

## REINTRODUCTION AND REHABILITATION OF GIBBONS IN WILD LIFE



### ETHOLOGICAL BEHAVIOUR: BRIEF INTRODUCTION

Poor knowledge about the ethology of a species can cause a failure in a reintroduction programme.

For this reason it's useful to talk about the main characteristics of the gibbon's behaviour.

Gibbons live in monogamous family groups consisting of an adult pair and one or three offspring. Pairs usually stay together for many years and rarely separate to search for another partner. Gibbons produce single offspring; twins are very rare.

Gestation length in all gibbons appears to be around 7 months. The young gibbon is weaned at barely 2 years of age. When fully mature, at about 8 years, it leaves its family group in order to look for a mate and a new territory.

The non-reproducing offspring can remain in the family till 10 years old and its role is to help the pair to manage the young offspring.

Parental care is very important: During this time, the youngsters learn many social, behavioural and sexual responses, e.g. how to call and communicate with others, how to manipulate and handle food and how to avoid predators.

Gibbons are strictly territorial animals: each group needs territories about 20-40ha.

Because gibbons are strongly dependent on a particular territory, they will not migrate to another part of the forest even when heavily disturbed.

This makes them particularly vulnerable when forest is being destroyed.

They usually mark their territory with loud and long sound bouts which usually have a duration of 10-20 minutes.

These vocalisations are called songs, which are produced daily in a certain time of the day.

These "songs" are in every species species- and sex-specific.

In most species, mated pairs may characteristically combine their songs in a relatively rigid pattern to produce coordinated duet songs. These songs are used not only for emphasising a role in territorial advertisement but also other functions have been attributed to gibbon songs, as mate attraction and maintenance of pair and family bonds.

One of the main characteristics of the environment where the gibbons live is the density, the diversity of the plants they need. The plants useful for these apes in their territory are mainly two species:

- **Figs trees:** as a source of food (and of course every kind of ripe fruits; leaves and insects are also eaten, but mostly as a supplement)
- **Dipterocarp trees:** for singing and building platform for sleeping.

By the way trees are important also because they use them to travelling: With their long arms they swing by the branches, brachiating at a fast pace.

## MEANING AND PURPOSE OF REINTRODUCTION IN GIBBONS

The American National Wildlife Rehabilitation Association (NWRA) defines wildlife rehabilitation as 'the treatment and temporary care of injured, diseased and displaced indigenous wildlife, and the subsequent return of healthy viable animals to appropriate habitats in the wild.'

The principal objectives of a reintroduction project are to establish a viable, free-ranging population in the wild of a species that has become globally or locally extinct in the wild.

We can talk about many kinds of reintroduction:

- **Re-establishment:** the use of captive-bred animals to re-establish an extinct population
- **Stocking reintroduction:** which involves supplementing a declining population with captive-bred animals.
- **Population reintroduction** (Susan M. Cheyne): adding captive animals previously rehabilitated to re-establish a wild decreased population, but only if the area can be adequately protected.

The main features we have to consider in a reintroduction program are:

- **Costs:** costs of reintroduction programs are to be viewed carefully in effort to conserve endangered species; it's important also to consider the morality aspect of the expense in order to consider if the programme costs are balanced with the possibility of good results.

- **Environment:** the reintroduced population may be a sustainable population; for this reason we must know if the area of releasing is suitable to give all the reintroduced population needs to survive. The main causes that make unsuitable the releasing environment for gibbons are:

- negative impact on the native flora or fauna because of competitive exclusion (chimpanzees and orang-utans).

- mortality due to animals being unused to natural predators in the release site (golden lion tamarins).

- poaching, traffic, shooting by humans: further these apes live in Third World countries.

In those countries which are experiencing the most rapid human population increases and hence, exerting huge pressures on their natural resources.

- inter- and intra-specific competition

- habitat quality at the release site: in the case of gibbons we have the example of the reintroduction of agile gibbons (*Hylobates agilis albibarbis*) in Central Kalimantan (Indonesia) since January 2003. The environmental features concerned

1. fruit abundance,
2. fruit productivity,
3. fruit diversity,
4. tree density.

When we analyze the density of trees in a releasing area we must consider also other data as size distribution of adult trees and the intensity of production activities.

We can use this productivity index:

$$I_m = F_{km} \cdot b_k \cdot d_k$$

Where:

**F<sub>m</sub>** = the fruiting score of all sampled individuals in species 'k' during month 'm'.

**b<sub>k</sub>** = mean dbh (diameter at breast height) of any adult tree for species 'k'

**d<sub>k</sub>** = density (number per ha) of adult trees for species 'k'

Diversity of fruiting trees was estimated using the Shannon-Weaver index, based on a formula in:

$$H = - \sum p_i (\ln p_i)$$

where:

**p<sub>i</sub>** is the relative frequency of a species in a given sample.

- **Loss** :how many animals it's possible to loose in order to establish a suitable population. When the new population is establishing in a new environment can happen for exemple that some individual can die because it's difficult to establish the right balances

After releasing there are some indispensable practise to act to be sure that the reintroduced population can alive in the wild.They are advised by “**UCN best guidelines 2007**”:

- at first it's necessary to monitoring (by discovering daily travel routes or thanks to radio collars) the releasing animals that means collect data of gibbon's behaviour, ranging, ecology, socialisation and interaction with other animals in the release area. Post-release monitoring must be in place with trained staff. Behavioural data are required for comparison with the released animals to determine adaptation.
- After releasing it's necessary to monitoring also the Environment to be sure that all the qualities of the releasing that allowed at the beginning
  - Animals should never be released into an area with an extant population to avoid competition for food resources and territory
  - Individuals younger than 2 years old should never be released. Because they need parental cares to learn how to live inside a social group and in the environment only adults should be released.
  - Animals without medical checks should never be released.
  - Socio-ecological and behavioural data on wild animals should be always available.

Many problems can occur in a reintroduction programme. The main causes should be Developmentally-stunted social skills: for exemple sometimes it's happened that a gibbon pair may have duetted and copulated in captivity, this is no indication that the association will continue once they are released.

- Possible stereotypic behaviour: for exemple due to the captivity

period or to a bad reintroduction process. These may have become dependent on that behaviour for comfort/reassurance, so stopping the animal from performing the behaviour without introducing other stimuli may be harmful.

- Malnourished and/or unable to brachiate properly
- Unable to sing/learn the duet, the species-specific morning singing bout where the male and female sing sex-specific songs.

#### SOURCES:

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