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UNION INTERNATIONALE POUR LA CONSERVATION DE LA NATURE ET DE SES RESSOURCES
INTERNATIONAL UNION FOR CONSERVATION OF NATURE AND NATURAL RESOURCES

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IUCNATURE GLAND

Référence/Reference R/33/6
CWL/jp/1

To the Chief Game Warden
Jabatan Kehutanan
Peti Surat 311
Sandakan
Sabah
Malaysia

20 June 1980

Attn.: Mr. P.N. Andau

Dear Mr. Andau,

Thank you for your letter of 11 June 1980.

I have now received the field report from Mr. Payne.

The recommendation that the Rhinos be captured and translocated should not be carried out without careful study. I am informed that previous attempts of this nature have resulted in the death of these animals.

I am passing your report on to the Chairman of the Asian Rhino Group for his assessment and recommendation.

We will contact you again soon.

Yours sincerely,

Chew Wee-Lek
Programme Officer, Asia,
Australasia and Pacific

cc: R. Schenkel
R. Scott
K. Scriven

John Hughes

Pl. note

23/7

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Avenue du Mont-Blanc
1196 Gland - Suisse/Switzerland

30 MAY 1980

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Tél/Tel. (022) 64 32 54

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Référence/Reference: R/33/6
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To the Chief Game Warden
Jabatan Kehutanan
Peti Surat 311
Sandakan
Sabah
Malaysia

22 May 1980

Attn.: Mr. P.N. Andau

Dear Mr. Andau,

I refer to your letter of 28 April informing us that there have been recent sightings of rhinoceros tracks in Sabah.

This is indeed very good news and because of the urgency of the matter your report was considered at a meeting of the IUCN/WWF Rhino Task Force yesterday.

I have now been requested by the Task Force to inform you that we would like to come to your assistance in undertaking conservation action on this species. I therefore enclose herewith a set of Guidelines to enable you to develop a proposal for submission to IUCN/WWF and funding.

It has been suggested that your immediate proposal should aim at an urgent survey to definitely confirm the presence of rhinos in Sabah and to identify conservation measures which should be taken immediately to save the species. As our conservation funds are not large, we will request you to keep the amount required as low as you can.

I am copying this to Ken Scriven of WWF-Malaysia so as to keep him informed of developments in this project.

Once the presence of rhino has been definitely confirmed by this survey, it would be desirable to develop another project which will aim at the establishment and the management of a

sanctuary or nature reserve in which this species could be effectively protected.

In view of the urgency of this matter, your earliest response would be highly appreciated.

Yours sincerely,

Chew Wee-Lek
Programme Officer, Asia,
Australasia and Pacific

cc: A. Fernhout
R. Scott

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GW.7/207/38.

28bb April, 1980.

Chairman,
Survival Service Commission,
Avenue du Mont Blanc,
CH01196 Gland,
Switzerland.

Dear Sir,

I am writing with reference to several recent sightings of rhinoceros tracks which have been found during the course of a faunal survey which is currently being conducted in Sabah.

There is no need for me to discuss the endangered state of this animal, and that conservation measures need speedy implementation. I am concerned that one population which includes breeding individuals, will soon be exterminated by logging operations and subsequent agricultural development.

I would be grateful therefore, if you could inform me, as quickly as possible, what funds are available from WWF for projects to study these animals and subsequently conduct a translocation programme. Also what technical assistance can be provided.

Thank you for your attention.

Yours sincerely,

(P. M. Andau)
for Chief Game Warden.

PMA/lsl.

c.c. Payne/Davies,
Sepilok.

Report On Rhinoceros (Dicerorhinus sumatrensis) in Silabukan Forest Reserve, Sabah: a recommendation to catch and translocate them.

Introduction

Matters related to wildlife conservation in Sabah are the concern of two separate bodies; the Sabah National Parks, a statutory body, and the Game Branch of the Sabah Forest Department. The former is responsible for the administration and development of National Parks in Sabah. Only one National Park (Kinabalu National Park) contains habitat where rhinoceroses may exist, but there is no evidence that they do so. The later body is responsible for the protection of wild animals in Sabah.

