



Suggestion from our advisor

The Territorial Conflicts

Dear Prof. Warren,

16th December 2003

Since November 2003 many things happened to our gibbons in the forest and made us worry. At the moment everything is okay. All the gibbons released, which means eight animals (four in each group) are still alive.

Feeding On 12th October 2003 we started to give 1 kg every second day to the first group and 3 kg every day for the second group released. Kip and Hope (1st group) disappeared for 3 days (4th-6th Nov), but on 7th Nov we found them back to the rest of the group and looking normal. We were worried about the infant conditions if Kip (mother) could not get enough wild food. We therefore increased food-provision to 2 kg every second day, and we didn't stop it yet.

The group conflicts On 18th Nov 2003 15h30, while we were collecting data of the second group, Joe (the male of first group) came to the border of the second group, far from them about 20-30 m. Bo (the male of second group) saw him, started to sing hoot song and swung in the high canopy direct to Joe. Joe looked scared of Bo and went back to his territory. In this situation Lek (the female of second group) just sat on the branch and looked at Joe, then she went to sleep in a tall tree with her offspring.

On 30th Nov 2003 15h42 While we were collecting data of the first group, Kip and Hope (female and infant of first group) were resting in the night tree. Joe was drinking water from a tree hole far from Kip 8 meters, then he started to sing hoot song and watched something. We saw Bo coming and trying to follow Joe. Joe went away, continued to sing hoot song. He looked very scared of Bo, eliminated 7 times and kept far from Bo 20-30 meters. Bo went back to Kip's sleeping tree far from her about 3 meters. She was sitting and looking at Bo. Joe also came back to Kip's sleeping tree and followed Bo. Bo went away and stayed 15 meters from Kip). Then he moved again to Kip's sleeping tree.

While Bo had his back turned to Joe, Joe jumped to bite Bo from behind. They fell down to the ground. Bo ran back to his territory, Joe followed to bite him. They fought and fell down to the ground 2 more times. We tried to follow them. We found only Joe, he was looking for Bo and continued to sing hoot song. Then he retired to his territory.



We looked for Bo (we thought he could have been wounded or have a broken bone), but we did not find him.

We heard something fell down to the ground while we looked for them. We saw Joe lying on the ground, blood stain over and around his mouth and having convulsions. After 10 minutes Joe tried to climb up and recover on a tree. He laid down on a branch and slept in this tree (10 meters from the ground).

On 1st December 2003 we found Joe at the feeding station. He tried to eat but could not chew; his mouth stayed open all time, salivation was visible and a big wound was present on the lower lip. We gave him antibiotic syrup, but he ate only a bit of it. We were worried he had a fracture of the mandibula and could die if not able to eat. However, in the following days he got better, although he still cannot close the mouth in a normal manner (see picture).



After 30th Nov 2003, the day of the dispute between the two males, Bo disappeared. We searched, but did not see him.

We thought he was dead until the 15th Dec 8h10, when we found him with his group, looking healthy and in normal condition. We were very surprised. How could he survive for two weeks?

Behaviour

-Bo is very tame to human. Usually when he comes close to us, we shout or walk away. We used to shoot him with the bee bee gun, but he is less scared of it than gibbons of the first group released.

Sometimes I did not see him and he came quickly close to me. In this kind of situation I don't want to shout (I believe it may make him excite and he would bite me). Then he embraced me.

Since the middle of November 2003 social behaviour is in part changed.

-The members of the first group stay always together. The adult male separate from the others for short periods and the pair sing duet bouts more often. They always sing to locate each other in their territory.

-Juveniles in general not come down to the ground like adults do.

**Sincerely,
Tum**

• **Dear Tum,**

16th December 2003

Thanks for the news about the conflicts. Now the males are beginning to behave like normal wild males. I am glad they are recovering and I hope Joe's mouth heals so he can eat normally. In the wild males sometimes grapple together and fall to the ground. However, sometimes bites can be serious or even fatal. It is good news that they are vocalizing more as a result of the conflict, especially duetting. This needs to be noted down.

It seems to me that food availability may be better now, with all the territorial activity and singing. When food is not so available in the wild, they stop a lot of their social activity. Please try to keep some record of how many fruit trees the groups are using.

