

Introduction to the Conference

Dr. Seung-ho Lee, President, The DMZ Forum

The Korean War was one of the most tragic human mistakes, with more than three million casualties. Fifty one years after the war, the two Koreas are still divided and regarded as a source of instability for peace and security in Northeast Asia. Can the two Koreas repair that mistake for their future generations? I see the opportunity in the Korean DMZ, a buffer zone set aside for military purpose for more than half a century that has become a sanctuary for many rare plants and animals. By transforming the DMZ into a peace and nature sanctuary, the two Koreas can somewhat compensate for the tragic mistake of the war and contribute to world peace and environmental security.

In its historical and ecological significance, the peace sanctuary or “Green Belt,” in the DMZ could equal the Great Wall of China and the Pyramids of Egypt. But it also has a practical current value. The DMZ peace and nature sanctuary could provide eco-tourism and scientific study, economically benefiting both Koreas while reducing the tremendous military cost. I urge the two Koreas not to lose this historical opportunity to demonstrate to the world that Koreans love peace and environmental security for all mankind. The DMZ peace and nature sanctuary will be a stepping stone to build a proud unified motherland for future Korean generations in Korea and all over the world.

Governor Hak-Kyu Sohn, Gyeonggi Province, Republic of Korea

Welcome Address

Messages to the Conference:

Dr. Nelson Mandela, Founder and Patron, Peace Parks Foundation

Mr. Francesco Bandarin, Director, UNESCO World Heritage Centre

Allow me to begin by congratulating the DMZ Forum on its initiative to turn the DMZ into a nature reserve. This will undoubtedly contribute to promote peace and solidarity

through dialogue between North and South Korea, while conserving an area of great natural heritage value.

Internet Conference of Young People (Brief summary)

Dr. Seung-ho Lee, President of The DMZ Forum, assembled (via web-conference) seven Korean young people to get their reaction to the idea of the Conference.

These were their conclusions:

1. I didn't know of the opportunity of preserving the DMZ or that the world cared about it.
2. This is a nice surprise. We had clear air and clean water, but they're now polluted. It's sad. The DMZ may be a symbol of war but also of environmental value. I hope people of the whole world will help—and lead to unification.
3. I used to be in the military in the DMZ. I can confirm that animals are there. We should preserve it as an attraction for people around the world.
4. I appreciate the world's interest.
5. I agree—it's good to have experts from six countries talking about Korea's DMZ. People here weren't aware of the situation. We hope you will continue your interest.
6. I have read about the DMZ in nature magazines. The DMZ is a precious treasure we need to nurture.
7. I hope the Korean people will pay more attention to the DMZ.

Conference Presentations

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Transboundary Peace Parks: Lessons from Southern Africa

Professor Willem van Riet, Executive Director & Executive Vice Chairman, Peace Parks Foundation, South Africa

At the 1884 Berlin Convention, Africa was dealt like a pack of cards to the colonial powers. The national boundaries proclaimed at this time cut across tribal and clan groupings and animal migration routes, thereby fragmenting eco-systems, leading to bio-diversity being destroyed. Transfrontier conservation areas (TFCAs) or 'peace parks' are a way to 'link' those protected areas that are divided by an international boundary.

Peace Parks Foundation (PPF) was founded in 1997 with the specific mission to assist governments to facilitate the establishment of peace parks in southern Africa, support economic development, conserve biodiversity, and promote regional peace and stability. It's program is to (1) create parks, (2) train park managers, (3) train tourism managers and (4) improve transportation to the parks.

In just three years, the Peace Park Foundation has accomplished a great deal. It is strongly supported by Anton Ruppert, a South African industrialist, and Prince Bernhard of The Netherlands. For peace parks establishment, partners are important. Corporate supporters include Daimler-Chrysler. The Foundation has an 8-person office staff. It has established a Wildlife College and a Tourism College.

Achievements

Six cross-boundary peace parks are now established. There have been over a million visitors to each of the facilities. The total cost has been \$227 million. In 5-10 years, there will be 22 parks with a potential for 8 million annual visitors. A million permanent jobs will have been opened up. One potential new park involves Argentina and Chile in Patagonia.

PPF, as the advisor to the Southern African Development Community (SADC), and in consultation with SADC Member States, identified 20 potential peace parks in the SADC region. PPF has assisted in the development of six of these peace parks so far. These peace parks have the potential to attract eight million tourists per annum and create one million permanent jobs.

The IUCN has identified 169 Transfrontier conservation areas (TFCA) worldwide, involving 113 countries. PPF has advised role-players in the development of a number of these international projects.

Seven steps in the development of a TFCA

Though there is no single way in which to establish a TFCA, seven generic steps, which are key to the development process, have been identified, namely:

- Demonstration of political will and support
- Constitution of multi-lateral planning teams

- Signing of a Memorandum Of Understanding (MOU) among the parties and appointment of an international TFCA Co-coordinator
- Constitution of ministerial, technical and advisory committees
- Development and signing of an international treaty
- Formal launching of the TFCA program
- Implementation of agreed conservation and development program

Lessons learned

Elements essential for the success of TFCAs (based on PPF's experience):

- Political acceptance by all involved countries
- Recording of decisions in MOUs and International Treaties
- A clearly defined process of development
- Involvement of all relevant stakeholders in a fully consultative process
- Capacity building for communities
- Equity amongst stakeholders
- Trust, transparency and mutual respect

Creation of Transboundary Peace Parks and Lessons for World Heritage Sites

Of the 20 identified potential and existing peace parks in southern Africa, at least three include world heritage sites within their boundaries. These World Heritage Sites are:

- The Victoria Falls in the Okavango-Upper Zambezi TFCA between Angola, Botswana, Namibia, Zambia and Zimbabwe,
- The Greater St. Lucia Wetland Park in the Lubombo TFCA between Mozambique, South Africa and Swaziland; and,
- The Mapungubwe Cultural Landscape in the Limpopo-Shashe TFCA between Botswana, South Africa and Zimbabwe.

A World Heritage Site is a draw card for tourists, and the creation of peace parks in these areas will enable a greater amount of people to benefit from the tourism potential and associated economic possibilities of the site. The Mapungubwe World Heritage Site was the site of an African empire built roughly between 1030 and 1290 AD and thought to be the precursor of Great Zimbabwe. During the era of South African apartheid, the history of Black Africa stood in the shadow of White history and Mapungubwe was known to only a handful of scholars. By incorporating this site into a peace park, not only will history be put into perspective, but it will highlight the

importance of co-operation between man and man and between man and nature. Such co-operation is evident in the development of the Limpopo-Shashe TFCA, which embraces land that belongs to the state, private landowners and local communities.

The land that Botswana would commit to the proposed TFCA will encompass the Northern Tuli Game Reserve, an association of private landowners who have agreed to remove the fences that separate their properties and to jointly manage wildlife resources. The potential area that Zimbabwe would commit to the proposed TFCA is the Tuli Circle Safari Area covering an area of 41 100 hectares. There is also potential for incorporating portions of the Maramani communal land into the area of the proposed Limpopo/Shashe TFCA.

On the South African side, the land to be committed to the TFCA would comprise a complex mosaic of private land, state-owned land and national parks. [South African National Parks with the assistance of various other organizations has been involved in land purchases to create the proposed Mapungubwe National Park. This park, which will form the core area of the South African component of the TFCA, will be proclaimed on 24 September 2004.](#) Lubombo Park in Mozambique was financed with \$10 million from Germany.

Lessons learned

- Small peace parks are also feasible
- Cultural and ecological sites can be combined
- Diversity of land ownership-- state, private and communal—are feasible
- Many areas of poverty in Africa are appropriate for eco-tourism and would benefit the residents
- The South African Minister of Environmental Affairs and Tourism very much favors the parks, but convincing the police and border people is hard..

The Korean DMZ: a Perfect Example of World Heritage Nomination, Mixing Natural and Cultural Values

Dr. Alessandro Balsamo, World Heritage Centre, UNESCO, France

The World Heritage Convention was designed as an instrument to encourage the joint and common responsibility for the conservation of the world's heritage through international cooperation. There is no better evidence of this joint responsibility than in

a nomination of a site that is jointly prepared, submitted and managed by two or more countries. Then, if the two countries concerned are North Korea and South Korea), everything assumes a different value and a much more meaningful dimension.

The Demilitarized Zone (DMZ) artificially created more than 50 years ago between North and South Korea would be a perfect nomination for inscription on the World Heritage List. I underline, a perfect nomination, since we are not here to prejudge or try to steal the competences of the Advisory Bodies designated by the 1972 Convention to evaluate the proposed sites and prepare their recommendations. Much less are we talking about passing over the capacity that is only of the World Heritage Committee's: to inscribe a site on the World Heritage List.

A perfect nomination because it would correspond at the same time with those that are the fundamental principles of UNESCO and those of the World Heritage Convention. In other words, the possible transboundary nomination of the Demilitarized Zone would help promote peace through its own historical memory and promote environmental protection through those natural values that 50 years of no human intervention let grow biologically to a great extent.

So far, only the biological qualities of the DMZ have been taken into consideration for a possible nomination as World Heritage Site. However, in the terms of the World Heritage Convention, the Korean DMZ presents also potentially relevant cultural values. Therefore, it would be useful to understand in depth the reason why this site could qualify also under cultural criteria. In fact, the World Heritage List is not a travel agency catalogue that put together a series of the most beautiful places on this earth to visit. The 1972 Convention main scope is to preserve for the future generations those sites that have a special significance for the whole humanity. History teaches us that cultural and identity diversity have been used by the leading powers to justify racism, exploitation, discrimination, intolerance and hatred. Very rarely, these differences have been taken as a huge potential enhancement of our society. The World Heritage Convention plays a key role for the spreading of this concept. In fact, the finality of this Convention consists in asking its States Parties to subscribe to the notion of the universality of the culture through the respect of the specific cultures. The recognition of the differences should enhance the appreciation of the other's culture, with even more significance where these differences are the fruit of important historic moments. Among the monuments there are those that have been transmitted to us virtually intact throughout the centuries thanks to their solidity; however the majority of them have "lived" and have seen reflected upon them the changing history of the world.

This is the World Heritage: human solidarity through time as through space. Korea's DMZ may have the same significance as other places relevant for their historic memories and already inscribed on the World Heritage List not for their aesthetic or artistic values, places such as the Hiroshima Peace Memorial and the Auschwitz Concentration Camp. In this sense, it is easier to understand why a site like the Korean DMZ could qualify also under cultural criteria.

With reference to this likely nomination, we have to be realistic and flexible in our minds. When speaking of the DMZ as potential future World Heritage Site, considering the political and historical sensitiveness of the matter, we should be ready to have different options for how to get to the final goal of protecting as much as possible of this area. Thus, if the proposal for inscription of the whole area of the DMZ right from the very beginning could seem rather unrealistic, perhaps a smaller portion or a series of distinct areas would be more reasonable from a diplomatic and administrative point of view.

In this regard, one option that would take care of both aspects, the preservation of the environment and the conservation of the spiritual values linked to the tragic memory of the war, and would seem politically more practical is the hypothesis of a serial nomination. A serial nomination including two or three as large as possible areas that would cover migratory bird sanctuaries and wetlands in the western and central part of the DMZ and, on the eastern part, a mountain area plus a wide portion of the DMZ in between. This latter mountain area would be represented by the ensemble of the Mount Keumgang in North Korea and of the Mt. Soraksan Nature Reserve in South Korea. An extremely important element is that both these properties are already included in the Tentative Lists of the two countries. This means that these are potential World Heritage Sites in the assumption of both governments.

Mount Keumgang is a strikingly beautiful mountain with numerous peaks and curious rocks, waterfalls and pools formed by crystal-like clear waters flowing from hundreds of gorges, as well as with the seascape stretched along the coastline.

Located in the eastern part of the central Korean peninsula, Mt. Soraksan Nature Reserve covers an area of 163.6 square kilometres. This region includes many high peaks measuring over 1,200 meters above sea level including Taech'ongbong, the highest peak (1,708 meters).

The transboundary nomination resulting from the combination of these two

mountainous areas plus a long portion of the DMZ in between would most probably represent the best starting point for a joint collaboration between the two governments that would lead, in a second stage, to the possibility of extending the site, protection of a vaster area including the wetlands zones and the migratory bird sanctuaries on the central and western side of the DMZ.

The path that will eventually result in the joint formulation of such a project is long and difficult. Without any doubt, the major obstacle is that the dialogue between the two concerned countries is nearly non-existent. Of course, a transboundary nomination to become reality on paper should see the full and complete collaboration of the involved ministries in South Korea as well as in North Korea. For this kind of challenge the experience and the diplomatic skills of UNESCO could and should be exploited at its best. This way, the shared legacy promoted by the World Heritage Convention could function as a bridge between two populations artificially divided by a war and a 4kilometres barrier.

As all the most precious things in this world and as many other sites all around the planet, the DMZ is extremely fragile and threatened by a great number of different elements, natural or due to the extremely fast development of this particular region. Its probable outstanding universal value if not protected may disappear quite soon under the asphalt of a newly constructed route, in the shadow of an endless series of tall concrete buildings or eaten by some other engineering project.

If this nomination wishes to become reality, if both these countries full of traditions and natural beauties wish to preserve this very important piece of their history and environmentally precious site, then the dialogue should begin as soon as possible. We should not wait to gradually lose the incredible richness of this extraordinary area; it would be a great loss not just for the Koreans, but for all the humanity.

The chance to become a World Heritage of all humankind will offer the only possibility for this peculiar strip of land to be turned into something positive for the Korean people as for the rest of the world; a unifying element rather than just a 255 kilometres long barbed wire, associated with a war and the slaughter of too many lives.

UNESCO's World Heritage Convention and the Nomination Process

The World Heritage Convention

The idea of World Heritage was expressed clearly in the 1972 UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage. The purpose of the Convention is to ensure identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage of 'outstanding universal value'. At present, the Convention has been ratified by 177 States Parties. Among the 754 properties in 129 countries inscribed on the World Heritage List, there are 582 cultural, 149 natural and 23 mixed properties.

World Heritage sites are not technically 'designated' like a National Park in Africa or an Area of Outstanding Natural Beauty in the United Kingdom but are 'inscribed' on a list maintained by the United Nations Educational, Scientific and Cultural Organisation (UNESCO).

Defining World Heritage

The World Heritage List grows longer every year as new nominations are accepted by the Committee and more countries sign the Convention. Drawing up the List presents a difficult challenge: what constitutes the outstanding universal value of a cultural or natural treasure?

To be included on the World Heritage List, a property must satisfy the selection criteria adopted by the Committee. Potential World Heritage properties have to meet one or more criteria. A cultural monument could, for example, be a masterpiece of creative genius, have exerted great architectural influence, be associated with ideas or beliefs of universal significance, or it may be an outstanding example of a traditional way of life that represents a certain culture. A natural site may exemplify major stages of the earth's history, represent ongoing ecological and biological processes, contain the natural habitats of endangered animals, or it may be a scene of exceptional beauty.

When a site on the List is seriously endangered, it may be inscribed on the List of World Heritage in Danger which entitles it to special attention and international assistance.

All cultural sites have to meet criteria of authenticity and to enjoy adequate legal, contractual or traditional protection while natural sites have to meet the criteria of integrity, taken to mean physical and/or contextual and/or environmental integrity. Unsympathetic development around a site, or within a landscape, injurious to a site's intrinsic qualities, would, for example, be considered, to have

diminished its authenticity. A new motorway dividing an architectural masterpiece from its park and gardens (a “clearly-defined landscape” in terms of World Heritage cultural landscapes), would seriously damage the integrity of the property. On the other hand, a new type of field pattern laid across an historic landscape as a response to technological or tenurial change in the agriculture practiced there, thereby enabling it to continue producing traditional crops in modern economic circumstances, could be considered to be development appropriate to a 'continuing landscape' without detracting from its integrity.

Different cultures have different ideas of what is and is not 'authentic', especially in landscape. We all see different facets of a landscape and make different value judgments about their significance and indeed the significance of a landscape as a whole. Authenticity really involves both the positive and the negative: on the one hand, whether it be a landscape or a building, the presence of much of the original or early fabric in terms of design, materials and perhaps management; and on the other the absence of inappropriate intrusions, whether they be in the form of human degradation of a natural resource or poor later workmanship inside a building. Additions in a landscape or to its setting which make the experience of appreciating or using it significantly different from experiences expressed in literature, folklore or art, for example, could be regarded as detrimental to its authenticity.

BENEFITS OF RATIFICATION

Why ratify the Convention? Who proposes sites for inscription? What kind of assistance may a State Party count upon? The Convention states: "Whilst fully respecting the sovereignty of the States on whose territory the cultural and natural heritage (...) is situated, and without prejudice to property rights provided by national legislation, the States Parties to this Convention recognize that such heritage constitutes a world heritage for whose protection it is the duty of the international community as a whole to cooperate" (Article 6.1). Through international solidarity, the Convention translates the principle of collective responsibility for the protection of World Heritage into action. By signing the World Heritage Convention, a country also pledges to protect the whole of its national heritage, whether or not it is recognized as World Heritage.

