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Sumatran Rhinoceros International Conservation Programm -  
Intensive Programme.

PROGRESS REPORT No 4

Fourth, fifth and sixth Mamas expedition

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## Introduction.

In the first half of 1976 the research in the occurrence distribution and ecology of the Sumatran Rhinoceros was continued in the Central Leuser Area. Since weather conditions are generally favorable for fieldwork in this period, three expeditions to the study-area were made in quick succession. From Februari 10th till March 3rd, from April 11th till May 4th and from June 11th till July 4th expeditions were made.

### Fourth Mamas expedition.

(Februari 10th - March 3rd, 1976)

After it proved to be impossible to charter a helicopter for a reasonable sum, it was decided to make this expedition entirely on foot. This was made possible by the large stock of food, flown in the previous expedition.

Considerable difficulties were met, finding the right path up in the mountains, but the third day the central camp was reached. The camp and the stock were in good condition.

From the central camp the party moved to camp "Aceh" on February 15th. On February 20th a fifth camp was constructed near the northern saltlicks. The supplies, flown in in December to this place, could largely be recovered, although they were trampled by an elephant. With the construction of this camp and the survey of the surrounding mountains, the study-area reached its ultimate extension.

On February 23rd the expedition moved back to the central camp and on February 26th on to camp "Silukluk". On March 1st camp was moved to camp "Pawang" and on March 3rd the party walked back to Kutacane in one day.

Due to a dry period of two weeks almost every day useable tracks were found and a large collection of plastercasts could be made. Apart from the very tiring start, which caused some physical inconvenience later on, no problems were met.

### Fifth Mamas expedition.

(April 11th - May 4th, 1976)

For this expedition a helicopter was lent from Asamera Oil at Medan. Because on the previous expedition the largest part of the food-stock had to be used; a second flight had to be made from Kutacane to the central camp to transport a new stock.

From April 13th till April 16th one of the western side-rivers of the Mamas was followed, almost to the watershed between the Mamas and a tributary of the Kluet river. Here a mountain of 2100 alt. was climbed. From the Mamas river one of the biggest gamepaths leads to this valley, to a very large complex of saltlicks. Especially elephants are regularly following this paths to the saltlicks, but also rhino frequent this place.

April 19th, camp was moved to camp "Aceh". From here camp "Uning" was visited for inspection. On April 24th the expedition returned to the central camp, and April 27th the expedition moved on to camp "Silukluk". April 30th, the party moved to camp "Pawang" and on May 4th the party walked back to Kutacane.

The weather was not very favorable, almost daily it rained and only a small collection could be made.

### Sixth Mamas expedition.

(June 11th - July 4th, 1976)

For this expedition the helicopter flight was granted by Mobil Oil Indonesia at Medan. The central camp was demolished by an elephant, but no serious damage was done to the left-behind goods.

June 14th camp has moved to camp "Aceh", June 19th to camp "Uning", June 23rd back to the central camp, June 26th to camp "Pawang", June 29th to camp "Silukluk" and finally on July 2nd to camp "Pawang". On July 4th the party walked back to Kutacane.

In general the weather conditions were very good, there were two dry periods and again a very large collection could be made.

### Progress of the Rhinoceros research.

In February the study-area reached its ultimate extension and the mapping of all the gamepaths in the area was almost completed. Afterwards the research was mostly restricted to this area and only now and then a less important trail was surveyed or a known path followed a little further than before.

Now a detailed sketch-map is available of the whole area, showing the rivers and gamepaths, the wallows, saltlicks, blangs and other features, the altitude and the marks made along the paths. The map was made with the help of a simple compass, an altimeter and a pedometer and afterwards corrected with a side-looking radar map. The existing areal photos of the area are not yet made available for the research.

With the help of the map and the marks in the field it is possible to make fast and extensive patrols in the whole area, and to localize the discoveries rather precise.

Since the Rhinoceros is a very shy animal, constantly on the move, and the forest is too dense, visual contact with the animal is out of the question. The use of treehides must be considered highly impractical even at the most suitable places this would cost months of waiting only to see a glimpse of a rhino. The research therefore has to be done solely on the tracks and trails left in the field by the animals.

The rhinos are great wanderers and have a very low density (at most one every 25 square kilometer), therefore the study-area was chosen as large as possible. This also reduces the amount of disturbance of the wildlife by the research in one particular place.

The whole of the study-area (more than 100 km<sup>2</sup>) can be patrolled, from the five permanent camps, during one expedition. The patrol-routes follow mostly the big gamepaths, which form a network covering the whole area. On an average about 10 km is walked daily, mostly going up and down a path, but at some places roundtrips can be made. The sequence of the patrols depends largely on the weather and the waterlevels in the rivers. The most important routes are followed at least once every expedition, but others have to be omitted sometimes. Now and then the party is split and two different routes are surveyed. In April a four-day trip was made to the west of the study-area, in order to establish the presence of rhinos there. A similar trip to the north of camp "Uning", planned in June, was canceled. The mountains here proved to be very rugged and only rarely visited by rhinos. If time permits it is worthwhile to make a few more trips to the mountains west and north-west of the study-area.

