. Tanguar Haor also supports a rich fishery and is regarded as one of the country's richest breeding grounds for freshwater fish. Threats include over-exploited fishery stocks and uncontrolled taking of waterfowl, and the local community has been denied access to the resources by leaseholders of the fishery, which has led to conflicts. Under the National Conservation Strategy Implementation Project-1, a first management plan was produced in 1997 and a new one is going into implementation in 2000, which is intended to restore access and use rights. Hunting of turtles, tortoises, and waterfowl is widespread and part of everyday life, and the way of life. Living in homesteads built on mounds is said to be unique in this part of Bangladesh.

**Discussion:** Significant issues include severe groundwater shortages (including high arsenic levels); increasingly severe monsoons and other weather events predicted by climate-change; over-fishing and hunting. A porous boundary, especially with Pakistan, renders lack of control over extremists entering country; river and maritime boundary issues; future severe freshwater water shortages predicted. Environmental refugees result from arsenic from groundwater extraction rendering soils unusable for agriculture. India has built a border fence in more porous regions. Both have signed a treaty to cooperate over the Ganges. Maritime boundary dispute in the Bay of Bengal - dispute over small section of River. India predicted to have egregious water problems. Engage India (who has no trans-

boundary sites listed) in transboundary process; Consider options such as micro-level watershed management, water storage, and traditional structures such as ponds/tanks to meet local water needs and lessen need for large-scale solutions such as dams.

#### Category 2, 4

### 35. Contracting Party: United States

#### Transboundary Neighbor: Mexico

**Site Listed:** Tijuana River National Estuarine Research Reserve (TRNERR): National Wildlife Refuge. On the border with Mexico facing the city of Tijuana, the site is one of the few unfragmented estuaries and coastal lagoons in Southern California. It is a seasonally marine-dominated estuary experiencing freshwater input only during the wet winter period, though its mouth remains open throughout the year. It has several sensitive habitats such as sand dunes and beaches, vernal pools, tidal channels, mudflats and coastal sage scrub. The site is critical habitat for nationally endangered species and subspecies such as the San Diego Fairy Shrimp *Branchinecta sandiegonensis*, the Light-footed Clapper Rail *Rallus longirostris levipipes* and the Salt Marsh Bird's Beak *Cordylanthus maritimus maritimus*; as well as nursery grounds for commercially important fish like the Diamond turbot (*Hypsopsetta guttulata*) and the California halibut (*Paralichthys californicus*). Dirt roads and border patrol off-road vehicles are a primary cause of concern because of the impacts of lighting, noise and sedimentation, already serious due to strong erosion and runoff from the shared basin with Mexico. The site is unfortunately isolated from surrounding habitat by urban areas and there are problems with introduced species. A multi-phased restoration program designed to restore tidal exchange and wetland habitats is in place, as well as a management plan. The site is administered jointly by California State Department of Parks and Recreation (DPR) and the United States Fish and Wildlife Service (USFWS).

**Discussion:** Violent drug war in Mexico crosses border periodically. US continues to increase border security as illegal immigration continues to occupy political agenda.

#### Category 1, 3, 4

### 36. Contracting Party: Gabon

#### Transboundary Neighbor: Congo

**Site Listed:** Site Ramsar des Monts Birougou. National Park. Comprising forests, swamps, savannah, falls, caves, valleys, and mountainous zones between 800 and 900m, which are the source of the Nyanga and Ngounié rivers and their main

tributaries. The woody and non-woody products of the forest provide resources for feeding, building, clothing and construction of artistic objects. The diversity of this ecosystem gives it a rich flora as well as one of the most remarkable faunas in Africa. Primates are dominant, with about 20 different species found in the Birougou Mountains. The endangered Gorilla (*Gorilla g. gorilla*), chimpanzee (*Pan troglodytes*), the vulnerable sun-tailed monkey (*Cercopithecus solatus*), mandril (*Mandrillus sphinx*), the West African dwarf crocodile (*Osteolaemus tetraspis*), the forest elephant (*Loxodonta africana cyclotis*) and the savanna elephant (*Loxodonta africana africana*), amongst others, are found here. The area is noted for its cultural and religious value in the country. In the absence of a management plan, the Advisory Council for National Parks in Gabon is making plans for putting in place certain management activities such as evaluation of land use zones by the population and sensitization of local administrative authorities and the population on national parks.

**Discussion:** Fishing with chemical products, over-exploitation of forest and mining practiced on the outskirts pose a threat. Maritime boundary dispute in Corisco Bay.

**Category 2, 3, 4**

## 37. Contracting Party: China

### **Transboundary Neighbor: Mongolia/Russia**

**Site Listed:** Dalai Lake National Nature Reserve, Inner Mongolia: National Nature Reserve. A complex of lakes, rivers, marshes, shrubs, grasslands and reed beds typical of wetlands in arid steppes, still retaining near-natural conditions. A staging area in the East Asian-Australasian Shorebird Flyway, the site is important for some 284 bird species, particularly Anatidae and shorebird species, and exceeds the 20,000 individuals and 1% thresholds for a number of species. Some 30 fish species are supported, of both Siberian and Northeast China types, and some are economically important. The Dalai Lake region, as the only lower land of the Hulunbeir Plateau, has great significance for flood storage, sediment retention, and groundwater recharge, and is critical for maintaining regional climate and increasing air humidity. Tourism offers birdwatching, boating, and traditional Mongolian foods, customs, and cultures, and the area is becoming a center for environmental education and research. Fishing is the primary activity of the water area, accounting for some 10,000 tons of economic fish per year, and livestock grazing in surrounding grasslands involves more than 2 million animals. Over-fishing within the site and over-grazing leading to desertification in the area are listed as potential threats. A management regime is in force.

### **Transboundary Neighbor: Russia**

**Site Listed:** Honghe National Nature Reserve: National Nature Reserve. A near-natural marsh ecosystem with a large variety of wetland types, providing support



for six endangered and rare species of flora and three of avifauna. The Reserve is the main breeding site for the Oriental stork (*Ciconia ciconia*), with 200 individuals in autumn, as well as for Black stork, Red-crowned and White-napped cranes, Whooper swan, and Mandarin duck. State-owned farms cultivate rice in the area. Overuse of groundwater and intensive agriculture are viewed as potential threats and a plan to regulate water supplies with a sluice dam has been put forward.

**Site Listed:** San Jiang National Nature Reserve: National Nature Reserve. An alluvial floodplain typical of high-altitude wetlands, a mixture of rivers, open bogs, seasonally flooded meadows, and sedge marshes, the largest area of freshwater wetland in the country. The site is internationally important for waterbirds, particularly ducks, and for fishery resources, and serves as a natural reservoir for the San Jiang Plains, providing vital flood control as well. Due to its remote location and cold winters, human interference has been minimal, though local inhabitants, including 300-400 people of the He Zhe (one of the smallest ethnic groups in China) who support a unique cultural, find abundant animal, fish, and forest resources. Overfishing with small mesh nets and other human effects are seen as potential threats, but rational ecotourism, especially in cooperation with nearby Russia, holds promise.

**Site Listed:** Xingkai Lake National Nature Reserve: National Nature Reserve. A complex wetland system including grassland, marshes, lakes, and forests, contiguous with Russia to the south across the Songacha River. The site, at the northern end of the large lake, provides important breeding habitat for a number of bird species protected in China, and some 65 fish species and more than 460 higher plant species are present. A transboundary nature reserve agreement (including joint training) was established in 1992 with the Khank Nature Reserve in Russia, with the help of the International Crane Foundation, and another in 1996 for management of the whole Xingkai Lake. The reserve joined the North East Asian Crane Site Network in 1997. Four ecotourism resorts drew 500,000 visitors from China and abroad in 2000.

**Discussion:** The 400 year-old border dispute between Russia and China ended in December 2008 with a 340 square kilometer piece of land being officially placed under the Chinese flag. The half-Russian, half-Chinese island is a hundred kilometers from the city of Khabarovsk. It has two names: the Russian half is called Bolshoy Ussuriysky Island, the Chinese half is now known as “the Island of the Black Bear”.

China’s self-interest in natural resources is causing them to become a major international force for peace-keeping; however, they are also willing to work with countries shunned by western firms thereby exacerbating conflict in developing world including North Korea and Iran. Multiple environmental issues plague China including large-scale desertification and resultant water shortages: 80% water occurs in south while the coal reserves (requiring great amounts of water) occur in the north. Working within the Ramsar Convention to develop viable transbound-

ary conservation areas may help prevent future conflicts and encourage China's peace-keeping role in the region. Active participation within this international treaty may reinforce peaceful relations within the region as water scarcity continues to worsen in coming years.

#### Category 4

### 38. Contracting Party: Macedonia

#### Transboundary Neighbor: Greece/Albania

**Site Listed:** Lake Prespa: Strictly Protected Nature Reserve; Ornithological Reserve. A Pliocene Lake (2-3 million years old), providing important feeding areas for large numbers of the Pelicans that breed nearby in Greece. The site includes cultivated land, meadows, pastures, reedbeds, and forests. Commercial and recreational fishing and conservation education are the only human activities. There is a visitors center at the site.

#### Category 4

### 39. Contracting Party: Senegal

#### Transboundary Neighbor: Mauritania

**Site Listed:** Djoudj. World Heritage Site; National Park. An inland delta consisting of an extensive complex of seasonally inundated, brackish lakes and pools linked by a network of channels in the Sénégal River floodplain. Water levels are artificially controlled. The terrestrial vegetation consists of Sahelian Tamarix and savannah with a ground layer of herbs and grasses in dry areas and various types of reedbeds in inundated areas. Internationally important numbers of various species of waterbirds use the site for breeding, staging and wintering, with up to 400,000 individuals present in January. Principal human activities are nature conservation and ecotourism. Surrounding areas are used for rice cultivation, livestock rearing, and hunting. Low rainfall is the most serious potential threat. Djoudj has been confronted with water quantity problems, which led to listing on the Montreux Record, but resolution of this problem through dams on the Senegal River led to removal from the Record. It was returned to the Record in 1993, however, due to infestations of *Pistia stratiotes* and *Paspalum vaginatum*. Subject of a Ramsar Advisory Mission in 1988 and another in 2000.

#### Transboundary Neighbor: The Gambia

**Site Listed:** Delta du Saloum. W. Biosphere Reserve. Delta of the Sine and Saloum Rivers consisting of extensive mangrove forests dissected by saline channels, lagoons, islands, and islets. The site includes dune areas with dry, open forest. Human activities include nature conservation, tourism, and pastoralism.

Surrounding areas are used for agriculture, livestock rearing, fishing, and hunting.

**Discussion:** Management issues include illegal gathering of mollusc, bird, and turtle eggs and unsustainable exploitation of plant products. Several border issues in region.

**Category 2, 3, 4**

## 40. Contracting Party: Bolivia

### **Transboundary Neighbor: Peru**

**Site Listed:** Lago Titicaca (Sector Boliviano). Transboundary site between Bolivia and Peru. The site is characterized by a mixture of freshwater permanent lakes, rivers, associated marshes and high Andean peatlands. It harbours several rare species and threatened fish, birds and invertebrate species endemic to the high Andes. The area is used for agriculture, fishing, sheep and cattle ranching. Small-scale tourism is becoming more important.