UNESCO Member States contribute the equivalent of one percent or more of their annual UNESCO dues to the World Heritage Fund, while signatories to the Convention who are not UNESCO Member States make voluntary contributions.

The right to submit nominations

Only States Parties to the Convention may submit nomination proposals for sites situated on their territory. UNESCO may however help the State Party to establish a Tentative List, i.e., an inventory of cultural and natural heritage sites which may be nominated in the future, and to prepare the nomination of a site.

Public awareness

The prestige that comes from being a State Party to the Convention and having sites inscribed on the World Heritage List often serves as a catalyst to raising awareness for heritage preservation on the part of governments and citizens alike. Heightened awareness, in turn, leads to greater consideration and a general rise in the level of protection and conservation afforded to heritage properties. A State Party may receive both financial assistance and expert advice from the World Heritage Committee as support for promotional activities for the preservation of its sites as well as for developing educational materials.

International assistance

It is the State Parties' responsibility to provide adequate protection and management for their sites. In this regard, a key benefit of ratification, particularly for developing countries, is access to the World Heritage Fund. Annually, about three million US dollars is made available, mainly to Least Developed Countries and Low Income Countries, to finance technical assistance and training projects, as well as for assistance to States Parties requesting help to prepare their nomination proposals or to develop conservation projects. Emergency assistance may also be made available for urgent action to repair damage caused by human made or natural disasters. Inscription of a site on the World Heritage List may also open the way for financial assistance from a variety of sources in heritage conservation projects. In the case of sites included on the List of World Heritage in Danger, the attention, and the funds, of both the national and the international community would be focused on the conservation needs of these particularly threatened sites, with the common aim of preserving or restoring them.

International recognition

The overarching benefit of joining the World Heritage Convention is that of belonging to an international community of appreciation and concern for unique, universally significant properties that embody a world of outstanding examples of

cultural diversity and natural wealth. The States Parties to the Convention, by joining hands to protect and cherish the world's natural and cultural heritage, express a shared commitment to preserving our legacy for future generations.

Conservation of Korea's DMZ and Peace for Humanity **Ms. Cora Weiss, President, Hague Appeal for Peace**

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Let us hope that this meeting will suggest concrete moves that can lead to a reunified, peaceful, nuclear free Korean peninsula and plans to implement a magnificent protected safe space in the present DMZ, home to unusual flora and fauna, where thousands of families, too long separated, can be reunited. The Peace Sanctuary must also serve as an enormous open university for conflict prevention as well as a safe place for conflict resolution and reconciliation. It can become a model for the whole world in prevention of war and post conflict peace education. That may sound like a dream, but "Nothing happens unless first a dream," said our wonderful poet Carl Sandburg. And remember Brazil's Dom Helder Camara who said, "When we dream alone it is just a dream, but when we dream together it becomes reality."

Plans to design a Peace Sanctuary must continue, but obviously can not be fully implemented in the current atmosphere of threats, tension and the absence of a Peace Agreement. The Korean War is not over. Unsubstantiated charges of the presence of weapons of mass destruction, yet to be found, coupled with eyewitness revelations of gross human rights abuses, none of which meet the legal requirements for the use of force, nonetheless led to the invasion of Iraq. The same seems to be true of the confrontational build up with North Korea and the attendant stories, no doubt quite accurate, of egregious inhumane eyewitness human rights abuses. Rumors of the nuclear build up may well be true, but until substantiated, we may become witness to another military escalation. I hold no brief for Kim Jong Il or his tyrannical regime and oppressive policies. But the world must learn new ways, which are available, of resolving problems other than through military might. We do not resolve one inhumanity of human rights abuse with another inhumanity of the death and destruction of war when the nature and lethality of weapons are so nearly homicidal. Wade Huntley of the Hiroshima Peace Institute reminds us of President Bush's threat that the world's most dangerous regimes will not be allowed to threaten us with the world's most dangerous weapons. I imagine that a number of countries feel threatened by the sole superpower's military capacity, and North Korea, long abandoned by Soviet and Chinese troops, is confronted by 37,000 US troops backed by combat aircraft and a

“nuclear umbrella” over South Korea. (Selig Harrison, *Korean Endgame*). Remember Winston Churchill’s call for “Jaw Jaw Jaw, not War War War.” Everyone, that is, everyone except a coterie of hard liners around President Bush, is calling for dialogue, for negotiations, for reciprocal gestures. Even the blue ribbon task force of the Council on Foreign Relations is calling for immediate bi-lateral negotiations to dismantle North Korea’s nuclear program in return for US security assurances, economic assistance and normalized relations. Women, from North and South Korea and the Diaspora, met at a women’s reunification rally calling for “every effort to prevent a new war....calling for a framework for a unified society with gender equality where women would participate equally with men in every process of reunification.”

There is a remarkable petition campaign started in Australia by Friends of the Earth (nonukes@foesyd.org.au) addressed to the presidents of the US, China, Russia, South Korea, North Korea, the Prime Ministers of Japan and Australia and signed by 215 members of parliaments and non-governmental organizations urging a peaceful solution and a non-aggression pact. The highly respected former journalist and frequent visitor to Korea, Selig Harrison, calls for a public pledge not to stage a pre-emptive attack on North Korea; not to use our nuclear weapons; not to pursue a policy of regime change; to sign a peace agreement ending the war; normalizing relations; opening the way for large scale energy and food aid; and North Korea must shut down its nuclear program and have inspectors. “We can not expect North Korea to give up its nuclear options if we continue to maintain our ‘nuclear umbrella’ and assert our right to pre-emptive military strikes.” (*NY Times* 6/7/03 Q and A page B11) Bi-lateral talks will not be easy; the situation is clearly not clear; containment and deterrence have given way to crisis and the possibility of a pre-emptive strike. China’s recent suggestion that there be regional talks and parallel bi-lateral talks is creative. More recently, an impressive delegation of Members of Congress from South Korea, academics, leaders of large women’s organizations, of political parties and of the environmental movement, came to the US with a set of 10 recommendations for peace. They called for dialogue between the US and North Korea; for Washington to reveal the sources of its claims regarding North Korea’s Highly Enriched Uranium Program; for a non-aggression treaty in exchange for North Korea’s abandoning its nuclear weapons; and they made other demands on North Korea as well as on the US. It’s a thorough and reasonable position. This delegation represents a creative new start and recognizes the need to include civil society and bi-partisan cooperation to settle the crisis. These are but a few of the many examples of initiatives for reconciliation taken by many groupings of Koreans, including many in this country, and North and South Korean members of the armed forces.

The Hague Appeal for Peace endorses the concept of the new democratic diplomacy recognizing that governments alone can no longer resolve disputes but that the combination of governments, international governmental organizations like the United Nations, and civil society must all be at the table where the fate of humanity is at stake. And included among them must be women, victims, youth and teachers. Why? Because for any peace agreement to succeed, it will be the young people who will have to live with it, the women who will also be affected by it, and as I always say, no women, no peace, and teachers who will have to help students understand it. Peace education must always be a part of any peace agreement for its effective implementation. Peace education is a holistic participatory process geared to democracy that includes teaching for and about human rights, non violence, social and economic justice, gender equality, environmental sustainability, disarmament and human security. The goal is to move from a culture of violence which has defined the past century to a culture of peace which must define this new century if there is to be another century. While my imagination and passion lay with the development of the Peace Park, about which I shall speak in a moment, I realize that nothing can happen until there is a significant reduction in the present atmosphere of threat and confrontation. Toward that end, there is a very important initiative for a North East Asia Nuclear Weapons Free Zone designed by Japan's Peace Boat and Peace Depot. The Toyota Foundation has made a grant to study "Frameworks for Northeast Asia Security" and for educational activities to bring these ideas to the public.(I'm so glad I own a Toyota!) Peace Boat has organized five tours to North Korea and is well positioned to be a messenger for peace.

There are 4 nuclear weapon free zones, including the Treaty of Tlatelolco covering Latin America and the Caribbean; Rarotonga Treaty covering the South Pacific; Bangkok Treaty covering Southeast Asia, and the Pelindaba Treaty, which is not yet in force, covering Africa. 113 nations are party to these treaties which cover over 50% of the land mass of the earth. These prohibit the use or threat to use nuclear weapons within the zone and prohibit the development, testing, production, possession, etc. of nuclear weapons anywhere in the zone. Why should North Korea dump its nuclear capacity if we don't get rid of ours, and the Russians theirs, etc.? At the end of the Nuclear Proliferation Treaty (NPT) review conference on May 20, 2000, by consensus, everyone, including the nuclear weapons states agreed to "an unequivocal undertaking to accomplish the total elimination of their nuclear arsenals." The US is a signatory to Article 6 of the NPT, which carries an obligation to negotiate in good faith for nuclear disarmament.

Unfortunately, instead, plans are underway to build bunker busters with war heads 70 times more destructive than the Hiroshima bomb, and so called low yield new nuclear weapons and under the new Nuclear Posture Review to use them against any country which is believed to either have or to be developing chemical and biological weapons. What's happened to the nuclear disarmament so many millions marched for in the 60's and 80's and for which there are so many agreements? Peace Boat will be docking in NY harbor on August 8 with 700 passengers to commemorate Nagasaki Day and tour the UN. They will be bringing a statement to the UN calling for a Northeast Asia nuclear weapons free zone. And young people from conflict zones around the world will be at a concert in Central Park on Saturday August 9..

I suggest that the DMZ Forum broaden its outreach to include peace organizations from the region as well as in the US; that the Forum join in the call for a nuclear free region, for multi-lateral and bi- lateral talks, and support the common initiatives that have been taken by so many Korean and Japanese organizations. Ichthyologists and ornithologists, zoologists and ecologists alone can not protect the rare birds and flowers in the DMZ. You need a multi-disciplinary coalition of support. And we need the International Campaign to Ban Land Mines to help in the safe removal of the mines. What better place to hold talks than in the pristine, untouched, beauty of the DMZ - in a de-mined spot, of course. There is never a substitute for a site visit. Surrounded by ancient forests, endangered species of animals and plants, farmlands in their natural state, this unique nature reserve can provide the quiet environment for intelligent talk. This seems an opportune moment to mobilize world public opinion to the beauty of the DMZ, to its potential, and to the value of a peace park.

My son called to say if we didn't hurry and make the DMZ a peace park it would become an MZ. Ten or more years ago, a housewife from California took her grandchildren on a tour of Washington DC and realized that the statues they saw were all men and horses. She proposed a peace park and got her Member of Congress, George Miller, to attach a request to a bill allocating a section of Hinds Point, also a peninsula, on the Potomac River, to a Peace Garden. The bill, which passed, gave them 10 years to come up with a plan and funds to support it. Needless to say, the Democratic administration gave way to the Republican and the Parks Department rejected one gorgeous design after another, and the funds were never appropriated. But the plan was to use the space for meditation, for study groups, for quiet walks, for safe sites for conflict resolution and for children to come to study peace. Today there are 600 protected border areas in the world under the World Commission on Protected Areas, dedicated to the maintenance of bio-diversity, of natural and cultural resources, and the

promotion of peace and cooperation. Such places can bring together environmentalists, peace workers, government officials, political scientists, historians, futurists, anthropologists, foresters, park agents, land mine removers, educators and more. Lands can be divided into nature preserves, with strict non-use, general reserves with controlled use, and space for recreational and educational use. Inhabited areas, without any industry, can support agriculture without hardship to the land, and peace education can flower everywhere.

As we sit here today there is a trek taking place through the borders of Montenegro-Kosovo and Albania. A diverse group of ecologists, historians, peace educators and more are walking the zone looking at it for eco-tourism possibilities, noting the traditional plants, thinking of the possibilities of studying wars past, seeing its potential for acts of reconciliation, designing new methods of conflict prevention. This war torn Balkan region cries for de-militarization. The recent wars have left deep scars of hatred and for many unfortunately a call for of revenge. This month's trek may well produce next year's peace park.

You are no doubt familiar with the My Lai Peace Park in Vietnam, built in large measure by veterans of that terrible war. Or the Scandinavian Morokulien Peace Monument, a demilitarized zone since 1914 bridging Norway and Sweden. There is a Glacier Peace Park between Canada and the US and another between Chile and Argentina. And others.

The DMZ Peace Park has extraordinary potential. First it must be carefully de-mined. UNESCO should be asked to give it a special designation to prevent further destruction, the World Commission on Protected Areas needs to be brought in. Perhaps regional and bi-lateral negotiations would suggest that the territory be administered by a specially created UN body. It could become the world's greatest open university without walls, a safe space where a peace agreement can be negotiated and signed; a place for young people from North and South Korea to camp, to study the ecology, to engage in reconciling activities and learn how to prevent future conflicts. Families long separated can have reunions; the Hague Appeal for Peace would certainly want to hold an international conference of peace educators without spoiling a blade of grass, maybe on the railroad tracks...but the site offers such a wealth of possibilities for imaginative thinking, for creative thinking about making this wonderful terrible place we call home, a world without war.

I can see, in my crystal ball, not too many years from now, the DMZ Forum hosting an

international conference of folks from all the professions I've mentioned, and from the United Nations secretariat and its many agencies, and leading a walk through the Korean Peace Park. World public opinion would be happy to join this inspiring, possible and doable effort, and you can't make it happen without them. Let's make sure web sites are linked to yours, every list serve has news about the Peace Park, every civil society organization calling for decency, for peace, for human rights, for respect for international law, carries news of this remarkable peace park. That way we will have world public support and no nation will be able to undermine it.

Good luck. (www.haguepeace.org)

**SERIOUS CONCERNS ON SAFEGUARDING WILDLIFE AND
MIGRATORY ANIMAL & BIRD SANCTUARIES WORLDWIDE
A record on findings during my recent travels in the Americas,
Europe, Australia, Austral-Asia, East-Asia and along the Pacific Rim**

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Summary

During recent travels, I observed a distinct set of serious re-occurring problems very similar, if not identical, for all wildlife sanctuaries visited in America, Asia, Australia and Europe. The first set deals with human exterior causes affecting these wetlands and indirectly the lives of migratory as well as resident birds within and in the neighborhood of such sanctuaries.

The second set deals with viral avian disease infestation of migratory birds as both a victim and also a carrier of viral diseases from the wildlife sanctuaries via various means to domesticated bird populations such as chicken, ducks, turkey and geese. Additionally, there is an increasing concern for avian viral disease transfer to other domesticated animals such as pigs, sheep, goats, cattle and horses.

The third problem deals with the development of novel monitoring techniques for the movement of resident as well as migratory birds in and out of wildlife sanctuaries, plus that of migratory bird travel along their entire migration route from wintering via rest stops to breeding sites. These techniques also allow for simultaneous imaging of the environment within which the birds reside at any one time during the course of their life histories.

This assessment of concerns is concluded with a set of recommendations of a more general global nature, which need to be addressed by the national and international Wild Bird Societies and also by the United Nations UNESCO Program.

Introduction

Wolfgang-Martin Boerner (hereafter **WMB**) boasts of a travel-rich life and has been on the move since childhood in Oceania until today at the pre-retirement age of 67, covering all continents several times and the oceans in between. Thanks to the deep love of his parents for nature's bountiful treasures, young WMB was dragged by his parents from one botanic garden and wildlife sanctuary to the next during their many travels throughout his childhood. A deep love was so instilled in both traveling and in planning such travels that any wildlife and wild plant sanctuary along any of his travel routes was paid a visit. As a result, since early adolescence he tended to skip most social events, except for track and field sports activities, and geological as well as geo-physical explorations.

WMB got very restless and unhappy at time of prolonged sedentary episodes like schooling, and attending to classes and strict residency schedules. He was not made to be a shop-keeper or bean-counter, but rather to be on the move and wandering through this beautiful world, yet exposed to its dangers like the migratory animals and birds as well as ocean going mammals and fish are. No wonder that WMB already early in his life generated a love for migratory creatures, and especially the birds – small to large. More recently, WMB transferred into retirement as a Professor Emeritus, which means in German – his mother tongue - "*Vorruhestand*", which may best be translated into "*Winged Professor Emeritus*". Today, he finds himself with a sanction for restless explorations of the terrestrial migratory bird habitats, sanctuaries and resting sites along their dangerous migratory routes from the polar breeding grounds to their warm equatorial wintering sites.

WMB's Involvement in Wildlife and Wild Plant Conservation and Preservation

WMB has become an active member over the past several decades of various local, national and international conservation groups and participates in wild plant and wildlife as well as rock collecting preservation forums. More recently, he has also been an active member of the Wild Bird Society International, including local subsidiaries such as the North-American Audubon Society and the International Crane Foundation (<http://www.savingcranes.org>) among others. Being a restless Wanderer – among his professional colleagues considered to be a scientific nomad – it must not come as a surprise that WMB is particularly attracted to the migratory animals, especially the migratory birds. As such, he "flies with the cranes" as a dedicated Internationalist across any political

borders, which together with religious and ideological borders have become the greatest menace to flora and fauna; man included. His special interests are focused on the migratory animal and bird navigation systems, remote sensing as well as communication skills – hitherto still mostly undiscovered in spite of Karl von Frisch, Konrad Lorenz, and many other behavioral scientists.

