



Global Environment Facility

MOHAMED T. EL-ASHRY
CHIEF EXECUTIVE OFFICER
AND CHAIRMAN

December 16, 1999

Dear Council Member:

I am writing to notify you that we have today posted on GEF's website, a medium-sized project proposal entitled *Democratic People's Republic of Korea: Conservation of Biodiversity at Mount Myohyang*. The GEF will contribute \$75,000 towards the total cost of \$1,664,300.

The project will protect biodiversity in Mount Myohyang in Central DPRK identified as globally significant based on the rich altitudinal variation in forest types and high species richness of plants and animals including many threatened and/or endemic species. This will be achieved by initiating a protected area management scheme that focuses on biodiversity conservation, demonstrating a model of protected area management for the rest of the country.

The proposal is being posted for your information. We would welcome any comments you may wish to provide by January 7, 2000, in accordance with the procedures approved by the Council.

If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such request, please provide us with your current mailing address.

Sincerely,

Cc: Alternates, Implementing Agencies, STAP



United Nations Development Programme
GLOBAL ENVIRONMENT FACILITY



Date: 29 September 1999

To: Mr. Kenneth King
Assistant CEO

Attention: Program Coordination

From: Rafael Asenjo
GEF Executive Coordinator

Subject: Submission of Medium Size Project Brief for GEF contribution of [less than \$750,000]: Conservation of Biodiversity at Mount Myohyang in the Democratic People's Republic of Korea.

Enclosed is a project brief for "Conservation of Biodiversity at Mount Myohyang in the Democratic People's Republic of Korea" submitted to UNDP by the Ministry of Land and Environmental Protection (MLEP)- Pyongyang, DPRK. Please note that the project has been endorsed by the GEF national operational focal point in Democratic People's Republic of Korea.

In accordance with the operational guidance for the preparation and approval of medium-sized projects, we are submitting this to the GEF Secretariat for action by the Chief Executive Office (CEO). We understand that the Secretariat will recommend to the CEO that the project be submitted to the Council for approval, that it be returned for revision or that it not be developed further.

We are simultaneously circulating copies to UNEP/GEF, World Bank/GEF, STAP and the Convention of Biological Diversity Secretariat for comments to the GEF Secretariat. We expect to receive these comments within 15 working days. Therefore, we look forward to receiving the CEO's decision on or before 5 November 1999 but understand that the project will not be formally approved, even if the CEO has endorsed it, until the Council has reviewed it [within the following 15-day period, namely by 10 December 1999] as part of the next work programme.

Thank you and best regards.

cc: Ahmed Djoghlaif, UNEP
Lars Vidaeus, World Bank
Madhav Gadgil, STAP
Rohit Khanna, UNEP/GEF
Mark Griffith, UNEP/STAP
Calestous Juma, CBD

33 pages
(cover sheet + 32pg
brief)

DPRK: CONSERVATION OF BIODIVERSITY AT MOUNT MYOHYANG

GEF Secretariat requests clarification of the following points;

1. The amount of co-financing which is cash versus in-kind
2. Indication of how the "replication" objective will be realized
3. Clarification on the community populations in and around the park and assurance as to their involvement in the preparation and implementation of the management plan
4. Clarification on how the recurrent cost of financing the Park will be met after the project is ended

Please note that the GEF financing requested for this project is US\$750,000. (see the Budget Summary on page 3)

1. There is no inconsistency between the budget summary on page 3 and the budget table on page 27. The cash and in-kind contributions are the same. There is no in-kind total of \$725,000 given in the budget table.

The co-financing arrangements can be summarized as follows:

Co-financing	Increment	Baseline
Cash	\$175,000	
In-kind	\$75,000	
DPRK		\$650,000

The DPRK Government contribution of \$650,000 can be broken down as follows:

- 1) Personnel US\$ 450,000.00 (967,500.00 WON)
 - a. National Project Director 36m/m
 - b. Deputy National Project Director 72 m/m
 - c. National Technical Researchers 180 m/m
 - d. Designers 108 m/m
 - e. Other assistance and residual personnel 216 m/m
- 2) Equipment US\$ 50,000.00 (107,500.00 WON)
 - a. Test equipment
 - b. Observing equipment
 - c. Car
 - d. Computer (1 set)
- 3) Miscellaneous US\$ 150,000.00 (322,500.00 WON)
 - a. Leased land and building including electricity, water and other raw materials.
 - b. Office requirements.
 - c. Provision of operational expenses for the local travel of the national researchers and experts.

- d. Provision of office and necessary in-land communication facilities to PA advisor.
 - e. Assurance to PA advisor of all necessary conditions to have access to mountain to carry out their work under the project.
 - f. All other operational expenses that can be borne from local funds will also be provided.
2. Replication of the project's outcomes across other protected areas in DPRK will occur on three levels.

First, component 2-B of the project focuses on institutional and policy strengthening. This includes a number of activities that impact directly on biodiversity conservation measures across DPRK, namely: the review of existing environmental legislation; changes to legislation as required; collaboration with Ministries and Departments; and strengthening of NCCE and other institutional bodies.

Second, other activities under component 2-B can be directly translated across DPRK. For example, the expertise gained by NCCE and other institutions in reviewing the Myohyang regulations can be directly translated to other protected areas across DPRK.

Third, the training programmes offered under the project include study tours for managers of protected areas across DPRK to come to Myohyang to observe the process of change and the development of the management plan. The outreach programmes will also develop information on the Myohyang experience and lessons learned for dissemination across DPRK. Publications and other materials will also be available to tourists visiting Myohyang.

Perhaps the most important way in which the project will be replicated is in its focus on developing capacity and strengthening capacity at the institutional, departmental and policy-making levels.

3. The population of local communities around Myohyang is estimated by the Government of DPRK to be 35,000. These populations are mainly rural, living in small, communal hamlets or small towns.

The involvement of local stakeholders in the preparation and implementation of the management plan is paramount to the project and to the Government. Local community participation is guaranteed through the alternative livelihood pilot projects and collaboration on setting out buffer zone activities. In addition, the local communities will be represented through the reserve's administration.

The importance of community participation is illustrated in the "Social and Participation Issues" section of the proposal (page 34). This section was drafted specifically by the National Coordinating Committee for Environment (NCCE) in DPRK.

4. As stated in component 3-C of the proposal, one of the main aims of the management plan is to ensure the ongoing costs of PA management are met. Here several approaches are followed to ensure the sustainability of the PA.
- Hypothecation. Although not well detailed in the proposal, component 1-B includes the development of a tourist management strategy for Myohyang. The area is receiving increased numbers of tourists and the Government

anticipates that these figures will continue to increase. At present, a nominal entrance fee is charged, but is not always collected. The potential exists to increase tourism revenue substantially. The Government has committed to the use of this revenue for the reserve and local communities.

- Government commitment. The increase in the budget of the reserve for the is expected to be continued beyond the life of the project. The Government does not want to commit to a set figure at this stage but has expressed its willingness to maintain higher levels of funding if the project succeeds. This creates a good incentive for project success and is actually preferred to a commitment from the Government at this stage.
- Buffer-zone income. The alternative livelihood pilot projects are expected to also raise significant new avenues of income. For example, local products can be manufactured at low cost (local food, medicinal remedies, handicrafts etc.) and sold to tourists. These activities, plus the involvement of the local community in the implementation of the management plan will address the threats to biodiversity caused by human pressures – hence reducing some of the on-going costs of park management.

A further response to this GEFSEC concern is provided by the NCCE:

“The Government ensures that the on-going costs of PA management will be met over the life of the project, commits to develop a tourist management strategy for Mt. Myohyang and the income generated from it will be included in the local budget and used for the management of the nature reserve and increment of life standard of local people. And also after the project life, the fund for biodiversity conservation in nature reserve will be reflected in the national plan and allocated to the national budget. More scientific budget will be specified in detail based on the experience and lessons gained from the project implementing process.”

PROJECT SUMMARY

Project Identifiers	
1. Project Name: Conservation of Biodiversity at Mount Myohyang in the Democratic People's Republic of Korea	2. GEF Implementing Agency: UNDP
3. Country or countries in which the project is being implemented: Democratic People's Republic of Korea (DPRK)	4. Country eligibility: Ratified the Convention on Biological Diversity on 26 October 1994.
5. GEF focal areas(s): Biodiversity	6. Operational program/short-term measure: OP 4 - Mountain Ecosystems
7. Project linkage to national priorities, action plans, and programs: With the support of UNDP/GEF, DPRK is preparing its National Biodiversity Strategy and Action Plan (BSAP) to identify priorities for biodiversity conservation and use, and the development of strategies and action plans. Information analysis and workshops conducted by the National Coordinating Committee for the Environment (NCCE) as part of the BSAP process, have placed a high priority on establishing a network of protected areas (IUCN Category I-V) across a range of ecosystems and strengthening management of existing protected areas. Mount Myohyang is a priority site for protection based on its high species richness (many of which are regionally endemic and/or globally threatened), largely intact landscape and diversity of communities.	
8. GEF national operational focal point and date of country endorsement: Mr. Ri Hung Sik, Secretary General, National Coordinating Committee for Environment. Concept endorsed 3 December 1998, MSP endorsed 30 May 1999	
Project Objectives and Activities	
9. Project rationale and objectives: This project will protect biodiversity in Mt. Myohyang in central DPRK identified as globally significant based on the rich altitudinal variation in forest-types and high species richness of plants and animals including many threatened and/or endemic species (threats include overharvesting and pressure from tourists and local communities). This will be achieved by initiating a protected area management scheme that focuses on biodiversity conservation, demonstrating a model of protected area management for the rest of the country.	Indicators: <ul style="list-style-type: none"> • Mount Myohyang becomes a protected area to the calibre of IUCN category II (National Park) by the end of the project. • Achievements are disseminated to all Protected Areas in DPRK by the end of project • Species diversity and habitat range increased by end of project from the levels measured by project's baseline surveys • Pressure on biodiversity resources reduced from baseline levels by 50% by end of project
10. Project outcomes: (over a 3-years) (1) Information system developed (2) Outreach strategic plans developed (3) Biodiversity protection strengthened (4) Institutional and policy base strengthened (5) Management capacity developed (6) Human resources developed (7) Management Plan developed and implemented.	Indicators: <ul style="list-style-type: none"> • Regular data sets are being used by Myohyang staff by end of project • Plans endorsed by MLEP and incorporated into the Management Plan by end of project • Increase in recorded numbers of targeted species by end of project, as compared to baseline • Policy recommendations endorsed by MLEP • Participation of all relevant authorities in decision-making process by end of project and decisions taken in a timely manner • Myohyang staff responsible for implementation of Management Plan by end of project • Management Plan endorsed by MLEP and under implementation by staff by end of project

<p>11. Project activities to achieve outcomes (including cost in US\$ of each component) <i>see Activities & Financial Input section for details</i></p> <p>1 Developing information systems (\$140,000)</p> <ul style="list-style-type: none"> • Surveys and information gathering • Threats analysis with recommendations • Information management system • Database and monitoring system 	<p>Indicators:</p> <ul style="list-style-type: none"> • At least 10 surveys underway after first 6 months and first results available by end of year 1 • threats analysis completed after first 9 months • first maps produced by end of year 1 • database operational after 18 months
<p>2 Developing Outreach Strategic Plans (\$185,000)</p> <ul style="list-style-type: none"> • Alternatives to resource overharvesting pressures • Education and interpretation 	<ul style="list-style-type: none"> • Local herbal medicines and other revenue generating items on sale in Myhoyang by end of project • Benefit sharing arrangement agreed with local communities by end of project • Activities undertaken in 75% of schools in contiguous counties • Tourist management plan in place by end of project • Material distributed in area of influence end of year 1. All local communities and 75% of visiting tourist exposed to materials by end of project
<p>3 Strengthening Measures to Protect Biodiversity (\$145,000)</p> <ul style="list-style-type: none"> • Policy recommendations for the PA and buffer zone • Reclassification of the Nature Park (following IUCN guidelines) • Demarcation of buffer zone and Nature Park • Design and implementation of land and resource use regulations for the buffer 	<ul style="list-style-type: none"> • Protected Area reclassified to acknowledged standard by end of year 2 • Agreement of buffer-zone functions reached with stakeholders by end of project • Buffer-zone regulations endorsed by MLEP by end of year 2
<p>4 Institutional and Policy Base Strengthened (\$95,000)</p> <ul style="list-style-type: none"> • Review of institutional framework • Clarify the roles of provincial authorities, MLEP, the PA Administration and other stakeholders • Strengthen enforcement measures 	<ul style="list-style-type: none"> • Review complete by end of year 1 • Roles of the authorities clarified after first 6 months. Ongoing advice provided • Methods for ensuring regulations are enforced included in the Management Plan