### **Transboundary Neighbor: Argentina**

**Site Listed:** Cuenca de Tajzara: Reserva Biológica. Situated in the endorheic Tajzara basin, 45 kilometres west of the city of Tarija, at 3,700m above sea level, the site consists of a group of seasonal, semi-permanent and permanent lakes, high-altitude streams, marshes and high-Andean pastures. The two permanent lakes (areas between 350 and 800 ha) serve as a refuge for 40 species of birds indigenous to the high-Andean aquatic systems, where about 90% of the high-Andean waterfowl in Bolivia is found. The area is important for migratory shore birds, with year-round concentrations of the vulnerable high-Andean waterfowl species Andean flamingo (*Phoenicopterus andinus*), James's flamingo (*P. jamesi*), and *Fulica cornuta*. More than 30 archaeological sites have been identified near the lakes, ranging from vestiges of primitive hunter-gatherers, pre-Incan hydraulic constructions, cave paintings illustrating aquatic birds, and three Incan roads that lead from the basin to the valley. The main economic activity is the raising of sheep, llamas and cattle; agriculture is limited by the climate, though the families in the area have an average of ½ to 1 hectare for subsistence crops. There is a visitors' centre, a bird-observation site, information material, and facilities for school visits. There are plans to draw up a management plan with the participation of the local communities. The site forms part of the Reserva Biológica de la Cordillera de Sama, which is managed by the Servicio Nacional de Areas Protegidas through the NGO Protección del Medio Ambiente Tarija (PROMETA).

### **Transboundary Neighbor: Paraguay**

**Site Listed:** Palmar de las Islas y las Salinas de San José. Includes National Park and Integrated Management Natural Area. A very large area of practically pristine saline and non-saline palm forests (*Copernicia alba*) and a system of

small lagoons and channels supplying water to considerable numbers of animal species. As these are the only wetlands in a large area of dry forest, they provide essential support for many species during critical stages in their life cycles, as in the reproduction of several amphibian and reptile species. The water bodies also have great seasonal importance for larger mammals, such as peccary and tapir, which congregate around them during the dry season. The area has traditionally been used almost exclusively by the Ayoréode people, who practice a nomadic system of resource exploitation, with hunting, gathering, and subsistence agriculture. Parts of the site lie within a national park and an integrated management natural area of the Gran Chaco.

### **Transboundary Neighbor: Brazil**

**Site Listed:** Pantanal Boliviano: National Park. An enormous area on the eastern frontier with Brazil, part of South America's great Pantanal, the world's largest wetland. The vast complex of rivers, lakes, lagoons, marsh, inundated forests and savannahs, and a major source of the Paraguay river, considered to be even richer in biodiversity and less disturbed than Brazilian portions, supporting astonishing numbers of floral species and fish, birds, and large mammals. The site also includes the Chiquitano forest, a major extension of the most intact dry forest in the world. Historically populated by Chiquitano and Ayoréode peoples in the southern parts, near the Chaco transitional region, others have joined the region over the past century to pursue cattle-grazing and trade with Brazil. Necessary future exploitation of mineral resources must be carefully managed to avoid harm to the region, and expanded cattle grazing may pose a threat to ecological values; deforestation as on the Brazilian side of the border is feared, and the potential effects of the Hidrovia project to open the Paraguay to navigation are being watched carefully.

**Discussion:** Ongoing dispute with Peru over the economic zone delimited by the maritime boundary. Peru recently granted Bolivia use of a small section of its Pacific coastline right near the port of Ilo. The deal is part of a long-standing crusade by both Peru and Bolivia to prod neighboring Chile into giving back some territory it seized in the 19th century "War of the Pacific." Bolivia is going to develop a commercial port, eventually perhaps even natural gas if they build a pipeline, tourist spots and a school for the navy. Environmental issues include melting glaciers.

### **Category 3, 4**

## **41. Contracting Party: Equatorial Guinea**

### **Transboundary Neighbor: Cameroon/Gabon**

**Sites Listed:** Río Ntem o Campo: Nature Reserve. Located along the Ntem (or Campo) river, which forms the frontier with Cameroon in the nation's north, the site has been designated for the List because of its support for vulnerable or endangered species and because it is an important source of food for fishes or spawning

ground, nursery and/or migration path on which fish stocks depend. Coastal stabilization and flood control have been noted as important hydrological values. The work of the forestry industry is seen as a potential threat to the ecological character of the site.

#### **Transboundary Neighbor: Gabon**

**Site Listed:** Reserva Natural del Estuario del Muni: Nature Reserve. Located in the mainland south, an area of estuaries and near-coastal highlands characterized by dense forest, inundated forest, and peat meadows. Secondary forest and mangroves are found around the mouths of the rivers Mitong, Mitemle, and Mbante or Mbané in the estuary of the Río Muni. Manatees, elephants, baboons, and migratory birds have an important presence. Traditional fishing, hunting, and subsistence agriculture are practiced, and disturbances caused by overhunting, overfishing, and forest exploitation are perceived as potential threats. A management plan is in preparation.

**Discussion:** Ongoing territorial dispute in Corisco Bay between Gabon and Equatorial Guinea.

**Category 2, 3, 4**

## **42. Contracting Party: Brazil**

#### **Transboundary Neighbor: Bolivia**

**Site Listed:** Pantanal Matogrossense: National Park. Part of the largest, permanent freshwater wetland in the Western Hemisphere. It is situated in a large depression functioning as an inland delta. The area consists of a vast region of seasonally flooded savannas, islands of xerophytic scrub, and humid deciduous forest. The site includes some of the largest and most spectacular concentrations of wildlife in the Neotropics and is probably the most important wetland in South America for waterfowl. There are huge resident breeding populations of a wide variety of species, and Nearctic shorebirds use the area for staging. An ecological station is located on the site.

**Category 4**

## **43. Contracting Party: Nicaragua**

#### **Transboundary Neighbor: Costa Rica**

**Site Listed:** Los Guatuzos Lakes and ponds subject to seasonal flooding, set in alluvial depressions with surrounding woodlands. There are also areas that are normally dry where the water table is several centimetres below the surface. The interaction of unique environmental factors has given rise to rich populations

of flora and fauna both indigenous and migratory. 326 bird species, of which 77 species are migratory, 32 mammal and 10 reptile species are supported. There are several species of birdlife threatened with extinction.

**Site Listed:** Refugio de Vida Silvestre Río San Juan: Wildlife Refuge, Biosphere Reserve. A long, slender, convoluted site that follows the course of the Río San Juan, which flows from Lake Nicaragua at 32m altitude along the Costa Rican frontier 200km to the city of San Juan del Norte on the Caribbean coast, and includes the coastline to the north as well, part of the Biosphere Reserve Indio Maiz, forming one of the two most extensive biological nuclei of the Mesoamerican Biological Corridor. The site comprises an array of wetland types, including estuary and shallow marine waters, coastal freshwater lagoon, and intertidal marsh, as well as permanent lakes, rivers, and pools, inter alia. Nearly all of the Ramsar Criteria are met, and four species of turtles, as well as the manatee *Trichechus manatus*, are supported.

#### **Transboundary Neighbor: El Salvador/Honduras**

**Site Listed:** Deltas del Estero Real y Llanos de Apacunca: Natural Reserve. An estuarine ecosystem that is part of the large mangrove systems of the Golfo de Fonseca shared with El Salvador and Honduras, marked by semi-intensive and extensive shrimp cultivation, fishing, and agriculture. Within the site some 35 species of fauna have been identified, and part of the site was declared a Reserve for Genetic Resources in 1996 in order to preserve a species of wild maize (*Zea luxurians* or *nicaraguensis*) that is endemic to Nicaragua and found only in this area. The original diversity of the site has suffered from human impacts such as agrochemical and organic waste, sedimentation, deforestation, and excessive hunting.

**Discussion:** The 1992 ICJ ruling for El Salvador and Honduras advised a tripartite resolution to establish a maritime boundary in the Gulf of Fonseca, which considers Honduran access to the Pacific; legal dispute over navigational rights of San Juan River on border with Costa Rica.

#### **Category 2**

### **44. Contracting Party: Ukraine**

#### **Transboundary Neighbor: Romania**

**Site Listed:** Kugurlui Lake. A shallow oxbow lake with swampy shores set in the lower Danube basin. Vegetation consists mainly of emergent species. The site supports internationally important numbers of various species of migrating, breeding and molting waterbirds (up to 30,000 individuals) . Nationally and internationally rare bird species occur at the site. It is also important as a breeding and nursery area for fish and amphibians. Human activities include environmental education, recreation, hunting, fish-rearing, and livestock grazing.

**Site Listed:** Kartal Lake. A system of small, interconnected floodplain lakes set in the lower Danube basin. Vegetation consists of emergent and submergent plant communities. Numerous species of rare and protected species of plants occur. The site is important for migrating, breeding (25,000 pairs), and molting birds, and supports internationally important numbers of nesting *Phalacrocrax pygmeus*. Of the 140 bird species occurring at the site, 32 are nationally rare. It provides important breeding and nursery areas for fish and amphibians. Human activities include conservation education, recreation, livestock grazing, haymaking, and an important fishery. Ancient burial sites are being excavated.

**Site Listed:** Kyliiske Mouth (no information available)

#### **Transboundary Neighbor: Moldova**

**Site Listed:** Dniester-Turunchuk Crossrivers Area. The Dniester River delta and floodplain lakes consist of islands of floodplain forests, numerous scroll ridges, deep lakes, and floating bogs. Vegetation includes reed thickets, shrubs, and floating plant communities. Internationally important numbers of *Egretta alba* and *Plegadis falcinellis* nest at the site, and over 50,000 birds winter here. Various species of nationally rare flora and fauna occur. Human activities include conservation education, recreation, hunting, fish-breeding and fishing, recreation, and scientific research. The site serves as an important source of irrigation and drinking water.

**Site Listed:** Northern Part of the Dniester Liman: Game Reserve. This site includes the Dniester River delta, streams, floodplain lakes, and part of the Dniester Liman. Vegetation consists of floating vegetation, reed thickets, and floodplain forest supporting various nationally threatened plant species. An important area for wintering Anseriformes, Gruiformes and Pelecaniformes and for breeding, wintering and migrating birds Anseriformes, Charadriiformes and Ciconiiformes. The site supplies water for domestic use and agricultural irrigation and serves as an important water transport artery. Human activities include environmental education, recreation, hunting, and fishing.

#### **Transboundary Neighbor: Russia**

**Site Listed:** Kryva Bay and Kryva Spit: Ornithological Game Reserve, Nature Monument. A bay of the Azov Sea made up of a sandy-shell spit, beaches, silt islands, and shallow lakes. The site supports reed thickets, saline meadows, and swamps and includes emergent and submergent plants and short grasses. Several thousand Anseriformes winter and up to 15,000 pairs of waterfowl nest at the site. Several endemic and nationally rare plant and fish species occur at the site. Human activities include conservation education, recreation, fishing, aquaculture, and hunting.

#### **Transboundary Neighbor: Poland/Belarus**

**Site Listed:** Shatsk Lakes: National Nature Park. Bordering Belarus, this unique system of 22 lakes includes marshes, peatlands, meadows, and forests. The wetland supports reedbeds, sedges and grasses and is important for the protection of various threatened species of swamp fauna and flora. Situated on the crossroads of two main flyways, the site is important for up to 60,000 migrating, as well as internationally important numbers of breeding and molting, waterbirds and waders. Human activities include recreation, health sanatoria, hunting, fishing, livestock grazing, and haymaking. The site supports an important fishery.

