

J 045



# ASIAN PRIMATES

A Newsletter of the IUCN/SSC Primate Specialist Group

Vol. 4, No. 2  
Vol. 4, No. 3

September 1994  
December 1994



SPECIES SURVIVAL COMMISSION



CONSERVATION  
INTERNATIONAL

**GIBBON REHABILITATION  
PROJECT  
PHUKET, THAILAND**

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**Introduction**

Large numbers of young gibbons captured from the wild are accumulating in the hands of individual owners in Thailand. Although they may be the recipients of loving care when they are young, the gibbons become dangerous and difficult to manage as they mature. As a result, they often are kept restrained, fed foods unnatural to their diet in the wild, maintained isolated from potential mates and thus are unable to propagate.



In 1992, the Government of Thailand enacted new wildlife legislation making the possession of gibbons and other protected wildlife illegal, but enforcement of the law and the final disposition of confiscated animals remain problematic. The capture of gibbons for the pet trade must be stopped, and the raising of pets should be discouraged. Capture depletes wild populations, and gibbons are not easily bred in captivity. The complexity of the problem recently has been reviewed in Eudey (1994). Although many captives cannot make the adjustment, earlier studies suggest that with proper selection, preparation and supervision, some captive gibbons may be able to adjust to the wild and reproduce (see, for example, Berkson *et al.*, 1971; Brockelman *et al.*, 1973; Brockelman *et al.*, 1974; Tiingpalapong *et al.*, 1981; Marshall, 1992). More research needs to be carried out to find ways to improve the chances of successful reintroduction. A reintroduction project ideally should involve cooperation between "owners", veterinarians, Forest Department personnel and field primatologists.

### The Gibbon Rehabilitation Project

The Gibbon Rehabilitation Project is located at Bang Pae Waterfall in Khao Phra Thaew Royal Wildlife and Forest Reserve, which encompasses 2,333 hectares of virgin rain forest (Boulbet and Briksavan, 1980) and was established in 1977 in the northeast of Phuket Island, Thailand. The intent of the project is to reintroduce breeding pairs of lar gibbons (*Hylobates lar*) to the forest in Khao Phra Thaew. The project is affiliated with the Wild Animal Rescue Foundation of Thailand (WAR) in Bangkok. An Information Center has been established at the facility to educate both Thai and foreign visitors on the procedures and reasons for rehabilitation. A proposal for a school lecture program is awaiting funding.

The project began with two gibbons in January 1992. The present gibbon

population at the Rehabilitation Center is 35, of which 13 have been released, including three subadults that were released together. In October 1994, a birth occurred at the Center. It was not possible to get the pair into the wild before the baby was born because of insufficient staff. Three more couples have reached the criteria for pair-bonding and will be released as soon as qualified personnel are available. A three phase program, as described below, has been developed in an effort to ensure successful rehabilitation and reintroduction. A more detailed consideration of the procedures in Phases I and II can be found in Morin (1994).

### Rehabilitation Procedures (Phase I)

Most gibbons in captivity probably are not suitable for release into the forest. First of all, candidates should be strong and healthy, with no injuries or diseases that might impair their locomotor or reproductive abilities, and their teeth should be intact. Owners may have the canines of pet gibbons extracted to avoid injury. Secondly, they should be at home in the trees. Many gibbons raised in cages or around houses prefer to run on the ground and, therefore, cannot adapt to arboreal life. Thirdly, they should accept natural foods. Some gibbons may have been fed only a human diet and would not find wild foods to their liking (see Brockelman, 1994).

When a gibbon is received at the Rehabilitation Center, a case history form is completed in an attempt to establish its provenance as well as its age, sex, diet, health history, inoculations and any identifying features. A local veterinarian then anaesthetizes the gibbon in order to conduct morphological measurements and a basic medical examination, which includes a *V. femoralis* blood sample for virological testing, tuberculosis test and de-worming. Subsequently, the gibbon is isolated in a quarantine cage where its feeding and behavior are closely monitored.



After a gibbon is judged to be healthy, it is allowed to socialize with other gibbons of the same age. Socialization is one of the most important aspects of gibbon rehabilitation. Since the time of capture, many gibbons have never seen a conspecific; some may dislike other gibbons and possibly consider themselves as "humans". This attitude changes with time, often in as little as four weeks. Juveniles are caged together, as are subadults. Mature animals are placed in their own cage since same sex adults normally will fight; subsequently an effort is made to find and introduce a compatible mate. For several months, a potential pair is sequestered with little human contact in a private cage, permitting acclimatization to relative isolation in preparation for the independence of forest living.

Enclosures are designed for brachiation, swinging, jumping and climbing. This allows the gibbons to improve their locomotor skills while building muscle tone and strengthening the palmar surfaces of their hands and feet.

The gibbons are fed twice daily, at 0800 and 1300 hours, with a mixture of fruits (10%), vegetables (20%), carbohydrates (10%), leafy matter (50%) and protein (5%). Fresh produce is supplemented with "gibbon balls", a local modification of a supplementary food originally designed for captive gorillas at Apenheul in the Netherlands. The gibbons prefer the supplement to other foods, with the possible exception of bananas.