For the past two decades WMB has been an active member of both the Friends Groups of the Federal and the State Horicon Marsh management agencies, the Horicon National Wildlife Refuge (HNWR: <http://midwest.fws.gov/Horicon/index.htm>) and the DNR of the Wisconsin State, Horicon Marsh State Wildlife Area with its Horicon Marsh International Wildlife Education Center, near the town of Horicon, WI (HMIEC: [http://www.dnr.state.wi.us/org/land/wildlife/reclands/horicon/Nathist/wild life/](http://www.dnr.state.wi.us/org/land/wildlife/reclands/horicon/Nathist/wild%20life/)). This decade-long interaction with one of America's most precious wetlands of international importance registered under the RAMSAR convention (http://www.ramsar.org/photo_wisconsin.htm), provided WMB with ample opportunities for studying and comprehending in depth the prevailing serious problems and issues confronting our international wetlands and wildlife first hand. Very special thanks are here extended to his loyal friend, the wildlife educator Bill Volkert from the HMIEC, his thought-provoking teacher on the protection of our wild birds and their endangered habitats. Similarly, the Educational Ranger, Molly Stoddard of the HNWR deserves praise for her active struggles against uncalled for intrusion of neighboring settlers into the corridor surrounding this precious marsh. The confronting problems invite a brief introduction of the Horicon Marsh to be used later on for comparison and assessment purposes.¹

The greater Horicon Marsh Ecosystem and the serious Problems confronting it

The greater Horicon Marsh ecosystem (consisting of this vast wetland and the surrounding watershed and uplands which impact it), is also such a wetland corridor within which many diverse species of resident and migratory birds resided among other wildlife ([see attached Rock River Watershed Map](#)). While the wetland basin has been restored, this once rich migratory bird and wildlife corridor of wetland and upland habitat has shrunk to a fraction of what it once was. And it will shrink even further if uncontrolled urban sprawl is allowed to further infringe on its current borders from all sides.

However, among the many ways to protect the wildlife of Horicon Marsh from human impacts may be achieved – *as a first crucial step* - by "down sizing" the traffic on 'bird-kill roads' that traverse this wetland. In particular, it is State Hwy 49, which separates the

¹ WMB Wake-up Call of 2003, December 24 (available upon request)

northern most section from the main marsh within the HNWR. But even if we succeed to progressively reduce or even shut down or re-route many of the area roads, this may not be sufficient to sustain Horicon Marsh. WMB feels that what we need to do is to create a larger buffer zone or corridor of protection to include the surrounding uplands (see attached [Horicon Marsh Area Road and Marsh Map](#)). Boundaries to be considered could reach as far along the east to County Road YY, to the North up to County Road AS, and to the West up to the main highway WI-151 to the North of WI-49 and as far West as ever possible between WI-49 and WI-33. Whether this may be accomplished by outright land purchase or binding cooperative land use agreements would need to be examined. But it needs to be understood that human encroachment, through poorly planned land use, high volume highway traffic and non-point runoff from a variety of poor land use practices threaten the future integrity of this internationally important wetland. Horicon Marsh has been designated as a “Wetland of International Importance” by the - RAMSAR Convention on Wetlands - recognized wetland ecosystem similar to so many others worldwide (http://www.ramsar.org/photo_wisconsin.htm) and has been designated as a “Globally Important Bird Area”.

This proposal may sound radical, but considering the ever increasing pressure of the cancerous sprawl of urban development and its unabated infringement on our remaining healthy wetlands, we need to strongly voice our protests – and, we need to begin here at the Horicon Marsh in Central-East Wisconsin. Among the community of concerned and dedicated international wetland preservationists, we cannot conceive of a less protective measure. In fact, together we must request that such a proposed buffer zone be implemented and integrated into the management objectives for the HNWR and DNR Horicon Marsh wetland ecosystem and that it be realized as soon as possible. But the Horicon Marsh is not the only such wetland, and worldwide almost all wildlife sanctuaries suffer from similar ever-increasing threats. The preservation of wetlands all over the world has and must become a very serious issue of concern to all of us because of the accelerating proliferation of urban sprawl and resulting human impacts, in the US and elsewhere in the developing world. Due to the continued infringement on these few remaining healthy wetlands, we need to voice our protests loudly and globally.

The Plight of the 15 remaining Crane Species: There are many wetland restoration programs currently in progress or others that need to be initiated urgently throughout the world. This wise land management is in keeping with the spirit of the Wisconsin naturalist Aldo Leopold, who had found able successors in late Dr. Ron Sauey, and his collaborator, Dr. George W. Archibald. Together, these two pioneers developed the International Crane Foundation at Baraboo, WI, where living samples of each of the

world's 15 crane species are cared for, available for public viewing and education. It was "George" who enticed a brilliant naturalist writer, Peter Matthiessen, to bring us close to these 15 crane species and open the world's eyes through his book "*The Birds of Heaven – Traveling with the Cranes*" (ISBN: 0374199442,) which deserves a cherished place in any of our private libraries. Inspired by "George", the undisputed international "*principator gruidae*" and this great travel treatise of "Peter", the leading naturalist writer of our time, WMB has initiated his own migratory flights along the paths of the cranes during the last year. This was accomplished during his tenure as a distinguished Visiting Research Professor at the Tohoku University, Center for North-East Asian Studies (TU-CNEAS) at the Kawauchi Campus in Aoba-ku of Sendai-shi, Miyagi-ken, Honshu, Japan. The very inspiring collaboration with his host, Professor Motoyuki Sato, in the beautiful cultural center of Northern Honshu, the venerable green City of Sendai, was enriched by close interactions with like-minded colleagues during various visits to other universities, space exploration and environmental research centers in Japan, Korea, Mongolia and Taiwan. Our research endeavors were concerned primarily with the advancement of remote sensing of the terrestrial environment with the aid of modern air- & space-borne sensors and its applications to the monitoring of wetlands. This work focused on sites in Northeast Asia within which migratory birds breed, migrate and rest during migration, and over-winter.

This effort included – next to many lecture programs - several ground-truth validation and field investigations to bogs, marshes and secluded lakes of remote regions in which larger migratory bird species still breed, rest during their long migratory travel or spend the winters safely and in isolation. In addition to storks, herons, swans, cormorants, ducks, geese, vultures, raptors of all sizes including eagles, we were especially concerned with crane habitats. Sites included Kushiro with its Japanese crane (*Grus japonensis*), in Izumi of Kagoshima-Ken, Kyushu (*Grus monacha*, *Grus vipio*, *Grus grus*, *Grus canadensis*, *Grus leucogeranus*) and Yashiro of Yamaguchi-Ken (*Grus vipio*) in Japan; the Daurian Steppe (*Grus monacha*, *Grus vipio*, *Anthropoides vigio*) and Onon Mountain bogs and marshes (*Grus vipio*) in Mongolia; and the DMZ separating North from South Korea (*Grus japonensis*, *Grus vipio*, *Grus grus*, *Grus canadensis*) and those of the Tsu-Shima islands between Korea and Japan (*Grus japonensis*, *Grus vipio*, *Grus grus*, *Grus canadensis*, *Grus leucogeranus*, *Grus monacha*). At all of the visited sites we were confronted with serious problems regarding the safeguarding and the rapidly dwindling survival prospects of these most venerable of all bird species – already existing with little changes for more than ten million years as so deeply researched by the German craniacs, led by Dr. Günter

Nowald at the German Crane Center in Groß Mohrdorf of Mecklenburg Vorpommern (<http://www.kraniche.de>). Many other trips ensued during the entire year with environmental research excursions to far distant migratory bird and especially crane sanctuaries in Canada, within the USA, Taiwan, Korea and Japan as well as France and Germany, which marked the initiation of my “*Winged Professorship Emeritus*” with more than eight months from home.

What concerned us most was the neglect by local county governments and up the chain to the federal levels, to several serious glaring issues regarding exterior infringement into sanctuaries and its immediate surrounding corridors. Impacts we noted included heavy truck and other high-speed traffic through or within the immediate area of wildlife sanctuaries, the intrusion into flight paths of larger migratory birds by electric power and telephone lines, the slow influx of pesticides and fertilizers into the marshlands and bogs and the heavy metal deposition within the feeding grounds in and close to the sanctuaries. At almost all of these sites we encountered the same set of serious problems, which hitherto have not been addressed in a holistic, internationally coordinated effort, which we need to spearhead via UNESCO as soon as possible in order to come up with improved management programs and preventive measures. Another serious threat on the horizon to the future preservation of these migratory bird sanctuaries is the anticipated rapid distribution of diseases carried by birds, such as various viral strands of the West Nile disease and Asian bird flu variations. These viral avian diseases may indeed be distributed by dislocating bird droppings via automobile traffic through and/or in the neighborhood of the sanctuaries, and by the migratory birds themselves. Whereas details on most of these serious findings discovered worldwide during the exhausting travels by WMB will be reported elsewhere, here the thought-provoking visits to the DMZ of early June and early November 2003 need to be recalled.

The re-generating Wildlife Sanctuary within the DMZ, the De-Militarized Zone separating North from South Korea

There are just too many wildlife sanctuaries that we visited to mention all of them and/or assess them all, and therefore WMB is focusing on one example in particular. This is the international effort of transforming the “*Korean DMZ*” into a World Peace Park, as summarized and described in the website of the DMZ-Forum: <http://www.dmzforum.org>, which WMB wishes all of you could visit and study most carefully. In fact, we would consider it appropriate for all of you who share these concerns to join us in becoming affiliated members of the DMZ Forum. With the generous support of both Professors Moon Woo-il of the Seoul National University and Professor Won Yoong-Sun of Yonsei

University, and their able graduate research assistants and our able drivers, Dr. Park Sang-Eun, SNU and Dipl.-Eng. Lee Seung-Kuk, YSU, respectively; two excursions were organized for Professor Sato and WMB in Spring of 2003 and once more during Fall of 2003 for WMB by Ms. Kim Choo-ny, Eng. Ahn Chang-Hee and Mr. Ma Yong-Un of KFEM, the Korean Federation for Environmental Movements - <http://kfem.or.kr> - to various major wetland regions along the DMZ. Without their knowledgeable volunteer assistance we never would have gained the deep insight into this new environmental sanctuary, which was developed by default. We were given a horrifying realistic introduction on how an active battlefield scenario looks like with grim-looking soldiers armed to the brim, battle-ready armored vehicles and rolling tanks of the most awesome firepower, ready to engage any time. And, towering on top of it all on both sides of the severely mined De-Militarized Zone, there was an endless chain, from the Korean East coast of the Japan Sea to the West Coast of the Yellow Sea, of heavily manned machine-gun towers. Yet by default a rich plethora of wild plants and wildlife was re-generating within this DMZ, feared by men on both sides, and because of its heavily mined densely vegetated covers, only the wild creatures could dare to exist in, and by default find a safe sanctuary protected from human intervention.

With eyes full of tears, WMB recalled his sad family experiences along the Iron Curtain separating East from West Germany – similar to WMB and his brother from all of his relatives in the former DDR - only twelve years ago. Yet, at the same time, we insisted that this now environmentally rich belt of the DMZ, plus its extended corridors of the Civilian Controlled Area: CCA, become also an “*International Environmental Peace Garden*”. This is similar to what former President Mikhail Gorbachev accomplished with the newly developing “Green Belt” - an environmental peace belt, replacing the Iron Curtain of the Cold War for Germany with the aid of his GCI (Green Cross International, 160a, rte. De Florrisant, Ch-1231 Conches, Geneva, Switzerland, Leadership: Mikhail Gorbachev, Chairman:

<http://www.greencrossinternational.net/index1.html> , The US Affiliate is GLOBAL GREEN USA, www.globalgreen.org), the NATO Alliance and the governments of re-united Germany and the European Union for which it has become a symbol of trans-European unification and integration across political boundaries.

With the aid of local ecologists and a resident ornithologist, Dr. Pae Seong-Hwan, responsible for the migratory and wild bird populations of the Yellow Sea region of the DMZ, we explored the rich environment with its annually increasing flocks of migratory birds and especially the cranes. This area also harbored other hitherto unseen rare creatures and is supporting the re-establishment of the native flora of historical Korea. As dedicated members of the DMZ Forum (<http://www.dmzforum.org>), the

Wild Bird Society International, the International Crane Foundation (<http://www.savingcranes.org>) and the Nature Conservancy International, we desire to entice former President Mikhail Gorbachev through his GCI to assist us in converting “DMZ + CCA” into another “International Environmental Peace Garden” under the UNESCO DMZ-TBR (Transboundary Biosphere Reserve) designation together with a more congenial set of governments in North (DPRK) and South (ROK) Korea, the reshaping Russian Federation and our United States of America plus the United Nations as a whole.

Summary on Lessons Learned from Excursions made through Spring of 2004

During these and many other environmental excursions – including those especially of Taiwan and Austral-Asia, WMB discovered many common roots of the serious dangers encountered in the current and future attempts of protecting and preserving the fragile wildlife and especially migratory bird sanctuaries worldwide.

Exterior devastating Impacts on Wildlife Sanctuaries Worldwide:

- urban sprawl and encroachment of human activities in terms of greedy land-poaching
- fertilizer and pesticide run-off plus heavy metal deposition in the wetlands serving as feeding grounds
- open and closed road traffic of heavy vehicles, generating oil, lubricants and heavy metal depositions in the wetlands serving as feeding grounds
- major traffic thoroughfares crossing sanctuaries including major trunk highways – like the Wisconsin State Highway 49, which separates the densely populated northernmost section from the main marsh - causing significant bird fatalities
- major traffic routes, including train and automobile, along major densely populated wildlife preserves causing additional appreciable bird fatalities
- boat travel within open marshes and illegal poaching and fishing in almost all of the RAMSAR and other wildlife preservation sites – causing long-lasting damage to wetland flora and fauna
- Human litter, and especially plastic refuse, poses a danger to wildlife and must be handled more strictly worldwide
- above-ground wires such as telephone lines, low to extremely high voltage electric power lines across and in the neighborhood of migratory bird sanctuaries: These increased fatalities, especially along roadways where scavengers may not feed as effectively may increase the spread of diseases from carcasses of killed birds.
- And finally, during the recent environmental excursions of WMB, especially in the central US of Indiana, Illinois and Wisconsin, where the epidemic West Nile viral disease is impacting our birds, and in Austral-Asia with its various avian viral strands of annually re-generating bird flu variations, these experiences give rise to other concerns. These not only affect the wild bird

and wild animal but also human populations, quite a different novel type of serious confrontation has arrived, which needs to be analyzed in greater detail.

Viral Bird Disease infestation of Wildlife Sanctuaries and its outward Dissemination

- viral avian disease infiltration into migratory bird population during migration
- viral avian disease infestation of migratory bird intermittent migration resting sites within wetlands of dense migratory as well as sedentary bird populations
- close interaction of sedentary with migratory infested bird populations
- distribution of viral avian diseases via bird droppings or according to the Ancient Greek idiom of “*dues ex machina*” – the droppings and/or crane-lever like sudden movements of “gruidae” (<http://www.kraniche.de>)
- the distribution of viral bird diseases by contact with ground-disposed bird droppings, especially on highly trafficked roads, so carrying the disease to the surrounding farmlands
- infestation of domesticated bird populations of poultry farms in the immediate vicinity of wild bird sanctuaries via agricultural vehicles, trucks and cars using roads in the vicinity or passing through densely populated migratory and also sedentary bird sanctuaries such as the dismal Wisconsin State Highway 49 passing through the northern most section of the densely populated northern Horicon Marsh
- development of correct multi-media education instead of current TV hysteria and rather misleading improper information distribution
- Until more recently the general public as well as the state and federal authorities did not give enough attention to these rising threats. With the advent of West Nile Virus in the USA affecting many resident and migratory bird species, and the Asian viral strands of the bird flu affecting a much larger set of birds, this hitherto negligent attitude has very suddenly changed. In particular the spread of these viral avian diseases through contact with bird droppings of infested birds has awakened the authorities, especially as regards the infestation of domesticated birds such as chickens, turkeys, geese and ducks of poultry farms close to the infected sanctuaries.

In Austral-Asia some local and state governments desire to implement drastic measures of closing down wildlife sanctuaries all together and as soon as ever possible by burning and by covering those scorched sanctuaries with concrete in order to make place for – as it was stated in the news media here very frequently – more profitable golf courses and outdoors sports and other recreational facilities. These widely and openly discussed counter-measures within agricultural regions of dense poultry farming are no longer proposals but such insane radical measures are on the drawing boards, and may indeed be implemented soon.

Spread of Viral Strands of the Bird Flu to other Domesticated Animals – next to Poultry

In various affected regions of Austral-Asia a great many poultry farms were forced to close down, millions of domesticated chickens including more recently also turkeys, ducks and geese were incinerated. More so, in Austral-Asia chicken and pig farms are intermingled, and in case the viral bird flu strands should intermingle with those of the pigs not to exclude sheep, goats, cattle and horses (for example in Mongolia), potent new viral flu strands affecting man could develop similar to past epidemics of various avian viral Asian flu strands. In fact, the hitherto main staple food of chicken is being replaced by the “substitute-chicken”, and classical chicken farms are being converted into huge open-air domesticated frog farms inviting various migratory raptors and other smaller sedentary birds of prey to give cause for the distribution of other viral diseases not yet identified as such.