<p>5 Building Management Capacity (\$340,000)</p> <ul style="list-style-type: none"> Review management and technical procedures and provide required assistance Upgrading of the technical facilities for staff, including computer equipment 	<ul style="list-style-type: none"> Review complete by end of year 1 Myohyang PA Administration mission focused to include biodiversity conservation considerations after 18 months 3 short-term consultancies undertaken to provide assistance by end of the project 50% of equipment budget disbursed by end of year 1, 80% by year 2 and 100% by year 3 Facilities and equipment upgraded by end of project 														
<p>6 Improving Human Resources (\$255,000)</p> <ul style="list-style-type: none"> Management training Scholarships for conservation professionals and decision-makers to attend short courses In-country training workshops International study-tours On-site practical program of education and skill development for rangers and PA staff Development of field guides for rangers and staff 	<ul style="list-style-type: none"> Management and field training programs developed after first 6 months 6 training workshops held by the end of project 3 scholarships completed by end of project 2 study tours completed by end of project training has involved all administration staff and field staff by end of the project field guide developed by end of year 2 														
<p>7 Preparing and Implementing a PA Management Plan (\$475,000)</p> <ul style="list-style-type: none"> Collaborative development and implementation of Management Plan Undertake pilot activities in the buffer-zone and forest corridor 	<ul style="list-style-type: none"> Management Plan endorsed by MLEP and in implementation by beginning of year 3 Pilot activities underway by end of project 														
<p>12. Estimated budget (in US\$):</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">1. Project preparation (non-GEF)</td> <td style="text-align: right;">US\$ 14,300</td> </tr> <tr> <td>2. GEF</td> <td style="text-align: right;">US\$ 750,000</td> </tr> <tr> <td>3. Co-financing: UNDP-TRAC</td> <td style="text-align: right;">US\$ 100,000</td> </tr> <tr> <td>4. Co-financing : WCS - (in-kind)</td> <td style="text-align: right;">US\$ 75,000</td> </tr> <tr> <td style="padding-left: 20px;">- (cash)</td> <td style="text-align: right;">US\$ 75,000</td> </tr> <tr> <td>5. DPRK Government</td> <td style="text-align: right;">US\$ 650,000</td> </tr> <tr> <td>TOTAL: (1+2+3+4+5)</td> <td style="text-align: right;">US\$ 1,664,300</td> </tr> </table>		1. Project preparation (non-GEF)	US\$ 14,300	2. GEF	US\$ 750,000	3. Co-financing: UNDP-TRAC	US\$ 100,000	4. Co-financing : WCS - (in-kind)	US\$ 75,000	- (cash)	US\$ 75,000	5. DPRK Government	US\$ 650,000	TOTAL: (1+2+3+4+5)	US\$ 1,664,300
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<p>13. Information on project proposer: Ministry of Land and Environmental Protection (MLEP), Pyongyang. (See the Implementation Plan of the Project Brief)</p>															
<p>14. Information on proposed executing agency (if different from above): The project will be executed by UNOPS, with MLEP acting as the local implementing entity. The NCCE is the coordinating body responsible for GEF projects in DPRK and will coordinate this project.</p>															
<p>15. Date of initial submission of project concept: 19 August 1998</p>															
<p>Information on Institution Submitting Project Brief</p>															
<p>16. Project Identification number: DRK/98/A01 (<i>UNDP/RBAP internal reference number only</i>)</p>															
<p>17. Implementing Agency contact person: Mr. Tim Clairs, GEF Regional Biodiversity Advisor –Asia and the Pacific, UNDP. Email <tim.clairs@undp.org></p>															
<p>18. Project linkage to Implementing Agency program(s): The environment and natural resource management programme, first Country Co-operation Framework (CCF I) covering the period of 1997-2000, focuses on sustainable natural resource management to increase the resilience of the ecosystem to exceptional climatic phenomena and to preserve biodiversity.</p>															

PROJECT DESCRIPTION

Background and Context

The Democratic People's Republic of Korea covers 122,762 sq. km of the northern part of the Korean Peninsula and some of the adjoining continental landmass. Within the republic are 115 protected areas, total area exceeding 5300 sq. km, in five classes: nature reserve, nature park, nature monument, wildlife reserve and landscape reserve. This summation excludes very large areas of forest legally preserved for soil conservation and/or timber production, and, pending their legal clarification, buffer zones intended to encircle each nature reserve and nature park. Conversely, some nature monuments and landscape reserves would be better regarded as cultural treasures and have a low role in biodiversity conservation. Overall, this major commitment to the environment and its component wildlife is currently managed with little application of biological principles, but government wishes to improve their system of protected areas by using IUCN criteria. Various factors, notably droughts and floods during the 1990s, have increased pressure on natural resources, and government's initiative to upgrade and modernise the protected area system is thus timely.

The Korean peninsula is a centre of endemism for plants and supports a rich fauna: over 400 bird species and c.100 mammal species. Richness of invertebrates is believed to be correspondingly high. These figures, notable considering the high latitude and harsh winter conditions, stem from the wide altitudinal (sea-level to 2750 m) and latitudinal ranges (almost 10°) giving a variety of habitats. A well-planned and managed national protected area system will make a major contribution to global biodiversity conservation.

Much of DPR Korea is composed of rugged terrain and only 20% of land are suitable for agriculture. However, in order to increase economic production, there is currently an effort to convert natural forests to high production conifer forests. Furthermore, the government intends to initiate a number of hydroelectric and intensification of natural resource use projects. These initiatives reflect DPR Korea's strong incentive to develop means of strengthening their economy.

At the same time, DPR Korea is eager to develop a system whereby the nation's biodiversity is preserved in this process of economic development. Designation of sites under the current protected area system is chosen on the basis of cultural significance and other factors not necessarily related to biodiversity value. Furthermore, all protected areas in DPRK are below IUCN category I-V and lack biologically-based management plans.

Finally, although most protected areas are staffed by dedicated officers, the skills needed to monitor and manage these sites are lacking. Therefore, efforts to conserve biodiversity in DPRK through protected areas merit international assistance. Montane forest offers the best opportunities for long-term conservation in Korea of large blocks of natural ecosystems, and globally significant species.

Mount Myohyang, established as a Nature Park in 1954, was the first protected area in DPR Korea. The central national park of 17,000 ha is abutted by a 7000 ha nature reserve¹. This area retains important populations of wildlife, with high species richness of birds, mammals and higher plants. Current regulations forbid all extractive activity throughout the park and reserve, however there is

¹ Throughout this document, the 240 sq. km will be referred to as "Mount Myohyang Protected Area", or simply "the PA".

no means of monitoring offtake. Tourism is encouraged in the park but not in the reserve. There is no buffer zone around the PA.

The PA lies at the transition between the northern and southern temperate forests of Korea, forming the southern range limit for several species. Situated at the southwest of a mountain range (abutting the northeastern extent of the Korean lowlands) and with prevailing westerly winds, Myohyang receives c.1340 mm annual precipitation compared with 1000-1200 mm over most of Korea. Snow lies for most of the year (typically September to June or July) and is an important regulator of water supply. These wetter conditions contribute to the diversity of habitats and increase susceptibility to natural landslides that are important in maintaining habitat heterogeneity. Most of the PA supports forest, but grasses, herbs and shrubs dominate steep slopes and higher ridges. Various different plant communities are distinguished over the wide altitudinal range of the PA (70-1900 m; Annex 2) and there are differences in bird communities and doubtless in other animals.

The many streams support specialised species such as Mandarin Duck. Most of the land lies at 200-1200 m altitude, with significant areas up to 1800 m. None of the adjacent plains is protected or forested and apparently no natural flatland forest remains in the region. On the slopes around the PA - both north and south - are hundreds of square kilometres of mildly degraded forest. These areas were not included in the legally declared PA as it was unclear whether management capability would be sufficient for such a large area. There appears to be scope for including these areas as a buffer zone. As part of the project, efforts will be undertaken to legally establish a buffer zone around the PA.

The Myohyang Protected Area is isolated from other natural habitat except to the northeast where forest stretches along the mountain spine to Mount Rangrim Nature Reserve (Chagang Province; established in 1995) which lies 150-200 km away. The band of forest is at least 10-20 km wide, and thus could be a valuable corridor for wildlife populations between Myohyang and Rangrim.

Of significance to global biodiversity conservation are the concentrations of globally threatened / near-threatened mammals and at least 26 higher plant taxa endemic to Korea. Additional species are classified as rare or endangered in DPR Korea even though they are not classified as threatened worldwide (Annex 2). The most significant animals persisting in the PA are Asiatic Black Bear, Common Musk Deer and Long-tailed Goral (all globally threatened).

Current Situation (Baseline Course of Action)

Mount Myohyang is of great significance to the people of DPRK and its natural beauty is very highly regarded. Although the preservation of natural beauty is important, the notion of biodiversity conservation is new to most people who manage and visit the Mt. Myohyang area. As a result, resources are not fully targeted towards best biodiversity conservation measures. It should be noted, however, that DPRK is now committed to the concept of biodiversity conservation and the current situation also includes a strong desire to improve biodiversity conservation practices.

The protected area lies in three provinces, but is entirely administered from Hyangsan County of North Pyongan Province. Staff activities are guided by annual duty rosters prepared by the Chief of the Nature Park, subject to approval by the County Department of Land Management and the Ministry of Land and Environmental Protection. Duties of the approximately 400 staff consist of patrolling to keep out illegal visitors, apprehending malefactors, manage tourist-related activities,

and replanting damaged forest and guarding cultural relics (e.g. temples). The staff perceives the main function of the PA as protection of plants and animals but are unsure if their activities meet this aim. No management plan addresses the biological needs of the PA.

National Priority

Government of DPR Korea values biological resources as a national heritage and their potential for sustainable use. The government recognises the urgent need to consolidate in-country management expertise in protected area planning and management, and that the global expertise and connectivity of international wildlife conservation NGOs foster sound long term conservation. Mount Myohyang has peak priority in national conservation aims with a high budget and a high profile in the national Biodiversity Strategy and Action Plan, stemming from its scenic beauty and cultural importance. Government sees it as the ideal location to begin upgrading the country's protected areas due to:

- Its biological importance;
- Its cultural importance to Korea (Myohyang is one of five mountains of special national heritage value, has many 500-1000 year-old temples and has the International Friendship Exhibition, a collection of gifts from the world to DPR Korea's leaders);
- The broad swathe of threats typical of most DPR Korea montane forests;
- The easy access from the capital, which allows concentration on project activities rather than on overcoming logistical hurdles;
- Provision of water for human communities and important agricultural productivity and a globally highly significant wetland bird reserve on plains south and west of it (Annex 2);
- High project sustainability after GEF intervention;
- The Nature Park's committed, active, staff, who specifically request training in biodiversity conservation;
- The local communities, who stress the resource-base of the PA but have high appreciation of the aesthetics and wildlife value of the site.
- The many tourists, an audience through appropriate interpretative materials for national awareness-building of aims, practices and challenges of biodiversity conservation.

Global Significance

The global significance of the Myohyang biodiversity can be summarised as follows (see Annex 2 for more detailed descriptions of the biodiversity and its global significance):

- Intact series of wildlife habitats from 70 (hill-foot boundary) to 1900 m, including six basic communities and a total of 14 sub-communities (Annex 2);
- Largely intact animal species complement (even among mammals only Tiger and Sika Deer *Cervus nippon* seem extinct), albeit with many populations at reduced levels;
- Five globally threatened and four globally near-threatened species;
- 26 plant taxa (21 full species) endemic to Korea;
- Many plant species sought for medicinal purposes across east Asia and under wide decline (particularly those where collection kills the plant, e.g. roots);
- Part of a large area of semi-natural forest, allowing buffering of PA wildlife populations (although the PA is only 240 sq. km in size, the nature of adjoining habitat most of its wildlife populations may best be considered as components of a population spread over 2000-3000 sq. km of forest. This has major implications for long-term gene pool viability and thus the area's role in global biodiversity conservation);

- Gazetted protected area under management (vulnerable quarry species, notably large mammals, are said to have little long-term viability in DPRK outside protected areas. This means that protection of those inside protected areas is essential. Furthermore, the presence of a PA is a strong reason to enhance hunting controls and wildlife management in adjacent non-protected areas, especially in cases where populations in such areas are necessary for the viability of those in the PA itself).

Threatening Processes

When analysing any threats to biodiversity values it is useful to classify threats by indicators of activities which alter ecological processes and which may lead ultimately to an irreversible decline in biodiversity values. In this way, four main classifications (which compare neatly with definitions of biodiversity) can be considered:

- Ecosystem and habitat loss
- Ecosystem and habitat decline
- Direct species loss
- Gene loss

Threats are gauged by reduction in distribution and abundance of animal species, and the alterations to plant communities and ecosystems, leading to diminished biodiversity values. For Mt. Myohyang, there are three main threatening processes; habitat loss, habitat decline, and direct species loss². Together, these threats erode biodiversity. Some globally threatened species, e.g. Tiger *Panthera tigris*, Oriental Stork *Ciconia boyciana* and Fairy Pitta *Pitta nympha*, have become locally extinct or now visit the area only irregularly.

Direct Species Loss

Overharvesting

No harvesting of plant and animal resources is allowed under current regulations in the park or reserve, however collection by local people has risen markedly since about 1993. Several groups are particularly sought: edible plants; mammals for meat, especially those with strengthening properties (notably goral and musk deer); fur-bearing animals (for hats, vests and collars; notably mustelids, also squirrels, goral and cats); and medicinal plants (many species involved, poorly documented). Collection of edible fruits, nuts etc. in autumn is so intense that staff speculate that it reduces animals' food supply. One staff estimated the ratio of people harvesting animals to those harvesting plants as about 1:70. A guard of a remote high-altitude temple placed the ratio nearer 1:2. Most hunting is by trapping; poachers are scared to use guns in case PA staff hear them. Trapping is reportedly most intensive in remote areas with neither trails nor frequent patrols. The lack of alternative foraging / gathering areas, even a buffer zone, exacerbates problems. Local communities value the PA and its place in the nation's heritage, but see few alternatives to current harvesting.

Natural problems (mainly floods and droughts) during the 1990s lowered agricultural productivity over much of DPRK and food shortages are now severe. People look to wild sources to make up the

² Gene loss, perhaps the most subtle set of actions that can result in biodiversity loss, is mainly related to the introduction of alien or exotic species into a population. Genetic diversity can be lost as a result of population isolation and inbreeding. For Mt. Myohyang, this issue is dealt with under habitat loss, as the potential loss of genetic diversity is a result of habitat fragmentation and isolation.

shortfall. Many people (estimated at c.35,000) live near the protected area. Animal poaching is now unsustainable and plant collection rampant. Illegal collection of edible products threatens the global significance of the biodiversity and strains the hitherto excellent staff-communities relations.

Enforcement of illegal harvesting is carried out by PA staff as it is discovered, but is currently insufficient to control the decline in biodiversity value. This is due to the difficulty in coordinating patrols across the PA and the fact that patrols are not currently focussed on proactive, biodiversity protection enforcement measures. Given the relatively small size of the PA and the increasing demand for edible plants and mammals, this “benign neglect” is not sufficient as a form of management.