The maximum penalty for killing a rhinoceros in Sabah is five years imprisonment and a M$5000 fine. There have never been any successful prosecutions. Verbal reports received by the Faunal Survey of Sabah (WWF Project 1692) indicate that a minimum of four rhinos have been killed in Sabah in the past four years:

(1) a young individual, snared, Silabukan area, 1976,
(2) adult, 1976, Deramakot area,
(3) adult, probably shot, Silabukan area, 1978,
(4) adult male, between Segama and Kinabatangan rivers, March or April 1980; horns now is possession of a Sabah Timber company owner.

Owners of timber companies within Sabah are believed largely to be responsible for instigating hunting or rhinoceroses. Hunting is made easier by the presence now of logging roads throughout much of Sabah and the widespread use of firearms. Although many are used illegally, it is easy to obtain firearms under licence, the commonest reasons given being (i) for supply of fresh meat to timber camp workers or (ii) protection of wages or property. Most timber camps possess at least one firearm.

The monetary value of rhinoceros horn is well-known to most people in Sabah. Prices quoted within the last year are M$75,000 for a whole rhino, and M$2000 for a horn (US$1 = M$2.2). Word of rhinoceros in any area becomes widely-known. There is no area in Sabah where rhinos are safe from hunting, although pressure is greater in some areas than in others.

Members of the Faunal Survey of Sabah team have visited three areas where rhinos have been reported in recent years (see inset to map):

(1) Lokan river - around early 1975 a rhinoceros was seen twice on the main road, not far north of the Lamag/Lahad Datu junction, by a lorry driver (Syarikat Kretam Sdn.Bhd.). Footprints were seen by Game Branch Rangers February 1979 and again by Forest Department Range Officer, April, 1979. Localities now being cleared and burned for cocoa plantations. One rhino seen by Forest Department worker, November, 1979. Locality now being surveyed for cocoa plantation. Fresh tracks seen by Sabah Timber Company worker, January 1980. Area now being logged.

If plotted on a map, the last four records form a fairly straight line about 11.5 Km long. Three days were spent by a Faunal Survey team searching in the vicinity of the last record, early in March, 1980, but no evidence was found. An isolated 6 Km^2 patch of forest remains unlogged in this area, the surrounding area a network of logging roads. The infrequency of rhino reports in an inhabited area suggests that only one rhino remains.

(2) Pacific Hardwood Concession in Ulu Segama - in the vicinity of the Bole and Kawang rivers. Footprints were reported in the area in 1976 (Game Branch Rangers), 1978 (Australian tourist) and, most recently, 1979, about half-way between the Bole and Kawang rivers. (Mr. Albert Ganning, assistant plantation manager).

Two Faunal Survey teams each spent 10 days in the area in March-April 1980, but no recent evidence of rhinos was found, only one old wallow.

(3) Silabukan - detailed below

There are other reports from:

(4) Danum Valley area - within the proposed Danum Valley National Park. Evidence of 2 or 3 rhinos, WWF Malaysia survey in July 1976. No recent evidence.

(5) Sungei Pin/Sungei Koyoh Forest Reserves - frequent sightings of female with calf, and solitary male, during 1976 - 1977, by workers in Syarikat Kretam logging concession. The area has been excised from Forest Reserve for agriculture. The three individuals were still present when logging operations finished (Syarikat Kretam Manager), but the area has since been easily accessible. The area should be checked as soon as possible.

(6) Gunung Lutong - verbal reports of footprints on the south side, to Arthur Mitchell, June, 1978.

(7) Ulu Padas - report by Murut hunter to Game Branch Ranger in November 1978.

(8) Deramakot area - a rhino is reportedly still living in the area where one was killed in 1976, (Timber company manager, May 1980).

(9) Tomanggong - one individual still alive near one of the Tomanggong Salt Springs (footprints seen by Pirian Mat Salleh).

THE SILBAUKAN AREA

The Silabukan area in the centre of the Kent Peninsula, eastern Sabah (see map) has long been known to natives of eastern Sabah as a good area for hunting rhinos. Even before the Rivers Estates company started operations from Tomanggong some 25 years ago, hunters came from along the Segama river there, specifically to obtain rhino horns (personal communication from Pirian Mat Salleh). Reports of sightings of rhinos or their tracks continued to be received by the Game Branch up to the end of 1979.

