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Thai Gibbon PHVA Workshop

During 26-29 April, the Royal Thai Forest Department hosted a workshop on "Thai Conservation Policy for Gibbon Rehabilitation and Reintroduction" in Khao Yai National Park. The meeting, to which about 40 select participants from Thailand and abroad were invited, was also co-sponsored by the Thai Zoological Parks Organization, the IUCN/SSC Primate Specialist Group and the IUCN/SSC Captive Breeding Specialist Group (CBSG). The main workshop leaders were Dr. Ronald Tilson of the CBSG and the Minnesota Zoo and Dr. Ulysses Seal, Chairman of CBSG.

PHVA stands for Population and Habitat Viability Analysis. Developed and promoted mainly by the CBSG in its frequent international workshops, it is a tool for evaluating and managing animal populations that have become so small that they are threatened with extinction. It is based on a computer software product that integrates important developments in a new field of conservation biology called "small population biology". This new field has grown out of collaboration among population geneticists, ecologists, zoologists in zoos involved with captive breeding, and conservationists. The PHVA program for PCs, called *Vortex*, performs hundreds of population simulations to estimate the probability of extinction within the near future. In order to do this, it requires data to be input on birth and death rates of the species in question, age at first reproduction, degree of inbreeding, initial population size and number of subpopulations, environmental variability, threats causing mortality, and other things. The results of these population simulations are now being used by the IUCN Species Survival Commission (SSC) to rate species as "threatened", "endangered", "critical", etc. and to devise conservation priorities and strategies. Depending on the nature of the threats facing the species, strategies recommended could involve actions such as bringing all the remaining animals into captivity (a very drastic intervention that has been implemented in the cases of the California condor and the black-footed ferret in the U.S.), translocating animals from one area to a more suitable one, releasing animals from captivity into the wild ("reintroduction"), or simply improving protection of the wild populations.

The goals of the Khao Yai workshop were to collect information on gibbon population sizes in various forest areas in Thailand, estimate the chances that populations of various size will survive and preserve sufficient genetic variation, and devise appropriate conservation management strategies for Thai gibbons.

After a series of introductory talks on Thai gibbons and their conservation problems, the workshop divided into smaller working groups of specialists on various topics: gibbon populations in Thai protected areas, population biology and "Vortex models", status and numbers of captive gibbons in the kingdom, captive management methods including reintroduction, gibbon diseases, and human demography as it relates to gibbon conservation.

Although we need to collect better census data than we now have, the data that are available suggest that there are populations of the two important Thai species (*Hylobates lar* and *H. pileatus*) large enough to survive over the long term, but that poaching pressure will likely become an increasingly serious threat to their survival. This is because gibbon rates of

reproduction and natural increase are so low, that nearly any extra mortality imposed on them at all may send the species downward into the "vortex of extinction". In the wild, we have found that gibbon females produce only a single young every 3 or 4 years, and the young require approximately 8 to 10 years to reach reproductive age and find mates. At present, gibbon populations in Thailand as a whole do not call for measures such as increase in captive breeding efforts or reintroduction of captive animals back into the wild. They will require better protection of forest habitat by the Forest Department, however, and efforts to get villagers to stop hunting them.

One of the major management problems concerning gibbons in Thailand is what to do with the large number of individuals in captivity. Most of these animals suffer from inadequate care or living space in private homes, private and public zoos, and various types of entertainment or tourist places—even Phuket beach bars. The total number of gibbons in captivity is estimated at around 2000–2500 animals, many of them not registered by the Forest Department (hence illegal).

Many people feel that a program of reintroduction of captive gibbons would be desirable even though it is not justified on purely conservation grounds at present. Such a program could to some extent reduce the cramped captive population. It would also allow us to gain important experience and knowledge about the optimal methods of "rehabilitation" and reintroduction which may in the future become a more important part of conservation efforts. Reintroduction does not just involve release of animals into the forest to fend for themselves—animals just abandoned in the forest have a very low chance of successful adjustment and survival. It must incorporate measures to increase the chances of successful adjustment, including careful selection of healthy individuals, proper socialization or pairing with compatible mates, improvement of locomotor abilities, provision of more natural-like diet, careful survey and selection of release area, public relations, supervised release and follow-up observation. Obviously, proper reintroduction is not simple to carry out.

At present, the only scientifically-based reintroduction experiment with gibbons is being carried out by volunteers working with the Gibbon Rehabilitation Project at Bang Pae Waterfall, Phuket, in collaboration with local Forest Department officials. This project is also performing an important public education role.

Any successful major reintroduction effort in Thailand will require collaboration between the Forest Department, the Zoological Parks Organization, primatologists, ecologists and conservation NGOs. It is hoped that the Forest Department, which has responsibility for wild animals and for protecting forest areas, will make a commitment to collaborate in initiating a sensible gibbon management project. The final report of this PHVA workshop, which should be available very soon, will contain plenty of useful recommendations by many of the world's experts on the subject.

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