Thanks very much for the pictures. I would like to get back there to see what is happening.

**All the best,
Warren**

Stop Feeding the First Group

Dear Warren,

2nd November 2003

How are you? Here we have some news about the two groups of gibbons released. We also have a question about food providing. Let's start with the news. All the gibbons released, which means eight animals (four in each group) are still alive.

Last group released:The group released on 15 August 2003 is doing fine. We observe them one day per week, from 6:00 AM until the focal animal enters the night tree. Since the release, we made some small changes in the check-sheets and now the observations are more accurate.

This group is provided every day with 3 kg of market fruits, and this since the release. The gibbons spend the day foraging and exploring the area. The female is carrying an infant. We don't observe much social behaviour. The male, like in the previous released group, separates often from the rest of the group to forage on his own.

With this group we cannot leave our bags unwatched because the adult male tries to open them and explore the content. The adult female is able to open water bottles and drink all the content. Sometimes the male shows affiliative behaviour towards observers, looking for body contact with them (embrace) and trying to be groomed. No one of the members show agonistic behaviour towards us.

Group released in 2002:The observations are carried on. At the moment we observe the group once a week, using the same observation's standard as for the other group. If possible, we also check every day if they are healthy. Now this group has a home range of at least 11 square km.

Since March, when you came to see the gibbons, we changes four times the amount of food provided by project.

- On 12 March 2003 we reduced the food from 2.5 to 2 kg.
- On 19 May 2003 we reduced from 2 to 1 kg.
- On 16 August 2003 we reduced to 0.5 kg.
- But then, on 25 August 2003, we increased again to 1 kg because the animals looked hungry.
- On 12 October 2003 we started to give 1 kg every second day, and this is what we are still doing now.

After this last change in food amount, we watched if the animals, especially the female carrying the 1-year old infant, could provide themselves with enough forest's sources.

We observed these following behaviours:

-Adults (or all?) descending to the ground in non-feeding day to look for left-over fruits under the feeding-basket.

-Adult female feeding on lizards few times (e.g. 3 lizards in the same day; see picture). The female is still dominant at the feeding-basket.

-All of them foraging far from each other (hundreds of meters). Most of the times only one or two animals (infant not included) shows up at the feeding basket.

-Juvenile completely on its own all day. We observed this few days ago; normally he always follows one of the adults. The gibbon tried to locate the adults by calling but didn't have reply (we also couldn't locate them). It rested quite a lot during the activity period and also slept for 2 hours (see picture). At the end of



the activity period he settled down for the night by itself and slept on its own. The day after all the group's members came to eat together at the feeding-basket.

-Few days ago the adult female came down into our camp, which is always at the same place, in a non-feeding day, while 5 men (including 3 staff members and 2 volunteers) were having their lunch-break. She looked very hungry and not scared at all; she explored a rubbish-plastic bag, dipped the hand in the cup of tea of a volunteer and finally left. (The camp was also visited another time by the adult male of the new-released group.)

-Yesterday, at 7h35 the adult female came down into our camp again, in a non-feeding day. She explored a rubbish-plastic bag. Then she went up to a tree and rested, groomed herself and groomed the infant for around 45 minutes, then she started to forage and continued until 11h00 (Dr Tum left her). In the fruit tree (*Antidesma spp*), 5 meters from the ground, the infant separated from the adult female and ate the fruit by herself.

-Today (2nd November) was a feeding day (look for them from 7h30 to 11h00). They did not come to eat.

The questions:

1. Do you think that the episodes that we just listed above are a sign of need of continued food-providing? Do you think that we can stop feeding them or we should go on feeding for some more months (or until when they don't take GRP food at all?).
2. Is it normal that both the adult females of the 2 groups are always dominant on the males?
3. What do you think about the adult males of both the 2 groups separating from the rest of the group for many hours (even all day)?
4. And what do you think about the fact that the frequency of calling and duetting behaviour in the new-released group is much lower of what we observed for the other group (they almost never sing)?

Please let us know what do you think about these points. Thank you very much.