#### **Transboundary Neighbor: Belarus**

**Site Listed:** Prypiat River Floodplains: Regional Landscape Park, Regional Landscape Park, Hydrological Game Reserve. One of the largest wetland complexes of the Polissia biosphere region, the site borders Belarus and is situated on the crossroads of two main flyways. The site comprises rivers, lakes, marshes, peatlands, meadows, forests, and river islands. Characterized by a rich biodiversity, over 220 vertebrate species and 550 vascular plants occur at the site. An important area for numerous species of breeding, molting and migrating waterfowl and waders. The site provides important feeding and nursery areas for numerous species of freshwater fishes. Human activities include sport and commercial fishing, hunting, livestock grazing, haymaking, and recreation.

**Site Listed:** Stokhid River Floodplains: Regional Landscape Park, Landscape Game Reserves, Hydrological Game Reserve. The site includes rivers, lakes, marshes, peatlands, islands, and meadows. It supports numerous species of nationally and internationally threatened flora and fauna. Situated on the crossroads of two main flyways, the site provides important habitat for numerous species of large numbers of breeding, staging, and molting waterbirds. An important site for feeding, nursery and wintering numerous freshwater fishes. Human activities include hunting, fishing, livestock grazing, haymaking, and recreation.

**Discussion:** Capacity-building continues to be a prime concern in the former Soviet states and this includes addressing boundary delimitations, water-sharing agreements and industrial pollution. Ukraine has potential for regional leadership to help prevent outbreak of conflict. The transboundary management for the Tisza River provides a model for development addressing the threats to freshwater access in Ukraine. Pollution, industrial development, agricultural runoff and lack of sanitation facilities overwhelms regional drinking water sources. A 1997 boundary treaty with Belarus remains unratified due to unresolved financial claims, preventing demarcation and reducing border security; delimitation of land boundary with Russia is complete but boundary through the Sea of Azov and Kerch Strait remains unresolved despite a December 2003 framework agreement and on-going expert-level discussions; Ukraine protests Russia's construction of a causeway in the direction of Ukrainian-administered Tuzla Island in the Kerch Strait. Difficulties continue with Moldova's Transnistria region complicate controlling border crossing and customs regimes despite concordance on the 2003 delimitation and customs protocols and



OSCE assistance. Romanian claims to Ukrainian-administered Zmiyinyy (Snake) Island and Black Sea maritime boundary despite ongoing talks based on 1997 friendship treaty to find a solution.

**Category: 3, 4**

## 45. Contracting Party: Indonesia

### **Transboundary Neighbor: Papua New Guinea**

**Site Listed:** Wasur National Park: National Park. This is a low-lying wetland in the monsoon climate zone of southern New Guinea, with intertidal mudflats and coastal mangroves with extensive seasonally inundated grasslands, reed swamps, savannahs, and monsoon forest. The site is the habitat for a number of rare and endemic species, including the Fly River Grassbird (*Megalurus albolimbatus*) and Grey-crowned Munia (*Lonchura nevermanni*). Tens of thousands of waterbirds visit the region during migration between eastern Siberia and northern Australia. The topography is exceptionally flat, with little natural drainage in large parts of the reserve. Land use is chiefly subsistence farming by small local communities of four groups of autochthonous peoples, and the area contains many sites of spiritual significance and archaeological importance. Poaching and alien invasive species like water hyacinth and mimosa pigra, as well as population pressures from the nearby town of Merauke, are seen as the greatest threats. Ecotourism infrastructure is being developed to accommodate international as well as local tourists, to benefit local communities. The site is contiguous with the Tonda Wildlife Management Area Ramsar site in Papua New Guinea.

**Discussion:** Indonesian squatters and illegal migrants create repatriation problems for Papua New Guinea.

**Category 2, 3**

## 46. Contracting Party: Paraguay

### **Transboundary Neighbor: Bolivia/Brazil**

**Site Listed:** Río Negro. A riverine system of meanders and oxbow lakes set in an ecotone arising from the confluence of three biogeographic provinces, with representative fauna from all. Considered a world centre of floral genetic diversity, numerous rare and threatened species of flora and fauna are supported. Some livestock rearing, timber extraction, and poaching take place.

### **Transboundary Neighbor: Argentina**

**Site Listed:** Tinfunque. National Park. An alluvial plain along the Pilcomayo River which is flooded much of the year and characterized by patches of forest, exten-

sive, clustered lakes, and savannas of palm groves. Watercourses follow ancient riverbeds, with gallery forest growing alongside. Another sector is composed of vast, dry plains of grasses and shrubs. Located in the tropical deciduous dry forest biogeographical region, the site, in outstanding condition, is a good representative of biodiversity. Situated along the migration route, birds are abundant in species and number. Several threatened wildlife species (rhea, caiman, turtle, and jaguar) and fish species breed here. The site is important for *Potamogeton striatus*, a critically endangered plant, and supports a distinct mammalian fauna. Extensive ranching, extraction of forest products, and poaching occur.

#### **Category 4**

### **47. Contracting Party: Greece**

#### **Transboundary Neighbor: Turkey**

**Site Listed:** Evros delta; Special Protection Area EC Directive; Protected Area. Sharing the border with Turkey, the Evros River delta consists of brackish lagoons, freshwater marshes, lakes, and a coastal zone of saltmarshes and mudflats. The site is important for conservation education and provides a biological station, observation tower, and birdwatching center. Human activities include cattle grazing, commercial fishing, aquaculture and hunting. The surrounding area is used for intensive agriculture and livestock rearing. Because drainage works caused major hydrologic and land use changes resulting in low water levels, flooding and salt water intrusion, the site was placed on the Montreux Record in 1990

#### **Transboundary Neighbor: Bulgaria, Former Yugoslavia**

**Site Listed:** Artificial lake Kerkini; Special Protection Area EC Directive; No Hunting Zone. Near the border between Greece, Bulgaria and the former Yugoslavia, an nutrient-rich, freshwater reservoir in an alluvial plain between mountain massifs, supporting extensive beds of floating vegetation and subject to wide variations in water level. The site includes mudflats, seasonally flooded forest, and sand banks, and supports the largest mixed nesting colony of waterbirds in Greece. Numerous species of waterbirds occur in winter and during spring and autumn migration periods, including several globally threatened or endangered species. Human activities include silviculture, fishing, intensive livestock grazing, irrigated agriculture, and illegal hunting and tree felling. The site has suffered changes in ecological character due to water management projects and increasing nutrient-enrichment. For these reasons it was placed on the Montreux Record in 1990.

#### **Transboundary Neighbor: Albania/ Former Yugoslavia/ Republic of Macedonia**

**Site Listed:** Lake Mikri Prespa; Florina; Special Protection Area EC Directive; National Park, Site of Outstanding Natural Beauty. Two freshwater lakes, shared by Greece, Albania and The Former Yugoslav Republic of Macedonia, occupy-

ing an enclosed mountain basin fed by seasonal streams. Human activities include fishing, irrigation, tourism, livestock grazing, and conservation education. A field station and an information center are available. The site was placed on the Montreux Record in 1990 due to changes in ecological character caused by past drainage works, recent overgrazing, and loss of fish production. The Society for the Protection of Prespa was one of the winners of the Ramsar Wetland Conservation Award in 1999.

**Discussion:** Complex maritime, air and territorial disputes between Turkey and Greece; dispute with The Former Yugoslav Republic of Macedonia over its name.

#### **Category 2, 4**

### **48. Contracting Party: Albania**

#### **Transboundary Neighbor: Greece**

**Site Listed:** Butrint: National Park, UNESCO World Heritage Site. A wetland complex in the southwestern part of Albania, famous for its archaeological monuments (ancient port of Buthrotum), historical significance, and natural richness. The core area is composed by a tectonic lagoon of 1600 ha, known as Lake Butrint, that is surrounded by forested hills and mountains and complemented by saltwater and freshwater marshlands. Butrint supports a large number of plants and animals considered as having an unfavorable conservation status either nationally or internationally, such as *Numenius tenuirostris*, *Caretta caretta*, *Dermochelys coriacea*, and *Monachus monachus*. The area is also an important spawning ground, food source and migration path for fish. The main activities are fishing, mussel farming, stock raising, vineyards and cultural tourism.

#### **Transboundary Neighbor: Montenegro**

**Site Listed:** Lake Shkodra and River Buna: National protected area. The eastern side of the largest lake in the Balkan Peninsula, shared with Montenegro (Skadarsko Jezero Ramsar site), and the River Buna with its near natural delta on the East Adriatic coast. The area comprises a variety of habitats: freshwater, brackish water, woodland, freshwater marshes, wet pastures, sandy shore and rocky habitats supporting about 900-1000 plant species. Connection with the River Drin ensures the migration of mainly fish species from the Adriatic via Shkodra Lake to and from Ohrid and Prespa Lakes, such as the endangered *Acipenser stellatus* and *Salmothymus obtusirostris* as well as the critically endangered species *Acipenser studio* and *Chondrostoma scodrensis*. The site hosts about 25,000 wintering waterbirds, amongst them the endangered *Oxyura leucocephala* and the critically endangered *Numenius tenuirostris*. Threats arise from past and present practices of drainage for agriculture, uncontrolled development, changes in water regime, deforestation, illegal hunting and fishing, and introduced species. Shkodra (Skadar, Scutari) is known for its cultural heritage of more than 2000 years, e.g.

the Illyrian walls and the ruins of a 600-year-old catholic church. Today the main activities are agriculture, stock raising, fishing and tourism.

#### **Category 4**

### **49. Contracting Party: Gambia**

#### **Transboundary Neighbor: Senegal**

**Site Listed:** Baobolon Wetland Reserve Protected Wetland. A tidal wetland complex on the Gambia River consisting of six major bolons (tributaries), tidal estuaries, and three distinct wetland ecosystems: mangrove forest, saltmarsh and savanna woodland. The tidal flats have been dyked for fresh water retention and rice production. The mangroves provide important fish spawning habitat. The site borders Senegal, offering the potential for bilateral cooperation with management. Human activities are predominantly recreational (birdwatching, wildlife viewing, fishing, and canoeing) and also include mangrove and thatch grass harvesting.

**Discussion:** Refugees, cross-border raids, arms smuggling, other illegal activities, and political instability from separatist movement in southern Senegal's Casamance region.

#### **Category 2, 3, 4**

### **50. Contracting Party: Bosnia and Herzegovina**

#### **Transboundary Neighbor: Croatia**

**Site Listed:** Hutovo Blato. Located near the estuary of the Neretva river, the site, comprising swamps, lakes, wet meadows, and riverine forest, provides favorable conditions for many wetland species, particularly of birds and fish, several of which are described as endangered. Human activities in the area include fishing and hunting; pressures from drainage, agricultural intensification, urbanization, and growing tourism are seen to pose potential threats.

**Discussion:** Rebuilding after 3.5 years of war in the 1990s. Croatia discussions continue with Bosnia and Herzegovina over disputed territory around Kostajnica on the Una River and villages at the base of Mount Pljesevica. After 2010 election a fiscal meltdown occurred. Work with Ramsar can build tools of state competency and capabilities. Several political boundaries in question; Bosnia and Herzegovina and Serbia and Montenegro have delimited most of their boundary, but sections along the Drina River remain in dispute.