Two surveys have been done in the Silabukan area in 1980. Results and recommendations are reported below.

Access to the Silabukan area

There are three main access routes to the rhino area in Silabukan.

(1) Wing Loi road - the Wing Loi logging company made a road from the Silabukan oil palm scheme, which is south of the area shown in the map. This company logged the area shown on the map, to the west and south of the present rhino area. This area has been re-logged by Chong Chin Company, which has nearly finished operations. The Wing Loi/Chong Chin road branches into three (see map). One road continues northwards to the Segama river. Another goes northeast into the Rivers Estates Concession area, and is now used by the Trus Jadi company. The third goes eastwards and is used by the Suriajaya Company.

All of these roads are maintained in good condition and, in fine weather, the area can be reached from Lahad Datu, a main east-coast town, within 2-3 hours.

(2) Indoh Concession - this company is operating at the end of an old, well-maintained road built by Kennedy Bay Timber Co. in the 1950's, from Bakapit. The hilly terrain between the Indoh Concession boundary and the rhino area, with no roads or paths, makes access difficult.

(3) Rivers Estate Road - starts at Tomanggong, on the north coast of the Dent Peninsula. This will probably not be maintained in the near future, since Rivers Estates have stopped logging, and logs taken by Trus Jadi and other minor concessionaires now operating in the old Rivers Estates area will be transported to the south by the Wing Loi/Chong Chin Road.

The Wing Loi/Chong Chin Road provides easy access to the rhino area. Rhino poachers can enter the area with ease, night or day.

The area is accessible by the Tagas and Tabin rivers, using dugout canoe, in rainy times. It is the roads, not the rivers, however, that nowadays provide easy access. During a rhino survey in April 1980 (see below) the fresh marks of a track were seen in Silabukan. The hunters had crossed a small river by cutting some small trees nearby and laying them to form a bridge. The rewards expected must have been large to perform such a risky operation.

The current and future state of forest in the rhinoceros area

All of the area shown on the map except the grey-shaded area (marked "unlogged", and "Suriajaya boundary") has been logged, most of it twice. The vegetation is low secondary growth, up to about 10 metres in height, with isolated emergent trees.

The area around Salt Springs S3 and S4 (see below) is a 8 Km x 1 Km hill, rising to over 1000 feet altitude. It is currently being relogged by the Trus Jadi Company.

Unlogged forest to the west of Tabin river is to be logged over the next 4½ years by Suriajaya Company. Unlogged forest to the east of Tabin river has been granted to the Sabah Foundation and there are currently no plans to log it.

The terrain through the area shown on the map is uneven, but almost entirely below 1000 feet altitude. Much of it is suitable for growing cocoa, oil palm and rubber. Sabah Government policy is to plant with crops all suitable land as quickly as possible. Looking further into the future, it is likely that any land unsuitable for the above-mentioned crops and food crops will be cleared, and planted with fast-growing, exotic tree species.

Powerful political figures have interests in both Suriajaya and Trus Jadi Companies. It would not be possible to have a nature reserve made in the rhino area.

Salt Springs

Two Salt Springs were identified from the air before logging occurred in the rhino area. Both (S1 and S2) are an area of salty soil 4 or 5 acres in extent, where no plants grow. The salt springs and surrounding forest (1.25 Km^2 for S1, about 2 Km^2 for S2) were gazetted as Virgin Jungle Reserves (VJRs), to be preserved in their natural state.

There are two smaller (less than 1 acre) salt springs, S3 and S4, which were not identified at the time when VJRs were being set up. Both have been logged over by Rivers estates company. It has not been possible to map these salt springs relative to the Trus Jadi logging concession, but S3 is probably within the concession boundary.

Men who have worked for Rivers Estates and hunted in the rhino area for many years said that there are no other salt springs.