This serious concern, not only in Austral-Asia but throughout East-Asia, is the fear that once the viral strands of bird flu contaminate other domestic animals such as pigs, sheep, goats, cattle and also horses, entirely new strands of much more potent types of viral flu that could affect humans could be generated. The question needs to be asked whether these problems of the generation of new viral strands of the flu can only occur in Austral-Asia, East and Central Asia or whether those may occur also in other remote regions. These may include the Mongolian Steppes and Siberia of Northern Asia, and/or occur in more temperate climates, as for example within the DMZ + CCA of Korea or at the Horicon Marsh in Wisconsin, and so on?

Thus, in order to assess these problems in more detail, as a next step it is essential to develop methods for determining migratory travel routes in greatest detail for the smallest to the large migratory bird populations, identify the intermittent resting and feeding places which in most cases are wetlands, and intermingling centers of sedentary with migratory bird concentrations. The relevant air-borne (blimp and drone) and also space-borne (stationary satellite) sensor and imaging techniques are currently in the process of being developed, and therefore those are being addressed next.

Tracking of Migratory Birds during Migration and Determination of Intermittent Resting and Feeding Sites, Breeding and Wintering Sites – Worldwide

Two distinct approaches need to be considered for assessing the migratory corridors within which wild birds migrate, and these ought to be merged and more rapidly developed. One is dealing with high resolution digital optical LIDAR plus microwave SAR imaging, which are both rather well developed on air-borne test-bed platforms as well as for shuttle and satellite implementation. The other method deals with either attaching radio transmitters to the body of the migratory bird or using miniature chip implants with signals received on ground, by aircraft, blimp or drones plus stationary satellites. Successful tests have been carried out.

Some of these are reported, for example in a Special Issue of *Global Environmental Research*, Vol. 4 (2), 2000, on the tracking of large migratory birds, such as stork and cranes from Japan and Southern China to Manchuria, Siberia and Mongolia. These studies demonstrated that it is possible to determine the precise travel routes, rest places, and breeding and wintering sites of larger migratory birds such as the rare Whistling Swan (*Cygnus columbianus*), the Whooper Crane (*Cygnus Cygnus*), the oriental White Stork (*Ciconia boyciana*), the close-to-extinct Siberian Crane (*Grus leucogeranus*), the Demoiselle Crane (*Anthropoides virgo*), the red-crowned crane (*Grus japonensis*), and so on.

However, in order to determine the local nature of their stop-over locations manual ground validation is required, which may in most cases not be a simple matter and require tedious expeditions into hostile terrain. Therefore, it is desirable to mate these tracking methods using attached transmitters with high precision and high resolution airborne blimp and/or drone (UAV) platforms, which can be operated at extremely high altitudes of above 20 – 30 km and at relatively slow speeds adjustable to those of the migratory birds, which is possible from space only with stationary satellites, which suffer from resolution and pretty low SNR for picking up the transponder signals of the transmitters attached to the body of the migratory birds (see, for example, J. S. Mason, J. N. Halls and H. Higuchi, *Integration of Satellite Telemetry Data and Land Cover Imagery: A study of migratory cranes in Northeast Asia*, *Transactions in GIS*, Vol. 7 (4), 505 – 528).

Indeed, there exists every good reason to anticipate that within only a few years a workable solution will be found for mating the bird tracking with the aerial imaging technique not only for large but also medium and maybe smaller sized migratory birds. This can be accomplished with the implementation of specially designed high-altitude operated blimps and/or drones. Whereas, for small birds the imaging option may require quasi stationary air-borne platforms operated at relatively lower altitudes, and implementing high resolution multi-spectral optical sensors.

In principle, most of the basic sensor technologies are in place, and now need to be packaged appropriately so that within the foreseeable future simultaneous bird tracking with high resolution imaging of the background environment should be possible. Thus, once these combined tracking plus imaging techniques are established, a powerful tool will become available for monitoring the movement not only of migratory but also sedentary birds in and out of bird sanctuaries as well as along the entire migratory routes from the wintering via the resting to the breeding sites, and vice versa.

Conclusions and Recommendations

Although the observations made on the human encroachment may not be new, the fact that the same set of serious problems confronting the safeguarding of our wildlife sanctuaries is asking for a concerted unified and well coordinated effort not only on the National but much more on the integrated International level because migratory birds soar above yet suffer from political, ethnical and religious boundaries at least as much as humans do.

More so, with the increasing threat of viral bird flu infestation not only of the migratory bird population but the almost verifiable presumption that migratory birds may become carriers of the disease and due to their robustness be able to survive, could become a severe threat for domesticated birds bred in poultry farms close to the sanctuaries. This threat all the more asks for the immediate establishment of corridors and buffer zones of several kilometer widths within which traffic especially of farming equipment must be eliminated, and any traffic through such sanctuaries must be diverted and only permitted for natural resource managers and research personnel. Any undue bird kill must be reduced – elimination of telephone and open power lines within the protecting corridors must come down. Such measures are now being established in many regions of Asia and Central Europe.

Efforts for developing proper and correct information dissemination on local and national news media need to be rapidly advanced in order to avoid grave injustice and serious damage that could be inflicted on the wild bird population locally and globally, and especially to maintaining wetlands and wildlife sanctuaries.

In order to avoid the closing or abandonment of sanctuaries - as suggested in Vietnam, Thailand, Malaysia, Cambodia and maybe the southern most provinces of the PR China - the development of improved bird tracking and simultaneous imaging of the migratory scenario will become most important for monitoring bird movements at all and any times because of the changing migratory routes caused by downsizing and elimination of wetlands worldwide, and especially in the savannahs, prairies and steppes on all major continents.

Acknowledgments: A special word of thanks is extended to the very many dedicated environmentalists, ecologists and ornithologists who provided valuable input during the extensive research and fact-finding travels as hosts and/or co-sponsors.

Progress of the Initiative for a Transboundary Biosphere Reserve in and around the DMZ and its Role in Designating the DMZ as a World Heritage Site

Ms. Suk-kyung Shim, Programme Specialist, Korean National Commission for UNESCO

The Importance of the DMZ to Rare Birds

George Archibald, Co-Founder and Chairman, International Crane Foundation, with Sooil Kim and Malcolm Coulter

Stretching 250 km across the Korean peninsula from the Yellow Sea in the west to the East Sea in the east, the 2.4 mile (4 km) wide Demilitarized Zone (DMZ) and the bordering regions within the Civilian Controlled Zone (CCZ) provide habitat for some of the world's most endangered birds.

The Korean peninsula provides habitat for both sedentary and migratory birds. Many shorebirds only visit Korea as they migrate, others like Chinese Egrets and Black-faced spoonbills come to breed in Korea in the spring and summer. Cranes and geese come to spend the winter in Korea while Woodpeckers, Jays and Magpies are sedentary. Some species like the Oriental White Stork that were once both sedentary and migratory, have lost the resident populations. The DMZ provides four major habitat types for birds; coastal rocky islands in the west, estuarine mudflats in the west, grasslands and agricultural fields in river valleys and buffer zones, and mountain forests.

Resident Birds

Crested Ibis (*Nipponia nippon*) in former times were both residents and winter migrants on the Korean peninsula. In 1974, four Crested Ibis were observed in the Panmunjon Valley of the western portion of the DMZ. Farmers from Freedom Village (a small demonstration community on the South Korean side beside Panmunjon) reported that formerly the number of Crested Ibis was greater. By 1978 their numbers declined to one survivor and then it disappeared.

In 1981 a group of seven Crested Ibis were discovered in China. Through careful protection and captive breeding there are now more than 200 in the wild and an equal number at two major captive breeding centers. Birds have been provided from China to Japan, and now more than 40 birds exist at a captive breeding center on Sato Island, where a remnant population of Ibis existed in the wild until 1981. There are plans to release captive-reared Ibis into areas of China and Japan from which the species has

been extirpated--when environmental conditions have been improved. There is an opportunity for the Government of South Korea to work with the Government of China on a reintroduction of Crested Ibis into Korea, using proven techniques.

The Oriental White Stork (*Ciconia boyciana*) also was both a resident and a winter migrant to the Korean peninsula. Approximately 3,000 survive in northern China and southeastern Russia, and several of these birds migrate to South Korea every winter. The last resident pair in South Korea nested in a tree in the village of Umseong in early 1970s. Successful captive breeding programs for these Storks have been developed in China and Japan and more recently at a special facility at the Korea National University of Education in Cheongwon. The wetlands of the DMZ and the CCZ might provide habitat for the successful reintroduction of resident Oriental White Storks to the Korean peninsula through release of captive-reared birds.

Until the 1980s, several pairs of the endangered Tristram's Woodpecker (White-bellied Black Woodpecker: *Dryocopus javensis*) nested in the Kwangneung Forest near Seoul. Perhaps from increased disturbance, habitat degradation and from inbreeding, the population failed. There are several well known and protected populations in North Korea. It has been impossible to conduct surveys in the wide expanses of forests in the DMZ. There is a possibility that Tristram's Woodpeckers survive there.

Summer Residents

Black-faced Spoonbill (*Platalea minor*) spend the winter in Chiku wetlands of Taiwan, Maipo wetlands of Hong Kong Bay, and the Red River estuary of northern Vietnam. They migrate to the Korean peninsula in spring to breed. Satellite radio transmitters on several birds demonstrated that perhaps 90 percent of adult birds among the approximately 1,200 still alive nest on remote islands within the western portion of the DMZ.

Human disturbance on most South Korean islands except the DMZ area have seriously impacted the welfare of island nesting birds by human disturbances, introduced cats and other domestic animals. The west islands of the DMZ are therefore crucial for the survival of the majority of the world's Black-faced Spoonbills. The Swinhoe's Egret (Chinese Egret: *Egretta eulophotes*) is another species of endangered birds--determined to be about 3,500 surviving birds, mostly breeding on a few western coastal islands of the Korean peninsula still undisturbed. This Egret, unlike others, requires vast expenses

of tidal-flats like those on the Korean West Coast, including the DMZ and Han River estuary.

Winter Visitors

White-naped Cranes (*Grus vipio*), Red-crowned Cranes (*Grus japonensis*) and Black Vulture (*Aegypius monachus*) migrate from northern and western Mongolia breeding grounds to spend the winter in and near the DMZ. Of the world's approximately 6,000 White-naped Cranes, as many as 1,000 spend the entire winter on the Han River Estuary and the Cheolwon Basin of the DMZ and bordering regions within the Civilian Control Zone (CCZ). They depend on sedge tubers in muddy soils in upper tidal zones of the Han River Estuary and gleaning from agricultural fields in the Cheolwon Basin.

Of the world's approximately 2,200 wild Red-crowned Cranes, 500-600 winter on or near the DMZ. Most of the Red-crowned Cranes are concentrated in the Cheolwon Basin with fewer along the valleys of the Imjijn and Sacheon rivers in the west and on tidal mudflats near Gangwha Island in the far west. The enormous Black Vulture is a bird of the grasslands of Mongolia and other regions of central Asia. Until two winter feeding stations were established in the DMZ at the Han River Estuary and in the CCZ at the Cheolwon Basin in 1999, only occasional vultures were observed in the DMZ. The provision of an abundance of carrion at the feeding stations caused a surprising concentration of as many as 1,300 Black Vultures. Satellite-radio telemetry devices placed on pre-fledged Black Vultures in Mongolia revealed that they migrated to the DMZ.

Passage Migrants

Perhaps 1,000 White-naped Cranes winter in and near the DMZ, and double that number rests for about one month on and near the DMZ in autumn and spring while in transit to and from wintering areas in Japan. Satellite-radio transmitters attached to White-naped Cranes on both their breeding grounds and wintering grounds demonstrated that they spend as many as 4-6 weeks on and near the DMZ, whereas they rest for only a few days at other spots along migration route,

Rocky Islands

Although not marked by fences and land mines, the DMZ extends into the Yellow Sea

and the East Sea. On the west side of the DMZ there are several small uninhabited rocky islands that are of great importance to birds. These islands, in order from west to east, are Sok-do (the smallest, 25 miles (40 km) from land), Yok-do (the largest.in the Han-Imjin estuary) and U-do (in the Han-Imjin estuary). They provide breeding habitat in spring and summer for a minimum of 100 pairs of the endangered Black-faced Spoonbill, the largest known breeding concentration of a species that numbers approximately 1,200 individuals. The only other known colonies are in west coastal areas of North Korea and northeast coastal China.

Although there are over 2,000 uninhabited coastal islands around South Korea, humans have had negative impacts, e.g.,introduced rats and goats, so few of them can support colonies of ground nesting birds like spoonbills. Because these three islands are in the DMZ and so are inaccessible to humans, they are the only safe place for nesting spoonbills known to South Korean researchers.

The Coastal Lands and Mudflats

The Han River flows north from central South Korea through Seoul and east of the Gimpo peninsula where it is joined by the Imjin River that partially originates in North Korea. The Han-Imjin estuary continues due west 19 miles (30 km) bordered on the south by Gimpo peninsula and Gangwha Island and on the north by North Korea. This enormous estuary supports the world's second highest tides and vast expanses of mudflats. Prior to the Korean War, the Han-Imjin estuary was a major navigation route to Seoul. Since 1953, when the Korean War ended and the DMZ was established, it has been a sanctuary for birds, especially migratory shorebirds, waterfowl and Cranes.

Eastern Curlew, Bar-tailed Godwit, Black-tailed Godwit, Greenshank, and the endangered Nordmann's Greenshank, and Spoon-billed Sandpiper, forage for invertebrates on the mudflats during their migrations. The communities of sedges at the upper tidal zone provide excellent habitat for White-naped Cranes, Bean Geese and White-fronted Geese during their autumn and spring migrations. The major population of Swan Geese that are known to be in the Korean peninsula spend the winter in the estuary in company with several hundred Ruddy Shelducks. The huge migratory flocks of shorebirds and waterfowl attract White-tailed Sea Eagles, Golden Eagles, Peregrine Falcons and Black Vultures. Throughout South Korea, mudflats have been diked to create land for agriculture, industry and other urban development. The great loss of coastal mudflats greatly increases the importance of preserving the DMZ mudflats, especially for the significant populations of White-naped Cranes and Swan Geese that

depend on them.

Inland Streams and Lowlands

Habitat for a large group of birds is provided by the Sacheon River that flows south from North Korea through the Panmunjon valley to the Imjin river, the Imjin River along the south border of the DMZ, an Imjin branch extending north through the DMZ, and a series of streams in the 6-mile (10km) wide Cheolwon Basin--with their riparian lowlands. The groups include the Crested Ibis, Oriental White Stork, Black Stork, Red-crowned Cranes, White-naped Crane, Great Bustard, Scaly-sided Merganser, Bean Geese, White-fronted Geese, Black Vultures, Goshawks and Golden and Imperial Eagles.

The riparian lowlands of the DMZ support in winter approximately 25% or 500 birds of the world population of the magnificent Red-crowned Crane, an increase from approximately 200 birds in the 1970s. No other species assumes such an important role in Korean culture. These Cranes are symbols of good luck and long life and are frequently depicted in art and legend. The flourishing and expanding population in the DMZ is a testimony to the quality of life possible for these space and solitude-demanding birds where human activity has been very limited. During several winters in the 1970s, I studied cranes on the DMZ and the nearby buffer zones in South Korea. Vivid memories remain of freezing northwest winds, hardy Korean soldiers running almost barefoot through the snow from bunkers to outdoor toilets, and magnificent cranes soaring in blue winter skies and dancing on the snow. The combination of solitude and habitat created ideal conditions for these endangered birds that formerly ranged throughout the Korean lowlands. The continued welfare of the cranes rests on this special blend of conditions in and near the DMZ.

Although most of the DMZ is mountainous and not suitable for cranes, the tidal mudflats where the DMZ meets the west coast, the valley associated with the Han, Sacheon and Imjin rivers, and the broad Cheolwon basin in the central highlands provide habitat for both Red-crowned (*Grus japonensis*) and White-naped (*Grus vipio*) Cranes. The DMZ is the southern terminus of the migration of about 500 red-crowned cranes and for several hundred White-naped cranes. For more than 3,000 other White-naped Cranes, the DMZ is an important resting area during their migration to and from southern Japan.

Mudflats

High tides and wide expanses of mudflats are characteristic of the west coast of Korea, unlike the east coast where the deep waters are bordered by steep banks. The mudflats support an abundance of small aquatic animals that provide food for a plethora of shorebirds and waterfowl. The mudflats are also easily diked, drained and developed. With habitat loss and disturbance elsewhere in the Koreas, the cranes retreated to mudflats in and near the DMZ.

Each winter about 10-12 Red-crowned Cranes forage throughout the winter on mudflats around the western and southern side of Gangwha island, an island whose northern side borders the DMZ. At low tide the Crane tend to forage in streams that cut small valleys through the mud. They also walk across the mudflats in quest of large sea worms that quickly retract into their burrows in the mud. Sometime the Cranes fly inland to feed on waste grains in harvested rice paddies and to drink in fresh water streams. One particularly cold winter, 22 Red-crowned Cranes were counted on Gangwha's mudflats suggesting that some birds had moved further south from the coastal area of North Korea.