#### **Category 2, 3, 4**

## 51. Contracting Party: Moldova

### Transboundary Neighbor: Romania

**Site Listed:** Lower Prut Lakes. The River Prut forms the western border of the site as well as the state border with Romania, and the site extends to the rivers confluence with the Danube. Lakes Beleu and Manta are unique ecosystems, described as the last natural floodplains in the lower Danube region. The system is important for groundwater recharge, flood control, and sediment trapping, and it supports an imposing list of rare and threatened species of flora and fauna. A number of heritage sites can be seen in the area, including some of Roman Emperor Trajans wall (ca.100 A.D.) . Fish harvests have been decreasing markedly in recent years, forests are generally seen to be deteriorating, and quite a few adverse conservation factors have been listed as requiring attention. A management plan is in preparation, particularly in hopes of creating a UNESCO Biosphere Reserve over more or less the same site.

### Transboundary Neighbor: Ukraine

**Site Listed:** Lower Dniester (Nistru de Jos): Nature Reserves; Landscape Reserve; Nature Monuments (paleontological). The designation of this part of the Dniester River in southeastern Moldova helps to complete the conservation of transboundary wetland the Dniester delta, with two Ramsar sites downstream in Ukraine. This complex of relict and transformed habitats of the Dniester floodplain includes meandering zones with almost closed river loops typical for the northwest of the Black Sea basin, lakes and oxbows formed by river roaming, specific ash communities and unique old stand floodland poplar forest, Fraxineto-Populeta (albae). The site supports many globally endangered and vulnerable bird species among which 2 are nesting (*Crex crex*, *Phalacrocorax pygmaeus*), 4 are present on migration (*Branta ruficollis*, *Aythya nyroca*, *Circus macrourus*, *Haliaeetus albicilla*), 1 regular visitor (*Pelicanus crispus*), and fish such as the Danube Salmon (*Hucho hucho*), the European Mud-minnow (*Umbra krameri*) and various species of sturgeons. The wetland is an important site for freshwater migratory fish as it supports more than 90% of the species of the region and offers a high diversity of biotopes: riverbed spawning ground, areas of pelagic spawning and nursery. However, the construction of dams in the Dniester valley has affected the terrestrial, aquatic and intermediate ecosystems and large areas of important meadow spawning grounds were lost. Grazing is also considered as an important disturbance. The site has recognized paleontological and archaeological value since the discovery of fossils and places such as tumuli, Cimmerian, Ghetic, Sarmatic and Slavic memorials. The RIS and the management plans of this site were prepared in 2001 during a Ramsar Small Grant Funds project. The creation of a Lower Dniester National Park is under discussion.

**Site Listed:** Unguri – Holosnita: Landscape Reserve, Nature Monument. High rocky, crumbling-sloughing slopes and narrow flood-land of the Dniester River's

left bank, in northeastern Moldova near the border with Ukraine. The Dniester includes wide, shallow segments here with little islands, small rivers and short creeks feeding the stream and forming steep canyons. Fluvial forests are formed by poplar associations with an admixture of willows, ash and elm, with riparian willow formations. The most numerous waterfowl and waders during forage and seasonal migrations are ducks, e.g. *Anas platyrhynchos*, *A. querquedula*, and *A. strepera*, which also predominate amongst wintering birds. Agriculture provides the main sources of economic life, supplemented by livestock farming and traditional fishing, which is losing its economic value as fish resources became scarce as a result of strong variations of discharge levels from the Novodnestrovsk hydropower station. There are more than sixty sites of cultural, geological, paleontological and archeological interest in the area, along with a settlement of Old Believers in the village of Pocrovca. The BIOTOCA Ecological Society in Chisinau was helpful in the preparation for this site designation.

**Discussion:** The breakaway Transdniester region remains unresolved.

**Category 2, 3, 4**

## 52. Contracting Party: Mongolia

### **Transboundary Neighbor: Russia**

**Site Listed:** Mongol Daguur (Mongolian Dauria): International Protected Area; Strictly Protected Area; Nature Reserve; Crane Network Site. Set in a basin formed by tectonic and volcanic activity, the site includes vast steppes, marshy wetlands, rivers and lakes. Supports a high species diversity with many endemic or rare plants. 260 bird species use the site for staging, breeding or wintering, including six species of cranes of which two are threatened. Semi-nomadic, animal husbandry is the principal livelihood of the local population. Crop production is also practiced.

**Site Listed:** Lake Uvs and its surrounding wetlands: UNESCO Biosphere Reserve. The largest saline lake in Mongolia with a small part lying in Russia, a unique wetland in desert-steppe landscape fringed by high mountain ranges; it has a maximum depth of 20m and freezes over from November to May. With reedbeds and river deltas it provides significant nesting and resting areas for 215 migratory waterbird species such as White-headed Duck (*Oxyura leucocephala*), Swan Goose (*Anser cygnoides*), both 'endangered' in the Red List of IUCN, and many other nationally and globally threatened flora and fauna species including endemic fish *Oreoleuciscus potanini*, *Oreoleuciscus pewzowi*, *Oreoleuciscus humilis*, are supported. Some nomadic families live along the shorelines using wetlands as pasture and watering points. A joint transboundary protected area is planned in cooperation with Russian authorities. The potential exists for recreation and bird-watching and a management plan is in preparation.

### **Transboundary Neighbor: China**

**Site Listed:** Lake Buir and its surrounding wetlands. The largest freshwater lake in eastern Mongolia, part of the basin of the large Amur river, together with many associated small lakes - northeastern parts of the system outside the Ramsar Site boundary lie across the border with China. This transitional habitat between Daguur and Stipa steppes features flora and fauna characteristic of arid steppe; it regulates the Khalk gol River and the Buir lake's water regime and protects the origins of many small rivers, lakes, streams, and springs. The site is a main grazing land for the Mongolian gazelle (*Procapra gutturosa*), a stop-over and permanent ground for more than 236 bird species. Many fauna and flora species listed by IUCN, CITES, and CMS are present, making it very important for biogeographical biodiversity. No human settlements are found within the wetland apart from a small fishing village on the eastern coast to support the long established fishing industry on the lake. Extensive grazing has resulted in land degradation, but there is no other agricultural activity. Global warming has affected the water level, with consequent fish stock depletion.

#### **Category 4**

### **53. Contracting Party: Tanzania**

#### **Transboundary Neighbor: Kenya**

**Site Listed:** Lake Natron basin is situated in Ngorongoro and Monduli districts within the Arusha region, in northern Tanzania contiguous with the Kenyan border.

#### **Category 3**

### **54. Contracting Party: Argentina**

#### **Transboundary Neighbor: Paraguay**

**Site Listed:** Río Pilcomayo: National Park. An extensive complex of rivers, lagoons, pools, permanent freshwater marshes and seasonally inundated grassland, interspersed with riparian woodland and gallery forest. Seasonally flooded savanna grassland with palm trees is the dominant habitat type. The site is notable for its rich terrestrial and waterbird populations. The region is increasingly important for tourism, supporting livestock grazing, and unauthorized hunting. A border is shared with Paraguay.

#### **Transboundary Neighbor: Chile**

**Site Listed:** Reserva Costa Atlantica de Tierra del Fuego: Provincial Nature Reserve. Ramsar's most southern site shares a border with Chile and is composed of shallow coastal waters, intertidal zones, extensive mudflats and lowland hills and cliffs characterized by grassland, pastures, drought-tolerant plant communities, with patches of *Notophagus* woodland. An endemic bird area, outstanding

for its variety of species, which provides important nesting areas for seriously endangered *Chloephaga rubidiceps* and wintering sites for internationally important numbers of shorebirds. At least 21 species of marine mammals use the waters for breeding, feeding and migration. Human activities include recreation and ranching.

**Discussion:** Unruly region at convergence of Argentina-Brazil-Paraguay borders is locus of money laundering, smuggling, arms and drug trafficking, and fundraising for extremist organizations.

**Category 2, 4**

## 55. Contracting Party: Namibia

### Transboundary Neighbor: South Africa

**Site Listed:** Orange River Mouth. Transborder site with South Africa. The sole perennial river in the region, it forms a linear oasis (floodplain) of islands and sand bars through an arid region. The site provides habitat for a variety of endemic plants and during the summer is the sixth richest wetland in southern Africa, in terms of bird numbers supported. The abundance of three species exceed 1% of their respective global populations. Restricted recreation takes place within the park. In surrounding areas, activities include diamond mining, irrigation, and large-scale water abstraction. Orange River Mouth (co-listed).

**Discussion:** Wetland ecosystem on both sides of border are listed with the Convention. One of the most arid regions in Africa and increased desertification from climate change predicted ; 6th richest wetland in southern Africa. Managed dispute with South Africa over the location of the boundary in the Orange River; Botswana, Namibia, Zambia, and Zimbabwe boundary convergence is not clearly defined or delimited. Diamond mining has also caused conflict. A participatory management plan with users of the river can help prevent outbreak of conflict.

**Category 3**

## 56. Contracting Party: Bulgaria

### Transboundary Neighbor: Romania

**Site Listed:** Srebarna: World Heritage Site, Biosphere Reserve, Maintained Reserve. Added to the Montreux Record, 16 June 1993. The site was extended from 600 ha to 1,357 ha in 2002. It is located on the southern bank of the River Danube 18 km west of the town of Silistra, and the major part of the site is the freshwater oxbow lake Srebarna (the last extant oxbow lake along the Bulgarian bank of the Danube), including an adjacent part of the River Danube and the river island Komluka covered by seasonally flooded forest of *Salix* sp. and *Populus* sp. The lake is an eutrophic wetland densely overgrown with emergent and submerged



aquatic vegetation, sustaining both representative and rare wetland habitats. It is a biodiversity hot spot with some 2,748 taxa recorded, among them many red-listed plant and animal species, including some globally threatened species, and hosts more than 50,000 migratory and wintering waterbirds. After a long period of deterioration due to a dam construction separating the lake from the river, the lake has suffered from, among other things, erosion of the river bed, severe nutrient-enrichment, and accelerated vegetation succession, and as a consequence the site was included in the Montreux Record in 1993. A small-scale restoration project (digging out a connecting canal) was undertaken in 1994 and conditions have been reinstated to a great extent. Poaching remains a persistent problem. A management plan, developed with support from the Ramsar Small Grants Fund, has been approved. Active organizations include the Central Laboratory of General Ecology, Bulgarian Society for the Protection of Birds/BirdLife Bulgaria, and Le Balkan. Subject of Ramsar Advisory Missions in 1992 and 2001.

**Site Listed:** Belene Islands Complex: Reserve, Natural Monument, Natural Park. A group of one big (Belene) and nine smaller islands located along 16km of the River Danube, on the country's northern boundary with Romania. The main part of the islands is covered with seasonally flooded riverine forest of *Alnus* spp., *Salix* spp. and *Populus* spp., diversified by several marshes and streams, and the site is a particularly good representative example of a natural riverine wetland complex in the Danube River catchment. The site has exceptional biodiversity values and hosts several rare species of plants like *Nymphaea alba*, *Nymphoides peltata*, *Marsilea quadrifolia* and *Leucojum aestivum* as well as five globally threatened species of birds (Pygmy Cormorant *Phalacrocorax pygmeus*, Ferruginous Duck *Aythya nyroca*, White-tailed Eagle *Haliaeetus albicilla*, Corncrake *Crex crex* and Aquatic Warbler *Acrocephalus paludicola*), and the globally threatened invertebrate *Hirudo medicinalis*. It is one of the most important breeding grounds along the Danube River for mixed colonies of herons, egrets, ibises and cormorants (6,000-9,000 pairs in the 1980s) and offers suitable stopover sites for about 20 migratory species of birds. The islands once had a significant role as a nursery for about 20 fish species, and efforts are being made to reinstate their importance with a planned restoration project. Part of Belene has been utilized as a prison since 1948 - other activities in this part of the island include agriculture, farming and small-scale timber harvest. A large-scale restoration project is ongoing, and a management plan is under development.