Last thing: Damiana is writing a report on the group released in 2002, from the release (27 September 2002) until 31 July 2003. We will reduce it to paper for publish. It will be wonderful if we can submit the paper to you and to Dr. Geissmann and publish it together. It will take probably one more month to finish the report and then it should take short time to write the article.

**Sincerely,
Tum**



Dear Tum,

4th November 2003

Thanks very much for the nice update on the gibbon groups. It will definitely be good to write up the findings on the 2 groups for publication. First the data needs to be organized and presented properly. It would be good to get together and discuss this before you start writing so it can be organized properly. First we have to decide where it should be published so that it is in the proper style.

I will try to answer your questions briefly now, although I don't have all the answers.

1. I think probably you should feed the groups as long as they continue to take food. You should reduce the amount if they are not eating everything.
2. Yes, females are usually dominant over all others around their young.
3. In the wild adult males separate from the others for short periods, usually when they are in territorial conflicts. But your pairs do not seem to be as well "bonded" as wild pairs usually are. maybe it's a problem of finding enough food. In wild groups, it is usually the females who know the locations of food sources the best.
4. The frequency of duetting may be a reasonable measure of who well bonded the male and female are. I would expect that the less singing they do, the farther apart they usually are. But singing frequency is also known to decrease in months of food shortage. You need to have quantitative measures of both duetting and distance apart.

Thanks for the great pictures.

**Sincerely,
Warren**

First Intergroup Conflicts

Dear Prof. Warren,

12nd September 2003

Few days ago we witnessed for the first time an interaction between the two groups of gibbons released.

It happened on 7th of September, 24 days after the release of the second group.

In the morning, for about two hours (from 7h35 until 7h55 and from 8h15 until 10h00), the two adult males were heard singing solo songs at the same time. They were at 100 meters from each other, both on the top of tall trees; Bo, the male of the new released group, was a bit higher than the other male. While singing they were both shaking branches around them; Bo seemed to employ more energy in shaking.

The rest of the group was not seen near Jo, the male of the first group released, and probably the same can be said for the other male, Bo.

The new released group gave already duet calls since release-day and probably the two groups already heard each other's calls.

Bo was quite close to the release's point (50 meters). And Jo was already seen in the hectare where he was singing.

The new released group has been also seen in the same hectare where Jo was singing. So we can think that there will be more interactions. We are really curious to see what will happen in the future.

We will let you know.

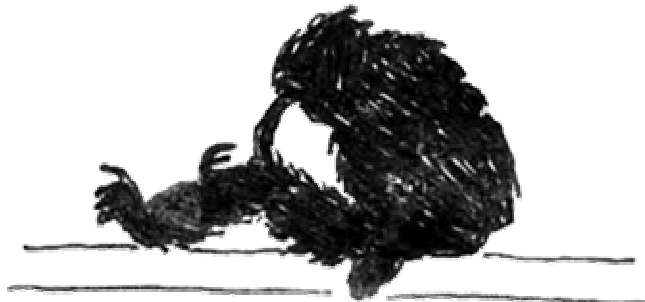
Best wishes,
Tum

Dear Suwit,

15th September 2003

That is very exciting. The males seem to be defending their territories like gibbons should. Usually males are separate from their groups a bit when they are singing solo. I hope that you are writing all this down in your notebooks. Some day we will want to write all this up for publication. How is the natural fruit situation?

Sincerely,
Warren B.



The First Few Days After the Release the Second Group

Dear Dr Brockelman,

This is a summary of what happened the first few days after the release.

Friday, 15th August 2003 The release-day the cage was opened at 10 am. Before opening the cage, 3 kg of fruits were placed in a basket hanging from a tree and not reachable from the cage; the gibbons saw it. As soon as the door was opened the adult male, called Bo, left the cage, followed by the adult female, Lek, with her clinging infant, Arun. Lek reached immediately the basket and started to feed. Bo took another direction and was not able to reach the basket.

Lek seemed to move better in the canopy than Bo; she was already released on an island in the past and probably this experience helped her. She makes mistakes anyway, like hanging from supports not safe. Both Bo and Lek sometimes have to return from the same way because they don't know how to continue. But they can jump and don't look scared of the height. Even Arun started to explore the new environment by himself, at arm distance from his mother.