Ecosystem and Habitat Decline

The key indicator of habitat decline is a change in the composition of the vegetation towards a new state that tends to favour some species at the cost of others, such that the ecological community ultimately becomes less diverse. The causes of habitat decline for Mt. Myohyang are brought on by human activity. Although illegal cultivation or grazing seems not to occur within the nature park, there are still other factors threatening biodiversity.

Increasing Tourism Pressure

Trampling of vegetation, compacting of soil and disturbance of wildlife are the main processes leading to habitat decline from human visitation. “Fatal litter” that injures, poisons or drowns wildlife is also a threat but is poorly monitored.

Tourism in the nature park has increased enormously in the last 40 years. Negative effects should be easy to contain, as few tourists are wilderness seekers but the many trails make tourist presence heavily dispersed. Tourist control is lax, collection of entrance fees sporadic, and there are few signs demarcating no-access areas. Staff feel that ecotourism could be beneficial to PA biodiversity conservation aims, but lack ideas on how to manage it. Animal harassment by visitors is a problem. Despite the high nature conservation ethic, tourists on seeing animals will throw stones and sticks, shout, wave their arms, attempting to provoke a response. The animal’s usual response is to flee or avoid the area altogether. O Myong Sok (Chief of Research, Environment and Development Center) has visited Myohyang for over 40 years and confirms that while habitat has been preserved relatively well, shy animals, particularly large carnivores, are now scarcer in the nature park. More than one person remarked during the reconnaissance visit, “Why are you looking for animals here? This is a nature park for people. You must go to the nature reserve to find animals”. Greater efforts are required to increase biodiversity conservation awareness in multi-use areas of the PA.

Over-Collection of Firewood

Although the collection of firewood is a harvesting practice, its main threat to biodiversity values is not direct species loss (given the predominance of *pinus densiflora* at lower altitudes - see Annex 2 for more details of the plant communities), but as a contribution to the overall decline in habitat health.

Each county in DPRK has 500 ha set aside for plantation land, to supplement the county’s energy needs. Hyangsan County currently does not have its full allocation under productive plantation use. As a result local communities look for alternative sources of firewood. Due to its geographical location at the end of a mountain range, surrounded by agricultural land and settlements, Myohyang

is particularly susceptible to over-collecting of firewood. Collection of firewood from the nature park margins is illegal, but is nevertheless undertaken.

Detrimental PA Management Practices

The PA staff's lack of understanding of what the aims, practices and realities of PA management are can be directly detrimental to the globally significant biodiversity. Some threats (e.g. removal of dead wood from the forest so that "harmful" insect populations damaging to living trees do not become established) are carried out in good faith by PA staff, while others reflect negligence, or a failure to realise the need for certain activities. Currently, understanding of the principles and practice of biodiversity conservation area management lags far behind enthusiasm and diligence.

Ecosystem and Habitat Loss

Habitat Isolation

Activities usually associated with direct habitat loss; logging, grazing, and/or fire regimes, are not considered a major threat to Mt. Myohyang's biodiversity. This is due to the general adherence to the overall integrity of the area as a nature park, in order to protect its natural beauty. Nevertheless, biodiversity values are vulnerable due to the small size of the PA and its isolation from natural habitat around much of the perimeter.

Fragmentation occurs when an area of vegetation is split, leaving smaller isolated areas of vegetation no longer capable of maintaining the suite of processes and species found in the original landscape. Opportunity for movement between the fragments is restricted. Often when a fragment is created, it harbours more species than it will be able to support in the long term. Moreover, as landscapes become more fragmented the size to edge ratio increases, with the consequence that the probability of damage from external effects also increases. In the boundary zone, edge effects lead to a net loss of plant and animal species through greater exposure to winds, increased micro-meteorological differences over short distances, and easier access for livestock, other non-forest animals, and hunters.

Such a process has led to habitat isolation at Mt. Kuwol, another significant area for biodiversity in DPRK. Mt. Kuwol is now a habitat "island" surrounded by agricultural land. The same fate threatens Mt. Myohyang, as its surrounding lowlands have been converted to agricultural use. Although small (240 square kilometers), Myohyang is not yet isolated. Instead, it is at the end of a 2000-3000 square kilometer corridor of forest along the main mountain range, which runs through DPRK. Although not closely studied this forest is probably still functioning as a dispersal corridor. This would explain the occasional reports of Tigers in Myohyang from time to time, and the persistence of other large mammals.

A survey of the forest and assessment of its conservation potential would be necessary as part of the project. For example, habitat isolation could be the greatest threat to Myohyang's Asian Black Bears (globally considered as a "vulnerable" species). "Direct species loss" is apparently not a major threatening process. Bears were stated to be hunted occasionally, but are not favoured prey as it is dangerous for single hunters to tackle them, and groups of hunters are more likely to be detected by PA staff. In addition, the market for parts is not high as it is supplied by captive bears. "Habitat decline" has had some impact on bears (they now reportedly avoid areas frequented by tourists), but the overall impact depends on the availability of alternative habitat. In other words, habitat loss is likely to be the most pressing threatening process. Here, the forest corridor becomes an important factor.

A maximum area of 150 square kilometers supports the species. Using the density derived by Reid *et al.* (1991) in similar habitat in China, the PA might support 10-15 bears at full capacity. This is not a large enough population to be of long-term conservation priority. Thus bear conservation interest in Myohyang is dependent upon the maintenance of a forest link to the north-east of the PA so that the Myohyang bears are a component of a significantly larger functional population. The same argument holds for the other big carnivores in the area, although there is little evidence that Myohyang retains important numbers of any other species.

The corridor is legally protected as a production forest by the Forestry Law of 1992. It seems to hold few villages, although at least one road crosses the mountain range. Currently, there are no site-specific hunting and harvesting regulations within it. Selective felling (on a 30-year cycle) followed by replanting (not always with native species) is occurring in it. The long-term plan is the conversion from a natural mixed forest to one of commercially valuable trees. It has potential value for wildlife conservation if various management practices can be introduced, e.g. enforcement of hunting and harvesting regulations and maintenance and/or rehabilitation of some areas of natural forest.

Outright deforestation of the corridor does not seem a threat, but fragmentation/bottlenecking (at least one road crosses it), over-hunting within it, and over-conversion to exotics might be. Even without complete knowledge of the forest it is responsible to assume that it is an essential long term lifeline for Myohyang wildlife.

Underlying Causes

The specific threats to Mount Myohyang's globally significant biodiversity, set out in the previous section, are caused by various factors (see Annex 1 for a detailed analysis of the underlying causes and project activities to combat them). These factors can be considered in terms of three main failings: information failure; institutional deficiency; and management deficiency. Information failure refers to the general lack of awareness of the value of biodiversity, the lack of information and monitoring systems to collect data, and the failure to distribute information. Institutional deficiencies refer to poor institutional arrangements, policy support and protected area classification. Finally, management deficiencies apply to inadequate resources allocated to biodiversity conservation, including human resources.

Information Failure

A lack of solid data on the existing biodiversity makes it difficult to develop a clear purpose of how to best respond to the processes threatening Mount Myohyang's biodiversity values. In addition, the lack of any data management systems perpetuates the problems associated with ineffective management. The nature park and surrounding areas have been surveyed several times for wildlife: (1) a three-month plant and animal survey in 1957; (2) work in 1965 for the nation-wide inventory of natural resources, which focussed on filling gaps in the 1957 survey; (3) the botanist Ju Il Yop spent one full year in the late 1980s, increasing the known PA list of higher plants from c.660 to over 1100 taxa; (4) 11 visits by the ornithologist J. Fiebig in 1987-1990; and (5) a four-month bird and mammal survey of by Yun Chol Nam in autumn 1993, focussing on the higher mountains. The PA's lower plants, invertebrates, fish and herpetofauna remain poorly known. Survey work has barely investigated topics of applied management concern (e.g. population trends in and threats to key species; harvesting of plant resources by local communities). The forest north-east of the PA

was studied during 1965, but its current biodiversity value is unknown. The lack of clarity on which species, habitats and areas of the PA merit special attention, and what that attention should be, means that current activity is unfocussed and not prioritised.

Initially the project will involve undertaking surveys and assessments to gather the required information. Subsequently, relevant information will be distributed to end-users in an appropriate form through the development of outreach programmes. The provision of information is an efficient response to direct species loss and ecosystem and habitat decline and is necessary in order to raise awareness of the effects of current practices. In most cases, PA staff, tourists, and local inhabitants do not set out to destroy important habitat intentionally. Local land managers (both within the PA management system and local inhabitants outside it) may wish to protect biodiversity values, but just lack the information to do so. They are likely to lack information on the existence of biodiversity values, the effects of their practices on these values, and how best to protect them.

Making information and reference material available will help land managers identify flora and fauna with high global values. Information emphasising how to best manage areas of biodiversity value and the benefits to land managers, such as preventing land degradation, is also useful in developing a shift in management practices. It is also important to collect information concerning matters such as habitat requirements or vegetation cover. Local land managers can help provide this information.

Information gathering and distribution is also important to address the threats posed by tourism pressure. The project's outreach strategy includes a programme directed at overcoming the information failures inherent in the threats from tourism. Another underlying cause of biodiversity loss covered by the outreach strategy is the lack of formalised benefit sharing of biodiversity values with local communities. Faced with few alternatives, local communities have an incentive to gather what natural resources they can from Mount Myohyang. The project will consider alternatives frameworks for meeting the resource needs of the local inhabitants, including formal biodiversity sharing arrangements and the creation of revenue generating activities for local communities based upon successful conservation of globally significant biodiversity.

Institutional Deficiencies

Although the DPRK Government is committed to the concept of biodiversity conservation, little expertise exists as to how to plan institutional and management frameworks in order to obtain the desired conservation results. The lack of a legal framework for biodiversity conservation is applicable to all of the country. DPRK is preparing its National Biodiversity Strategy and Action Plan (BSAP), but has yet to enact specific legal measures for biodiversity conservation. The Mount Myohyang Nature Park Administration works within these limitations. Its mandate and operational procedures are not targeted at biodiversity conservation. In addition, there is little institutional capacity to deal with biodiversity conservation issues at the policy level within the PA's administration, resulting in the absence of biodiversity considerations in management planning.

As a result of the lack of any cohesive planning mechanisms, no clear conservation objective exists, although efforts to retain the area's natural beauty and cultural significance are made. The lack of planning capability within the PA management structure also means that the critical habitat for globally significant biodiversity has not been specifically identified. Current zoning of "nature park" areas and "nature reserve" areas does not necessarily represent an optimal outcome for biodiversity conservation. Similarly, areas of heavy pressure around the PA do not provoke optimal resource responses from local communities. This is reflected in the direct species loss from

overharvesting and habitat decline from firewood collection. Institutional responses included in the project aim to strengthen biodiversity protection measures, in-line with IUCN Protected Areas Management guidelines. The project will also review current zoning arrangements and introduce multi-use activities in a demarcated buffer zone. This will include reviewing resource use patterns, possibilities for sustainable harvesting, and benefit-sharing arrangements.

Underlying causes of overharvesting and firewood collection also include insufficient natural resources outside the PA to meet the needs of local communities. The project will work with local officials to assist in meeting their resource needs and to ensure the objectives of the PA are understood and biodiversity conservation is included in normal resource-use decision making. Poor enforcement of regulations restricting (or prohibiting) off-take is another underlying cause of biodiversity loss. Improved training in patrol techniques and greater support to rangers will alleviate this to some extent, however the project will also review existing regulatory measures and recommend effective methods for ensuring regulations are enforced. These recommendations will be included in the PA Management Plan.

In relation to the forest corridor connecting Myohyang to the main mountain range, the underlying causes of habitat loss are the potential fragmentation of the forest by future development (i.e. roads, tracks, trails etc.), the uncertain long-term legal status of biodiversity conservation measures, and unmanaged activities detrimental to biodiversity values (i.e. hunting, and over-conversion to exotics).

The project will address the area's legal designation as long-term forest, by undertaking a survey to define a long-term habitat link to the Mount Rangrim Nature Reserve and establish the corridor as a buffer for the needs of Myohyang's wildlife. It should be noted that the project does not aim to gazette the area as a strictly protected area. Instead it aims to ensure biodiversity considerations are taken into account when determining future uses of the forest. The project will also carry out awareness building exercises in adjacent communities including making it a priority area for stepping up anti-hunting measures (national laws are adequate to protect the wildlife of the area, provided they are enforced). Small pilot projects, such as replanting of degraded bottlenecks will also be undertaken. The whole exercise will be invaluable capacity building for PA staff in getting them to understand spatial planning needs of ecosystem reserves and the local context of Myohyang.

Management Deficiencies

The Nature Park administrators currently run a well ordered PA, yet they are constrained by the lack of facilities and the difficulties in coordinating management activities across the entire protected area. The Nature Park has outlying patrol stations that are difficult to reach in the mountainous terrain and communication facilities between the stations and the headquarters in Hyangsan County are limited. The headquarters' administrators have excellent staff management skills and are responsible for preparing rosters for the approximately 400 staff. Nevertheless, it lacks the equipment and materials to undertake biodiversity management measures. Administrators also have very little experience in developing financial mechanisms for biodiversity conservation.

The Nature Park staff currently have little knowledge of how to carry out appropriate biodiversity conservation and management practices. Nevertheless, a large body of willing staff exists and there is a clear opportunity to overcome the constraint if the staff are instructed in basic biodiversity conservation principles. Strengthening human resource capabilities is therefore a major element that the project must address. Training of the PA staff and local community representatives to undertake

rapid assessments and biodiversity surveys will increase awareness and, moreover, represents a cost-effective method of collecting information.

Staff are conscious of the incongruity of being placed to manage a PA important for wildlife, despite their lack of vocational training, both in management activities and information gathering. For example, staff stationed in remote sites (e.g. looking after temples) could contribute wildlife records to management but feel unqualified to provide information, particularly in the absence of a formalised reporting system. Training requirements also extend to PA protection. Greater emphasis needs to be placed on enforcement of regulations restricting the use of biological resources. Training in patrol techniques that focus on biodiversity protection and monitoring biodiversity values is also seen as a key requirement.