Gangwha Island lies immediately west of the Gimpo Peninsula whose eastern side is bordered by the Han River that flows from the center of South Korea northwest and then through Seoul, a city of 10 million, The River continues due north just 12.5 miles (20 kms) to the DMZ. Cleansed twice daily by the world's second highest tides and providing an unobstructed passage from North Korea to Seoul, the Han River Estuary is crucial to both the welfare of the White-naped Cranes and the security of South Korea. At the northeast corner of the Gimpo Peninsula the waters of the Han are joined by those of the Imjin River from the east and the Sacheon River from the north. The combined flow passes east between the two Koreas to form the western portion of the DMZ bordered on the south first by the Gimpo Peninsula and then by Gangwha Island. Fences and guard posts follow both sides of the Han from Seoul to the DMZ, and an enormous floating fence traverses the Han River at the end of the Gimpo peninsula. Within this walled security zone, the White-naped Cranes find protection and excellent habitat. The Han River estuary with the world's second highest tides, provides at the upper tidal zone, sedges and other types of grasses carpeting the mud flats. At high tide in winter, the dead leaves of these grasses and sedges rise above the water. Under the mud, the predominant Sedge(*Scirpus maritimus*) survives as a fleshy tuber that sprouts a new plant in spring. These tubers are a primary food for the Cranes. A combination of the wet muddy soil that is more readily excavated than dry soils by hungry Cranes and the abundance of tubers makes the upper zones of the mudflats a bountiful foraging

area for Cranes.

During the last two weeks of October and the first week of November, 1974, I lived with Korean soldiers at an outpost on the east side of the estuary several miles south of the border of the DMZ and a few miles north of a cone-shaped mountain called, Shimhak-san that translates "Cranes Forever Mountain". During the first week of my observations, several hundred Cranes spent the day and the night on the salt marshes just north of my station. In late October, I noticed more Cranes on the west side of the estuary near the DMZ. Eventually this group, numbering more than 1,000 birds, moved to the east side. On the edges of the large flocks, several juvenile cranes, identified by their cinnamon brown back plumage and soft peep-like calls, searched for lost parents. Undoubtedly, they had become separated during the confusion as flocks joined together while migrating hundreds of miles.

Later in the winter, I returned to the estuary and was surprised to find fewer than 30 Cranes. Apparently the large flock had continued south to other wintering areas in Korea and Japan. During my stay at the Han River estuary, I observed thousands of White-fronted and Bean Geese feeding among the White-naped Cranes. Several White-tailed and Golden Eagles patrolled the estuary, and when one of these large raptors flew near the geese, the entire flock burst into the air with loud calls. In contrast, the Cranes seldom flew when an Eagle approached. They stood erect, watching the predator and seemed prepared for defense. There were also Spot-billed ducks and Mallards and many shore birds near the Crane flocks. Unfortunately, I was unable to go beyond the fences, and it was therefore difficult to identify many of the smaller birds.

Based on our recommendations to the Bureau of Cultural Properties of the South Korean Government, the salt marshes of both the east and west sides of the Han River estuary were protected as Natural Monuments. This status protected critical habitat for another Natural Monument, the White-naped Crane.

The Panmunjon Valley

The Red-crowned Cranes usually gathered in a single flock when temperatures dropped, but on mild days they dispersed as family groups and as small flocks of presumed sub-adults. Some pairs defended against the intrusion of other Cranes in their territory, small wetlands where they probed in the mud presumably for small fish and other aquatic animals. Whereas such territorial birds were intolerant of other Red-crowned Cranes, they ignored a pair of White-naped Cranes feeding in the same wetland. The

White-naped Cranes tend to eat plant material in winter and the Red-crowned eat more animal food. Apparently, they do not compete for the same resources in a given wetland.

That winter I was amazed to discover four of the rarest birds in the world, Ddaogi in Korean, Toki in Japanese, the Crested Ibis. These light pink birds have salmon-yellow flight feathers, orange-tipped beaks, orange legs and bright red faces bordered by loose elongated plumes that can be elevated when the bird displays - without a doubt one of the most beautiful creatures of East Asia. There is a sad Korean folk song about the Ddaogi, and the sound of the word in Korea mimics the plaintive call of this species that has suffered throughout its range in Japan, Korea, and China.

Crested Ibis feed on aquatic animals found in mud. In former times, when guns were absent, they thrived in rice paddies that were kept wet throughout the year. When it was discovered that snails in the rice paddies were host to a deadly disease that affected humans, the paddies were drained in winter to kill the snails. The Ibis lost its habitat. In addition, Ibis were slaughtered for plumes and food when guns were introduced. In 1974, they were reduced to fewer than a dozen birds in Japan, and it was not known if they survived in China. The discovery of four birds in the Panmunjon Valley was important. Two years later, when I returned to the area, there were only two Ibises. I proposed that permission be granted to capture these birds and take them to the Jersey Zoo in Great Britain for captive breeding. It was not until the following winter that the paperwork was in order for the capture. By then, their numbers had declined to a single bird. Despite a three-month effort to capture this Ibis in a net near one of its favorite feeding areas, I failed. We had hoped to pair it with a lone captive bird in Japan.

Although my efforts with the Crested Ibis in the DMZ failed, these activities helped stimulate conservation action in Japan and in China. In 1981, the five Japanese survivors were captured using a rocket net. Had explosives been allowed in the DMZ, I might have been successful in capturing the Ibis I was after.. That same year, seven wild birds were discovered in central China, a population that has increased to almost 200 in response to conservation efforts. Perhaps at some point, if the problems are corrected that caused the demise of the Korean population, birds can be trans-located into the Korean DMZ from China, and the population will recover.

The Cheolwon Basin

In 1976, with support from the South Korean Army, we conducted a survey of Cranes

across the entire DMZ. We discovered that most of the DMZ is hilly and forested and that there are few lowland areas for the Cranes. In the central highlands we discovered more than 100 Red-crowned Cranes in the 9.5-mile (15km) wide Cheolwon Basin. In an area where some of the heaviest fighting occurred during the Korean War, these superlative birds enlivened the frozen landscapes with their sonorous calls and visual grace.

When we discovered the Cranes, we were sitting on the peak of a cone-shaped hill named by American soldiers, Ice Cream Mountain. A freezing mist limited visibility, and what I thought were pieces of plastic on the rice fields, turned out to be Cranes. Between the Cranes and myself near the base of the hill was an excavation where mass graves of hundreds of soldiers had recently been discovered. Only a few decades had passed since those massacres. On the scene of much misfortune stood the birds that represent good fortune.

In winter, the stretch of the DMZ that crosses the Cheolwon Basin is predominantly a mixture of dull brown deciduous forest and light brown colored grasslands. Streams within the sanctity of the DMZ provide safe roosting habitat for both species of Cranes. The Cranes, however, usually fly south of the DMZ to feed. Approximately three miles south of the DMZ, a chain of hills traverses the valley in an east to west direction, thus blocking from the DMZ the villages of Cheolwon that lies south of the hills. Rich agricultural fields between the DMZ and the hills are farmed from March through October. During the November through February period, civilian use of the area is restricted, a period that conveniently coincides with the most important months for the Cranes that start to arrive in autumn and migrate north in late winter. Tons of gleanings from rice, wheat, and corn are available in the empty, frozen fields.

The Future of Cranes in Korea

As relations between the two Koreas warm and the prospects of reunification become more tangible, the fate of the Cranes and their habitats in the DMZ are increasingly uncertain. In 1996, I returned to the Han River Estuary, and was dismayed to discover a four-lane highway along the east side of the River from Seoul to the DMZ. Much of the Natural Monument has been buried. The remote bluff of land where I lived with the soldiers has been transected by the highway, and the fence that guarded the estuary was pushed west of the highway. Marshes along the Kimpo Peninsula seem to have survived for the time being, and one can only hope there is adequate food for the Cranes.

Not only did the Crested Ibis decline in the Panmunjon Valley, so did the Red-crowned Cranes. On a brief visit in 1984, I was aghast that the quaint village had been replaced with large, unattractive, modern, concrete homes with tiled roofs standing in monotonous rows along straight streets. Many of the formerly small rice paddies had been merged to form large fields for more mechanized agriculture. An important meandering stream where the Cranes fed had been transformed into a deep ditch bordered by high dikes to channel summer flooding to the Sacheon.

Today, White-naped Cranes still frequent the Panmunjon Valley. Perhaps the Red-crowned Cranes will return someday when it is safe. In recent years, the number of Red-crowned Cranes wintering in the Cheolwon Basin has increased to about 500, and the over-wintering White-naped Cranes have increased from no more than 40 in the 1970s to more than 500. Some of the increase can undoubtedly be attributed to successful reproduction and reduced mortality. Perhaps conditions in North Korea are less favorable for wintering Red-crowned Cranes so more birds are moving from traditional wintering areas in that country to the security of the DMZ and the abundance of food in the buffer zone. Sandhill Cranes in North America and Eurasian Cranes in Europe are now spending the winter much farther north than in previous decades, and perhaps the same is true for the White-naped Cranes in east Asia. Some have suggested this might be a response to global warming.

In November of 1999, when I visited the Cheolwon Basin, I was dismayed to discover that another large highway had been built leading up the valley to the very southern border of the DMZ. This proactive development is predicated upon the general assumption that it is just a matter of time before reunification happens and transportation between the north and the south becomes a reality. Small fields were being joined to other fields to make larger ones. The fields were dotted by steel buildings in which farm machinery was stored. Deadly power lines (that cranes easily collide with in poor visibility) connected the buildings to even larger feeder lines. Families and flocks of White-naped Cranes were everywhere, seemingly oblivious to the trends that, unless corrected, will soon consume their safe winter home.

During the past decade, researchers in Japan have developed remarkable techniques for studying the migrations of Cranes. A tiny radio that communicates with a satellite is placed on the back of a Crane between its wings. This technology has helped demonstrate the importance of the DMZ to White-naped Cranes that spend the winter in Japan. During their migration between wintering grounds on the island of Kyushu in

southern Japan and breeding areas in northern China and southeastern Siberia, White-naped Cranes rest at many lowland areas along a line connecting the extremes of their range. This line crosses the Korean DMZ at three locations; the Han River Estuary, the Panmunjon Valley and the Cheolwon Basin. Whereas at rest spots outside the DMZ, the Cranes stop for only a single night or a few days, many Cranes spend several weeks and perhaps more than a month in the DMZ. Short stops at other areas are perhaps influenced by disturbances from humans and by inferior habitat compared to conditions in and near the DMZ. This research demonstrated that the DMZ is the most important resting area during the migration of the White-naped Cranes.

Conclusion

As well as providing vital habitat and protection for the above-mentioned endangered birds, the DMZ provides habitat for perhaps tens of thousands of resident song birds (mostly in forests), migrant shore birds (mostly on tidal flats), and waterfowl (ducks and geese on the Han River Estuary and Cheolwon Basin).

It is ironic that birds that are the symbol of peace might suffer from peace. Now is the time to act by designating the major habitats used by important birds as permanently protected reserves for them and for people. Birds like Cranes have lived in harmony with people on the Korean peninsula since times untold. A quarter century ago, I witnessed that harmony on the rice paddies near Freedom Village. Let us hope that, as in Japan, a careful modernization will provide a place for the birds of national and global importance in the Land of the Morning Calm.

Economic Perspective on the DMZ Conservation: Approaches and Reality

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Peaceful reunification is a first priority among all national goals for both South and North Korea, though some in South Korea worry about the cost of reunification and some in North Korea about loss of their political and economic rights. Despite these hesitations, there have been reunification efforts since the 1970s by both Korean governments, resulting in more frequent exchange and expanded cooperation between them. In the past few years, two railroads and highways have been connected across the DMZ.

Reunification would pose a major threat to DMZ conservation, inviting development within the DMZ and thus destruction of biodiversity there. For example, the two rail lines through the DMZ could dramatically increase operations because rail service presents a faster and cheaper alternative to current ocean shipping. To Europe, rail freight from Europe could be delivered in 20.4 days at a cost of \$1,280 per container, compared to ocean shipping's 34 days and \$1,340-\$1,540 cost. Between North and South Korea, rail freight could deliver goods in 1-3 days at a cost of \$300 per container, compared to 13-14 days and \$1,000-\$1,100 per container by ship. The Korean Transportation Institute estimates the annual revenue increase from shifting to rail freight would be \$248.5 million.

Gangwon Province, just south of the DMZ in the east, is proposing a South-North Exchange Town and widened highways to greatly increase tourism. These possibilities appear to be economically beneficial. However, the cost in environmental assets, such as the destruction of the DMZ's biodiversity, has not been factored into the development's consideration. That is because it is difficult to calculate the economic value of environmental assets in money. We and other economists are working on ways to introduce environmental values into economic calculations. The Korean governments should postpone implementing any development plan for the DMZ until we know the real status of biodiversity of the DMZ and its value.

Here is how economists are working to factor environmental values into economic decisions. Consumers purchase a good when willingness to pay for the good (WTP) exceeds the price set for the good. Preserving the DMZ ecosystem is a "good" that people are willing to pay for. But how much are they willing to pay for this environmental "good" and how does that compare to the economic benefits of threatening the DMZ ecosystem?

Ecosystems provide actual economic benefits, e.g., preventing floods and droughts, providing raw materials for food and pharmaceuticals, saving people from famine caused by over-dependence on a single strain of food. They also have an aesthetic value—people's pleasure in seeing natural areas and wild animals--and a moral value—giving species other than the human species a chance to live. Biodiversity is the glue that holds all of nature's structure and process together. These values should be calculated not just for today's population but also for future generations.

To calculate the economic value of the DMZ ecosystem, environmental scientists

should provide a description of the services provided and how the ecosystem affects human and other organisms. Then economists can measure human preferences—how much they are willing to pay for the services and other human benefits of the current DMZ ecosystem and its intrinsic and moral value—now threatened by development.

Putting monetary value on environmental assets is difficult. There is no market in these assets through which to compete with the goods and services that might destroy the DMZ ecosystem. Science cannot provide absolutely certain descriptions of environmental consequences nor communicate them clearly to non-scientists. The moral equation of humans destroying other species remains ambiguous. Nevertheless, putting monetary values on environmental assets is important in the best way we can do it; otherwise, these assets will be ignored when economic decisions are made. This valuation may be imperfect, but some valuation is almost always better than none.

Prospective economic damage saved by ecosystems, e.g., soil erosion or flooding, can be calculated in monetary terms. The value humans place on ecosystem assets are calculated in two ways: asking them how much an environmental asset is worth—e.g., protecting the habitat of a rare crane—or watching how they spend their money—e.g., how much do they pay to visit a nature reserve or live on a street with trees compared to a street without trees.

Studies have produced calculations in dozens of countries, including the U.S., Portugal, Netherlands, Australia, the United Kingdom, Belgium, Costa Rica, Madagascar and Kenya. In many studies, it is clear that less money is spent on environmental asset protection than the public would like and that the social cost of ecosystem damage is greater than the economic benefits achieved in its damage. (An inventory of environmental valuation studies throughout the world is at <http://www.evri.ca>, provided by the Canadian government.) The U.S. National Oceanographic and Atmospheric Agency (NOAA) appointed a panel of distinguished economists who have developed guidelines for valuing natural resource damages, which was influential in court regarding the oil spill damage from the *Exxon Valdez*.

We will be continuing our research on environmental valuation toward including the monetary value of environmental assets in decisions that are being made affecting the DMZ ecosystem. Until the value of these assets is considered by decision-makers, steps that might degrade the ecosystem should be postponed.

IUCN/WCPA Experience on Trans-Boundary Protected Area

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Last month, at the annual steering committee meeting of IUCN/WCPA, the work plan of the Trans-boundary Protected Area Task Force was discussed and agreed to. The Task Force had its origin in IUCN/WCPA/CEL (CEL: Commission on Environmental Law) Parks for Peace Initiative, which examined the global experience of trans-boundary protected areas that foster peace and cooperation. It built on the experience of trans-boundary protected areas complexes around the world. In particular, the Task Force is distilling experience and lessons learned from workshops and initiatives focusing on trans-boundary situations in Australia, Central Europe, Eastern and Southern Africa and Meso-America. The Parks for Peace program developed some definitions for trans-boundary protected areas and Parks for Peace, guidelines for protected area managers, a draft Code for Trans-Boundary Protected Areas in times of peace and armed conflict, and a project proposal for exploring and supporting further work. The guidelines referred to above have been published as the 7th in the IUCN/Cardiff University Best Practice Protected Area Guidelines Series (Sandwith et al., 2004).

In parallel, there has been a growing interest in trans-boundary conservation programs, encompassing such diverse goals as more effective eco-regional biodiversity conservation, regional integration and cooperation and economic development. Many multi-lateral donors have project portfolios involving IUCN (The World Conservation Union), WCPA (World Commission on Protected Areas) trans-boundary conservation. International conservation organizations have been exploring their efficacy in achieving better landscape level conservation, and there is high-level support from many governments and regional organizations promoting coordinated regional economic development. In many parts of the world, trans-boundary conservation programs are increasingly being regarded as a new opportunity to establish, expand and improve the sustainability of protected areas (Sandwith et al., 2004).