**Site Listed:** Ibisha Island: Partially Maintained Reserve. An island located in the River Danube along the country's northern boundary with Romania. Ibisha is situated just opposite the village of Dolni Tzibar and east of the town of Lom. It has significant importance for the conservation of waterbird fauna and rare habitats. The whole island is covered with seasonally flooded riverine forest of *Alnus* spp., *Salix* spp. and *Populus* spp., and the Ramsar site also includes a part of the river and its bank. The wetland is recognized as a Ramsar site for its importance for preservation of a rare forested wetland habitat within the Danube catchment and

conservation of a rich assemblage of breeding rare waterbirds (mixed colony of Cormorant *Phalacrocorax carbo*, Pygmy Cormorant *Phalacrocorax pygmeus*, Night Heron *Nycticorax nycticorax*, Squaco Heron *Ardeola ralloides*, Purple Heron *Ardea purpurea* and Spoonbill *Platalea leucorodia*). Human uses on-site include forestry and fishing.

### Category 3

## 57. Contracting Party: Zambia

### Transboundary Neighbor: Tanzania/Burundi/DRC

**Site Listed:** Tanganyika: National Park, Game Management Area. Includes the Zambian part of Lake Tanganyika, Africa's deepest and longest lake, shared by Zambia, Tanzania, Burundi and the Democratic Republic of Congo, as well as shoreline areas of Nsumbu National Park and Kaputa GMA. The Zambian shoreline (about 238km) is steep and rocky, with some areas of shallow swampy land and limited stretches of sandy beaches. The site has a rich diversity of vegetation including riverine forest, woodland, thickets, shrub and grassland and hosts the African elephant, lion, wild dog, and endemic reptiles like the Lake Tanganyika Water Snake (*Lycodonomorphus bicolor*) and Water Cobra (*Boulengerina annulata*). The Zambian part of the lake hosts over 252 fish species, 82 of which are endemic (e.g., *Neolamprologus brichardi* and *Altolamprologus compressicep*). The main inhabitants (Tabwa and Lungu peoples) practice artisanal fishing for a living but also trade forest products (grass, fuel wood and timber wood). The lake holds historical landmarks such as ruins of early missionary churches and some early Stone Age sites near the Kalambo Falls. A management plan has been finalized for the NP with UNDP assistance, aimed at decreasing poaching levels, ensuring proper waste disposal, restoring degraded habitats, and ensuring implementation of EIAs and land use plans for all development projects in the park, and will soon be implemented. There are plans to formulate a transnational fisheries management plan.

### Category 3

## 58. Contracting Party: Burkina Faso

### Transboundary Neighbor: Benin, Niger

**Site Listed:** Parc National du W. Transboundary protected area shared by Benin, Burkina Faso, and Niger. A major floodplain composed of shrubby and wooded savannah supporting various bird species, ungulates, carnivores and a gallery forest along the river. Human activities include livestock rearing and agriculture.

**Discussion:** Multiple border disputes between Burkina Faso, Benin and Niger

boundary.

### Category 2, 3

## 59. Contracting Party: Estonia

### Transboundary Neighbor: Russian Federation

**Site Listed:** Emajõe Suursoo Mire and Piirissaar Island: Mire Reserve, Zoological-Botanical Reserve. A large wilderness area of various types of peatland, rivers, lakes, coasts, and islands. Vegetation consists of fens, swamps, swamp forests, peat bogs, mixed forests, reedbeds, and agricultural areas. The site is an important spawning area for various fish species. Numerous species of vulnerable waterbirds use the site for breeding, molting or staging. The site supports several amphibian, fish, plant and bird species that are vulnerable, endangered or endemic. Human activities include fishing, farming, hunting, seasonally intensive berry picking, and boating. An extremely important area for the hydrology of Lake Peipsi.

### Transboundary Neighbor: Russia/Latvia

**Site Listed:** Nigula Nature Reserve: Nature Reserve, Protected Area, IBA. Extensive bog complex of various types, fringed by deciduous forest. The site includes a relict lake, many pools and hollows. Ancient bog areas (9,000 years old) consist of a peat layer up to 8 m deep. The wetlands play an important role in groundwater hydrology and maintenance of water quality in southwestern Estonia. The site supports numerous species of summering waterbirds and acts as a stopover place for fall migrating birds, regularly supporting up to 40,000 Anser albifrons and Anser fabalis. The mammals Ursus arctos, Canis lupus, Alces alces, Lutra lutra, and Lynx lynx live in marginal parts of the mire. Principal human activities include research and small tourist excursions. Area significantly extended in 2007. Part of "North Livonian" Transboundary Ramsar site, with Sookuninga (Estonia) and Northern Bogs (Latvia).

**Site Listed:** A complex of six different raised bog massifs with hummock and hollow complexes as well with numerous pools. The site supports rare, vulnerable and endangered species of birds and plants, some of them occurring in great numbers or densities. Highly endangered and strongly protected are Black Stork, Golden Eagle, Lesser-Spotted Eagle, Great-Spotted Eagle and Lagopus lagopus Willow Grouse. The site also supports populations of large mammals including Canis lupus Wolf, Lynx lynx Lynx, Ursus arctos Brown Bear and Alces alces Elk. The site plays an important role in the recharge and discharge of groundwater as well maintenance of water quality in southwest Estonia and northwest Latvia. It also has a significant cultural and historical importance for its small scale battle grounds, burials, and war routes. Due to its remote location the area is sparsely inhabited, and the main uses are tied to forestry, berry and mushroom picking, and small-scale hunting. all at comparatively low intensities. Part of the North Livonian

Transboundary Ramsar site with Latvia.

**Discussion:** Estonia Russia continues to reject signing and ratifying the joint December 1996 technical border agreement with Estonia.

### Category 3

## 60. Contracting Party: Latvia

### Transboundary Neighbor: Estonia

**Site Listed:** Northern Bogs (Ziemelu purvi): Protected nature area, Biosphere Reserve. The site comprises two large raised bogs which are divided by the border with Estonia. Together with Nigula Nature Reserve in Estonia (Ramsar site no. 910) located 1 km westwards from the Kapzemes bog, the area comprises one of the largest untouched wetland complexes in the Baltic Republics. It supports an appreciable assemblage of rare, vulnerable and endangered species of birds and plants, some of them occurring in great numbers or densities especially during migration. In autumn, at least 10,000 *Anser fabalis* and *A. albifrons* are roosting. Breeding species include *Circus pygargus*, *Falco columbianus*, *Grus grus*, *Philomachus pugnax*. The wetland complex plays an important role as a water storage in stabilising runoff. Land use is essentially berry picking and local fishing. Diminution of agricultural lands outside the wetlands has a negative impact on food availability for some birds and mammals. Various state monitoring programmes are carried out within the complex. Part of “North Livonian” Transboundary Ramsar site, with Sookuninga and Nigula Ramsar sites in Estonia.

### Transboundary Neighbor: Lithuania

**Site Listed:** Pape Wetland Complex, Important Bird Areas, Nature Park. Bordered by Lithuania at the south, the Lake Pape area is unique in the diversity of ecosystems concentrated in relatively small territory, including coastal lagoon, oligomesotrophic waters, natural eutrophic lakes, coastal dunes and raised bogs. The area is an internationally significant breeding, migrating and wintering site for birds and includes BirdLife Important Bird Areas. The narrow strip of land between Lake Pape and the sea is a major “bottleneck” for migratory birds such as the goose *Anser fabalis* and supports thousands of bats, notably the *Myotis dasycneme*. The site is an important place for other species considered as vulnerable or endangered within international frameworks like *Lynx lynx*, *Castor fiber*, *Lutra lutra*, *Lampetra fluviatilis* and shows also 6 habitats of EU importance, from which 5 are identified as priority. Human activities are berry picking (in mires), recreation, fishing and reed cutting. Surrounding areas are used for extensive grazing by Konik horses. Factors adversely affecting the site are the overgrowing of reeds, eutrophication of the lake, and unregulated tourist use of the area. A Nature Centre was established in 2002. A management plan for Lake Pape was prepared in 1997 and should be updated in 2004.

**Discussion:** Latvia has not ratified maritime boundary treaty Lithuania due to concerns over oil exploration rights.

### Category 3

## 61. Contracting Party: Romania

### Transboundary Neighbor: Ukraine

**Site Listed:** Danube Delta: World Heritage Site, UNESCO Biosphere Reserve. The Danube delta (Romanian part) consists of a fluvial zone characterized by sandy levees and densely vegetated lakes, a transitional zone of larger lakes, reed swamps and forested levees, and a marine zone, dominated by dune and barrier beach complexes. The site supports a rich flora, fish fauna (75 species), and important populations of several mammals. The area is internationally important for breeding, staging and wintering waterbirds. Nesting species include internationally important numbers of cormorants and pelicans. The inhabitants of the many scattered villages have unique cultural links with the ecosystem. Human activities include fishing, forestry, small-scale cultivation, and tourism. The site was formally twinned with the Camargue Ramsar site by an agreement between the governments of Romania and France, 1992.

**Discussion:** Romania has not resolved claims to Ukrainian-administered Zmyyny (Snake) Island and Black Sea maritime boundary despite ongoing talks based on 1997 friendship treaty.

### Category 2, 3

### Transboundary Neighbor: Hungary

**Site Listed:** Mures Floodplain: Natural Park, IBA. Includes the length of the River Mures downstream from Arad to the Hungarian border. It consists of a high variety of ecosystems, a mixture of meadows, periodically flooded areas mainly covered with soft and hard wood forests, arable land and pastures, and about 40 isles on the river. The forest and old riverbed ecosystems, permanently or temporarily linked with the Mures, are among few examples of this type of habitat remaining in Europe. The present landscape results from the damming of the valley and the consequent agricultural transformation; as the lower floodplain is bordered by dams and high terraces, it is subjected to all the benefits and damage caused by floods, such as drying out of habitats in years of low flow and water-logging in high floods. Disturbance is caused by overgrazing as well as poaching of fish and game resources and introduced exotic tree species, especially *Acer negundo*. The main human activities are oil and timber harvesting, together with agriculture as well as sheep and cattle grazing. Amongst the many archaeological sites is the fortified settlement "Santul Mare" dating from the Bronze Age. The Hodos-Bodrog and Bezdin monasteries are also culturally important and the objective for ecumenical

tourism.

**Discussion:** Hungary amended status law extending special social and cultural benefits to ethnic Hungarians in Romania, who had objected to the law.

### Category 2, 3

## 62. Contracting Party: Malawi

### Transboundary Neighbor: Mozambique

**Site Listed:** Lake Chilwa. A shallow, saline lake subject to seasonal variations in water level. Surrounded by dense swamps, neutral to acid marshes, and seasonally inundated grassland floodplains. The lake consists of numerous islands, two of which are permanently inhabited. The lake supports internationally important numbers of 153 species of resident and 30 species of palearctic (migratory) waterbirds. Apart from human settlements, activities include fishing, agriculture (rice and dimba cultivation), and livestock grazing. The fishery annually contributes 25-30% of the total fish production in Malawi.

### Category 3

## 63. Contracting Party: Chile

### Transboundary Neighbor: Bolivia

**Site Listed:** Salar de Surire: A saltmarsh and saline lakes subject to seasonal fluctuations set in the High Andean steppe. Vegetation is determined primarily by the relief and the water availability. Numerous non-metallic minerals (calcium and boric salts) are found around the saltmarsh. One of the four most important places in Chile for nesting flamingos. The site supports various high altitude species of flora and fauna which are endangered or rare. Human activities include livestock grazing, borax mining, and tourism.