Project Rationale and Objective

The objective of the project is to protect biodiversity in Mt. Myohyang in central DPRK identified as globally significant based on the rich altitudinal variation in forest-types and high species richness of plants and animals including many threatened and/or endemic species. This will be achieved by initiating a protected area management scheme that focuses on biodiversity conservation, demonstrating a model of protected area management for the rest of the country. The result will enable the Myohyang PA to meet the IUCN Protected Area Management classification scheme, with the current nature park being classified as a "National Park" (IUCN Category II).

The rationale of the project is to provide the expertise and financial inputs required to result in better protected area management. The project is intended to take three years, building upon the large body of dedicated staff in place already at Mount Myohyang and the further contributions pledged by DPRK. The staff's interest in and willingness to improve biodiversity conservation measures (along with the willingness of local communities to participate) provide the platform for ensuring the long-term success of the GEF intervention.

As so much of Korea is mountainous, management successes in Myohyang will be widely replicable in other areas. This project duplicates no activities with any other project (GEF-funded or otherwise) in DPRK. The fact that this proposal represents the first project to focus on biodiversity conservation in DPRK again highlights the importance DPRK has recently placed on biodiversity conservation.

Expected Project Outcomes (Alternative Course of Action)

To meet the objective of protecting the globally significant biodiversity of Mount Myohyang through improved PA management, the project must address the underlying causes of the processes threatening biodiversity values. Consequently, the project's outcomes are designed to respond to the three main concerns: information failure; institutional deficiency; and management deficiency.

The lack of information currently available for the Myohyang nature park means that a phased approach is required in order to succeed. Initially the project will concentrate on achieving a clear vision of what can be achieved through better management of the PA. This will include development of information systems that will assist in determining clear objectives for PA management and also provide data for ongoing monitoring. Outcomes focussed on the provision of information also include the development of outreach strategic plans to ensure relevant information is disseminated.

In addition to putting in place information systems, the project will also initially concentrate on developing the institutional and policy capacity within DPRK and especially for the Myohyang PA. The project will also build the capacity of the PA staff, management and Ministry officials to carry out biodiversity conservation measures.

Outcomes that respond to management deficiencies focus on training and capacity building, reflecting the recognition that long-term success in this is best achieved through a low-intensity process of continuous seepage of knowledge between stakeholders and advisors, rather than solely intensive short courses. The latter are important, but more important is the opportunity for participating staff to use the information they have gained in an environment where further guidance and refinement of technique is possible.

Building on these outcomes, the project will develop a Management Plan for the on-going management of the Myohyang PA. The Management Plan will be implemented in the final year of the project by the PA Administration, with assistance from the PA advisor. This will be the culmination of the adaptive management built-in to the project components implemented during the first two years of the project. During the final year, the implementation of the Management Plan will be reviewed to ensure its sustainability beyond the life of the project and to ensure the capacity exists to build upon feedback from the monitoring and review mechanisms. An outreach strategy for local communities and visitors will also be included.

1. Provision of Information

1-A Information Systems Developed

The project will develop an integrated information management system to compile, analyze, and disseminate information required for planning and decision making. Specifically, the information system will:

- enable management practices to be based on sound biological principles;
- provide policymakers, park managers, and other users with geographically related environmental information for Mt. Myohyang;
- assess effects of PA management activities in reducing threats to biodiversity, and identify refinements needed in activities; and
- provide a facility for the training of staff in database management, scientific investigation, and standardization of data collection and processing procedures.

The component will finance the establishment and operation of habitat, species and ecosystem monitoring systems designed to track environmental changes and to monitor the impact of project implementation. Ongoing monitoring of conservation activities and biodiversity values will provide information appropriate for resolving specific management questions, while at the same time providing ecological research training opportunities for DPRK scientists, and the involvement of local communities.

1-B Outreach Strategic Plans Developed

The project's strategy is to develop two main outreach strategic plans. The first responds to the need to develop alternatives to resource overharvesting, while the second concentrates on education and interpretation.

i. Alternatives to Resource Overharvesting Pressures

Local communities will be involved in project activities as a practical method of improving their understanding of the value of biological resources and as a means of responding to their resource needs. This will be achieved through participatory surveys, documentation of local knowledge, investigation of needs, exploration of sustainable methods of sharing biological resources, and the development of marketing strategies.

This component will result in increased awareness of biodiversity conservation issues and requirements among visitors to Mt. Myohyang. Also more sustainable resource sharing arrangements with local communities which focus on conserving biodiversity of global significance.

ii. Education and Interpretation

Extension and other awareness programmes addressing the needs, aims and practices of biodiversity conservation will be targeted towards all stakeholders including policy-makers, PA management and staff, local communities, and PA visitors. Large benefits are expected by raising awareness due to the strong commitment of stakeholders to the principle of biodiversity conservation.

Educational visits to the PA will be supported, as well as extra-curricular activities in local schools. A detailed tourism strategy will be included as part of the PA management plan. The project will also produce interpretative materials to improve tourist awareness.

2. Institutional Capacity Strengthened

2-A Biodiversity Protection Strengthened

In order to make sure the improved institutional and human capacity is effectively targeted toward the conservation of globally significant biodiversity, a framework of protection measures needs to be developed. This will involve determining the most appropriate zoning of the PA to ensure the threats to biodiversity are addressed, biodiversity is conserved, the resource needs of the local communities are met, and visitors continue to enjoy visiting the park.

The project will use the IUCN guidelines for protected area classification so that Mt. Myohyang may be used as a model for further PA management plans in DPRK. The main output expected is the reclassification of the PA as a National Park and the formalisation of a buffer-zone.

2-B Institutional and Policy Base Strengthened

This component will focus on improving the legal and institutional structures within which the PA Administration operates. For example, existing environmental legislation will be reviewed to determine whether sufficient legal support is given to the protected areas system. If required, recommendations for strengthening protected area management and enforcement capabilities will be made. This will ensure suitable conditions for project implementation are in place, as well as creating a sustainable framework in which management activities can be taken and enforced beyond the life of the project. The project will provide technical support for key units within the PA administration and the conservation sector within the Government.

3. Management Strengthened

3-A Management Capacity Developed

The main output of this component will be an improved PA administration structure. The management and financial procedures will be reviewed and "best practice" implemented. Developing the management capacity will also include the provision of necessary materials and

equipment. The outcomes of this component are closely linked to Component 3-C, as the successful implementation of the PA Management Plan is largely dependent upon having the management capacity in place to cope with the new activities and ensure they are carried out sustainably over the long-term.

This component has a large budget due to the fact that it includes the purchase of most of the project's technical and field equipment. Resources will also be provided for short-term assistance to resolve specific, but currently unidentified, managerial and technical problems.

3-B Human Resources Improved

Capacity building of PA staff and other stakeholders will be a major focus, through both courses and on-job training. To strengthen the biodiversity conservation and management skills of the PA staff, this component will focus on the underlying capacity constraints contributing to the currently inappropriate management practices. Training will be provided to staff that is both appropriate to their level of responsibility and maximises their learning potential. In order to improve capacity, effective monitoring systems will be put in place for PA staff to measure and understand the effects of management activities. PA staff will also be trained in using such systems so that they can continue to sustainably manage biodiversity values by generating and utilising information beyond the life of the project.

There are two elements to increasing the human resources of the PA. Improving the capacity of provincial authorities and administrators running the PA will be one element, while a ranger/staff training program will be the other. Administrators will be trained how to plan and execute management decisions, while rangers and "ground staff" will receive training to enhance capacity to manage, patrol and document biodiversity. The capacity of DPRK staff to sustainably maintain and manage biodiversity values in the Mount Myohyang PA over time will be aided by the involvement of a PA management advisor, stationed in DPRK (both at the project site and Pyongyang on an "as-needed" basis). Study-tours will also be organised as appropriate. In order to ensure the sustainability of management efforts over the long-term, the project will take account of the need for ongoing training. This is both a response to the inevitable turnover of staff and the need to keep up to date with best practices and lessons learned.

3-C Management Plan Developed

This outcome concentrates on the operational framework for the PA. Model operational guidelines for PA management will be developed by way of a Management Plan. The Management Plan will prioritise conservation actions and ensure management operations focus on threat mitigation. It will also be based on sound biological principles compiled and accepted by all stakeholders. Project support will provide technical assistance to help determine the most appropriate mechanisms for Mt. Myohyang in the context of DPRK's legal and institutional frameworks.

An operational Management Plan will be ready for implementation by the end of the second year of the project, based on the outputs described in the outcomes above. Furthermore, the Management Plan will utilise the ongoing data collection abilities of the developed database and geographical information systems.

The Management Plan will also set out pilot projects that will be undertaken to provide basic protection against habitat encroachment and illegal harvesting of natural resources by strengthening the patrolling capacity of park staff and supporting sustainable alternative livelihood activities for

local communities and other stakeholders. These will commence during the project on a small scale, with the assumption that they will be continued as part of the ongoing sustainable baseline. Responsibility for the pilot projects will rest with the PA administration, which may identify local groups to undertake the implementation of activities.

As part of the preparation of the Management Plan, consideration will be given to designing and implementing resource-use recommendations for the buffer zone. This will include both the PA staff and local communities.

In an effort to protect globally significant biological values from harvesting pressures, the Management Plan will be designed to incorporate local community involvement in the conservation process. Possibilities for benefit sharing arrangements will be explored and the resource needs of the local communities taken into account when collaboratively determining the appropriate use of buffer zone areas.

The management plan will also include a strategy to reduce the pressure on biological resources from tourists, one of the main threats identified during consultations with stakeholders. This will involve both a management strategy and a marketing strategy.

The management plan will be implemented during the project life in a phased approach, with the guidance of the PA advisor. This approach will provide greater management responsibility to the PA staff as they gain the expertise and confidence to carry out the required implementation task. The role of the advisor will be phased-out over time to ensure the PA staff can independently manage the PA and conserve its globally significant biodiversity. The implementation of the management plan will also involve collaboration with local communities to ensure their commitment to conserving globally significant biodiversity, while at the same time meeting their resource needs.

Activities and Financial Inputs Needed to Enable Changes

Before the project's main components get underway, some project start-up activities will be instigated. These include the hiring of the PA advisor (undertaken by UNOPS) and a short-term consultancy to hire a project planning expert. The role of the project planning expert will be to design, in conjunction with the PA advisor and the NCCE, a detailed, costed implementation plan for the project.

1. Provision of Information

1-A Developing Information Systems

- Targeted surveys of selected species, areas and habitats vulnerable to human activities, in order to complete the threats analysis and recommend specific actions
- Baseline surveys of very little-known groups such as invertebrates and lower plants
- Habitat and land use mapping
- Establishment of database, possibly with GIS capability
- Review of baseline survey results and previous information to select appropriate subjects for monitoring
- Design and initiation of schedules to monitor these subjects
- Maintenance of database

- Socio-economic survey to understand which resources are most avidly sought in the PA and which are most important to the communities
 - Survey forest corridor to north-east of the PA to define a long-term habitat link to Mount Rangrim Nature Reserve, and facilitate its legal establishment, to buffer PA wildlife populations against negative effects
 - Participatory survey for quarry species of plant to identify population trends in each species, document local knowledge, and identify management strategies for vulnerable species (area-limited harvest, otherwise limited harvest, complete protection)
- (GEF: US\$55,000. Non-GEF: US\$85,000. Total: US\$140,000)

1-B Developing Outreach Strategic Plans

i. Alternatives to Resource Overharvesting Pressures

- Investigation of role of buffer zone in providing scarce resources with appropriate regulation of activities
- Investigation of needs and possibilities for, followed where appropriate by implementation of, artificially enhancing resource base, e.g. fruit and nut plantations (using local species; not necessarily undertaken in PA or buffer zone) and enrichment planting of buffer zone
- Creation of revenue generating activities for local communities based upon successful conservation of resources to give them direct personal interest in such conservation, e.g. preparation of herbal medicines for sale to tourists
- Formalise biodiversity benefit sharing arrangements with local communities

ii. Education and Interpretation

- Extension and other awareness raising programmes among the communities, including participation in ecological survey data collection
- Educational visits to PA for local teachers and children
- Support of extra-curricular activities in schools, e.g. nest-box construction. Some activities may not directly attend to species of global significance, but all will be important to the global significance of the community in that they enhance understanding
- Survey of tourist attitudes to define areas of particular need and develop tourist management plan
- Development of marketing strategy for tourists
- Development of interpretative materials to build educated conservation awareness in the many tourists, in local communities and, during compilation of the materials, in the staff themselves
- Generous provision of interpretative materials so that tourists are more likely to behave appropriately and champion cause of biodiversity conservation following visit to Myohyang: natural history and conservation book/booklets, displays, introductory video, annotated signs along trails, specially educated guides, etc.

(GEF: US\$45,000. Non-GEF: US\$140,000. Total: US\$185,000)

2. Institutional Capacity Strengthened

2-A Strengthening Measures to Protect Biodiversity

- Preparation of policy recommendations for the PA and buffer zone (including harvesting quotas) based on data collected and stakeholder input and inclusion in the Management Plan for implementation
- Reclassification of the Nature Park (following IUCN guidelines for protected area classification) so that it is zoned primarily for biodiversity conservation

- Mapping and demarcation of buffer zone by all stakeholders and formal classification. Negotiation and agreement on permitted buffer-zone activities
- Design and implementation of land and resource use regulations (including harvesting quotas) for the buffer zone by PA staff and local communities
- Rezoning the PA to reduce tourist areas relative to nature reserve
- Legally formalise the wildlife habitat corridor from Mount Myohyang PA to Mount Rangrim Nature Reserve.