The establishment of the De-militarized Zone and the Civilian Control Zone following the Korean War marked a great tragedy for the Korean people, but at the same time, the prevention of development in this area has created a sanctuary for wild plants and animals. The DMZ and CCZ areas are now cited as a precious area where rare flora and fauna are kept intact. The DMZ is a 4 km-wide and

250km-long strip, covering 907.3 square kilometers from coast to coast. In the far northern areas of eastern Gangwon Province, mountain ecosystems are as well preserved as those in the DMZ. Given the fact that DMZ and CCZ are the result of the division of the Korean Peninsula, there will certainly be a bumpy road ahead before the two Koreas could consider their designation as a TransBoundary Protected Area.. Recognizing that the DMZ is not the exclusive property of one side and that it is an eternal asset, which should be passed down to the coming generations, both South and North Korean overnments, international organizations, and civic groups need to jointly establish proper measures to preserve the area and put policies into practice (Ministry of Environment, Republic of Korea, 2001).

In 2001, IUCN-The World Conservation Union published a best-practice protected area guideline on “Trans-boundary Protected Areas for Peace and Cooperation,” which notes there were currently 169 complexes of internationally adjoining protected areas containing 666 individual protected areas in 113 countries. These listed sites adjoin across one or more international boundaries and have to qualify as protected areas, based on the IUCN Definition, and be assigned an IUCN management category (1-1V). Sites have to be both legally recognized by government and maintained within the UN Environmental Program-WCMC database. A second list of “potential TransBoundary Protected Area complexes” was created, which includes 69 sites with an established protected area on one side of an international boundary and a proposed protected area on the other side--without an IUCN category. IUCN best practice guidelines also listed, in Appendix 4, the UNESCO Man and Biosphere Program’s Seville +5 Recommendations for the establishment of Trans-boundary Biosphere Reserves (UNESCO, 2000). It includes a “Procedure for the establishment of a Trans-boundary Biosphere Reserve” (Sandwith, Shine, Hamilton and Sheppard, 2001).

Other literature relevant to transboundary protected areas include the following:

1. The Vth World Park Congress 2003 outcomes: including the Durban Accord , the Action Plan and the Message to the Convention on Biological Diversity
2. The COP 7 program of Work on Protected Areas of the Convention on Biological Diversity
3. Proceedings of the La Maddalena workshop on transboundary protected areas. 16-21 May 2005 ?????

All the previous mentioned efforts suggest that IUCN-WCPA will increasingly invest more manpower in the promotion of Trans-Boundary Protected Areas.

The DMZ is not on the list of proposed TBPA's, and it has not been designated by the Korean governments as a protected area, under the IUCN definition. It is obvious that the next step for our common interest is to work with the Korean governments to take action to designate this outstanding area as a national protected area.

**Table 1: Guidelines –
for transboundary cooperation in protected areas (Sandwith
et.al, 2001)**

- ✦ Identifying and promoting common values
- ✦ Involving and benefiting local people
- ✦ Obtaining and maintaining support of decision-makers
- ✦ Promoting coordinated and cooperative activities
- ✦ Achieving coordinated planning and protected area development
- ✦ Developing cooperative agreements
- ✦ Working towards funding sustainability
- ✦ Monitoring and assessing progress
- ✦ Dealing with tension or armed conflict

References:

1. Letter from DMZ Forum to Jeffrey McNeely
2. WCPA web site: WCPA Task Force on TBPA's (www.iucn.org)
3. World Bank, 2000. Trans-boundary Reserves: World Bank Implementation of the Ecosystem Approach".
4. Sandwith, T, C. Shine, L. Hamilton and D. Sheppard, 2001. Trans-boundary Protected Areas for Peace and Cooperation. Best Practice Protected Area Guidelines Series No. 7.
5. Sandwith, T. 2004. WCPA Steering Committee Meeting, 2004. Agenda and Background Document, pp. 122-133. "Proposal to establish a trans-boundary conservation theme program in the 2005-2009 WCPA/PPA Quadrennial Work Program"
6. Ministry of Environment, Republic of Korea, 2001. Green Korea. Ecosystem Preservation near the DMZ. pp.16-19.
7. Hong, Dong-Gon, 2002. Protected Area Conservation Policies of the Republic of Korea. IUCN-WCPA-EA Conference at Taipei, Taiwan.

The DMZ, World Heritage Site, and Korea's Nature Conservation **Ke Chung Kim, Ph. D. Professor and Curator, Pennsylvania State University**

Introduction

Sustainability of Korea cannot be built solely on relentless economic development without determined stewardship of environment and lands. South Korea, having achieved a vibrant economy for the last four decades--recently ranked the 12th economic power in the world--now needs to redirect it's development and inter-Korean policies and enterprises toward sustainable development and environmental security with peace. The "*Keum-Su-Gang-San*" (translation: land of embroidered rivers and mountains), a historic metaphor depicting the country of beautiful landscapes with prosperity and peace, can be rebuilt on the Korean peninsula.

Korea's Demilitarized Zone (DMZ) is the linchpin of pan-Korean nature conservation. Created to control military hostilities after the 1953 armistice, the DMZ not only separated the two Koreas, , but also re-established habitats and native biodiversity—it became a unique sanctuary for biodiversity and native wildlife, particularly those species that were already lost, endangered or threatened north and south of the DMZ. The DMZ showcases Korea's natural heritage. It is a ready-made bio-reserve, across the entire Korean peninsula, transformed into important natural resources for Korea's nature conservation and sustainable future. This historic natural heritage must remain a landmark nature and culture reserve in perpetuity, as it is an important national heritage site for Koreans everywhere.

The preservation of the DMZ is absolutely necessary for sustainable development and environmental security of Korea. It should provide the foundation for Pan-Korean cultural and spiritual advancement and peace. The DMZ, symbolizing the tragedy of the Korean War, is a sacred resting place for millions of innocent compatriots, foreign friends, and soldiers of both sides and their allies died. A nature and culture reserve would symbolize that, in dying for freedom and peace--they did not die in vain.

The DMZ corridor is not only a national heritage but also a world heritage for humanity. There is a loud call from around the world for designating Korea's DMZ corridor as a World Heritage SiteI It is an opportunity for the two Koreas to join the global conservation movement by creating a unique World Heritage Site on the peninsula. The International Conference where this paper is presented provides the first platform for embarking on this movement and charting the strategies for making the DMZ a World Heritage site.

The Demilitarized Zone (DMZ), A System of Multipurpose Nature Reserve

The Demilitarized Zone has become Korea's world renowned national heritage site for the later half of the 20th Century. The DMZ is a 2.4 mile(4-km) wide strip of beautiful land running 155 miles (250 km) across the entire Korean peninsula, created by the War and nurtured by the Armistice. It has provided a relatively stable peace as the transboundary corridor separating the two Koreas since 1953. Now it can be Korea's national monument of culture and nature, and a symbol of the 20th Century--a dichotomy of war and peace, death and life, and past and future for all the peace-loving people of Korea and the world. It can be a gateway to unification and peace for the people of the two Koreas. Therefore, Korea's DMZ must be protected and sustainably managed so that the environmental integrity of the entire ecosystems could be sustained for the future of Korea and people of the world.

The DMZ Ecosystems, Home for Stewardship of Korea's Natural Heritage

After the Armistice of the Korean War, the DMZ ecosystems rapidly revived themselves from war's devastation; its forests recovered and wild habitats rebuilt through the renewal of life in the absence of human interference. In their newly recreated habitats, endangered and rare plants and animal species have rebuilt their populations including the Asiatic black bear, leopard, Eurasian lynx, Goral sheep, and perhaps even the Amur tiger, The DMZ has become a unique sanctuary for endangered native species that no longer exist anywhere else on the Korean peninsula. A great number of species of migratory birds, including endangered species, such as the White-naped and Red-crowned cranes and the Black-faced spoonbill, have made their home in these habitats. It transformed itself into the most important *in-situ* bio-reserve for Korea's biodiversity conservation.

The DMZ corridor represents a horizontal cross-section of Korea's geological patterns and ecological and biological processes through which today's biodiversity has evolved and developed in biological communities and ecosystems. The DMZ now includes landscapes of exceptional natural beauty and aesthetic importance and exceptional natural habitats for *in-situ* conservation of biodiversity, particularly the species of special concern and outstanding universal value for science and conservation. The DMZ ecosystems and their biodiversity represent the essence of Korean culture and healthy ecosystems and landscapes. There is no place comparable to the DMZ in the Korean peninsula. Korea's DMZ represents therefore a unique historical national

heritage of both culture and nature that is important to the future of a sustainable Korean peninsula.

The DMZ's biodiversity and ecosystems are the essence of and central to pan-Korean biodiversity conservation toward building a new *Keum-Su-Gang-San*, a metaphor depicting the land of beautiful landscapes and clean environment. The DMZ can provide an ecological laboratory to study nature's resilience and revival, human ecology and ecosystem sustainability, and thus this estate owned by Korean people provides the foundation for sustainable development, cultural and spiritual advancement, and environmental security. This land must remain a landmark nature reserve in perpetuity as an important national heritage site for Koreans everywhere.

Fragile Environment yet Sustainable Economic Development

Korea's DMZ ecosystems are fragile and easily vulnerable to the impact of careless development and sprawling urbanization, as enormous pressure and threats abound from developmental and political forces in the contemporary society in South Korea. Today's problems of environmental pollution, land abuse, habitat destruction, biodiversity loss, material consumption, waste disposal, and all related human health issues are obvious and definable. However, their predictable dire consequences are usually overlooked and bypassed as "not very urgent." It is generally understood that sustainability is imperative for the future of Korea's human and economic health and yet society avoids holistic strategies to maintain it for a greater good for all of us. As economic development continues and inter-Korean activities are accelerated, South Korea needs to redefine its economic and political goals to meet the needs for sustainable prosperity and peace.

A sustainable Korea cannot be built solely on contemporary developmental policies and practices at all levels that exploit lands and damage natural habitats without due consideration for protecting the ecological integrity of Korea's ecosystems and landscapes. The future of a sustainable Korea largely depends on today's determination to maintain a high environmental quality and to establish ecologically sustainable land use. Both Koreas are seriously challenged to undertake sustainable development and environmental conservation toward building the new *Keum-Su-Gang-San* within a context of economic prosperity. Fortunately, carefully controlled eco-tourism can provide economic value without environmental destruction. Toward that end, the DMZ must be protected, preserved, and sustainably managed so that the environmental integrity of the entire corridor can be sustained and some of its preserved richness can

be replanted north and south where it has been lost.

A World Heritage Site toward Conserving the DMZ Ecosystems

Toward conserving the DMZ ecosystems there is a recent call from around the world for the designation of Korea's DMZ corridor as a UNESCO World Heritage Site . The *Convention Concerning the Protection of the World Cultural and Natural Heritage* adopted by United Nations Educational, Scientific and Cultural Organizations (UNESCO) in 1972 governs the protection and preservation of World Heritage, cultural and natural heritage sites--considered to be of outstanding value to humanity around the world.

Korea's DMZ ecosystems are a unique national and world heritage unlike any other transboundary corridors in the world. It is an opportunity for the two Koreas to join the global call for conservation by creating a unique World Heritage Site on the peninsula. This *Conference on Conservation of Korea's Demilitarized Zone (DMZ): Transforming Korea's DMZ, A World Heritage, into a Peace and Nature Sanctuary*, provides a platform for embarking on this movement and charts the strategies for the designation of Korea's DMZ as a World Heritage.

At this juncture, South Korea, as a dynamic democratic nation with a vibrant economy and a growing population, must take this challenge seriously for the future of a sustainable Korea that can continue to support the needs of over 70 million people. South Korea is already engaging North Korea for political and military reconciliation as well as economic development that should ultimately benefit all Koreans on both sides of the DMZ. The Democratic People's Republic of Korea (DPRK) and the Republic of Korea (ROK) are two independent states based on opposing political ideologies and different socio-economic systems that have shaped the people in social ideology, culture, and economic life. As a result, they have quite different worldly perspectives.

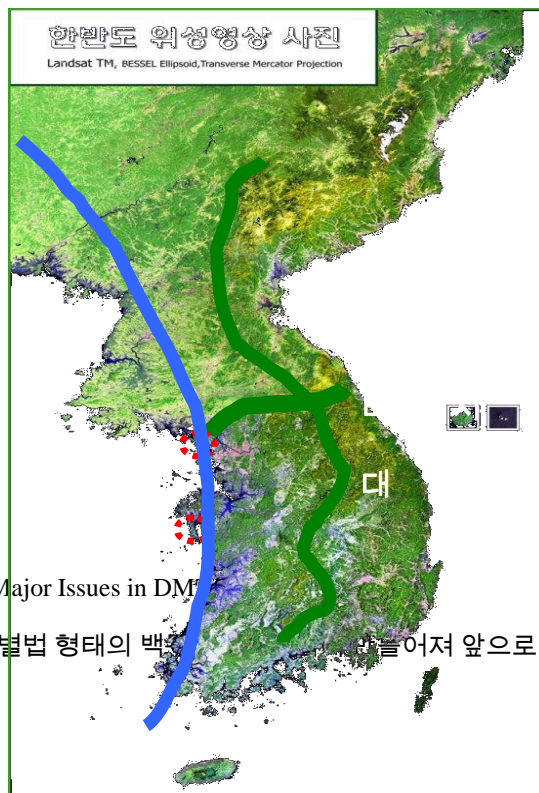
Yet, Korean people in both countries want to attain prosperity and at the same time chart the future of sustainable Korea with environmental security and peace in a systematic and orderly way together. The DMZ World Heritage Movement offers a vehicle to garner all the societal forces and the platform all Koreans can rally behind to achieve these goals.

Policy Suggestions for DMZ Protection

Dr. Yang Ju Lee, Gyeonggi Research Institute

Main Conservation Structure of Korean Landscape -- "H" Type

- 백두대간은 한민족의 상징경관이며, 민족의 Green Way 이며, National Trail , 풍부한 물과 양질의 토양을 공급
- 예를 들면, 우리는 남과 북을 “백두에서 한라까지”로 표현함
- 같은 방향으로, 서해안의 연안갯벌축은 한반도를 찾는 철새들의 낙원이며, 높은 생산성과 생물다양성으로 Prime Biodiversity Zone 임
- DMZ 은 이를 동서로 가로지르면서 이어주는 생태축으로 이들 세 가지 축이 모여 “H”자형을 이루는 한반도의 경관생태축을 구성하게 됨.