The 1980 surveys in the rhino area

A Faunal Survey team surveyed the Silabukan area 29 February - 16 March 1980. The area was approached initially by the Indoh Concession road. Neither company workers nor the local Forest Department Range officer had ever heard any report of rhinos. A new approach was made by the Wing Loi/Chong Chin road. Chong Chin company were uncooperative,

but the S1 VJR was inspected. Traces of rhino tracks, at least six months old, were found, no recent signs.

By talking to workers in Rivers Estates (which finished operations in early April, 1980) and Suriajaya, it become apparent that all recent sightings of rhinos or their tracks were in three separate areas:

(1) between the salt springs S3 and S4,

(2) around the boundary of Rivers Estates and Suriajaya concessions at the end of a side-road to the east of Rivers Estates main road,

(3) in the Suriajaya concession where tree-felling was in progress.

Each area was investigated. Eight days were spent searching for rhino evidence between the 2nd and 3rd areas, and the VJR which encloses salt spring S2. Routes taken by foot area marked with red on the map.

Fresh rhinoceros tracks were found in the places marked on the map, although few prints were sufficiently clear for useful measurement of foot-width. The area between salt springs S3 and S4 was visited on 5th and 15th of March. It was being used by at least two rhinos (hind-foot print widths about 18 cm and about 21.5 cm), which travelled together some of the time - presumably a female with offspring. They had used salt spring S3 recently, but not S4. One worker had seen fresh rhino tracks at S4 in 1979. In some places, the ground was covered completely by superimposed rhino footprints. Two large, recently-used piles of dung were found, and a recently and frequently-used sleeping or resting place. Only one freshly-used wallow was located, made on an old, overgrown tractor path.

On 4th March, fresh tracks (clear hind-foot print 21.5 cm) of a single individual were found some 6 Km south of S3/S4 area (see map). This must be a different individual. At one place, a whitish deposit was found on saplings and shrubs, at the sides of a rhino track. It was clearly a liquid which had been sprayed and dried to leave the solid deposit. The area covered was about 4 x 1 metres, up to a height of about 1m. This may have been the urine of a male rhino, described by Marcus Borner and others.

There were tracks of rhinoceros between the Suriajaya tree-felling area and the west side of Tabin river. (Surprisingly, no evidence, new

or old, of rhinos was found east of Tabin river although five days were spent in the VJR around salt spring S2). All the tracks here were in sand, gravel or soft river banks, during a period with no rain; it was possible only to guess that they were 2-4 days old. No useful measurements could be made, but it is possible that a single rhino had been following the western tributary of Tabin river over a period of 2 or 3 days (see map) as the rhino surveyors themselves were doing.

One rhino dung heap, not used for at least several days, was found in the vicinity of the Suriajaya tree felling area.

Four wallows were found in the Suriajaya concession near to new rhino tracks, but none had been used for weeks or months.

From this survey, it was possible to conclude that in March 1980:

(1) two rhinos, probably adult female with accompanying sub-adult offspring, were present between and around salt springs S3 and S4. Judging from the abundance of tracks, they had been using an area of only several Km^2 for at least several weeks.

(2) at least one adult rhino, probably male, was present in the unlogged Suriajaya concession area.

Food supply for rhinos is probably poor in the S3/S4 area. At the time of this survey, Indonesians were collecting rattan (probably illegally) near S3. There was evidence of other people, possibly poachers, coming along the road north-west of S3. News of resident rhinos will become known to rhino-hunters, if it has not already done so. It is possible that these two rhinos remain in the locality because of the presence of salt springs. Van Strien (Progress Report hr. 8) found that the ranges of all of 9 individuals recognised were centred on salt licks.

It is not known whether rhinos have crossed the main Rivers Estates road in recent years.

A second survey was made by a Game Branch team, 18 - 21 April 1980. They checked thoroughly the area around S1 (see map) in the Chong Chin Concession. No evidence of rhinos was found there. They checked the tree-felling area of Suriajaya and found some fresh tracks where the previous survey had seen fresh tracks.

RECOMMENDATION

Attempts should be made to catch as many rhinos as possible in the Silabukan area, as soon as possible. They should be taken to Sepilok (14 miles west of Sandakan, and the site of the well-known orangutan rehabilitation centre), and kept in enclosures built within the forest there, until such time as a suitable protected area in Sabah is found into which they can be released.