**Site Listed:** Salar del Huasco. Seasonal, brackish lagoons and sparsely vegetated saltmarsh. Surrounding areas consist of five High Andean, sub-desert steppe vegetation types. An important group of flamingos is present at the site. Human activities include small-scale ranching and mining in the surrounding area. The saltmarsh is a source of rites and myths in the Aymara culture. A plan for groundwater extraction to supply the city of Iquique is pending.

### Tranboundary Neighbor: Argentina/Bolivia

**Site Listed:** Salar de Tara. This High Andean site encompasses a brackish lagoon that has maintains itself with the superficial waters that flow from the high mountains and volcanoes that surround it. This water body is important as nesting

grounds for at least two flamingo species including *Phoenicoparrus jamesi* and *Phoenicopterus chilensis* and is habitat to many other waterfowl species, resident and migratory, such as the mammal species *Vicugna vicugna* and *Lagidium viscacia*. Among the land uses are the conservation of natural resources, as well as tourism and the use of the surrounding grounds by the communities for grazing and collection of medicinal plants. The area is partially included in Los Flamencos National Reserve, which has a Participative Management Plan in place, and is included in the National System of Protected Areas of the State. Salar de Tara falls under the IV Management Category of the IUCN (Habitat/Species Management Area).

**Discussion:** Bolivia and Chile share use of the Silala River and has been the subject of tension.

## Category 2

### 64. Contracting Party: Croatia

#### Transboundary Neighbor: Serbia

**Site Listed:** Nature Park Kopacki rit (Kopacki rit). Added to the Montreux Record, 16 June 1993. Zoological Reserve, Nature Park. Located within the floodplain at the confluence of the Danube and Drava rivers, and subject to spring flooding, the site supports extensive reedbeds and woodland and includes numerous channels, oxbow lakes, and a complex of fishponds. The site is of considerable importance for breeding various Ardeidae, as well as cormorants, storks and sea eagles; wintering and staging birds also frequent the site. Principal human activities include tourism, hunting and fish farming. The area is subject to increasing siltation and nutrient-enrichment. During the military conflicts in the region, serious damage resulting from deforestation for firewood was reported. Subject of a Ramsar Advisory Mission, 2005. Area significantly extended in October 2007.

#### Transboundary Neighbor: Bosnia and Herzegovina

**Site Listed:** Lonjsko Polje & Mokro Polje (incl. Krapje Djol): Nature Park, Ornithological Reserve. A river floodplain, seasonally flooded woodland, marshes, meadows and fishponds. The site is important for numerous species of breeding birds and several species of staging and wintering birds. Principal human activities include forestry, fish farming, tourism and agriculture.

**Site Listed:** Delta Neretve: Mediterranean Specially Protected Area; Ornithological Reserve, Zoological Reserve, Protected Landscape Area. The delta of the Neretva River, associated salt marshes, saline lagoons, sand banks and wet meadows. The site is of considerable importance for wintering and staging birds, particularly Charadriiformes and for several species of breeding birds. Large parts of the area have been subject to drainage and agricultural development, increasing road con-

struction, urbanization and hunting.

### Category 3

## 65. Contracting Party: Botswana

### Transboundary Neighbor: Namibia/Angola

**Site Listed:** Okavango Delta System; Headwaters in Angola. Controlled Hunting Area, Game Reserve, Wildlife Management Areas. The site borders Namibia and is the only inland delta in sub-Saharan Africa. Set in a semi-arid region and subject to large fluctuations in flooded area, the site includes permanent and seasonal swamp, riverine floodplains and a seasonal freshwater lake. The floodplains form critical habitat for many species of birds and wildlife at their southern limits of distribution in the region. The diverse flora and fauna includes 1060 different plant species, 32 large mammal species, over 650 species of birds, 68 species of fish, and a highly diverse insect population, all of which include rare, endangered and endemic species. Human activities include recreation, tourism, subsistence farming, fishing, and livestock grazing.

**Discussion:** The Okavango River sustains the Namibian economy: Botswana listed the Ramsar site without consultation seeking to sustain upscale tourism development including limits on hunting/fishing/agriculture. In 1994, 3 countries collaborated and formed the Permanent Okavango River Basin Water Commission (OKACOM) to manage the river basin. Poverty issues: local communities not receiving tourism dollars from Okavango refuge (Wilson ECSP); A commission has been established with Namibia to resolve small residual disputes along the Caprivi Strip, including the Situngu marshlands along the Linyanti River. Downstream Botswana residents protest Namibia's planned construction of the Okavango hydroelectric dam at Popavalle (Popa Falls). Botswana, Namibia, Zambia, and Zimbabwe boundary convergence is not clearly defined or delimited (Global Security.org).

### Category 3, 4

## 66. Contracting Party: Costa Rica

### Transboundary Neighbor: Nicaragua

**Site Listed:** Caño Negro: Part of the International System of Protected Areas for Peace; National Wildlife Refuge. A shallow freshwater lagoon near the Nicaraguan border, surrounded by seasonally inundated marshes and woodland. Part of an important network of Nicaraguan and Costa Rican wetlands used seasonally by many species of breeding or migrating waterbirds. The site supports small numbers of the endangered stork, Jabiru mycteria, important populations of the reptile Caiman crocodilus fuscus and the fish Atractosteus tropicus. A scientific research station



is maintained.

**Site Listed:** Humedal Caribe Noreste. The wetland includes lakes, grassmarshes, wooded swamps, gullies, streams and backwaters of large rivers as well as estuarine lagoons. The wetland area is the main stopover and entrance to Costa Rica for most Neotropical migratory birds, and the eagle *Morphnus guianensis*, the second largest bird of prey, has been recorded in the area. There are also several species of salamanders thought to be endemic to the area. The area is used largely for agriculture, and cattle ranching, tourism and fishing are also important activities.

**Discussion:** There are unresolved border issues.

#### **Category 2, 4**

##### **Transboundary Neighbor: Panama**

**Site Listed:** Gandoca-Manzanillo: Wildlife Refuge. A coastal lagoon consisting of coral reefs, seagrass beds, beaches and cliffs with flooded lowland areas between. The vegetation forms an unusual association of swamp forests composed of “yolillo” *Raphia taedigera* and *Camnosperma panamensis*, *Prioria coparifera*, and some mangroves. An important area for nesting sea turtles inhabiting the Caribbean. The site supports a high diversity of species, some of which are endangered or threatened, including birds, reptiles, molluscs and fish (marine, estuarine and freshwater), crustaceans, including lobster and 32 coral species. The fishery is an important source of revenue for local inhabitants. The site is part of the Talamanca-Caribe Biological Corridor and shares a border with Panama.

#### **Category 4**

## **67. Contracting Party: United Kingdom**

##### **Transboundary Neighbor: Ireland**

**Site Listed:** Pettigoe Plateau: Area of Special Scientific Interest, Special Protection Area. Abutting the border with the Irish Republic, the site is one of the largest expanses of blanket bog in Northern Ireland. Features include numerous pool complexes, acid flushes, basin mires and ladder fens supporting characteristic bog vegetation. The site supports an important assemblage of nationally vulnerable and endangered bird species. Nationally important numbers of golden plovers *Pluvialis apricaria* breed at the site. Human activities include livestock grazing.

**Site Listed:** Upper Lough Erne: National Nature Reserve, Special Protection Area EC Directive. The site, set in a basin bordering the Republic of Ireland, is a particularly good example of a nutrient-rich lake and associated swamp, fen and wet grassland. A very large and complex freshwater system, it includes a series of islands, bays and many lakes bordered by damp pastures. Vegetation consists of reedbeds, alder and willow carr, and oak woodland. Internationally important

numbers of wintering Whooper Swan, *Cygnus cygnus*, use the site regularly. Human activities include tourism, recreation, research activities, fishing, hunting, and livestock grazing.

**Site Listed:** Carlingford Lough: Special Protection Area EC Directive, SSSI. The site includes mudflats, saltmarsh, small rocks, and shingle islands on the border with Ireland. It supports an important assemblage of vulnerable and endangered Irish Red Data Book bird species. It provides habitats for terns, including *Sterna hirundo*, *S. dougallii*, *S. paradisaea*. The site is used for recreation, fishing, marine aquaculture, and hunting.

**Site Listed:** Cuilcagh Mountain. The site is a large and relatively intact example of a blanket bog comprising an nutrient-poor lake and exhibiting a wide range of characteristic vegetation and structural features, with well-developed pool, acid flushes, and bog bursts. The bog vegetation is locally characterized by *Sphagnum* mosses but over most of the site dwarf-shrubs and graminoid species dominate. It supports *Pluvialis apricaria* and *Falco columbarius*. Human activities include grazing and nature conservation.

**Site Listed:** Lough Foyle: National Nature Reserve, Special Protection Area EC Directive. The site is composed of a large shallow lough including estuaries, extensive intertidal areas of mudflats, sandflats, saltmarsh and associated brackish ditches. It supports a diverse assemblage of waterfowl (*Limosa lapponica*, 1.6% of the population, and *Branta bernicla hrota*, 11% of the population) and internationally important (more than 29,000 birds) waterfowl. The site is used for nature conservation, gathering shellfish, and recreation.

**Site Listed:** Slieve Beagh: Area of Special Scientific Interest, National Nature Reserve. A particularly good and relatively intact example of a blanket bog, featuring occasional well developed hummock and lawn complexes, a few small localized pool complexes, as well as soakways and flushes. The vegetation is characterized by *Sphagnum* mosses, ericoid dwarf-shrubs and sedges, including amongst the peatland flora a number of rare and unusual species. Potential threats include peat-cutting, past drainage, heavy grazing, excessive burning, and afforestation in adjacent areas, but these are being addressed by means of management agreements with private owners near the site.

#### **Category 4**

### **68. Contracting Party: Slovak Republic**

#### **Transboundary Neighbor: Austria/Czech Republic**

**Site Listed:** Moravské luhy (Morava flood plains): Protected Area Landscape. A section of the Morava River that forms the border with Austria and the Czech Republic. The site, the most important section of the river's floodplain, includes trib-

utary channels, oxbow lakes, sand and gravel banks, abandoned sand and gravel pits, reedbeds, freshwater marshes, seasonal pools, wet meadows, pastures, and seasonally inundated forests. A centre of biodiversity, with 600 species of cyanophytes and algae, 880 of vascular plants, 200 species of spiders and 300 of beetles; also an important habitat for migratory bird species and a spawning ground and nursery for many natives species of fish. Part of the 'Trilateral Ramsar Platform' collaboration with Austria and the Czech and Slovak Republics and four NGOs, an initiative which won the Ramsar Wetland Conservation Award in 2002. Area extended in 2003. Part of the "Trilateral Ramsar Site Floodplains of the Morava-Dyje-Danube Confluence" Transboundary Ramsar site.

#### **Transboundary Neighbor: Austria/Hungary**

**Site Listed:** Dunajské luhy (Danube flood plains): A section of the Danube River and its floodplain along the Austrian and Hungarian borders. The site includes a network of tributaries, oxbow lakes, sand and gravel banks, floodplains, floodplain forest, reedbeds, marshes, and low-lying meadows. The floodplains represent the most valuable source of drinking water aquifers in Central Europe. The area is important for its diverse flora and fauna and especially for staging waterbirds. Human activities include forestry, recreation, and fishing.