(GEF: US\$45,000. Non-GEF: US\$75,000. Total: US\$120,000)

2-B Institutional and Policy Base Strengthened

- Review existing environmental legislation to determine whether sufficient support is given to the protected areas system.
- Recommend improvements to the legislation if required, negotiate and implement.
- Collaboration with policy-makers in appropriate Ministries and Departments to establish status of the PA and the institutional framework for decision-making
- Clarify the roles of provincial authorities, MLEP, the PA Administration and other stakeholders
- Work with NCCCE and relevant government officials to ensure any required changes to the institutional and policy base are agreed and implemented
- Review existing regulations affecting (both constructively and perversely) biodiversity values in Myohyang.
- Assess whether existing measures are satisfactory, recommend changes, negotiate and implement.
- Recommend effective methods for ensuring regulations are enforced by PA administration and respected by Myohyang users (i.e. land managers, local inhabitants, tourists etc.)
- Ensure PA objectives are understood at the provincial and county levels and work with officials to ensure biodiversity conservation is included in normal resource-use decision-making
- Provide advice to contiguous counties in meeting their resource needs

(GEF: US\$45,000. Non-GEF: US\$50,000. Total: US\$95,000)

3. Management Strengthened

3-A Building Management Capacity

- Review management procedures with a view to making appropriate recommendations to improve the effectiveness of biodiversity conservation measures. Negotiate and implement in the Management Plan.
- Focus the mission of the PA Administration in light of the identified threats to biodiversity
- Ensure a financial control system is in place to enable effective management of the PA
- Undertake a review of financial mechanism “best practice”, to determine the most appropriate mechanisms for Myohyang PA that will ensure the sustainability of PA activities.
- Review management and technical procedures for possible constraints and provide required assistance to rectify difficulties
- Develop regular review mechanisms to include iterative improvements to systems as part of the project’s adaptive management approach
- Improvement of park infrastructure including trails, sign posting etc.
- Upgrading of the technical facilities for staff, including computer equipment, reference herbarium, a small library, and field equipment (e.g., binoculars, GPS)

(GEF: US\$215,000. Non-GEF: US\$125,000. Total: US\$340,000)

3-B Improving Human Resources

- Needs assessment for training of PA staff to give staff training schedule
 - Training for PA administration to level sufficient to plan and execute management decisions
 - Scholarships for conservation professionals and decision-makers to attend short courses focusing on conservation management disciplines. The training will be country-driven based on training needs agreed to by DPRK, but is likely to include: biological data management and use, conservation planning and monitoring, operational management, public outreach methods
 - In-country training workshops for decision-makers and PA administration staff:
 1. Protected area management planning and co-ordination
 2. Basic ecology
 3. Aims and practices of biodiversity conservation
 4. Monitoring and evaluation of biodiversity and conservation activities
 - Study-tours to view and learn from relevant protected area conservation programs
 - On-site practical program of education and skill development for rangers and PA staff to enhance capacity to manage, patrol and document the wildlife of the PA, particularly to increase capacity to respond flexibly to changing circumstances, with courses in:
 1. Patrolling skills
 2. Basic ecology
 3. Aims and practices of biodiversity conservation
 4. Basic survey techniques and field identification of selected species
 - Relevant training provided to local community representatives in biodiversity conservation and rapid assessments
 - Protected area management advisor works with PA staff to ensure understanding and capability to implement Management Plan.
 - Development of field guides for rangers and staff
- (GEF: US\$205,000. Non-GEF: US\$50,000. Total: US\$255,000)

3-C Preparing and Implementing a PA Management Plan

Most of the activities proposed for the project feed into the preparation of a PA (including buffer zone) Management Plan. The management plan will focus on the conservation of globally significant biodiversity as well as biodiversity of local value and will be prepared with the assistance of a PA management advisor.

- Collaborative development of the PA Management Plan by Government policy makers, bureaucratic managers, PA staff, Local communities and PA visitors
- Implement activities as set out in the Management Plan that have been developed by the project (i.e. data collection, monitoring system, institutional procedures, training schedules, buffer-zone management, and outreach strategic plans)
- On-going running and maintenance of the PA, including provision of staff, administration office, and utilities
- Work with the PA advisor to develop and implement operation systems
- Undertake pilot activities in the buffer-zone and forest corridor to identify and implement sustainable alternative livelihoods

(GEF: US\$85,000. Non-GEF: US\$375,000. Total: US\$460,000)

Project Inputs

Component	GEF US\$	Co-financing US\$	Sustainable Baseline Funding US\$	Total US\$
Project preparation and start-up	15,000	14,300	-	29,300
1-A Information Systems	60,000	85,000 ¹	-	145,000
1-B Outreach Strategic Plans	45,000	15,000 ²	125,000	185,000
2-A Biodiversity Protection Measures	55,000	75,000 ³	-	130,000
2-B Institution and Policy	45,000	-	50,000	95,000
3-A Management Capacity	215,000	-	125,000	340,000
3-B Human Resources	205,000	-	50,000	255,000
3-C Management Plan	85,000	75,000 ⁴	300,000	460,000
Monitoring and Evaluation	25,000	-	-	25,000
GRAND TOTAL	\$750,000	\$264,300	\$650,000	\$1,664,300

Notes:

1. Comprising \$75,000 cash and \$10,000 in-kind from WCS
2. UNDP TRAC resources
3. Comprising \$10,000 UNDP TRAC resources and \$65,000 in-kind from WCS
4. UNDP TRAC resources

Sustainability Analysis and Risk Assessment

Several very strong reasons predict that positive project results will far outlast funding:

- the basic staff issue to be addressed is of capability, not primarily of (as is often the case) motivation. Pride in, and feeling of value of, the job is already high. The project will guide staff to use their time more effectively, rather than have to stimulate them to work. Once the capacity has been built, the need for recurrent costs to be met is low.
- among tourists, nature conservation ethic is already high; what is needed is merely clearer understanding of what this means in practice.
- the local generation of income through sustainable use of forest resources is a more viable option at Myohyang than elsewhere. Plants used in Koryo medicine abound and the many tourists are a ready market for locally prepared herbal medicines and other items (but see 'risks' below).
- the project has high replicability in other protected areas in Korea. Continued attention as the focus of a successful ground-breaking project is liable to motivate the staff to maintain this lead.
- the cultural significance of Mount Myohyang, high for centuries, is explicitly upheld by Korea's recent leaders, and is unlikely to diminish in the foreseeable future. There is no likelihood of progress being wiped out by re-assignment of the area for alternative use.
- basic infrastructure and equipment needs will be met during the project, so future capital outlays will be low, with expenditure primarily for maintenance and running costs.
- enhanced economic management of tourism offers potential for meeting recurrent costs.

The chief risks appear to be:

- This will be the first externally assisted project to manage protected or other field areas in DPR Korea. Many ground rules will need resolution. The strong national commitment to progress is likely to minimise procedural problems. High flexibility was shown by government during the project formulation mission, boding well for the future. The Wildlife Conservation Society (WCS) has been involved in similar projects in many countries throughout the world.

- Long-term project success involves developing the ability of PA staff to notice, observe, document and think over potentially problematical situations, develop ideas together with other stakeholders, implement these ideas, evaluate the results, and perhaps modify future actions. Knowledge can be imparted relatively swiftly, but conceptual growth needs time. Risks are minimised by giving the project a flexible life with an on-site protected areas management advisor.
 - Long-term community biodiversity in Myohyang hinges on the retention of a wildlife habitat corridor to the north-east. This will involve liasing with a different local administration and undertaking activities outside the PA. However, the area is already legally protected from deforestation by the 1992 Forestry Law, so there is not the formidable challenge of fending off competing land-uses involving deforestation.
 - The shortage of cultivable land in the county demands strong justification for project activities on land outside the PA and buffer zone (e.g. plantations). Chances of obtaining land for medicinal plant propagation are high, but careful negotiation with stakeholders will be required.
- Medium- or long term success with activities designed to lower pressure on PA resources by developing alternative sources of resources / income for local communities will depend upon careful consideration of the optimum flow of finances arising from such activities. There are no existing projects in DPR Korea to use as a model. However, the existing method of agricultural payment from state to farmers (all of whom work for state farms), of flat rate plus productivity-related bonus is potentially suitable as a base. Key issues to be addressed are assuring that of the revenue generated, minimal amounts leave the system (i.e. go to provincial / national levels) and that the benefits are felt by the entire community, not just the individuals engaged directly in the activities.

Stakeholder Involvement and Social Assessment

The Ministry of Land and Environmental Protection is the DPR Korea's executing agency. The PA's management body falls under this ministry, as do various other bodies involved in the project: county and province Departments of Land Management, and the Environment and Development Centre. Specific involvement will come from bodies outside the Ministry: the Academy of Sciences and the Korean Nature Conservation Union. The desire for management to be based upon biologically sound and transparent reasoning is strong at all levels of the MLEP, from the PA staff to the Pyongyang office. Other national stakeholders will complement PA staff activities, to strengthen collaboration and staff involvement.

Addressing socio-economic needs of local communities is a major aim, as these needs are currently met through over-consumption of the globally important biodiversity of the PA. Building a relationship allowing their meaningful input into the project through discussion with other stakeholders will be an experimental process. High priority will be given early in the inception of the project to designing ways to ensure this. Impacts of the project on communities will be assessed in an ongoing participatory fashion throughout the project and specifically at each phase of project review.

This proposal was formulated by MLEP, with technical support from the WCS, and in conjunction with all Pyongyang stakeholders. The formulation process for this proposal included unprecedented discussions with staff members of the Nature Park and local inhabitants. Two missions were made to the project site; the first by the consultant and the second by the UNDP-GEF Regional Advisor for Biodiversity. The first mission involved a three day (two night) excursion in the PA and surrounding areas, accompanied by Nature Park staff. Discussions were held on site with several

junior and two senior staff members of the Nature Park, three senior staff members from the provincial and county Departments of Land Management. Importantly, discussions were also held with nine farmers and two school-teachers in the proposed buffer zone, concerning their views on biodiversity status, resource use, and conservation awareness. The second mission was undertaken after a draft proposal had been formulated. The draft was explained to stakeholders at the Nature Park headquarters, including an outline of proposed activities. All present were satisfied that the proposal reflected the concerns they had expressed to the consultant.

INCREMENTAL COST ASSESSMENT

This project builds on the existing management of the protected area hitherto funded entirely by the government of DPRK. Funding comes chiefly from central government (recent figures indicate about US\$400,000 for the project period). The government intends to increase its allocation to the PA by a further US\$250,000 over the life of the project if external funding is obtained.

A small (currently almost insignificant) amount of funds is also generated by tourist entrance fees. The considerable tourist industry in the area has the potential to be involved in generating benefits for domestic or global biodiversity conservation, but does not appear to be doing so directly as yet. The government intends to increase tourist revenues (by encouraging international tourism) and to increase return of revenue to the PA. This commitment to the PA forms the baseline. Within the system boundary, there does not appear to be any other activity related to conservation or sustainable development.

Staff stressed during the reconnaissance visit for this proposal that they need outside technical assistance to gain the understanding and skills to resolve the suite of threats outlined (see Table 1). Over the last decade, quarry species populations (both plants and animals) have dropped, some species (not all famed for being particularly shy) have retreated from tourist areas (i.e., most of the protected area), pressures from local communities on the PA have grown, and the PA falls short of the major conservation education role it could play. Much staff time involves important activities such as patrolling to discourage intruders, but much is directed towards irrelevant activities (e.g. sweeping leaves from the margins of paths on windy days), directed towards cultural ends (e.g. caretaking of the many fine temples in the PA's mountains), or actively harmful to biodiversity conservation (e.g. removal of dead wood from the forest). All these activities are done with a diligence that indicates the chief problems of Myohyang arise not through lack of staff motivation, but lack of informed guidance. This most vital resource in protected area management - energetic and motivated personnel - is being seriously under-utilised. In the absence of planned external intervention, it would take a very long time to bring about the changes necessary.

From a global perspective, the PA can only fulfil its role in biodiversity conservation with international assistance. Until recently threats to PA biodiversity were few, but recent changes mean that only speedy action gives the opportunity for cost-effective conservation of what remains. The future alternative is very costly re-creation. Recurrent costs for hands-on management would be prohibitively high if the forest link to the north-east were severed and the PA were to attempt to maintain low density species such as large carnivores.

The project is the first externally-aided for biodiversity conservation intervention in the country. GEF resources and external co-financing will complement the government's baseline activities to change the focus of PA management from tourism and intended exclusion of local people to a

biologically-based management schedule which focuses on needs of globally significant components of the ecosystem and on biological community integrity itself, involving local people in this protection through a direct livelihood interest in it.

The “business-as-usual” scenario is resulting in a steady erosion of biodiversity values of the PA. Not surprisingly, various species of global conservation concern, e.g. Long-tailed Goral, Common Musk Deer, Tiger, Mandarin Duck and the wild ginseng *Panax schinseng* are declining more steeply than are other components. This is of immediate direct global concern. Of international concern in the mid-term is that a community with many plant taxa endemic to Korea and containing a largely intact series of habitats from the plains/foothill boundary to the high peaks is at risk. To maintain this global importance necessitates the entire plan of work here proposed. Some of the activities do generate additional domestic benefits (notably the work with local communities) but these do not fall within the government's national priorities, as communities living away from the protected natural forests are facing even greater resource shortages than are those near them.

To date, national priorities for Myohyang were the preservation of scenic and cultural interest and government budgeting was more than adequate. The recent government interest in international biodiversity conservation, notably the preparation of the national Biodiversity Strategy and Action Plan and of the first country report to the Conference of the Parties of the Convention on Biological Diversity, revealed the global biodiversity importance of areas like Myohyang. As a result, the government now wishes to act on this priority through conservation efforts.

Even though the proposed activities are complementary in nature, considerable co-financing has been secured from the government as well as from UNDP and WCS. The government has committed itself to increasing its baseline funding for the PA from US\$400,000 to US\$650,000 over the three-year project period, on the basis that this project goes ahead. This reflects the government's strong priority to global biodiversity conservation. Also of particular note is UNDP-DPRK's commitment to the project from its TRAC resources. This contribution shows concrete commitment to the national government for biodiversity conservation in general. Co-financing is likely to be directed specifically towards local community/buffer zone work, as these have the strongest direct domestic benefits, and any baseline survey work of non-threatened species that may be carried out. Additional to the financial contributions, the involvement of WCS gives access to a world-wide network of experienced conservation scientists. WCS will provide some of the technical expertise as an in-kind contribution.