JUSTIFICATION

All the rhinos in the Silabukan are dommed to die at the hands of poachers unless they are removed to a safer place. Apart from the fact that destructive logging in the area cannot be stopped, it is unrealistic to suppose that any protection measures can be certain of stopping hunters.

SUGGESTED METHOD

The presumed mother-offspring pair in the vicinity of salt springs S3 and S4 should be given priority. Anaesthetic dart guns involve too much risk to be the preferred method of capture; in any case, it is well-known to be almost impossible to catch more than a brief glimpse of a wild Sumatran rhinoceros inside forest cover. The initial attempt should be to catch the rhinos in pit-fall traps (as described by N.J. van Strien, "Dicerorhinus sumatrensis (Fischer). The sumatran or two horned Asiatic rhinoceros. A study of literature". Mededelingen Landbouwhogeschool wageningen, Netherlands, 74-16(1974). The traps would be made on all access routes to salt springs S3 and S4. If, after a reasonable time, it becomes apparent that this method is unlikely to catch rhinos, tracking and anaesthetic dart guns will have to be tried.

If a rhino is caught in a pit-fall, it should be kept in a locally-made enclosure, until a time suitable for it to be transported to Sepilok.

The Game Branch can provide manpower except for veterinary skills, and foodstuffs for captured rhinos. Transport will be arranged within Sabah but financial assistance may be requested.

IUCN/WWF priority actions

(1) Formally support the aims of this project (whether or not financial assistance is ultimately provided) and suggest modifications or new ideas if appropriate.

(2) Give priority to financing purchase of materials where the Forest Department or other Sabahan organisation cannot do so. (All efforts will be made to obtain local funds where possible).

(3) Seek an expert who could be present at the time of capture of a rhino and remain in Sabah until after the rhino has been taken to Sepilok. The expert should be a vet with experience of the capture and handling of large wild mammals in the tropics, rather than a zoologist who has studied rhinoceros ecology. WWF would have to pay the salary of the expert and this would probably be WWF's major financial contribution.

Game Branch (Sabah) priority actions

(1) Map sites of salt springs S3 and S4. Check boundaries of Trus Jadi logging concessions and obtain information on predicted dates of logging within the main rhino area.

(2) Build camp between the rhino area and Trus Jadi road. Two Rangers to be present at all times to (a) keep potential poachers out, (b) check on the movements of the rhinos.

(3) Contact Veterinary Department in Sabah, Sarawak and Peninsular Malaysia, and the vet at Zoo Negara, Kuala Lumpur, to see if there is a suitably-qualified vet within Malaysia, and who could assist if necessary.

(4) Contact Dr. Engke Soepadmo, Botany Department, University of Malaya, who was present on the project led by P. Ryhiner and H. Skafte, which captured ten sumatran rhinos in central Sumatra in the late 1950's.

(5) Make preliminary enquiries to other organisations in Sabah which might be connected in some way with the project (for example: Sabah Foundation for additional funds; Army, for helicopter; Research Section, Forest Department, for suitable site for enclosure in Sepilok Forest Reserve).

(6) Practise the construction of pit-fall traps and the handling of animals caught in them (for example, near salt spring S1).

John Payne
18 June 1980.
(with minor revisions and additions over 13 June draft).

(2 Tiao

As promised

A CONTRIBUTION TO THE PRESERVATION OF THE SUMATRAN RHINOCEROS

By Hakon Skafte
Zoological Gardens, Copenhagen

(Extracted from Natural History Bulletin of the Siam Society
Vol. 20 No. 2 - October 1962)

The hairy Sumatran Rhinoceros (Dicerorhinus sumatrensis), the smallest of the known species of rhinoceroses, is on the verge of extinction - so it is said. As the majority of these animals live in the dense tropical rain forest of Sumatra the sumatrensis is relatively inaccessible to a proper ecological study. It is therefore impossible to say whether there are two hundred or two thousand left. I would rather use the last figure if I was pressed for an opinion.