#### **Transboundary Neighbor: Ukraine**

**Site Listed:** Latorica: Landscape Protection Area, Nature Reserve. The widest part of the Latorica River, including a well-developed network of oxbow lakes, tributaries, seasonal pools, reedbeds, marshes, wet meadows, pasture and floodplain forest. The site borders Ukraine. The area supports a rich wetland fauna of dragonflies (Odonata), amphibians, and nesting waterbirds. Human activities include fishing, hunting, forestry, livestock grazing, and haymaking. Area extended in 2003.

#### **Transboundary Neighbor: Hungary**

**Site Listed:** Poipлие: The core area of the site is the Ipel River, an important tributary of the Danube River. It is linked with the extensive wetland ecosystem of the Ipoly Valley Ramsar site in Hungary. The area is a unique complex of well-preserved wetland habitats along the middle and lower part of the river floodplain within the Pannonian biogeographical region. Marshes and seasonally flooded grasslands along the river have a high level of biodiversity. There are two fragments of floodplain forest and scattered patches of willow shrub. Important habitat for migratory birds, mammals, amphibians spiders, and dragonflies. The site is used extensively for agriculture, poultry breeding, cattle grazing, and, on a limited scale, tourism. The site was declared a Transboundary Ramsar Site with Hungary's Ipoly Valley Ramsar site on 02/02/07.

**Site Listed:** Domica: Protected Landscape Area, UNESCO Biosphere Reserve, World Heritage site. Sub-surface wetlands discovered in 1926; part of the 25km-

long Domicia-Baradla Cave System, the largest subterranean hydrological system of the plateau karst shared by Slovakia and Hungary, in the natural functioning of which it plays a substantial hydrological, biological, and ecological role. The site has special value for a large number of endemic and rare plant and animal species, especially subterranean hydrobionts. The cave system has important tourism functions, with guided tours by boat and foot, electric lighting, and a visitorscentre, and a signposted transborder nature trail surrounds the area on the surface. The cave also has very significant archeological remains of Paleolithic and Neolithic occupancy. The site was declared a Transboundary Ramsar Site with Hungary's Baradla Cave System Ramsar site on 18/01/01.

### **Transboundary Neighbor: Poland**

**Site Listed:** Wetlands of Orava Basin (Mokrade Oravskej kotliny): Important Bird Area; most of the site is situated in the Protected Landscape Area. It has a diverse mosaic of wetland communities, including riverine-forested peatland, wet peat meadows, non-forested shrub, swamp forests, fens, open bogs, and an artificial water reservoir. The site is characteristic of the Western Carpathian biogeographical province. It supports a high diversity of rare and endangered plant and animal species, especially insects (butterflies and dragonflies), amphibians, fish (37 species recorded), mammals (*Lutra lutra*, *Arvicola terrestris* and *Alces alces*), and birds, many of which use the site for breeding, overwintering and feeding. The most numerous bird species are from the Anseriformes and Charadriiformes. Rare migratory species include *Haliaeetus albicilla*, *Pandion haliaetus*, and *Limosa limosa*. The area used for recreation, fishing, hunting, agricultural production, and timber harvesting.

### **Transboundary Neighbor: Hungary/Ukraine**

**Site Listed:** Tisa River: In southeastern Slovakia, the site includes a 6 km section of the Tisa River and its floodplain contiguous with portions of the river in Hungary and Ukraine. The site includes floodplain forests and shrubs, an oxbow lake and grasslands. It is part of a larger wetland important for the recharge of aquifers in the Tisa River basin, natural control of flooding and self-purification processes, as well as for maintaining biological diversity. It supports species vulnerable at international level such as the Corn crake (*Crex crex*), Geoffroy's bat (*Myotis emarginatus*) and the Sterlet (*Acipenser ruthenus*). The upper part of the designated section has natural river bed, but the lower part was changed by human interferences in the 1880s. Within the site, human activities include regulated recreation and tourism, hunting, pasture and extensive agriculture. There is high eutrophication in the oxbow as a result of pollution from nearby intensive agricultural practices. The site was also used for fishing before February 2000 when several heavy metals pollution spills originating in Romanian mines caused damage in river ecology. A transboundary Ramsar site designated in conjunction with "Felső-Tisza (Upper Tisza)" in Hungary.

## Category 4

### 69. Contracting Party: Poland

#### Transboundary Neighbor: Russia

**Site Listed:** Lake of Seven Islands Nature Reserve (Rezerwat przyrody “Jezioro Siedmiu Wysp”): Added to the Montreux Record, 4 July 1990. Nature Reserve, Natura 2000, BirdLife IBA. The site, located on the border with the Kaliningrad region of Russia, includes a freshwater lake colonized by submerged vegetation and overgrown by reedbeds, associated marshland, meadows, woodland and moraine islands. An important inland staging site for migratory waterbirds, including geese and ducks, the site supports several species of breeding birds and rare mammals. Two northern tree species reach the southern limit of their distribution here. Human activities include forestry, as well as intensive agriculture in the surrounding areas. Threats to the site include urban and domestic effluent, nutrient-rich agricultural inflow, and vegetation encroachment into the marsh. Subject of a Ramsar Advisory Mission in 1989. Significantly extended in 2007. Removed from Montreux Record, 5 November 2007.

#### Transboundary Neighbor: Belarus

**Site Listed:** Biebrzanaki National Park (Biebrzanski Park Narodowy): National Park, Natura 2000, BirdLife IBA. The largest and most well-preserved area of low bogs and forest raised bogs in the temperate biogeographical zone. Habitats include various types of swamps, tussock communities, alder forest, and some cultivated land. The site supports an exceptional variety of birds, mammals, fish, and plants, several of which are rare, endangered or endemic. Over 80% of the entire Polish fauna of breeding birds use the site, including the largest European population of *Acrocephalus paludicola*. Human activities include agriculture, tourism, and recreation. Nearly 2,000 archaeological sites, mostly ancient settlements, can be found. Water management is of particular importance in maintaining the natural environment within the valley. The site is considered a model of traditional wetland management techniques.

#### Transboundary Neighbor: Ukraine

**Site Listed:** Poleski National Park: National Park, UNESCO Biosphere Reserve, NATURA 2000 SPA. A unique complex of shallow lakes and mires, ranging from raised bogs to transitional and calcareous mires and rare alkaline fens with vegetation indicating some features of tundra and woodland tundra in its most westernmost location, situated at the watershed between the basins of the Bug and Wieprz rivers in southeastern Poland bordering with Ukraine and part of the European Ecological Corridor of the Bug River. Forest communities vary from pine woods to alder swamps with a typical hollow-and-mound structure. The site supports a wide range of about 146 breeding bird species including very rare raptors such

as Lesser Spotted Eagle, Hen Harrier and Montagu's Harrier. The only sparsely populated area, which hosts a rich cultural heritage of traditional wooden cottages, is used for extensive agriculture, fishing and forestry. Agricultural facilities in the surrounding area are affecting the site through water pollution. Since 2002 the National Park is also forms the core zone of the West Polesie Biosphere Reserve, and it is planned to be identified as a transboundary Polish-Ukrainian Ramsar site in the future.

### **Transboundary Neighbor: Hungary**

**Site Listed:** Mures Floodplain: Natural Park, IBA. Includes the length of the River Mures downstream from Arad to the Hungarian border. It consists of a high variety of ecosystems, a mixture of meadows, periodically flooded areas mainly covered with soft and hard wood forests, arable land and pastures, and about 40 isles on the river. The forest and old riverbed ecosystems, permanently or temporarily linked with the Mures, are among few examples of this type of habitat remaining in Europe. The present landscape results from the damming of the valley and the consequent agricultural transformation; as the lower floodplain is bordered by dams and high terraces, it is subjected to all the benefits and damage caused by floods, such as drying out of habitats in years of low flow and water-logging in high floods. Disturbance is caused by overgrazing as well as poaching of fish and game resources and introduced exotic tree species, especially *Acer negundo*. The main human activities are oil and timber harvesting, together with agriculture as well as sheep and cattle grazing. Amongst the many archaeological sites is the fortified settlement "Santul Mare" dating from the Bronze Age. The Hodos-Bodrog and Bezdin monasteries are also culturally important and the objective for ecumenical tourism.

### **Transboundary Neighbor: Czech Republic**

**Site Listed:** Subalpine peatbogs in Karkonosze Mountains: National Park, UNESCO Bilateral Biosphere Reserve. Three subalpine bogs situated on mountain flats in the dwarf pine zone, along the Polish-Czech border in the Karkonosze Mountains. Situated at the European watershed dividing the Baltic Sea and North Sea basins, the area has special importance for groundwater recharge and flood control in the mountains. The vegetation is dominated of endemic dwarf pine communities with cloudberry vegetation and surrounded with spruce forest growing on hanging bogs. Most typical of the site are bog moss communities including associations resembling subarctic tundra with a combination of alpine and arctic species and association of alpine tufted common bog. Numerous hummocks and permanent pools that support a unique flora of algae form the rich relief of the area. The major threat for the bogs is trampling, littering and water pollution from tourist and recreation activities in the area. Since 1992 the site has been part of a MAB Bilateral Biosphere Reserve, and discussions are under way with Czech authorities of the Krkonoská raseliniste Ramsar site about management collaboration as a transboundary Ramsar site.

## Category 4

### 70. Contracting Party: Uruguay

#### Transboundary Neighbor: Brazil

**Site Listed:** Bañados del Este y Franja Costera: Added to the Montreux Record, 4 July 1990. Biosphere Reserve. Sharing the border with Brazil, this vast complex of coastal wetlands includes lagoons and parts of several rivers. An important wetland for locally nesting shorebirds and migratory shorebirds (17 species) which breed in the Nearctic realm and winter in Uruguay; generally supporting at least 25 species of birds. The region supports an endemic palm, various mammals, endangered plants and animals, and an economically important fishery (80 species). Human activities include agriculture (especially rice), forestry, and livestock rearing. Subject of Ramsar Advisory Missions in 1988 and 1993.

## Category 3, 4

### 71. Contracting Party: Hungary

#### Transboundary Neighbor: Croatia

**Site Listed:** Szaporca, O-Dráva meder: Nature Reserve. An oxbow lake formed by the Dráva River, supporting gallery forests, wet meadows, reedbeds, agricultural land and marshes. The site is important for numerous species of breeding waterbirds. It is also an important botanical area. Hunting and fishing are regulated.

**Site Listed:** Béda-Karapanca: Landscape Protection Area, National Park, Nature Reserve. Floodplain habitats along the southernmost part of the Danube River made up of river branches, oxbow lakes, marshland, meadows, reedbeds, and hard and softwood gallery forests. The site supports various rare, endangered or endemic plants. Various species of nesting waterbirds use the site. Human activities include fishing, forestry and hunting.

#### Transboundary Neighbor: Romania

**Site Listed:** Pusztaszer: National Park, Landscape Protection Area, Nature Conservation Area. The site is composed of artificial fishponds, marshlands, a seasonally flooded saline lake, flooded woodland, and an oxbow lake. The area is important for staging numerous species of waterbirds and supports several species of notable or endemic plants. A research station and an information centre are available, and there are several observation hides.

**Site Listed:** Biharugra Fishponds: Landscape Protection Area; National Park. Intensively used lakes near the Romanian border, supporting a characteristic steppe vegetation, wet meadows and forests. The site provides resting, breeding,

feeding and staging areas for numerous endangered and protected waterbirds and waders. The “kunhalom”, an elevated hill probably used for burial purposes 1100 years ago, is archaeologically important. Human activities include intensive fishing, cattle and sheep breeding, farming and hunting.