Incremental Cost Matrix

	Baseline	Alternative	Increment
Global Environment Benefits	Under-trained PA staff neither manage the area for biodiversity, nor have the capability to plan to do so. Thus, globally significant biological communities at risk, with some species (mostly those of high global significance) in steep decline or locally extinct	Mount Myohyang becomes a protected area to the calibre of IUCN category II (National Park) managed into the foreseeable future according to the globally significant biodiversity conservation needs of the area by a technically trained staff using regularly updated management plans formed. The achievements of the project in this one protected area are widely disseminated across Korea and result in substantial awareness raising among the populace in general on the aims, principles and practices of biodiversity conservation, and emulation in other protected areas facing similar challenges. This activates a process of consolidation of a network of well selected and managed protected areas across Korea, which would make a major contribution to global biodiversity conservation needs	An altitudinal series of plant and animal communities typical of the Korean peninsula, including a number of endemic species, is conserved for the international benefit

	Baseline	Alternative	Increment																
Domestic Benefits	<ul style="list-style-type: none"> Local communities face resource hardship which will increase as the resource base declines further Tourists do not capture maximum nature experience 	<ul style="list-style-type: none"> Local resource needs met while maintaining globally significant biodiversity values. This is achieved through negotiated resource planning for buffer-zone use and also through the development of alternative livelihood options. Tourists have richer experience when visiting site Increased tourist income 	<ul style="list-style-type: none"> Korean populace able to benefit from the preservation of biodiversity in an area of high national heritage value. Local populace has strengthened resource base. 																
Costs (US\$)	Government funding for area management: \$650,000	<ul style="list-style-type: none"> Information systems: \$140,000 Institutional capacity: \$385,000 Human Resources: \$265,000 Biodiversity Protection Measures: \$145,000 Outreach Strategy: \$100,000 Management Plan: \$575,000 	<table> <tr> <td>GEF:</td> <td>Non-GEF:</td> </tr> <tr> <td>\$55,000</td> <td>WCS - cash \$75,000 in-kind \$10,000</td> </tr> <tr> <td>\$235,000</td> <td>-</td> </tr> <tr> <td>\$215,000</td> <td>-</td> </tr> <tr> <td>\$70,000</td> <td>TRAC \$10,000 WCS - in-kind \$65,000</td> </tr> <tr> <td>\$35,000</td> <td>TRAC \$15,000</td> </tr> <tr> <td>\$100,000</td> <td>TRAC \$75,000</td> </tr> <tr> <td><u>\$710,000</u></td> <td><u>\$250,000</u></td> </tr> </table>	GEF:	Non-GEF:	\$55,000	WCS - cash \$75,000 in-kind \$10,000	\$235,000	-	\$215,000	-	\$70,000	TRAC \$10,000 WCS - in-kind \$65,000	\$35,000	TRAC \$15,000	\$100,000	TRAC \$75,000	<u>\$710,000</u>	<u>\$250,000</u>
GEF:	Non-GEF:																		
\$55,000	WCS - cash \$75,000 in-kind \$10,000																		
\$235,000	-																		
\$215,000	-																		
\$70,000	TRAC \$10,000 WCS - in-kind \$65,000																		
\$35,000	TRAC \$15,000																		
\$100,000	TRAC \$75,000																		
<u>\$710,000</u>	<u>\$250,000</u>																		
Totals	Cost of baseline: \$650,000	Cost of alternative: \$1,610,000	Incremental cost: \$960,000 Monitoring and evaluation: \$25,000 Project Appraisal \$15,000 Total: \$1,000,000																
			Of which, GEF: \$750,000 Co-financing \$250,000																

PROJECT BUDGET: Cash and In-Kind Contributions (US\$)

Component	GEF	Co-financing		Sustainable Baseline Funding ⁴	Project Total
		Cash	In-kind		
Project preparation	-	14,300 ¹	-	-	14,300
Personnel	-	20,000 ²	-	450,000	470,000
Experts	90,000	75,000 ³	75,000 ³	-	240,000
Training	252,500	30,000 ²	-	-	282,500
Equipment	250,000	30,000 ²	-	50,000	330,000
Travel	72,500	20,000 ²	-	-	92,500
Evaluation mission(s)	\$25,000	-	-	-	25,000
Miscellaneous	60,000	-	-	150,000	210,000
Project total	\$750,000	\$189,300	\$75,000	\$650,000	\$1,664,300

Notes:

1. Financed from UNDP-DPRK Enabling Activity surplus
2. Financed from UNDP-DPRK TRAC
3. Financed by WCS
4. Financed by DPRK

IMPLEMENTATION PLAN

The project will be executed by UNOPS. UNOPS has a history of executing UNDP-related projects in DPRK and is experienced with the Government procedures for executing internationally-funded projects in DPRK. It is important to build on this experience to ensure the smooth execution of the first GEF-funded biodiversity project in DPRK. The National Coordinating Committee for Environment (NCCE) is the coordinating body responsible for GEF projects in DPRK and will coordinate this project. MLEP has been designated as the implementing agency within DPRK. The project will be implemented in association with the Wildlife Conservation Society (WCS) and various national stakeholders. Of the few international organisations active in DPRK, UNDP has the largest and longest-standing presence. Co-operation was initiated in 1979 and as of 1992, UNDP was still the only international organisation with a desk office in DPRK. MLEP is responsible for the general management of land and environment in DPRK, the organisation of environmental protection nation-wide, the preparation of general plans on land construction and environment protection, the establishment of management regulations on land and natural resources, and the prevention of pollution. Within MLEP is the Environment and Development Centre (EDC), a research body which performs scientific data-gathering work specifically addressing the Ministry's requests and advises the Ministry on scientific and technical matters, the provincial and country Departments of Land Management, and the Mount Myohyang Nature Park management board. All these organs are involved in the project design and implementation. WCS is an international NGO dedicated to the conservation of wildlife based on sound scientific data. It currently carries out over 400 projects in 80 countries of which 125 projects are carried out in 15 Asian countries. It also has a history of working with national counterpart agencies to develop in-country capability for high calibre wildlife research and management.

Six-monthly plans will be produced to guide the project activities. The first such plan will outline the schedule of the rest of the project. After two years the formal Management Plan will be available and there will be a mid-term review of the project. The final year will see initial implementation of the Management Plan. The PA management and the Ministry of Land and Environmental Protection (MLEP), with on-site advice from WCS, will co-ordinate activities throughout the project.

ACTIVITIES	PROJECT-MONTHS											
	3	6	9	12	15	18	21	24	27	30	33	36
<ul style="list-style-type: none"> Development of interpretative materials to build educated conservation awareness in the many tourists, in local communities and, during compilation of the materials, in the staff themselves Generous provision of interpretative materials so that tourists are more likely to behave appropriately and champion cause of biodiversity conservation following visit to Myohyang: natural history and conservation book/booklets, displays, introductory video, annotated signs along trails, specially educated guides, etc. 			X		x		x		x		x	
<p>2-A Strengthening Measures to Protect Biodiversity</p> <ul style="list-style-type: none"> Preparation of policy recommendations for the PA and buffer zone (including harvesting quotas) based on data collected and stakeholder input and inclusion in the Management Plan for implementation Reclassification of the Nature Park (following IUCN guidelines for protected area classification) so that it is zoned primarily for biodiversity conservation Mapping and demarcation of buffer zone by all stakeholders and formal classification. Negotiation and agreement on permitted buffer-zone activities Design and implementation of land and resource use regulations (including harvesting quotas) for the buffer zone by PA staff and local communities Rezoning the PA to reduce tourist areas relative to nature reserve Legally formalised wildlife habitat corridor from Mount Myohyang PA to Mount Rangrim Nature Reserve. 				X		X						
<p>2-B Institutional and Policy Base Strengthened</p> <ul style="list-style-type: none"> Review existing environmental legislation to determine whether sufficient support is given to the protected areas system Recommend improvements to the legislation if required, negotiate and implement 		x										

ACTIVITIES	PROJECT-MONTHS											
	3	6	9	12	15	18	21	24	27	30	33	36
<ul style="list-style-type: none"> • Collaboration with policy-makers in appropriate Ministries and Departments to establish status of the PA and the institutional framework for decision-making • Clarify the roles of provincial authorities, MLEP, the PA Administration and other stakeholders 			X									
<ul style="list-style-type: none"> • Work with NCCCE and relevant government officials to ensure any required changes to the institutional and policy base are agreed and implemented • Review existing regulations affecting (both constructively and perversely) biodiversity values in Myohyang • Assess whether existing measures are satisfactory, recommend changes, negotiate and implement • Recommend effective methods for ensuring regulations are enforced by the PA administration and are respected by Myohyang users (i.e. land managers, local inhabitants, tourists etc.) 				X	X	X						
<ul style="list-style-type: none"> • Ensure PA objectives are understood at the provincial and county levels and work with officials to ensure biodiversity conservation is included in normal resource-use decision-making (as required) • Provide advice to contiguous counties in meeting their resource needs (as required) 												
3-A Building Management Capacity <ul style="list-style-type: none"> • Review management procedures with a view to making appropriate recommendations to improve the effectiveness of biodiversity conservation measures. Negotiate and implement in the Management Plan. • Focus the mission of the PA Administration in light of the identified threats to biodiversity • Ensure a financial control system is in place to enable effective management of the PA • Undertake a review of financial mechanisms "best practice", to determine the most appropriate mechanisms for Myohyang PA that will ensure the sustainability of PA activities 			X		X							

ACTIVITIES	PROJECT-MONTHS											
	3	6	9	12	15	18	21	24	27	30	33	36
<ul style="list-style-type: none"> Review management and technical procedures for possible constraints and provide required assistance to rectify difficulties Develop regular review mechanisms to include iterative improvements to systems and ensure system function Improvement of park infrastructure including trails, sign posting etc. Upgrading of the technical facilities for staff, including computer equipment, reference herbarium and small library 		X				X		x		X		x
<p>3-B Improving Human Resources</p> <ul style="list-style-type: none"> Needs assessment for training of PA staff to give staff training schedule Training for PA administration to level sufficient to plan and execute management decisions Scholarships for conservation professionals and decision-makers to attend short courses focusing on conservation management disciplines. The training will be country-driven based on training needs agreed to by DPRK, but is likely to include: biological data management and use, conservation planning and monitoring, operational management, public outreach methods In-country training workshops for decision-makers and PA administration staff: <ol style="list-style-type: none"> Protected area management planning and co-ordination Basic ecology Aims and practices of biodiversity conservation Monitoring and evaluation of biodiversity and conservation activities Study-tours to view and learn from relevant protected area conservation programs 		X						x	X			x

ACTIVITIES	PROJECT-MONTHS											
	3	6	9	12	15	18	21	24	27	30	33	36
<ul style="list-style-type: none"> On-site practical program of education and skill development for rangers and PA staff to enhance capacity to manage, patrol and document the wildlife of the PA, particularly to increase capacity to respond flexibly to changing circumstances, with courses in: <ol style="list-style-type: none"> Patrolling skills Basic ecology Aims and practices of biodiversity conservation Basic survey techniques and field identification of selected species Relevant training provided to local community representatives in biodiversity conservation and rapid assessments Protected area management advisor works with PA staff to ensure understanding and capability to implement Management Plan. Development of field guides for rangers and staff 		x	X	x	x	x	X	x	x	x	X	x
<p>vi Preparing and Implementing a PA Management Plan</p> <ul style="list-style-type: none"> Collaborative development of the PA Management Plan by Government policy makers, bureaucratic managers, PA staff, Local communities and PA visitors Implement activities as set out in the Management Plan that have been developed by the project (i.e. data collection, monitoring system, institutional procedures, training schedules, buffer-zone management, and outreach strategic plans) On-going running and maintenance of the PA, including provision of staff, administration office and utilities Work with the PA advisor to develop and implement operation systems Undertake pilot activities in the buffer-zone and forest corridor <p>Monitoring and Evaluation (APR, TPR, Terminal Evaluation etc.)</p>				x	x	X	X	X	X	X	X	x

*Note: X = major activity during period, x = subsidiary activity.

PUBLIC INVOLVEMENT PLAN

Stakeholder Identification

National stakeholders include the National Coordinating Committee for the Environment (the Operational Focal Point for GEF activities in DPRK, and the national overseer of all activities related to the environment), the Academy of Sciences (which undertakes many biodiversity surveys in DPRK) and the Korean Nature Conservation Union (KNCU, a member of IUCN-the World Conservation Union, with major responsibility for preparation and dissemination of conservation and environment-related material in DPRK). The Academy of Sciences will play an important role in this project in generation of data and training of PA staff, and the KNCU will play an equivalent role in the dissemination of information. Important local stakeholders, as well as the PA management body and the sub-national divisions of MLEP, include the local administrations of North Pyongan Province and Hyangsan County, and the nominated spokespeople for all *ri* (sub-county division) falling within or adjacent to the protected area and its buffer zone.

Information dissemination and consultation

Continuing the consultation that has taken place to prepare the project brief, frequent meetings will be held with all key stakeholders to identify activities, responsibilities, opportunities and practicalities of cooperation, and aspired benefits to each party. Particular attention will be given to disseminating the results of the monitoring component of the project, indicating progress made and problems resolved, to maximise potential for replication of success in other protected areas of DPRK. This will be chiefly undertaken by KNCU through its existing bimonthly magazine and thrice-yearly technical bulletin. KNCU produced in 1976 a then widely distributed book on Mount Myohyang. This has been out of print for many years and KNCU intends to produce an updated version of it late in the project. This will detail not just the history and current status of the site, but will also discuss biodiversity conservation at it. Findings will be circulated nationally and internationally (e.g. to IUCN and World Conservation Monitoring Centre) to help identify global priorities for conservation action and to build liaison between DPRK conservation agencies and the international conservation organisations. Regular seminars are held for the staff of DPRK's nature parks to meet and discuss problems, progress and prognostications in their protected areas. Project progress reports will be distributed at these seminars at least twice yearly. In addition, staff from other protected areas will be invited to observe management techniques at Myohyang.