Bo reached the basket with food some hours after coming out of the cage.

The juvenile female, Dao, didn't leave the cage all day. She watched her parents and vocalized a lot towards them. One time Lek went to the cage but she did not enter it. As a result, Dao didn't eat all day.

Differently from the last group released, the adults of this group don't come too close to the observers, and they don't show aggressiveness. Bo was shot one time in the afternoon when he came too close to us.

Sunday, 16th August 2003 We reached the cage at 6.20 am. Bo and Dao were sitting close to each other in the cage, so we supposed that they slept there. Lek was sitting on a branch 15 m up in a tree, so we supposed that she didn't sleep in the cage.

We put the fruits in the basket. Bo and Lek came to eat but Dao stayed in the cage. To make her leaving it DrTum built a new basket and placed it close to the door of the cage, with food in it. For reach the fruits Dao had to go a bit out of the cage. Finally she took a piece and ate it outside. She didn't come to the cage anymore that day.

For the rest of the day they moved around the cage eating insects and tasting the food all around. They didn't come too close to us and stayed separate for most of the time. Lek fell down one time, while jumping.

We didn't see where they went to sleep.

Sunday, 17th August 2003 Dr Tum fed them at 6.30 am. He saw all of them around the cage but didn't stay there all day.

Monday, 18th August 2003 One staff (Reed) went to feed them at 7.00 am but he saw only Bo and Lek with baby (Arun). He also saw a group of wild Pig-tailed macaques around the area. At 9.00 Dr Tum arrived at the site and saw only Bo. He searched for the other 3 gibbons but couldn't find them all day.

Tuesday, 19th August 2003 We found only Bo near the cage. Four people (Dr Tum, Gop, Reed and Dami) started to look for Lek, Arun and Dao and couldn't find them.

Around 11 am Bo disappeared from the area so that all were lost. Around 14.30 pm Reed and Gop found Lek and Bo in two different places outside of our trails' system. Lek was near the training-cage, at about 500 meters from the release-cage; Bo was at 300 m from the release site. The 2 gibbons followed together the staff back to the cage; Lek looked very hungry. We observed them until they found a sleeping place in separate trees, near the cage.



Dao was not seen today.

Wednesday, 20th August 2003 We were at the cage at 6 am. Bo and Lek already left the sleeping places and were moving near the cage. We fed them and started doing observation (Bo, Lek and Arun). At the same time 5 people of the staff were looking for Dao all around.

Bo and Lek didn't stay all the time near the cage and we were scared that moving too far they would not found the way back and got lost in the forest.

Around 12 am Dr Tum saw Dao near our camp, about 200 m from the release site in Hope-group's home range. She seemed very hungry but fine. Dao doesn't come close to humans so it was not possible to catch her. In the afternoon the staff tried to make her follow them to the cage, but very slowly. At 220 m from the cage Dao climbed in a tall tree and started to sing. Lek heard the singing from the cage and moved immediately to the juvenile; like she was not able to find her way in the canopy, she run on the ground to be faster. When Lek was 20 m from Dao, Dao stopped singing and Lek stopped moving. Lek was also probably confused by the presence of many people and she changed direction and we lost her.

At 15.30 pm Dao stopped in the tall tree and the staff watched her until she found a place to sleep.

Bo and Lek were found together in the area around the cage. They followed the staff to the cage and used the same trees as the day before for sleep.

Thursday, 21st August 2003 Five people of Thai staff (Dr Tum, Gop, Reed, Je and Mud) arrived the release site at 6.00. Dao was still in the same tree where she probably slept, Bo and Lek had already left the sleeping places and were moving near the cage.

We did not feed Bo and Lek but tried to tempt Bo and Lek to follow us (with fruits) to Dao's sleeping tree. At 9.30 am they met each other, Lek and Bo crossed the small stream to Dao's sleeping tree, then Dao followed her parents very slow to the cage. At 1.30 pm they arrived the cage. Dao went up to a tall tree for sleep.

Friday, 22nd August 2003 Dr Tum and Mud went to feed the gibbons at 6.30 am. They looked fine and were moving near the cage. Dao was always following Lek.