### The study of tracks and footprints.

One of the main objectives of the research is to establish a method for the identification of individual rhinos, based on their tracks and footprints. Therefore the characteristics are recorded by means of measurements and plastercasts of hindfoot prints.

For the measurements the width of the foot, that is the distance between the tips of the outer toes, is taken. This is the only measurement that can be made, with a certain accuracy, on a rhino footprint. If possible these measurements are made on a successive row of prints, the step, is measured.

The width of the print varies considerable, with relation to descending and ascending and the type of the soil. Measurements are far from sufficient to characterize a track. Therefore plastercasts are made, if really good prints are found. As a standard four casts are made from every track, two from the left and two from the right foot. When enough plaster is brought sometimes more casts are made.

In ordinary forestsoil good prints are not found. The print is invariably distorted by leaves, branches, roots and stones. Only on particular places where the soil is free from hard particles and neither too soft or too hard, really good and usable prints can be found. These places are rather rare and so are good prints.

The main obstacle for this part of the program is rain. The climate in the mountains is very humid and almost daily there is heavy rain. Consequently all prints are washed away shortly after they are made. Only on particular places with extremely sticky clay or protected against the rain by big leaves or tree trunks, prints remain visible for some time. In a rainy period good fresh prints are encountered on an average only once a week.

In a dry period however the prints remain visible for the duration of this period. After a few days without rain already daily good tracks can be found. During both the February and the June expedition dry periods occurred and the bulk of the plastercasts were made then. The material and data collected during a dry period is several times more than in a wet period and this does not apply only to tracks and prints.

During the six expeditions made till now, almost 150 plastercasts could be made, half of which is now brought back from the forest and made ready for further study. The plastercasts are mostly broken during excavating or transport. When brought home the casts are repaired and mounted on a piece of wood. After cleaning they are varnished for protection.

The study of a very limited number of the available material made it clear that a system for print-identification will probably be found. A sufficient collection is available now and much attention is paid to the development of such a system.

### The faeces- and foodplant- collection.

After the study of tracks, the collecting of foodplants and faeces has high priority. When fresh faeces are found, a small amount is collected for later analyses. At first the samples were dried, but, since whole leaves or large leaf-fragments, are frequently found in the faeces, now they are preserved in alcohol. With the help of experts some of the remains can probably be identified.

The collecting of foodplants is much more difficult. When a plant is found, partly eaten, it is often not absolute sure if this plant is browsed on by a rhino or other herbivore. Also the wellknown bent or broken small trees can not merely be regarded as foodplants, since rhinos frequently bend and break trees without eating the leaves and twigs. Therefore plants are only collected along fresh tracks and only plants almost surely eaten by rhino are taken.

Traces of feeding are often met in the field, but foodplants, meeting the above requirements are far less common. In February not one foodplant could be collected, but in April and June some good collections, totalling some 50 specimens, could be made.

Foodplants are preserved in alcohol. When brought home they are dried and stored for later identification.

#### Other activities.

Apart from the special collections all other signs of the presence of rhino's are registered. A large number of wallows is measured and sketched and the position of every dungheap along the paths is noted down.

In order to gather some information on the frequency of visits to wallows, at many places thin, earth-coloured thread is stretched over the wallows. When the thread is broken the wallow must be used since the last inspection. Unfortunately many of the wallows are also used by rusa and sometimes by elephants.

On seven places, along the main gamepaths, small plastic roofs are constructed above the path. The roof shelters a stretch of the path against the rains and tracks, made there, are not washed away. The plastic roofs (2x3 meter) are constructed about 3 meter above the path and the soil underneath is cleaned from hard particles. Rhino's seem not to be bothered by these roofs and many times tracks were found there.

A disadvantage is the frequent destroying of the construction by elephants. Even if made high enough for them to pass, they invariably tear down the roof.

Also with the aim of avoiding the washing away of the tracks by the rains, small pieces (about 1x1 meter) of thin plastic are laid on the path, camouflaged with leaves. When passing, the sharp nails of the rhino pierce the plastic and the track is fixed. This method is very easy to apply, but the results are not very good. Many times the piercing of the plastic is incomplete and vague and the results are inconclusive. Nevertheless with both methods some useful information on the amount of traffic along the rhinopaths is obtained. Tracks and trails of the other larger mammals are also recorded and for the primates a special census is made. Plastercasts are made of all good prints, known and unknown, found during the patrols. Prints of the larger mammals are generally easily recognisable, but those of small animals, especially carnivores, are much less known and only poorly documented in literature. A collection of plastercasts of all different prints can be very valuable for the knowledge of the fauna of the area and for the knowledge of animal tracks in general.

## Conclusions.

The initial phase of the research is finished now and the more systematic program is well under way. When the program is continued this way, for a sufficiently long period, much reliable information will be gathered.

Considering the scarcity of the rhino's and their tracks and trails and the difficulties met in making expeditions to this very remote area, it will be clear that the amount of useful data collected in a certain period will be relatively low. Therefore it is highly recommendable to continue the present program at least through 1977. Then, after two years of systematic fieldwork it will be possible to make sound conclusions and to make a scheme for possible further research.