Social and participation issues

National social and economic systems provide the basic needs of all citizens. Local communities' needs will be integrated into the activities related to the buffer zone: location, usage regulations and income generation activities based upon sustainable use of natural resources. The government encourages all the stakeholders to actively participate in the management of the nature reserve and nature park and actually undertakes this work as a social movement. PA local communities look forward to project implementation commencing as soon as possible and they will be involved and will participate in preparing the Management Plan of the PA, biodiversity conservation and sustainable use of natural resources and equal benefit sharing arising from this process.

MONITORING AND EVALUATION PLAN

Internal to the Project

During the baseline survey work for the preparation of the management plan, the project will select indicators of success of PA management activity. Indicators for biodiversity may include: goral dung sites (number along standardised transects), bear signs (number per 100 km crossed), a measure of the general status of the large mammal community (based on camera trapping results), a measure of bird community health (based on records per year of distinctive and sensitive species such as Mandarin, Oriental Stork and Fairy Pitta), density of trees and shrubs in marginal areas subject to encroachment, and some measures of quarry plant status. Finer precision would be premature, prior to clearer understanding of what are the preferentially threatened components of PA biodiversity and which of those are potentially monitorable. Development indicators may include: ability of senior PA staff to undertake biological fieldwork unaccompanied; ability of communities to manage specified natural resources in the buffer zone; ratio of protected area zoned primarily for biodiversity conservation to that for tourism; size of protected area and buffer zone; and others dependent upon the final selection of activities to be undertaken.

External to the Project

Using the indicators set out in the Project Summary of this proposal, the development indicators prepared by the project, and impact indicators, the project will be subject to standard UNDP monitoring and evaluation requirements. This includes Annual Performance Reviews (APRs) and a Tripartite Review. A final determination of appropriate impact indicators will be made by the Executing Agency and UNDP-DPRK as part of the “appraisal phase” when the MSP brief is developed into a UNDP Project Document. However, they will be based on the “objective indicators” set out in the Project Summary:

- Mount Myohyang becomes a protected area to the calibre of IUCN category II (National Park).
- Intact ecosystem and biodiversity representing the Palearctic biogeographic realm
- The achievements of the project are widely disseminated across Korea and result in substantial awareness raising among the populace in general on the aims, principles and practices of biodiversity conservation, and emulation in other protected areas facing similar challenges.

Verification of the indicators will be based on the monitoring systems put in place as part of the project activities, IUCN criteria for protected areas, surveys of visitor attitudes, use of similar management regimes across DPRK, and resource pressure assessments.

Given that this project represents the first GEF-funded biodiversity conservation project in DPRK, particular attention will be paid to the performance of the project and the effectiveness of its implementation. In this way, lessons can be gained and applied to future GEF biodiversity projects in DPRK. This approach will involve two missions to DPRK. A mid-term monitoring mission will take place to review the performance of the project and final evaluation mission will also occur.

TECHNICAL REVIEW

Not obtained (GEF grant proposal does not exceed US\$750,000).

PROJECT CHECKLIST

PROJECT ACTIVITY CATEGORIES			
Biodiversity	Climate Change	Intern'l Waters	Ozone Depletion
Protected area zoning/mgmt: X	None	None	None
Buffer zone development: X			
Inventory/monitoring: X			
Ecotourism: X			
Agro-biodiversity:			
Trust fund(s):			
Benefit-sharing:			
Other:			
TECHNICAL CATEGORIES			
Institution building: X			
Investments:			
Policy advice: X			
Targeted research:			
Technical/management advice: X			
Technology transfer:			
Awareness/information/training: X			
Other:			

REFERENCES

- Fiebig, J. 1993-1995. Dreijährige ornithologische Studien in Nordkorea. *Mitt. Zool. Mus. Berl.* 69 (suppl. 17): 93-146, 71 (suppl. 19): 43-99.
- IUCN. 1996. *The 1996 IUCN Red List of Threatened Animals*. Gland, Switzerland: IUCN.
- Reid, D., Jiang, M., Teng, Q., Qin, Z. and Hu, J. 1991. Ecology of the Asiatic Black Bear (*Ursus thibetanus*) in Sichuan, China. *Mammalia* 55: 221-237.
- Won, Pyong-Oh. 1996. *A field guide to the birds of Korea*. Seoul: the Korea Association of Wildlife Conservation.

ANNEX 1: THREATS ANALYSIS

Threats facing the globally significant biodiversity, underlying causes and activities to combat them.

Threatening Process	Nature of Threat	Underlying Causes	Main Nature of Cause	Relevant MSP Activities
Direct Species Loss	<p>Overharvesting:</p> <ol style="list-style-type: none"> 1. Animal poaching 2. Plant collection 	<ul style="list-style-type: none"> • Natural resources available to local communities outside protected area insufficient to meet needs, especially after several years of poor harvests 	Multiple	<p>Component 1-A:</p> <ul style="list-style-type: none"> • Socio-economic survey to understand which resources are most avidly sought in the PA and which are most important to the communities <p>Component 1-B:</p> <ul style="list-style-type: none"> • Investigation of role of buffer zone in providing scarce resources with appropriate regulation of activities • Investigation of needs and possibilities for, followed where appropriate by implementation of, artificially enhancing resource base (using local species; not necessarily undertaken in PA or buffer zone) <p>Component 2-B:</p> <ul style="list-style-type: none"> • Ensure PA objectives are understood at the provincial and county levels and work with officials to ensure biodiversity conservation is included in normal resource-use decision-making • Provide advice to contiguous counties in meeting their resource needs <p>Component 3-C:</p> <ul style="list-style-type: none"> • Undertake pilot activities in the buffer-zone to identify and implement alternative supply of sustainable resources

Threatening Process	Nature of Threat	Underlying Causes	Main Nature of Cause	Relevant MSP Activities
Direct Species Loss (continued)	Overharvesting: 1. Animal poaching 2. Plant collection (continued)	<ul style="list-style-type: none"> PA not classified primarily for biodiversity conservation and buffer zone not legally defined in terms of location, area or of activities permitted 	Institutional deficiency	<p>Component 2-A:</p> <ul style="list-style-type: none"> Preparation of policy recommendations for the PA and buffer zone (including harvesting quotas) based on data collected and stakeholder input and inclusion in the Management Plan for implementation Reclassification of the nature park (following IUCN guidelines) so that it is zoned primarily for biodiversity conservation Mapping and demarcation of buffer zone by all stakeholders and formal classification Design and implementation of land and resource use regulations (including harvesting quotas) for the buffer zone by PA staff and local communities <p>Component 1-B:</p> <ul style="list-style-type: none"> Formalise biodiversity benefit sharing arrangements with local communities Creation of revenue generating activities for local communities based upon successful conservation of resources to give them direct personal interest in such conservation, e.g. herbal medicines <p>Component 1-B:</p> <ul style="list-style-type: none"> Extension and other awareness raising programmes among the communities, including participation in ecological survey data collection Development of interpretative materials to build conservation awareness in local communities Educational visits to PA for local teachers and children Support of extra-curricular activities in schools
		<ul style="list-style-type: none"> No formalised benefit sharing of biodiversity with local communities 	Information failure (need for outreach programme)	
		<ul style="list-style-type: none"> Low understanding of biodiversity conservation management aims and practices among local communities, despite strong commitment to the principle 	Information failure	

Threatening Process	Nature of Threat	Underlying Causes	Main Nature of Cause	Relevant MSP Activities
		<ul style="list-style-type: none"> Insufficient enforcement of existing regulations 	Management deficiency	<p>Component 2-B: (all activities)</p> <p>Component 3-A:</p> <ul style="list-style-type: none"> Review management procedures with a view to making appropriate recommendations to improve the effectiveness of biodiversity conservation measures. Negotiate and implement in the Management Plan Focus the mission of the PA administration <p>Component 3-B:</p> <ul style="list-style-type: none"> on-site training in patrolling skills training of local community representatives
Ecosystem and Habitat Decline	Tourism Pressure	<ul style="list-style-type: none"> Low tourist awareness of biodiversity conservation requirements and value 	Information failure	<p>Component 1-B:</p> <ul style="list-style-type: none"> Development of a marketing strategy for tourists
		<ul style="list-style-type: none"> Low tourist awareness of effect of their actions on biodiversity values 	Information failure	<p>Component 1-B:</p> <ul style="list-style-type: none"> Development of interpretative materials to build educated conservation awareness in the tourists Generous provision of interpretative materials
		<ul style="list-style-type: none"> Lax control of the effects of tourist activities on biodiversity values 	Institutional deficiency	<p>Component 2-A:</p> <ul style="list-style-type: none"> Preparation of policy recommendations for the PA and buffer zone based on data collected and stakeholder input Reclassification of the nature park (following IUCN guidelines) so that it is zoned primarily for biodiversity conservation Rezoning the PA to reduce tourist areas relative to nature reserve <p>Component 3-A</p> <ul style="list-style-type: none"> Improvement of park infrastructure including trails, sign posting etc.
		<ul style="list-style-type: none"> Insufficient planned management of tourism impacts, in the face of increasing tourist numbers 	Management deficiency	<p>Component 1-B:</p> <ul style="list-style-type: none"> Survey of tourist attitudes to define areas of particular need and develop tourist management plan <p>Component 3-A: (all activities)</p> <p>Component 3-B: (all activities)</p> <p>Component 3-C: (all activities)</p>

Threatening Process	Nature of Threat	Underlying Causes	Main Nature of Cause	Relevant MSP Activities
	Firewood Collection	<ul style="list-style-type: none"> County's plantation allocation not currently being met 	Institutional deficiency	<p>Component 2-B:</p> <ul style="list-style-type: none"> Ensure PA objectives are understood at the provincial and county levels and work with officials to ensure biodiversity conservation is included in normal resource-use decision-making Provide advice to contiguous counties in meeting their resource needs
Ecosystem and Habitat Decline (continued)	Firewood Collection (continued)	<ul style="list-style-type: none"> Enforcement measures need to be strengthened 	Management deficiency	<p>Component 2-B: (all activities) Component 3-A:</p> <ul style="list-style-type: none"> Review management procedures with a view to making appropriate recommendations to improve the effectiveness of biodiversity conservation measures. Negotiate and implement in the Management Plan Focus the mission of the PA administration <p>Component 3-B:</p> <ul style="list-style-type: none"> on-site training in patrolling skills
Detrimental PA Management Practices		<ul style="list-style-type: none"> Untrained staff with poor knowledge of biodiversity conservation practices Unavailable information relevant to sound management 	Management deficiency Information failure	<p>Component 3-A: (all activities) Component 3-B: (all activities) Component 3-C: (all activities) Component 1-A: (all activities)</p>
Ecosystem and Habitat Loss	Habitat Isolation	<ul style="list-style-type: none"> Potential fragmentation of forest by future development Uncertain long-term legal status of biodiversity conservation measures Unmanaged activities detrimental to biodiversity taking place (i.e. hunting, over-conversion to exotics) 	Information failure Institutional deficiency Management deficiency	<p>Component 1-A:</p> <ul style="list-style-type: none"> Survey forest corridor to define a long-term habitat link and facilitate its legal establishment to buffer PA wildlife populations <p>Component 2-A:</p> <ul style="list-style-type: none"> Legally formalise the wildlife habitat corridor from Mount Myohyang to Mount Rangrim Nature Reserve <p>Component 3-C:</p> <ul style="list-style-type: none"> Undertake pilot activities in the forest-corridor as identified

ANNEX 2: BIODIVERSITY OF GLOBAL SIGNIFICANCE

Notes on species of global conservation significance found in or reported from Mount Myohyang

The information about the biodiversity of Mount Myohyang is scattered in various sources in a variety of languages. An attempt is made here to summarise information on the species of elevated global or national interest believed to occur in the PA and its surroundings. Global status listings are taken from IUCN (1996), or, for birds, from M. J. Crosby (*in litt.* 1999) from the BirdLife International candidate list for the compilation of the Bird Red Data Book for Asia. National listings are taken from an annex drafted for the national Biodiversity Strategy and Action Plan.

Plants (source: Lo Jong Sam *in litt.* 1999)

- Nationally nearly extinct: *Viola websterii*, *Panax schinseng*, *Gastrodia elata*.
- Nationally threatened: *Clematis brachyura*, *Rhododendron yedoense*.
- Rare: *Girardinia cuspidata*, *Reynoutria japonica*, *Deutzia coreana*, *Rhodiola elongata*, *Bergenia pacifica*, *Sophora japonica*, *Asarum heterotropides* var. *seoulense*, *Aralia continentalis*, *Echinopanax elatum*, *Angelica gigas*, *Bupleurum konarobianum*, *Ligustium tenuissimum*, *Rhododendron fauriae*, *Styrax obassia*, *Thymus quinguccoctatus*, *Weigelia subsessilis*, *Sasamorpha purpuraseus*, *Arisaema amurense*, *A. heterophyllum*, *A. japonicum*, *A. peninsulae*, *Smilax china*, *Veratrum alpestrei*, *Galeorchis cyclochila*.

Most of these plants grow over a wide altitudinal range in the mountains. *Weigelia subsessilis* and *Berberis amurensis*, which is scarce, grow only below 350 m and are thus particularly susceptible to tourist and harvesting related encroachment. *Panax schinseng* is collected assiduously for its root. Although the species is common in captivity, this has been selectively bred, and the wild stock is now extremely rare.