Policy Trends and Major Issues in DMZ

- 백두대간은 특별법 형태의 백두대간특별법이 만들어져 앞으로 법적으로 보

호될 전망

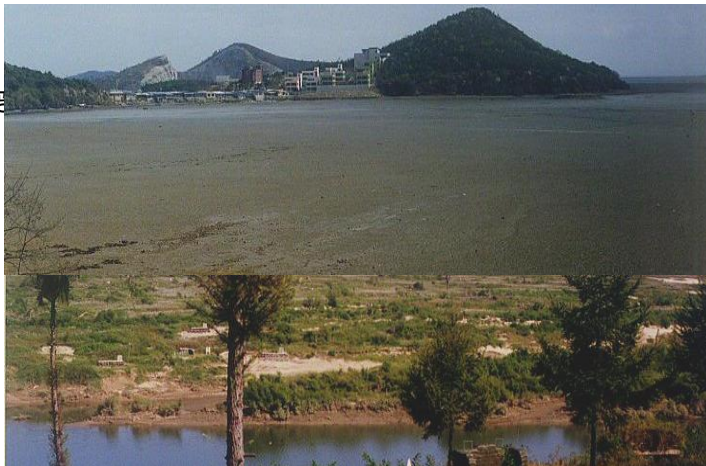
- 서해안 연안갯벌축은 그 동안 간척과 매립으로 대규모의 훌륭한 서식지들-아산, 시화, 새만금 등-이 파괴됨
- DMZ의 경우에는 사회적으로 이슈화도 되고, 높은 관심으로 많은 조사와 계획도 이루어져 왔지만, 실제적인 보호장치는 없는 실정
- DMZ보다 CCZ(Civilian Control Zone)에 생태적으로 더 중요한 서식지가 있는 경우도 있음
- 특히, CCZ는 향후 중요한 완충지역을 역할을 할 수 있어야 함
- 그 동안 실제 CCZ 선은 북쪽으로 많이 이동되었음
- 무엇보다, 접경지역지원법의 제정과 이 법을 근거로 한 접경지역지원계획으로 개발이 우려됨
- 한 가지 다행스런 것은 환경부가 자연환경보전법을 개정하여 통일이 되면, 2년간 개발할 수 없는 자연유보지역으로 지정해 놓았음

Value of DMZ as Ecological and Cultural Resources

- 희귀하거나 멸종위기에 처한 동물과 식물종이 많이 서식
- 그 중에서도 한민족의 단군신앙과 관련된 호랑이와 곰이 서식할 수 있다는 주장은 매우 중요한 민족적 의미를 가짐
- 강화연안, 김포연안, 대암산 용늪, 어룡저수지, 장단반도, 초평도 등 다양하고 중요한 습지가 있음

- 한강과 임진강 하구는 국내 최고의 보호대상습지라는 판단되며, 이는 한반도에서 유일하게 남은 하구이기 때문이기도 함(낙동강, 금강 등 국내 주요간의 하구는 이미 개발되었음)
- 임진강은 적벽(Red cliff)이라는 특이한 경관을 보여주고 있음
- 민족전쟁의 상처가 남은 국내 및 세계 최대의 역사경관
- 김포시에는 우도(Cow island)가 있는데, 홍수 시에 북한의 소가 떠밀려 내려온 사건이 있었던 곳이고, 북한과 남한의 경계선이기도 함
- 이북의 동포를 생각하는 애기봉, 통일전망대, 태풍전망대, 판문점과 같은 특수한 문화경관
- 미군의 감축과 남쪽으로의 이동으로 이들이 점유한 공간은 또 하나의 역사적 유물이 될 것임

하구의 풍경



임진강 가운데 있는 습지 초평도

아름다운

Problems

- 가장 문제가 심각하게 여겨졌음
- 장단반포 합지 일부를 도립공원으로 지정하려 했으나 합지 중의 논지와 군부 대비협조로 지정하지 못했음
- 조사가 되었다 하더라도 군사기밀이라는 이유로 공식적인 조사결과를 공개할 수 없었음
- 다양한 분야에서 다양한 조사가 이루어져 하나의 형식으로 통일시킬 수 없었음
- 지뢰가 매설되어 있어 조사경로가 정해져 있음
- 향후 토지소유권 문제가 가장 심각한 문제로 대두될 전망이다, 이는 한국의 부동산 시장의 특징이기도 함
- DMZ 만의 보호만으로는 소기의 성과를 달성할 수 없고, CCZ 를 포함해서 보호지역을 설정해야 한다는 주장이 설득력을 가짐
- 국가정책기조인 “선계획, 후개발” 원칙을 지키려면 우선 중앙정부 부처간의 협의된 정책노선이 요구됨
- 계획의 집행을 담보할 수 있는 수단의 미흡

- DMZ의 객관적인 사실은 각종 매체에 알려진 것과 다른 면이 많이 있으므로 조사보다도 홍보는 주장도 있음

Policies for DMZ Protection in Future Perspective

- 남한과 북한이 공동으로 학술조사를 실시하고, 조사된 정보를 공유하는 협정이 우선 필요
- 자연환경대해 조사와 보전만큼이나 문화자원, 문화경관 조사도 중시해야 하며, 특히 전쟁당시 찾지 못한 유골 등의 조사는 반드시 사전에 이루어져야 함
- 접근성 확보와 조사를 위한 지뢰 조사 및 제거문제도 해결되어야 함
- 조사된 자료를 토대로 환경성지도 및 문화지도 작성필요
- 남북한간의 화해 분위기가 고조된다면, 접경지역지원법으로 개발수요가 급격히 증가할 소지가 있으므로 환경친화적인 개발을 유도할 있도록 자료 조사 및 DB 구축
- 지역환경보전, 지역개발, 토지소유권 이 3 가지 문제를 같이 다루는 사전준비 계획 필요
- DMZ 내에는 그 동안 군사활동으로 사실상 훼손된 지역도 많으므로 복원계획도 일부 필요
- 정부가 아닌 시민단체가 참여할 수 있는 수단의 마련
- 시민단체가 참여하기 위해서는 세계의 보전기구와 다양한 NGO 들의 지원도 필요

- 세계의 보전기구들의 지원 및 참여
- 현재로서는 가장 절실한 것이 관련된 각 중앙부처, 경기도, 강원도 등 정부기관만이라도 해야 할 역할을 주고 역할 분담하는 것이 급선무
- 생물다양성과 근대사전쟁경관 즉 자연과 문화 두 측면을 동시에 고려하여 국제적인 관심을 유도해야 할 것임
- 정보 공개에 대해서는 국방부와 안기부 등과의 사전협약이 가장 어려울 것으로 예상되므로 이에 대한 준비

Stakeholder - Networking

- 가장 기본적인 것이 중앙정부 기관인 국방부, 통일부, 환경부, 문화관광부, 외교통상부 서로간의 네트워크임
- 다음으로 경기도와 강원도가 참여할 수 있는 체계를 갖추는 것임
- 현재 시민단체와 정부간에는 어느 정도의 불신이 있으므로, 정부 주도로 갈 것인지, 시민단체 주도로 갈 것인지, 역할 분담을 할 것인지가 중요
- 만약 역할분담을 하게 된다면 이를 한국 스스로 하기에는 사실상 한계가 있으므로 DMZ Forum 에서 권고가 필요
- 결국, 국제적 Network, 국내 정부간 Network, 시민단체들 간의 Network 가 우선적으로 되어야 하며,
- 이들 3 개의 Network 가 또 Network 를 구축해야 함

Project Suggestions

- 국가는 휴전선 155 마일을 National Nature Trail 로 지정. 그 이유는 현재의 철책선은 대한민국의 젊은이들이 지난 50 년간 손수 만든 길이며, 감시장비와 관찰소가 적재적소에 배치되어 있어 세계 최고의 자연탐방시설이 될 수 있으며, 독자성도 매우 높음
- 환경부는 한강하구를 국가생태계보전지역으로 지정
- 환경부는 생태등급도를 작성하여 생태계 관리 및 개발을 적합하게 유도
- 남북공동학술조사는 DMZ Forum 를 통해 진행
- 경기도는 장단반도를 Local Nature Park 로 지정
- DMZ 의 토지의 매입은 다양한 재원을 통해 하되, 일단은 한국녹색문화재단(산림청), Seoul Green Trust(서울), 경기녹지재단(경기도) 등 녹화재단을 통한 것이 유리. 이는 북한산의 민둥산을 녹화하는 차원에서 공감대를 얻을 수 있기 때문
- 또한 정부가 북한과의 협력사업을 추진하는 데는 한계가 있으므로 가칭 “Korea DMZ Trust” 창설하여 모금운동을 전개하고 연락사무소 역할 수행
- “DMZ 내 땅 한 평 사기” 전 국민운동 전개
- 각종 자원 시도 : 대기업의 출연, 개발이익환수금을 요청, 다양한 국내재단, 지방자치단체의 환경보전기금 등

Audience-Speaker Interchange:

July 15:

George Archibald: East Germany saved open space before unification, knowing there would be a push for development after. It would be appropriate for N.K. to do that now.

Kosima Weber Liu: We have to make a land-use plan for all of N.K. Wolfgang Boerner: No. We should concentrate on the area around the DMZ. Kosima: We would waste time if we focus on the DMZ. Willem Van Riet: Use the DMZ to extend north and south. George: Can South Korea help in N.K.? Kosima: Not always easy. NGO representatives from NK couldn't travel to SK. Maybe with another president in the U.S. it can happen. But there may be other ways to help N.K. Work through NGOs and the UN—China, Mongolia—any country but S.K and U.S. Shin Wang: China can be a mediator. I'll propose it. Wolfgang: Invite Gorbachev to Korea. His Iron Curtain line proposal came late, and 30% was lost, but the idea is valid here. Professor ????: We know N.K. is devastated. Fertilizer is being sent, and it creates problems. Kosima: Yes—in China's ??? River, there are gold mine tailings and trash, but 70% of the pollution is from fertilizers and pesticides. They have a biotech center to find out the best way to grow food. But large areas of N.K. are too poor to use fertilizers and pesticides, which gives them a chance to farm better. People are pursuing organic farming, but they need information. ????: We need a regional approach to DMZ preservation with China and Mongolia, NK and SK. UNEP started to build a coalition in 2001, but NK couldn't participate. SK and NK NGOs couldn't meet. So the effort was derailed by NK. NGOs in SK can't tell the government not to send fertilizer to NK. We'd be misunderstood as not wanting to help NK. Similarly, we can't oppose nuclear plants for NK, even though we understand the environmental damage. We have NGOs in SK and information centers. Tell us how they can help NK. Kosima: Educate NK to ask for alternatives. They need to know what's possible. Send books to me in China and we'll get them to NK. We can meet NK people in China. Use our organization, the Environmental Education Media Project. Wolfgang: Germany also seems to have good relations with NK. ????: I work for a foundation concerned with NK. South Korea's problem is it produces too much fertilizer. Kosima: NK has a lack of training and information about environmental matters. They're not prepared to introduce machinery. There is no air quality measurement; they don't know air quality standards. The country will be a dump. People are aware and are asking for help and monitoring equipment. Man??: We are looking for a way to work with NK on training in environment. When can we do that? Kosima: It's hard at the ministerial level. I've been to many international meetings. Start to build lower level contacts. There is some exchange. Man??: We've been involved with a project in NK. Their strict guidelines create lots of problems. Some N. Koreans have visited SK. We've discussed how to have a dialogue. They participated in discussions about the Silk Road. But the economy is their main problem, so maybe they wouldn't go a conference on the

environment. Overcoming poverty was China's #1 problem in the past; it's the same now in NK. Focus on the economy. Next year there will be a conference in the Gangwon Province. Maybe NK will participate. Man??: The DMZ is protected until unification. Unification is our most important problem. Kosima: The DMZ is an emotional issue, but we must be rational—concerned about the future. Our goal should be sustainable development not preservation. Better technology can help.

July 16:

Gill-Chin Lim, Co-President of KFEM, (MSU Endowed Professor, Michigan State University), I congratulate the organizers of the conference. Implementing the ideas presented in this conference will require a substantial amount of time and money. Therefore, I suggest that the DMZ Forum prepare a **Long-term Strategic Plan**. The strategic plan must contain, among other things, a solid and feasible **Financial Plan** which has details on securing funding for projects for a peaceful and ecologically sound use of DMZ. One concrete idea I propose is creating a company or foundation, the membership of which consists of South Korea, North Korea, China, Japan, USA, Russia, European countries and other nations. The new entity could take a form of **Global Ecological Research and Education Center, or Global Peace and Ecology Village**. The UN could play an important role in attracting as many members as possible. The member nations will have the privilege of participating in various research, education and cultural activities organized by the proposed entity. They will also share any benefit derived from the activities of the newly created entity.

K.C. Kim: Environmental protection must be built into all fund proposals. Wolfgang: Consider what we can learn from Gorbachev's green corridor iron curtain line. Invite groups to contribute as shareholders. Willem Van Riet: Three things are needed: 1. GIS data base. There are data; we need one group responsible for collecting them. 2. A broad area definition—the CCZ as well as the DMZ. 3. A mapping agency. The Peace Parks Foundation will work with you. K.C.: We need an international coalition for research and surveying. George: We need a GIS study and an analysis of land ownership. Finding owners may be complicated, but they will appear. Kosima: There is some research, but we need to centralize the data through an inclusive task force. We need a financial trust on a grand scale. We need to educate a broad public. People must understand it's a matter of survival. Alessandro Balsamo: Focus on a World Heritage nomination. We must start in the right way, not two state parks. Je-Nam Kim, Secretary-General, Green Korea United: We must publicize the importance of the DMZ and World Heritage status. People are somewhat informed, but NK can't be concerned

about it right now. Money will help persuade NK, and UNESCO will be important in persuading NK. There are windows for dialogue with NK. Korean Crane Research Center person: I've done research for 10 years on the DMZ. There's a lot of research but no central organization to coordinate it. Someone must take the initiative. The international community is interested. Different levels must have different roles. Include neutral working-level people from the provincial governments. We need action—local, national, international. We must work in SK. The DMZ Forum should coordinate the work. The marine areas and islands are important. Dr. Bae Sung Hwan. title: I have five years of data. The Ministry of Environment and media have pictures, but they haven't shared them. We've wasted money because we don't share data. Compiling a data base is a high priority. There are satellite and GIS operations but no sharing. We need community level activities; locals must understand the DMZ's value. Public participation is essential. The NGOs here should get together with the DMZ Forum. NGOs are not cooperating. There are power struggles. Domestic NGOs must agree. Set priorities. K.C.: A coordinating committee is needed, meeting soon. Willem: We need a fulltime staff. The Peace Parks Foundation will support you. We'll put someone on staff for six months to get you started. Cultural assets man: There are castles and palaces from earlier dynasties. We've identified many species. Small islands are already protected. More action is needed. Unfortunately, we couldn't contact the DMZ Forum before the Conference. We should have had conversations before the Conference. NGOs have a role, but government agencies should be included. We've had a major failure in Cheorwon—lots of discussions but residents opposed. We should enhance public awareness; we can't just announce policies. Sung-Kyo Oh: NGOs should know that the government has plans for protection and development, and they are proceeding with development before protection. We must control development. We must provide conditions for conservation that the locals will accept. Government should do that. Kosima: We need an eco-design for the whole peninsula, including NK. Show NK it can work, i.e., that SK has protected important areas. Start with training in NK—train scientists on how to build a data base and GIS. NK people are ready. Quick! We can combine development and conservation in eco-industrial parks. An eco-design plan should be done right away. Dr. Mee Young Song from Gyeonggi Research Institute: Include the CCZ in preserving the DMZ. Boundaries must be clear. If the Gyeonggi governor is so interested, you will have the Province's support. They perhaps could bring a specific proposal to the central government. Dealing with NK is a long-term issue, but we need to deal with South Korea right now. Why was there no representative of the ROK at the Conference? Kim, Choony, International Secretary, KFEM: We need national, international and local support, but Mr. Oh said to start with local residents. Ministries have different positions on the

DMZ so they all should be brought together. Preserving the DMZ should be introduced in two-party talks. The South Korea is not willing to share information. We should ask for information and we NGOs should share information ourselves. Environmental Justice man: NK process is different—the channel to them is important. NGOs can work with NK groups. Some SK NGOs are helping NK already and have contacts with them. K.C.: Can we meet Monday or Tuesday to plan coordination? Form a committee, keep the momentum?

That meeting was held on July 19, summarized below.

Meeting to Form a DMZ Coordinating Committee, July 19, 2004

Meeting Objective

To determine the key tasks necessary to begin the UNESCO World Heritage Site (WHS) process and to discuss in more detail specific action items for this process that were developed during the DMZ transboundary conference in Seoul on July 15 - 16, 2004 (please see attachment #2).

Agenda

- Introductions
- Action item list discussion
- Formation of steering committee
- Formation of task forces to conduct the actual work of the committee

Meeting Attendees

<u>Attendee</u>	<u>Affiliation- Korean Organizations</u>	<u>Email Address</u>
Chung, Hong Ke	The Green Movement of Korea	Hongkey1237@hanmail.net.kr
Han, Myun Hee	Environmental Justice Institute & Green University	plantlove@eco.or.kr
Kim, Choony (not present but wishes to be represented)	KFEM	kimchoony@empal.com
Kim, Kwang Sik	ICOMOS-Korea	Kskimm@hananet.net
Lee, Tae Ha	GSA/Korea	thlee@gsakoreapr.com
Lee, Yang Ju	Gyeonggi Research Institute	yjlee@gri.re.kr
Oh, Sung-kyu	Citizens' Movement of Environmental Justice	ohskk@eco.or.kr

Pae, Seong Hwan	Korea Ocean Research & Development Institute-crane specialist; wildlife management	starwing@chol.com
Shim, Suk-kyung	Korean National Commission for UNESCO	skshim@unesco.or.kr
Song, Meeyoung	Gyeonggi Research Institute	mysong@gri.re.kr
Yoon, Jong-Ho	Citizens' Movement of Environmental Justice	bebelow@eco.or.kr
	<u>Affiliation- Other Organizations</u>	
George Archibald	International Crane Foundation	george@savingcranes.org
Wolfgang Boerner	University of Illinois, USA	boerner@ece.uic.edu
Hall Healy	The DMZ Forum	hallhealy@aol.com
Kim, Ke Chung	The DMZ Forum	kck@mail.psu.edu
Kosima Weber Liu	Environmental Education Media Project	kosima@public.sta.net.cu

Action Items and Concepts Discussed

The group focused on what were for those individuals and organizations the most important issues to begin the UNESCO WHS process. This discussion reinforced action items that had been suggested in the July 15-16 meeting. A list of the issues discussed is below. Those that received significant emphasis are marked with an asterisk (*).