But one thing is certain, the number of sumatrensis is gradually diminishing due to widespread poaching of this otherwise totally protected animal. The Chinese harbour an old superstition that a certain powder, made of the skin and horn of the rhino, has powerful aphrodisiac properties. Thanks to this superstition the small horny excrescence which adorns the rhino is one of the rarest and most valuable commercial articles in Singapore. A single horn, so I was told, will fetch the price of a brand-new American car.

Together with Professor Kusnoto, the former leader of Indonesia's preservation of natural amenities and of many scientific institutions in Bogor, the Danish zoologist, Dr. Anton Fr. Bruun and the Danish taxidermist at the Zoological Museum in Bogor, Arne Dyhrberg, devised a plan to catch a few pairs of the rare animals and to try to make them breed in captivity in order to preserve the sumatrensis - at least in special national and zoological parks.

The successful breeding in 1956 and 1958 of the rare Indian rhino at the Basel Zoo (Switzerland) showed the important part Zoological Gardens can play in preserving such animals from extinction. Encouraged by this success the Basel Zoo, in cooperation with Peter Ryhiner, organised an expedition to Sumatra for the purpose of capturing Sumatran rhinos. As a result a young female, "Betina", has been brought to Europe.

Cooperation between the Zoological Gardens in Copenhagen and the Zoo in Basel (Switzerland) was successfully established, with further financial support from a Scandinavian publishing house the future of an expedition was provided for and I went to Central Sumatra in order to get the programme activated.

Our hunting-district covered about 30,000 square miles. It was traversed by two big rivers - Siak and Kampar - several tributary rivers, and a poor jungle-road along a pipe-line. It was covered with primeval tropical rain forest. Low hills and swamps alternated.

Thanks to intimate cooperation with the Indonesian military and civil authorities - and the truly remarkable obligingness and helpfulness of the Caltex Pacific Oil Company we finally managed to set out on what I believe is one of the most exciting big-game safaris imaginable ever made.

The Sumatran rhinoceros is a swamp-and-hill animal and has its haunt in one of the oldest and most inaccessible tropical jungles in the world. It is an ill tempered animal - and quick as lightning. I have seen it move in and out between trees, roots and other obstacles in the tangled undergrowth with surprising grace and agility. And I have seen it stop, turn around in the fraction of a second, and charge ahead with the speed of an express-train. When it is captured, however, it calms down surprisingly quickly and seems to be comfortable in human company. In spite of its bad reputation as a ferocious beast the sumatrensis is probably one of the most harmless wild animals in existence.

Our task was to study the habits of these animals, discover their haunts, catch them alive, and bring them out of the jungle to the zoological gardens of Basel, Bogor and Copenhagen. We were only armed with hunting-knives, because the whole area in which the animals travelled was a kind of no-man's land between the fighting rebels and the Indonesian government-troops, and the possession of firearms might easily have got us into trouble with either party.

We were successful on one of our very first incursions. No sooner had we passed a thorny bamboo-copse in a hilly country and were ascending a slope with tall ferns, when our local guide abruptly came to a halt and exclaimed: "Badak!" - the Malayan word for rhinoceros.

In front of us a trail, partly covered by withered leaves, wound its way through the ferns. This trail was made by rhinos and belonged to a whole system of similar trails which we were to map out during the following weeks. A newly broken branch and a spatter of wet mud on a tree trunk indicated that rhinos had passed here quite recently.

We followed the trail and came to a small clearing where the sun merely "trickled" through the thick foliage. The grass was trampled down, bushes were broken and splintered branches strewn everywhere, as if giants had been having a gay time. Big, round tracks in the soft mud held clear impressions of the rhino's hoofs.

We hurried down the slope towards a boggy swamp. Here the tracks showed even clearer than before.

For the next two hours we shambled in mud and mire, systematically reconnoitering the swamp and the surrounding hills. We found that several rhino-trails led down to the swamp which evidently was their favourite bathing-place.

We measured and surveyed and made some quick calculations. This seemed to be an ideal spot for a trap. But how were we going to make it? The native poachers used a sling of steelwire which automatically laced the snout of the rhino just above its horn. But at the same time this wire cut deeply into its skin, making the animal completely furious. It charged anything within range, until it finally dropped from sheer exhaustion, half-choked and partly mutilated. To the poachers this mutilation was of no importance. They merely killed the animal to get the horn. We naturally rejected this primitive method at once.