- Taxa endemic to Korea found in Mount Myohyang: *Woodsia polystichoides* var. *nudiuscula*, *Quercus dentata* var. *erectosqamosa*, *Alnus vermieularis*, *Caltha palustris* form. *minor*, *Clematis flabellata*, *Lycocotnum pseudolaeye*, *Berberis koreana*, *Cardamine impatiens* var. *obtusifolium*, *Deutzia coreana*, *Astilbe thunbergii* var. *divaricata*, *Saxifraga farumii*, *Geranium knuttii*, *Buxus koreana*, *Viola websterii*, *Angelica distans*, *Peucedanum coreanum*, *Spuriopimpinella komarovii*, *Ligustrina fauriei*, *Lonicera diamotica*, *Viburnum koreanum*, *Weigelia subsessilis*, *Saussurea conandriifolia*, *S. diamantica*, *S. eriophylla*, *S. uchiyamana*, *Suilacina bicolor*.

Herpetofauna

The following amphibians listed as Nationally rare or endangered were reported from Mount Myohyang by O Myong Sok (verbally 1999):

- Amphibians, endangered: *Onychodactylus japonicus*, *Rana coreana* (r. *nigromaculata*)
- Amphibians, rare: *Hynobius lechii*, *Rana chosonica*
- Reptiles, endangered: *Coluber spiralis*, *Dinodon rufozonatum*, *Elaphe schrenckii*
- Reptiles, rare: *Takydromus wolteri*, *Elaphe davidi*, *Gloydus saxatilis*, *Vipera berus*

- Mandarin Duck *Aix galericulata* Candidate Globally Near Threatened; Nationally rare
Two seen on 23 April 1988 (Fiebig 1993-1995). Formally a regular breeding visitor to many of the streams in the area, but has been pushed back by out of the nature park by human pressure, and now occurs only on the remotest watercourses on the northern slopes of the main mountain range (O Myong Sok verbally 1999); recorded in 1998, when birds were video-taped (Pak U II verbally 1999).
- Black Woodpecker *Dryocopus martius* Nationally endangered
This species was observed several times in the upper Sangwon valley up to 1100 m, in April 1999. It is possible that all sightings stemmed from one pair. It occurs patchily in the park, but may be limited by the numbers of large trees (Pak U II verbally 1999).
- Oriental Stork *Ciconia boyciana* Candidate Globally Threatened; Nationally endangered
There were regular records in the 1950s and 1960s in the area and it is suspected that the species used to breed (O Myong Sok verbally 1999). However, there are no recent records, although it still visits the lower Chongchon river (see below).
- Fairy Pitta *Pitta nympha* Candidate Globally Threatened; Nationally rare
This species used to breed in Myohyang (which was its northern limit in Korea) and was observed relatively commonly on the 1965 survey. However, it has not been seen since a record of breeding in the early 1980s (Pak U II, O Myong Sok verbally 1999). It has declined throughout the northern parts of its range and now appears to be very scarce in mainland Korea (Fiebig 1993-1995, Won 1996).
- Japanese Paradise-flycatcher *Terpsiphone atrocaudata* Candidate Globally Near Threatened
This species used to breed in Myohyang and still occurs, chiefly at 500-1000 m, but was always apparently scarce (Pak U II, O Myong Sok verbally 1999) and there are no recent records. The related Asian Paradise-flycatcher *Terpsiphone paradisi* has also declined, perhaps to local extinction (O Myong Sok verbally 1999).
- Chinese Nuthatch *Sitta villosa* Candidate Globally Near Threatened
Occurs in the park area (Fiebig 1993-1995, O Myong Sok verbally 1999). May be scarce, a seasonal visitor, local in the area and/or declining as all nuthatches seen during the reconnaissance visit in April 1999 were *S. europaea*.

The following species, all classified as Nationally rare, were also reported from Myohyang by O Myong Sok (verbally 1999): Black-capped Kingfisher *Halcyon pileata*, Collared Scops Owl *Otus bakkamoena*, Eurasian Eagle Owl *Bubo bubo*, Tawny Owl *Strix aluco*, Northern Hawk Owl *Surnia ulula*, Little Owl *Athene noctua*, Eurasian Collared Dove *Streptopelia decaocto*, Band-bellied Crake *Porzana paykullii*, Pied Harrier *Circus melanoleucos*, Japanese Sparrowhawk *Accipiter gularis*, Northern Goshawk *A. gentilis*, Grey-faced Buzzard *Butastur indicus*, Upland Buzzard *Buteo hemilasius*, Golden Eagle *Aquila chrysaetos*, Eurasian Hobby *Falco subbuteo*, Asian Paradise-flycatcher *Terpsiphone paradisi* and Arctic Warbler *Phylloscopus borealis*.

Downstream along the Chongchon river, about 80 km from Myohyang, lies the internationally important Mundok Migratory Bird Reserve. This covers about 20 sq. km, and is important for passage migrant cranes (typical numbers: *Grus japonensis* c.100, *G. monacha* c.1200, *G. vipio* c. 200, *G. grus* c. 40 and *G. virgo* 1-2) and spring passage of Swan Goose *Anser cygnoides* (up to 4000 birds) and, most years, a few Oriental Storks. Other globally threatened species occur and the contribution the Myohyang range makes to the hydrological balance is likely to be significant (Pak U Il verbally 1999).

Mammals

- Grey Wolf *Canis lupus* Nationally endangered

Wolves probably still occur in Myohyang. One temple guard reported having heard one in mid-April 1999. A patrolling staff estimated that he saw wolves about one a year. The species was formerly much more easy to observe. Some staff consider that as the species is not 'useful', its protection is unnecessary.

- Brown Bear *Ursus arctos* Nationally endangered

Myohyang represents the southern range limit of Brown Bear in Korea. There are no recent records and the species was apparently never very numerous. It may now be extinct.

- Asian Black Bear *Ursus thibetanus* Globally Threatened: Vulnerable; Nationally endangered
Black bear numbers may remain relatively high in the PA, judging by the number of reports received. Most staff stationed in remote parts of the PA see bears not infrequently (especially in the autumn), and several cases of bears attacking illegal plant collectors were relayed. In all cases bears were specifically stated to have the whitish front collar diagnostic in Korea of this species. Some staff stated that they were aware a second species was supposed to occur in the park, but they had never seen it. One pile of faeces was found probably from a bear: it was c.25 cm long, 6.25 cm at its widest, curled and contained many whole grains and seeds.

- Eurasian Otter *Lutra lutra* Nationally endangered

Numbers in Myohyang are believed to be healthy, even along the river in the main valley among tourist and administrative development. No sign search was made on the April visit, but visually the habitat appears to be highly suitable.

- Eurasian Lynx *Lynx lynx* Nationally endangered

The status of lynx in Myohyang is unclear. There are previous records and the animal is notoriously secretive so although no recent reports were traced in April 1999, this may mean little. As with Asiatic Black Bear, the viability of any population remaining in the PA, and thus its global interest, is critically dependent upon maintenance of forest to the north-east.

- Leopard *Panthera pardus* Nationally endangered

Leopard numbers in Myohyang are now very low, having declined heavily over the last 50 years. The most recent evidence traced in April 1999 were two independent reports of direct sightings from 1996-1997.

- Tiger *Panthera tigris* Globally Threatened: Endangered; Nationally endangered

Tigers have probably not been resident in Myohyang for some decades, however, there were occasional reports of intermittent presence (probably wandering animals traversing the mountain range to the north-east) from the older residents interviewed in the buffer zone. There are no recent records.

- Common Musk Deer *Moschus moschiferus* Globally Threatened: Vulnerable; Nationally endangered

Musk deer were reported to occur in substantial numbers in Myohyang, across a range of altitudes and in any habitat away from tourist areas. No signs were found but this means little given the short time in the field and the unsuitability of most of the terrain to take track impressions (thick leaf litter, exposed rock, or compacted, melting, snow). However, all informants agreed that the species is declining fast as it is targeted by hunters. It is easily trapped along the trails it habitually uses and, as with goral, the blood is believed to make the hunter strong and resistant to most common ailments. This species is under global population decline as it is avidly harvested for its musk. Reportedly, this was not a problem in DPR Korea until a few years ago, because of farming of the deer. However, the low agricultural productivity of the last few years is forcing people to consume more wildlife and it is this that has driven the recent upsurge in hunting. The PA is more than adequate in size to support a substantial population, particularly if the species were able to reoccupy tourist areas (as do various other species of deer in areas where tourist behaviour does not disturb them).

- Long-tailed Goral *Naemorhedus caudatus* Globally Threatened: Vulnerable; Nationally endangered

Myohyang is one of few sites in the national protected area system supporting a viable population of gorals. Until very recently, numbers were high and animals were observed easily in areas outside those frequented by tourists. During the April visit, dung piles (including some very large ones close to sleeping places) identified as from this species were abundant along the main ridge between peaks Pobwang (1309 m) and Hyangro (1599 m). The population is clearly still viable, but is under threat because the species is targeted by hunters as it is easily trapped along trails it habitually uses and the blood is believed to make the hunter strong and resistant to most common ailments.

The following species, all classified as Nationally rare, were also reported from Myohyang by O Myong Sok (verbally 1999): Common Bent-winged Bat *Miniopterus schreibersi*, Greater Tube-nosed Bat *Murina aurata*, Least Weasel *Mustela nivalis*, Yellow-throated Martin *Martes flavigula*, Japanese Marten *M. melampus*, Eurasian Flying Squirrel *Pteromys volans*. Many of these species are of considerably more than national significance, being rare across the region. It is only the presence of buoyant populations in Europe or Africa that prevents the species being listed as of global conservation concern. As global biodiversity conservation aims to conserve representative genetic diversity (which varies across the geographical range) within a species, rather than just bald numbers somewhere in its range, the presence of some of these species in Myohyang is of international significance. The martens were reported to be rare, the weasel to be susceptible to trapping for fur, and the flying squirrel to persist commonly around temples and in the few areas with big trees.

Main plant communities of Mount Myohyang (source: Lo Jong Sam *in litt.* 1999)

The following are the main plant communities of Mt Myohyang:

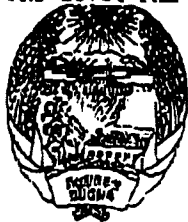
1. Up to 500 m: pure or mixed *Pinus densiflora*. Five different sub-communities:
 - a. *P. densiflora* - *Lespedeza bicolor* - *Carex lanceolata*
 - b. *P. densiflora* - *Fagara schinifolia* - *Spodiopogon sibiricus*
 - c. *P. densiflora* - *Corylus heterophylla* - *Artemisia keiskeana*
 - d. *P. densiflora* - *Carex siderosticta* - *Rhododendron mucronulatum*
 - e. *P. densiflora* - *Lespedeza maximowiczii* - *Melampyrum roseum*
2. 500-800 m: *Pinus densiflora* + *Quercus mongolica* codominated. Two sub-communities:
 - a. *P. densiflora* + *Q. mongolica* - *Lespedeza bicolor* - *Carex lanceolata*
 - b. *Q. mongolica* + *P. densiflora* - *Palura paniculata* - *Carex siderosticta*
3. 500-1000 m: *Betula schmidtii* dominated. Two sub-communities:
 - a. *B. schmidtii* - *Deutzia prunifolia* - *Carex siderosticta*
 - b. *B. schmidtii* - *Palura paniculata* - *Meehania artificifolia*
4. 1500-1800 m: *Betula ermani* dominated. Two sub-communities:
 - a. *B. ermani* - *Lonicera caerulea* var. *emphyllocalyx*
 - b. *B. ermani* - *Erythronium japonicum*
5. 1000-1800 m: *Abies nephrolepis* + *Picea jezoensis* dominated. Some areas with substantial *A. holophylla*.
6. 1800-1900 m: often almost mono-specific, examples include:
 - a. *Pinus pumila*
 - b. *Sabina sargentii*

Stands of the following species are also distinctive of Mount Myohyang's vegetation: *Thuja kotaiensis*, *Chosenia arbutifolia*, *Berberis koreana*, *Aconitum coreanum*, *Prunus sachalinensis*, *Spuriopimpinella komarovii*,

Betula schmidtii dominated communities are known in Korea only from Mount Myohyang, although the species occurs elsewhere. *Betula ermani* dominated communities are rare and away from Myohyang are found only over 2000 m.

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조선민주주의인민공화국
환경민족조정위원회

DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA
National Coordinating Committee for Environment

P.O.B: 44, Pyongyang
Phone: 850-2-3827222
Telex: 5350KP/5351KP
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Pyongyang, 30 May Juche 88(1999)

Dear Mr. Lemaire,

I have the pleasure to forward here enclosed the reviewed proposal on Biodiversity Conservation in Mt. Myohyang, Democratic People's Republic of Korea.

The preparation of the above-mentioned proposal was initiated since the approval of the concept paper on 3 December 1998 and was completed as a result of cooperation between and efforts by the National Coordinating Committee for Environment (NCCE), Ministry of Land and Environment Protection (MLEP) of the DPR Korea, UNDP and its consultant.

The proposal focuses on building the capacity to conserve and manage the globally significant biodiversity of Mt. Myohyang protected area. The main components of the project are:

- I. The preparation of a management plan of the protected area.
- II. Building the capacity of the management staff of the protected area.
- III. Workplan on protection activities in the bugges zone and neighboring villages
- IV. Nationwide replication of the activities in the Mt. Myohyang protected area

This proposal, as a priority in the DPRK, will enjoy the full support from Mt. Myohyang p protected area management staff, local communities and all other concerned sectors.

In view of the importance of the project, the Government of the DPRK has decided to increase the allocation of its financial resources to the project from US \$ 400 000 to US \$ 650 000.

The government has a special interest in this proposal, which represents the first GEF-funded project under the Biodiversity Operational programmes in the DPRK.

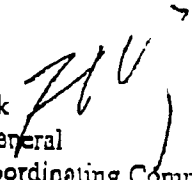
Mr. Christian Lemaire
UN Resident Coordinator
UNDP Representative
DPRK

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I am pleased to fully endorse the proposal and look forward to its timely approval and immediate implementation.

With best regards,


Ri Hung Sik
Secretary general
National Coordinating Committee
for Environment (NCCE)
DPR Korea