Since the end of this confused week everything went better.

Every morning one person of the staff goes to feed the group and checks if they are still in the release-area and if they are fine. The same happens with the previous group released, even if now, after one year spent in the forest, it is not possible to find all the gibbons every day.

We provide 3 kg of market fruits to Arun's group every day. In comparison, Hope's group now gets only 0.5 kg fruits; the rest they can provide by themselves from the forest. Soon we will stop food supply for them.

Two days per week we collect data about the gibbon's behaviour, home range, social interactions and foraging habits. This is done all day, from 6 am until when the gibbons sleep, about 16 pm. We do the same we the other group released. From these data we can follow the progress made by the different groups through the months.

The new group released appears easier to observe than the other group. While we still have problems of aggression towards observers from the gibbons of Hope's group, especially from Kip and Jo (adult female and male), the gibbons of Arun's group are much more friendly. Until now they never attacked the observers. Bo likes more than the other group's members to come close to humans, but he showed signs of aggressiveness only one time, yawning (showing his canines) towards a new observer. He likes very much bags and will try to open it and steal the content; we never saw this behaviour with Hope's group. At the moment Arun's group, contrarily with Hope's group, is still depending almost entirely on project's food; for this reason they will tend to follow the staff if they think that they are getting food, which is not always the case.

The foraging behaviour is in relation with this factor.

In early morning the gibbons get their daily food supply from the staff. After feeding on part of the food they will spend most part of the remaining time foraging on wild food sources. Differently from Hope's group the new group know only a small area (less than one hectare) and doesn't know where the fruiting trees are located. For this they will have to explore first a bigger area. For the moment they try many kinds of different food: berries, young leaves, mature leaves, insects (also spiders and insects' eggs).

After the experience of the first week the group members don't split up anymore. Dao learned to follow her mother in the canopy and Lek wait for her. Most of the time Lek leads the group around the cage, foraging and exploring the new environment. If the members split up, it is not for a long time. At different times in the day they also go back to the basket to eat market-fruits.

Nobody sleeps in the release-cage anymore. The gibbons sleep high in tall trees, where we cannot see them. They use the same trees different nights; this doesn't happen in wild gibbons. Normally they retire for sleep around 15.30 or 16 pm.

At beginning Lek seemed to move better in the canopy than Bo; she was already released on an island in the past and probably this experience helped her. She makes mistakes anyway, like hanging from not safe supports and sometimes she stays on the ground for a long moment, looking around. Both Bo and Lek sometimes have to return from the same way because they don't know how to continue. But they can jump and don't look scared of the height. Dao never comes to the ground; at the beginning she couldn't follow her mother but now she is much better. Arun started immediately to explore the new environment by himself, at arm distance from his mother first; and now, only one month after the release, he can travel and follow the mother on his own and can separate from her more than meters and go to play with the father or the sister. Dao also plays with her father. All the gibbons groom each other but often they do it high in the trees so that we cannot see very well who grooms who.

Since they were released Bo and Lek were never heard duetting. It might depend on the fact that they don't know yet the area and they don't have yet a territory.

Until now we didn't see also interaction between the two groups even if their home-ranges are quite close to each other.

**Sincerely,
Tum and Dami**



🌟 **Dear Tum and Dami,**

Thanks for the wonderful pictures and the update. It sounds like the release has been very successful so far. How is the food supply in the forest? Are there fruits available now? Is anyone studying the food species?

How far is this release site from the first one? Is there any interaction between the 2 groups? Some time I will have to visit again to see the new group.

**Cheers,
Warren**

When stop feeding

🌟 **Dear Dr. Tum,**

Thanks for the information on the origin of the gibbons in the pictures. This will be of use to me, even though we don't know what forest areas they were captured in. Both Dr. Woodruff and I greatly enjoyed our visit there and meeting all the volunteers was a pleasure. I hope it was helpful to them also.

The group in the forest appear to be doing well but **I suspect that they have not yet learned to find all the foods they need. This will take at least a year of experience. With the coming rainy season there should be more food available.**

With best wishes,
Warren Brockelman