## **Release Procedures (Phase II)**

### ***Selection of release sites***

The careful selection of release sites is crucial to the success of a reintroduction program. We feel that the release area for lar gibbons, as discussed by Brockelman (1994), should satisfy several criteria:

(1) It should be good natural habitat for the species being released. Ideally the

species must have lived there once and become locally extirpated. Preferably, the site should be in the same part of the country in which the gibbon originated; that is, a northern Thai gibbon should not be released in the peninsula. There may be important genetic differences among the populations in widely separated parts of the country.

(2) The forest area should not have many wild gibbons remaining, or they probably will drive out the released animals. The territory of a single gibbon group may be as large as 30 hectares.

(3) The site should be part of a large forest area, not an isolated patch, so that it may be able to support a viable population, not just a few individuals. As a general rule, there should be space for at least 100 territorial groups.

(4) The site should be distant from areas of human activity, such as houses or roads. Adult gibbons raised with humans may readily attack them and can cause serious injury with their canines.

(5) The site should be in a national park or wildlife sanctuary or other protected area that is actively protected by guards.

### ***Release***

Mature gibbons suspected of forming a pair bond in the isolated, minimal human contact enclosures are observed closely for mutual grooming, duetting and possible copulation and the female's estrous cycles are recorded. If these criteria for a pair bond have been met, the gibbons are given another medical checkup, placed in a carrying cage and transported to the island of Ko Boi.

Ko Boi is a forest reserve, non-calcareous island approximately 7 km<sup>2</sup> in Phang Nga Bay. Steep terrain, thick foliage, an absence of beaches and shore rocks covered with razor clams make the island inhospitable to passerbys. The



island is inhabited by two other primate species: the dusky langur (*Trachypithecus obscurus*) and the long-tailed macaque (*Macaca fascicularis*).

The gibbons are placed in an acclimatization cage at the release site for one week; their diet and feeding schedule remain the same as in Phase I. Without such a period of acclimatization, the gibbons will wander off, possibly separate, may not be able to find the feeding station and easily could die due to stress and starvation. The gibbons learn that they are fed each day and become familiar with the new sounds and alarm calls of the local fauna. One person who is familiar with both gibbons should accompany them to the release site and conduct the daily feedings and initial follow-up behavioral observations; the presence of a familiar person may help to relieve the stress that the gibbons experience in their new environment.

On the seventh day, the cage is opened so that the gibbons may explore their new environment. They will fall several times as they discover rotten tree branches. Daily feedings are continued for four to five weeks while the gibbons are learning to find their own food. During this "weaning" period, they soon prefer natural foods over intentionally bland supplements, which by the fourth week usually are reduced to one rice ball per individual, depending on acquired foraging skills. Although the gibbons originally remain in the vicinity of the release site, their explorations increase with each week. After the supplementary feedings are discontinued, the female may leave the male to establish her own territory, after which he will rejoin her.

Behavioral observations on all released pairs must be continued, even though safety precautions by the observers are especially necessary when the gibbons are in a free state, to determine how well they adjust to the wild. They are checked for several days each month during the first year. Their dispersion, arboreal

locomotion, exploitation of natural foods and singing behavior are noted. Local people near the release site may be hired to report regularly on the gibbons, and to protect them; employment of local people serves to enhance public relations, as does informing villagers or other residents about the planned reintroductions. If they fail to behave like normal gibbons or if they follow people out of the forest, the gibbons may have to be returned to captivity. Failure to follow humans is considered to be the final, and most important, test of rehabilitation. These observations also are important to improve the chances of success for gibbons released in the future.

### Future Plans for Juveniles (Phase III)

One of the problems with the rehabilitation project is that most of the gibbons received are very young. Since gibbons are monogamous and form small, stable family groups, they cannot be released into the wild until they enter into a pair-bond upon reaching sexual maturity at approximately seven years of age. A two-year-old gibbon received for rehabilitation, for example, would have to remain caged for five years before reaching adulthood. There have been minimal problems with young animals sharing the same enclosure. One enclosure houses as many as nine gibbons, two to three years old. They play together without any apparent social dysfunction and have little need for human contact. This is a unique situation in that same-age gibbons have the opportunity to form play groups; in the wild gibbons live in small family groups in which juveniles do not have same-age playmates. These gibbons have shown improvement in their social abilities.

An alternative would be to release young gibbons on an island sanctuary where they would be fed and observed in a free state on a daily basis. At maturity, the gibbons would be captured and successfully reintroduced gibbons when they become young adults and release



them in forest reserve areas that presently are depopulated of gibbons.

Ko Tong, a small island located about 400 meters from Ko Boi, has been authorized for use by the Royal Forest Department as a release and study site for juvenile lar gibbons. This unique opportunity to study juvenile gibbon social behavior in a same-age grouping should yield interesting results. Phase III is scheduled to begin in mid February 1995.

## Conclusion

The Gibbon Rehabilitation Project appears to be the only undertaking to date to systematically rehabilitate captive gibbons for reintroduction into the wild. Although financial constraints have limited the size of the present project, it is hoped that it will serve as a model for similar projects for gibbons both within Thailand and elsewhere. We realize that our efforts may have little influence on future generations of lar gibbons, but we feel that the Gibbon Rehabilitation Project will make a difference in the quality of life for the gibbons we seek to assist.

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