- * It was agreed that the most important task at this time is to create an NGO 'steering committee' to coordinate and guide the DMZ UNESCO WHS process. More members can be added later, but it was suggested that initially it is better to have a small group to organize the effort, determine how to operate and communicate. It also was suggested that this committee be made up of Koreans living in Korea for the time being; others are available to assist the committee when desired.
 1. Chung, Hong Ke
 2. Han, Myun Hee
 3. Kim, Choony (she was volunteered but needs to provide her approval)
 4. Kim, Kwang Sik
 5. Lee, Yang Ju
 6. Pae, Seong Hwan-the group nominated him to be the initial coordinator and head of the group in order to: (1) determine committee structure, how to operate and communicate; and (2) initial activities

7. Shim, Suk-kyung (she indicated an interest in being on the committee but needs to be formally invited through the Korean National Commission for UNESCO to obtain her employer's approval)
 8. Song, Meeyoung
 9. Yoon, Jong-Ho
 10. Those at the meeting who are available to assist as needed include: George Archibald, Wolfgang Boerner (GIS), Hall Healy, Kim, Ke Chung and Kosima Weber Liu
- * Determine all the organizations and people (NGOs, government agencies, etc) that should be a part of this process
 - * Involve both ROK and DPRK governments immediately, so that they will take on DMZ conservation as their issue; to achieve this result, educate and communicate with the political leaders of both countries
 - * Create a higher level of understanding
 1. Among ROK politicians about the DMZ's value
 2. Develop background papers and documents, as well as a DMZ map to 'tell the story' of DMZ value, status of land ownership, priority sites to protect
 3. About the benefits of UNESCO WHS designation
 4. Include economic benefits to DPRK and ROK
 5. To help the governments prepare for project support and approval
 6. Make clear what the UNESCO process steps are and who will accomplish them
 7. To make clear what the role of the DMZ Forum is in this process
 - * Communicate with and closely involve UNESCO in Paris and South Korea in the process-they can help significantly; promote the UNESCO WHS process
 - * Collaborate and cooperate as NGOs towards this preservation goal that is common to all organizations, regardless of their own separate objectives and differences
 - * Hire paid staff to coordinate the UNESCO process activities and to bring everyone together
 - * Obtain funds, including small grants for this process, paid staff and small conservation projects to complement the WHS designation process; include the private sector in this effort
 - Develop a 'shopping list' of conservation projects
 - Build trust among partners
 - Create a partnership - NGOs and government
 - Work for Mt. Keumgang conservation
 - Define the area(s) to be protected, including the DMZ and CCZ
 - Determine focal point activities to drive the process and complementary

conservation efforts

- Conduct long term planning
- Educate the public in the value and benefits of DMZ conservation
- Conduct surveys of DPRK cultural heritage sites (a budget exists for this in the Cultural Properties Administration)
- A DMZ Forum office in Seoul
- Having ROK legislation passed to support the UNESCO process
- Being a part of the new “Sea Forum”
- Having the DMZ Forum look for funds to support paid staff for the steering committee

Other Issues Discussed

- Gyeonggi Province leaders have indicated that they fully support DMZ conservation efforts
- There has already been hard work completed on some aspects of DMZ protection-it is important to know what those past and current activities are
- It will be important to consider how to properly compensate owners of land in the DMZ and CCZ areas that is eventually used for conservation purposes
- It is important to begin negotiations with DPRK regarding DMZ conservation
- We need to look at both the ecological and the political/policy issues related to DMZ conservation
- Formation of task forces or groups to conduct the actual work will be the responsibility of the steering committee

Participant Expectations (at beginning of the meeting)

- Develop 2-3 clear steps
- Need a plan of action
- Develop a small, focused group of people responsible for the UNESCO process
- Develop priorities
- Determine activities for Gyeonggi Province and the Research Institute
- Develop roles and responsibilities, determine appropriate roles for the group
- Collect and connect DMZ information
- Conduct international outreach
- Include DPRK right away
- What are immediate steps for the ROK
- Want to learn how we can participate in the process

- Should we participate in the October 5-6, 2004 ICOMOS conference in Seoul?
- Obtain knowledge on the past and current NGO and government DMZ related activities; determine where the knowledge gaps are
- Avoid duplication
- Clarify issues related to DMZ conservation
- Determine priority areas for DMZ and other conservation
- Development issues in the DMZ, CCZ areas
- Conflicts/overlaps of government policy/activities/ministries involved in the DMZ

CONSERVATION OF KOREA'S DEMILITARIZED ZONE (DMZ): CONCEPT, PLAN, AND STRATEGIES FOR IMPLEMENTATION

DR. KE CHUNG KIM, CHAIR, THE DMZ FORUM

ABSTRACT

The future of sustainable Korea depends on a clean environment and ecologically sustainable use of the land and natural resources which provides the foundation for environmental security and sustainable development—it's absolutely necessary to sustain the welfare of over one hundred million people on the Korean peninsula. The demilitarized zone (DMZ) is the linchpin of pan-Korean nature conservation which paves the way toward a sustainable Korea. The DMZ, a 4- km wide strip of beautiful land running 250 km across the entire Korean peninsula, has separated the two Koreas, the Democratic People's Republic of Korea (DPRK) and the Republic of Korea (ROK), and controlled military hostilities between them since 1953. The DMZ became a unique natural sanctuary for biodiversity and wildlife and a showcase of natural heritage and is an important resource for Korea's nature conservation. This corridor must be preserved for future generations, as it will provide the foundation for sustainable development, cultural and spiritual advancement, and environmental security which also becomes the process toward the eventual unification. To achieve this goal, all the interested forces in and out of South Korea should be galvanized to forge multi-pronged strategies at different scales, leading to the ultimate agreement between the two Koreas for permanently preserving Korea's DMZ for conservation and peace.

Introduction

Sustainability cannot be built solely on exploitative development without due environmental protection and preservation of biodiversity. Building a sustainable Korea requires the preservation of the DMZ corridor and its ecosystems. The Armistice in 1953 created the DMZ corridor and nature revived it from devastation, its forests recovered, and wild habitats rebuilt, resulting in a renewal of life without human interference. Fallow land has returned to thick prairie and shrubby land in the western section and rich green forests adorn the magnificent landscape of the eastern mountain ranges. With them, endangered and rare plants and animal species, including Asiatic black bear, leopard, Eurasian lynx, Goral sheep, and perhaps Amur tiger, have rebuilt their populations. A great number of migratory birds, including endangered species such as the White-naped and Red-crowned cranes and the Black-faced spoonbill have made their home in these habitats. The land devastated by the War has become a rare sanctuary for endangered native species and also transformed into the most important in-situ reserve for Korea's natural heritage, biodiversity and landscapes, including many species that no longer exist anywhere else on the peninsula.

Symbolizing the tragedy of War, Korea's DMZ is a sacred resting place for millions of innocent compatriots, foreign friends, and soldiers of both sides who died for freedom and peace. The DMZ corridor separated the two Koreas with distinctly different socioeconomic and political systems for the last five decades until this day. The two independent Koreas have created different culture and perspectives on life in a rapidly changing world and yet desire to be united and mutually benefited by building a prosperous and peaceful future. Korean people in the south have worked hard for the last forty years and now enjoy a democratic society with a free consumer economy, attaining a position as the 12th largest economic power in the world. South Korea has already embarked on helping to improve the lives of their northern compatriots. With opening of two roadways and railroads that is being built between the two Koreas the DMZ has been transformed into a place of juxtaposition for people of the two Koreas for reconciliation and concordance and as a gateway to unification and peace.

The DMZ corridor with rich biodiversity and landscapes opens a unique opportunity to recreate "Keum-Su-Gang-San", meaning "land of embroidered mountains and river", for Korea's sustainable development and peace. The DMZ that contains a complete array of native biodiversity on the peninsula already has become a unique nature reserve. This historic estate must remain a landmark nature reserve in perpetuity, as it is an important national heritage site for Koreans everywhere. The DMZ is the center of what can become pan-Korean nature conservation and a tribute to the Korean's patriotic pride, the "Keum-Su-Gang-San". The DMZ also can serve as an ecological

laboratory to study nature's resilience and revival, human ecology and ecosystem sustainability. Simply put, there is no place comparable to the DMZ on the Korean peninsula and in the world – this land must remain intact and protected for the future of Korea. Toward that end, there is a call from around the world for designating the DMZ corridor as a UNESCO World Heritage Site. The DMZ is not only a national heritage site for biodiversity and culture but also a world heritage site for humanity. The UNESCO process provides an opportunity for the two Koreas, the DPRK and ROK, to join the global conservation movement by creating a unique World Heritage Site. The conference provides a platform for embarking on this movement and charts the strategies for designating the DMZ as a World Heritage.

Mission and Goals of the DMZ Forum

The mission of the DMZ Forum is to promote the conservation of nature in and near the Korea's demilitarized zone (DMZ). With this ideal the DMZ Forum aims to promote collaboration between North and South Korea in achieving the mission, to promote the development of unity and collaboration among conservation organizations in South Korea regarding the mission, and to advance the promotion of conservation values and importance of the DMZ conservation among the public in South Korea with focus on those who live near the DMZ. The DMZ Forum also continues to mobilize support of scientists, political leaders, governments, and international organizations, to provide interdisciplinary meetings to explore preservation issues of the DMZ, and to support research in providing baseline data for developing a transboundary peace park and related protected areas in the DMZ corridor.

Important Criteria of Korea's DMZ for a World Heritage Site

Korea's DMZ is an important national monument of people, culture, nature, and history of the 20th Century on the Korean Peninsula. It also offers a World Heritage for the Peace-loving People of All Korea and the World. The DMZ corridor commemorates the tragic loss of lives of all those Korean people and others from around the World sacrificed for peace and security during the Korean War. The DMZ corridor has become a symbol of war and peace, death and life, and past and future.

The DMZ corridor contains an outstanding example of traditional human settlement and land-use representing Korean culture and green open space which is easily vulnerable to the impact of development. The DMZ corridor represents a horizontal cross-section of Korea's geologic patterns and ecological and biological processes in

the evolution and development of biodiversity in biological communities and ecosystems. The DMZ ecosystems contain landscapes of exceptional natural beauty and aesthetic importance and the most important and significant natural habitats for *in-situ* conservation of biodiversity, including those containing threatened species of outstanding universal value from the point view of science and conservation. Therefore, Korea's DMZ must be protected and sustainably managed so that the environmental integrity of the entire corridor can be sustained for the future of Korea and people of the world.

Conceptual Plan and Sustainable Conservation of the DMZ Ecosystems

The DMZ corridor is already a no-man's-land and ready-made transboundary nature reserve defined by barb-wires and fences that also has equitable buffer zones of variable size adjacent to the DMZ on both sides. The core corridor of 4km is a narrow fragile land crossing the heart of the Korean peninsula that can easily be fragmented and destroyed by repeated human intervention. In principle, therefore, the DMZ corridor is to be preserved in its entirety and adjacent buffer zones (e.g., Civilian Control Zone in South Korea) without any application of specific land use until the inventory and classification of habitats with ecosystem characteristics are completed. Piece-meal approaches proposed often by development forces will fragment and likely damage fragile habitats and their communities which eventually destroy sustainability of the DMZ corridor as unique natural heritage.

Transformation of the DMZ corridor into a system of permanent protected areas is a complex process even after the bilateral agreement between the two Koreas is made. As two borders of DPRK and ROK lay next to the 4 km corridor are guarded by land mines and metal fences, the first task before anything can be done is the process of de-mining and establishing the security zone. By this time the DMZ corridor and its ecosystems should have been surveyed and the inventory and classification of habitats on the GIS-based layers of soil, geology, topography, and physiographic features, along with known ecological information such as the status of those plant and animal species that are endangered or threatened have already been completed. These databases will provide the basis for classifying different classes of broadly defined protected areas: 1) nature reserve (strictly for education and long-term research); 2) protected landscapes or seascapes for conservation and ecotourism (including international peace parks); 3) nature peace villages (with a limited number of families from North and South Korea living together in an environment-friendly manner); 4) special maritime sanctuary for cooperative fishing and aquaculture with common environmental assessment and

monitoring programs.

The protected DMZ ecosystems will provide critical habitats and *in-situ* reserve for germplasm of the native species that already extirpated or became extinct in other parts of the peninsula. Both Koreas will benefit from the protected DMZ in many different ways: 1) unique nature laboratories for research and education; 2) continued benefits of ecological services and common biodiversity; 3) cooperative sustainable agriculture (ecologically-sustainable organic farms) for a number of farm families from North and South Korea; 4) cooperative practice of protective environmental law enforcement; 5) mutual confidence building for common goals; 6) mutual exchange and joy of arts, culture and sports; 7) nurturing mutual trust and fellowship; and 8) mutual assistance in economic development.

The development of different classes of protected areas will take many years and require a large investment of financial resources, for which an organized fund raising agency, perhaps called the Korean DMZ Conservation Foundation, should be established to support the development of various reserves in the protected DMZ ecosystems.

Two Partners: Gyeonggi-do and Gangwon-do

The Gyeonggi-do and Gangwon-do are the two north-most provinces adjacent to the DMZ corridor endowed with rich natural heritage and beautiful landscapes. Both provinces are dedicated to enhancing awareness and knowledge of the DMZ as a vital resource for water, biological diversity, and beauty of landscapes, sustainable eco-tourism, sustainable agriculture and ecologically-based economic activity for a local, national and international audience. The Gyeonggi Province is the northwestern province, one of the two provinces that the DMZ corridor divided the peninsula, and it is directly involved with matters related to the DMZ conservation.

Gyeonggi Province is a showcase of dynamic economic development in South Korea with a diversity of beautiful natural and cultural landscapes, symbolizing the land of Keum-Su-Gang-San, which invites the world to visit. Gyeonggi Province, representing 60%+ of the Korean economy, is the key driving force for economic and trade development with North Korea; it is the gateway to North Korea, China and Russia, soon to be providing a renovated Seoul-Pyongyang highway and Seoul-Wonsan railroad across the DMZ. The Gyeonggi Province has been seeking and implementing best eco-friendly ways in across-the-DMZ economic and trade development between

North and South Korea, with a strong commitment to nature conservation of the DMZ. The Gyeonggi Province sponsored the International Conference on the Conservation of Korea's DMZ, July 14-19, 2004, Millennium Seoul Hilton, Seoul, Korea

Strategies for Preservation of Korea's DMZ Ecosystems

Considering political complexity and competing interests for economic development in the DMZ corridor, any specific strategy would guarantee the success of actually forging an inter-Korean agreement between the two Koreas for preserving the DMZ ecosystems. Since the inception in 1997, the DMZ Forum has focused on promoting the concept of the DMZ conservation and obtaining broadly-based supports from influential individuals and organizations from around the world through public lectures, individual contacts, news media, publications, and annual conferences. The DMZ Forum has embarked on the new phase of the overall strategies to achieve its goals and objectives by the Seoul Conference in 2004. The post-conference activities redefined the mode and future of the DMZ Forum. This involves the three-pronged approaches:

A) Project-based (or bottom-up) approach

This approach could involve a diversity of site-specific and species-specific projects by different groups of people in and out of South Korea. This approach would closely involve local governments and their leaderships. The DMZ Forum with the Korean Federation of Environmental Movement and International Crane Foundation has promoted and supported a global coalition for conservation activities for migratory cranes in Cholwon Basin for which an inter-Korean project was organized and the GEF (Global Environmental Facility) proposal has been submitted to the South Korean partners for it. It may also include smaller projects such as Cholwon Crane Festival of 2003, inter-Korean cooperative crane census, International Tiger Conference, International Music Concert at Panmunjom, International Peace Boat Event, Education and training of North Korean specialists in conservation. Similarly, an international Han-Imjin estuary reserve may be proposed for conservation of migratory birds such as the White-naped crane and Black-faced spoonbill.

B) Inter-Korean (or horizontal) approach

This approach involves the South Korean government (ROK) with support of NGOs and civic organizations. The DMZ Forum has initiated this approach in South Korea to

begin with convening a joint conference with KFEM in 2002. This year the DMZ Forum established a formal relationship with the ROK government (Ministries of Unification and Foreign Affairs and Trade) after the 2004 Conference in Seoul. Led by the Ministry of Unification (Bureau of International Cooperation) the ROK government already established the Inter-ministerial Committee on DMZ that has not made much progress as yet. With our input it will renew the committee activities and promote the DMZ conservation issues toward engaging the upper administrative units and eventually the cabinet and the President. The DMZ Forum is planning to submit and continue to support a proposal on the DMZ conservation for eventual adoption by the ROK government as a national issue to be presented in the negotiations of inter-Korean meetings. This approach may also involve the United States Department of State for supporting the DMZ conservation via inter-governmental meetings with North Korea.

C) *High-level (Top-down) negotiation with the DPRK leadership*

This approach involves a delegation of influential people which may include former diplomats, philanthropists, conservationists, scientists, and formerly well-known politicians. This group organized around high-powered international figure(s) in behalf of the DMZ Forum would meet with the DPRK leadership to promote and convince the inter-Korean agreement for preserving the DMZ for conservation and peace.

Basic Research Agenda

- Collection, review and database development of literature and documentation on ecosystems and biodiversity in the DMZ corridor;
- Assessment and evaluation of land and habitat classification;
- Assessment of critical habitats in the DMZ and adjacent areas;
- Assessment and inventory of biodiversity in the DMZ and buffer zones (e.g., Civilian Control Zone in ROK);
- Assessment of conservation status of extirpated, endangered, and threatened species;
- Ecological economic analysis of the DMZ conservation;
- Analysis and classification of potential classes of protected areas and reserves in the DMZ corridor;
- Assessment of sustainability for eco-tourism in the DMZ conservation areas;
- Sustainability of ecologically-based agriculture and ecosystem management in the DMZ and the adjacent areas;

- Development of post-conference strategy and specific action steps for Korea's World Heritage project
- Definition and delineation of the issues pertaining to the development of a formal proposal for UNESCO's World Heritage Site designation;
- Organization of the partners and networking for Korea's World Heritage project.