### **Transboundary Neighbor: Austria**

**Site Listed:** Pusztazer: National Park, Landscape Protection Area, Nature Conservation Area. The site is composed of artificial fishponds, marshlands, a seasonally flooded saline lake, flooded woodland, and an oxbow lake. The area is important for staging numerous species of waterbirds and supports several species of notable or endemic plants. A research station and an information centre are available, and there are several observation hides.

**Site Listed:** Rába valley (Rába-völgy): Landscape Park. The largest valley of Western Transdanubia, comprising the floodplains along the river Rába from the Austrian border downstream. The Rába meanders largely freely and yearly floods maintain the natural dynamic of oxbows, shifting riverbeds, and typical riverside vegetation. Typical habitat types are floodplain meadows, softwood riparian forests, willow bushes and hardwood riverside forests; the banks support rare nesting birds such as *Merops apiaster*, *Alcedo atthis* and *Riparia riparia*. The Rába holds an especially rich fish fauna, supporting populations of the threatened Zingel zingel, Zingel streber, and *Gymnocephalus schraetzer*. Negative impacts are caused by uncontrolled tourism, fishing activities, intensive forestry, and the discharge of treated sewage water pollution inflow from upstream Austria. Since 2004 a restoration plan for maintaining the water supply of the oxbows has been in preparation, which aims to improve the fish spawning possibilities and the development of bird habitats - this will assure the use of the rich fish fauna by traditional fishery in the region. These rich and dynamic natural conditions of the area also have great importance for environmental education activities.

### **Transboundary Neighbor: Slovakia**

**Site Listed:** Baradla Cave System and related wetlands: National Park, MAB Biosphere Reserve, World Heritage site. The Baradla Cave System is the Hungarian part of the 25 km long Baradla-Domica Cave System that is a typical and the largest subterranean hydrological system of the karst plateau in the territory of Hungary and Slovakia. The site is characterized by a permanent subterranean stream, ponds, rich dripstone formations, and diverse representatives of sub-surface fauna as well as rich archaeological remains. The extended underground world of the Aggtelek & Slovak Karst, of which the site is a large part, provides a habitat for more than 500 species of troglobite, troglophile and troglaxene animals including endemic species (such as *Niphargus aggtelekas*), as well as species first described from this region. The most important archaeological sites are the settlements of Bükk culture both inside and in front of the cave entrance, with charcoal drawings unique in Central Europe. The importance of the karstic springs was rec-



ognized by local people as early as the Middle Ages, particularly for milling grain and crushing ore. More than 200,000 tourists visit the site annually, for whom tours and study trails, as well as hotels and campsites, are available. The site is a part of Transboundary Ramsar Site with Slovakia's Domica Ramsar site (designated January 2001) and part of a single Caves of Aggtelek Karst and Slovak Karst World Heritage site since 1995.

**Site Listed:** Ipoly Valley: National Park. A long, flat, and narrow valley containing oxbow lakes as well as shrub and alder bogs which serve to minimize risks of flood damage. Seasonally flooded meadows are partly grazed by cattle and partly mowed, and groundwater recharge supplies drinking water to the population. The site is an important stopover for migratory waterbirds and offers habitat to a significant number of fish species, some of them endangered, though its role as an important fish spawning ground has declined. Few serious threats to the site are foreseen, though increased overgrazing and greater use of artificial fertilizers would not be welcome. Expanded recreational and eco-tourism for the Budapest region may bring benefits, and a return to traditional, sustainable fishing methods is contemplated. The site was declared as part of a Transboundary Ramsar Site with Slovakia's Poiplye Ramsar site on 02/02/07, and a unique ethnographic and cultural character binds the sites, as evidenced by the Csadó-tanya prehistoric settlement remains.

#### **Transboundary Neighbor: Slovakia/Ukraine/Romania**

**Site Listed:** Felső-Tisza (Upper Tisza): Nature Reserve, Landscape Protection Area. The site covers the entire active floodplain along a 215 km section of the river Tisza in northeastern Hungary, adjacent to the Bodrogzug Ramsar site; it meets the Ukrainian and Slovakian borders to the east and north, and the catchment is also shared with Romania. Felső-Tisza is a typical floodplain with dikes constructed in the late 19th-early 20th centuries. The natural and near-natural habitats consist of large patches of softwood (*Salicetum albae-fragilis*) and hardwood riverside forests (*Quercus-Ulmetum*), oxbow lakes, filled-in meanders with rich natural flora and fauna, extensively managed or abandoned orchards and plough-lands. The site supports many vulnerable animal species such as Corn crane, Common otter, Danube salmon, Zingel, Sterlet, and Russian sturgeon and is an important migration route notably for the fish Nase (*Chondrostoma nasus*), Barbel (*Barbus barbus*), and Sterlet (*Acipenser ruthenus*). The oxbows perform important ecological functions such as spawning, rearing, feeding, resting and staging, aquifer recharge, aquatic species "banks", and habitat connectivity. Dry periods in recent years have led to eutrophication and decreased habitat extent. Tourism, fishing, and intensification of forestry are adversely affecting the ecological character. A special program identifying the most important sites along the river has been implemented. The site is part of a Transboundary Ramsar Site designated in conjunction with "Tisa River" in the Slovak Republic.

**Discussion:** Slovakia and Hungary have renewed discussions on ways to resolve

differences over the Gabčíkovo-Nagymaros hydroelectric dam on the Danube, with possible resort again to the ICJ for final resolution. Hungary abrogated a 1977 treaty with Czechoslovakia concerning construction of the Gabčíkovo/Nagymaros project based on environmental concerns. Slovakia continues construction unilaterally, completes the dam, and diverts the Danube into a canal inside the Slovakian republic. Massive public protest and movement of military to the border ensue; issue taken to the International Court of Justice.

### **Category 2, 4**

## **72. Contracting Party: Slovenia**

### **Transboundary Neighbor: Croatia**

**Site Listed:** Secoveljske soline (Secovlje salt pans): Landscape Park; Nature Reserve. An area of tidal mudflats, salt pans, and saltmarsh supporting reedbeds and salt-resistant vegetation at the mouth of a canalized river. The site is important for various species of breeding, wintering and large numbers of staging waterbirds. Numerous nationally rare invertebrates and halophytic plants occur within the site, and the area is important for conservation education, outdoor recreation, and scientific research. Salt pans have been operated in the delta for hundreds of years and 40% of the site consists of operational salt pans.

### **Transboundary Neighbor: Italy**

**Site Listed:** Kocjanske jame (Skocjan Caves): World Heritage Site, Important Bird Area. The site is a karst underground water cave system with typical karst phenomena and features developed at the contact between permeable and impermeable rocks and in limestones. It provides habitat to numerous endemic (crustacean species, cave beetles) and endangered animal species (such as *Miniopterus schreibersi*, one of the rare bat species). The karst grassland is a breeding site for *Apus melba*, *Bubo bubo*, and *Emberiza hortulana*. Human activities include tourism, extensive agriculture, and forestry.

### **Category 4**

## **73. Contracting Party: Czech Republic**

### **Transboundary Neighbor: Serbia**

**Site Listed:** Nature Park Kopacki rit (Kopacki rit). Added to the Montreux Record, 16 June 1993. Zoological Reserve, Nature Park. Located within the floodplain at the confluence of the Danube and Drava rivers, and subject to spring flooding, the site supports extensive reedbeds and woodland and includes numerous channels, oxbow lakes, and a complex of fishponds. The site is of considerable importance for breeding various Ardeidae, as well as cormorants, storks and sea eagles; win-

tering and staging birds also frequent the site. Principal human activities include tourism, hunting and fish farming. The area is subject to increasing siltation and nutrient-enrichment. During the military conflicts in the region, serious damage resulting from deforestation for firewood was reported. Subject of a Ramsar Advisory Mission, 2005. Area significantly extended in October 2007.

### **Transboundary Neighbor: Bosnia and Herzegovina**

**Site Listed:** Lonjsko Polje & Mokro Polje (incl. Krapje Djol): Nature Park, Ornithological Reserve. A river floodplain, seasonally flooded woodland, marshes, meadows and fishponds. The site is important for numerous species of breeding birds and several species of staging and wintering birds. Principal human activities include forestry, fish farming, tourism and agriculture.

**Site Listed:** Delta Neretve: Mediterranean Specially Protected Area; Ornithological Reserve, Zoological Reserve, Protected Landscape Area. The delta of the Neretva River, associated salt marshes, saline lagoons, sand banks and wet meadows. The site is of considerable importance for wintering and staging birds, particularly Charadriiformes and for several species of breeding birds. Large parts of the area have been subject to drainage and agricultural development, increasing road construction, urbanization and hunting.

### **Category 4**

Three countries with Ramsar Transboundary Wetlands, not on Global Peace Index:

#### **1. Contracting Party: Benin**

##### **Transboundary Neighbor: Burkina Faso/Niger**

**Site Listed:** Site Ramsar du Complexe W: National Park, part of UNESCO Transboundary Biosphere Reserve. Comprises the W du Benin National Park and other protected zones, as well as the free zone between the Park and the River Niger (which is state protected and offers right of use to inhabitants). It is bordered by Burkina Faso (Arli-W-Singou complex) and Niger (W National Park). Its diversified landscape has a rugged relief and is made up of rivers, ponds, meadows and floodplains, gallery forests and savannah. It serves as reception point for surface water runoff and is important for water infiltration, recharge of groundwater, sediment trapping, and flood control and thus contributes to improving the quality of waters in the area. The site is important for tourism, environmental education and fish production, and it holds traditionally sacred sites such as the Koudou Falls. Threats to the site include poaching, illegal farming, toxic fishing methods and bush fires. A new management law for protected areas, aiming at participative management, has been elaborated and submitted to the National Assembly for adoption.

**Discussion:** Border dispute especially with Nigeria.

**Category 2, 3, 4**

## 2. Contracting Party: Lesotho

**Transboundary Neighbor: South Africa**

**Site Listed:** Lets'eng-la-Letsie. A highland wetland about 200 km southeast of the capital city Maseru, part of the Lets'eng-la-Letsie (not yet gazetted) protected area, which was designated in 2001 as a component of the Conserving Mountain Biodiversity in Southern Lesotho (CMBSL) project. It consists of a human-made lake with a mean depth of about 1 m and its associated catchment area. The main vegetation types are Afromontane and Afroalpine formations that are dominated by grasses and show high biodiversity and endemism levels. A number of vulnerable species occur among the 110 bird species recorded at this site, including the Wattled and Blue Cranes, the Lesser Kestrel and the Bald Ibis. The site is currently used as grazing land and is important for provision of grass for thatching, as a source of water, medicinal plants and wood, and for fishing. Given the free access/open property nature of the site it suffers from overstocking, overgrazing and erosion, as well as overexploitation of its natural resources. No management plan exists as yet for the Ramsar site, although there are plans, which have raised controversy, to fence off the area for the re-introduction of large mammals and development of tourism facilities. Also supplies water to South Africa (Lesotho Highlands Water Pjct).

**Category 3**

## 3. Contracting Party: Togo

**Transboundary Neighbor: Benin**

**Site Listed:** Reserve de faune de Togodo. Deciduous and semi-deciduous forest studded with ponds and swamps. The site serves as a stopover point for migratory birds and provides ideal habitat for waders and other aquatic birds.

**Category 2, 3**

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