To dig pits across all the trails leading down to the swamp was another solution, but the difficulty in getting the heavy animal out - and the risk that it might break a leg in falling in - likewise made us abandon that plan.

After some discussion between ourselves and our local assistants, we finally decided to build a solid, well camouflaged palisade-fence around the whole bathing place. Where the fence was to cross the trails, we would make trap-doors which automatically fell down when the animal

passed through the opening. This kind of trap had previously been used by Ryhiner in trapping successfully tapirs and the rhino "Betina".

We drew a rough sketch of the whole area and decided to build an enclosure of about 30 x 30 meters with six trap-doors-one for each of the most frequented rhino-trails.

There were quite a lot of details to be taken into consideration. Nails and tools had to be transported by river from the nearest town, Pakanbaru, and afterwards carried to the camp - approximately one day's journey through the jungle. We would need several bags of salt to lure the animals to the trap, and more than 1,000 young saplings were required to make the palisade. In order to avoid frightening the animals with the noise, these saplings had to be cut in another area and from there transported to the building-place.

All this required a large staff of native workers - and a very few natives cared to leave their villages even for a temporary stay in the jungle. And the building of a trap like the one we had in mind would take at least two to three weeks. Tempted by good wages, extra rice, coffee and tobacco rations and a cash award for all live rhinoceroses brought out to the Siak river we finally managed to get a first class staff of local assistants, and the traps were very quickly built.

The following weeks were spent in anxious waiting for animals to walk into the trap. In the day-time we made trips through the jungle to map out the district and gain more knowledge of the habits of the rhino. On these daily trips we rarely came across animals at all - and then mostly birds, reptiles, monkeys and an occasional deer or wild-boar. Sometimes we heard the snorting of elephants from the thicket, and one morning we met two Malayan bears, jogging along quite unsuspectingly.

As far as we could ascertain from the network of rhino-trails, the sumatrensis are great travellers. They seem to feed and travel all night and in the very early hours of the morning. We never saw any rhinos during the day.

At certain times we found plenty of fresh rhino tracks in our hunting-district - at other times the animals seemed to have vanished completely. The local observers - mostly the native hunters - believed that the rhinos move periodically, although they had no specific data about the season. According to our observations rain seemed to influence the movements of the rhinos. When violent torrents flooded the lowlands, the rhinos stayed away from the swamps and remained in the hills where

they had water enough for their daily bath. But the drier the forest was, the more traffic moved towards the bathing-grounds in the swamps - and towards our traps. With hot and dry weather the horse-flies also seemed to become more troublesome to the rhinos and the necessity of coming to the wallows to get a protecting cover of mud increased.

We also learned that the sumatrensis seems to be an unsociable animal. Two adults are never seen together except for the rare moments of mating or when a cow is accompanied by a calf. Most of the time sumatrensis is a lone wanderer.

Within half an hour's walk from the camp, and near the little river Tenajan, we found two more places to put up traps and decided to take advantage of these possibilities.

At night we took turns keeping guard at the finished traps. Night after night we sat in the specially built watch-huts in the trees, straining our ears to detect even the faintest noise. We always went out in twos so that one could keep guard if an animal walked into the trap, while the other under cover of darkness hurried back to rouse the camp.

It was a starry night when we caught our first animal. We sat in the hut, peering down at the trap, the contours of which rose faintly out of the darkness. Suddenly we heard a shrill, whimpering sound - something between the squeak of a little pig and the whine of a big dog. It was followed by a splash in the mud and the snapping of twigs. We held our breaths. At last a rhino was on its way down to the bathing-ground and the trap.

A few thrilling minutes went by. The whimpering sound came nearer and nearer. Now it sounded very near the trap. Then we heard the smack of a trap-door, snapping shut.

We hurried towards the trap. Fortunately we were able to follow a narrow path we had trodden ourselves. When we reached the palisade we heard a thundering gallop from the other side and saw a big, grey shadow rush towards us with a furious snort. With lowered head the rhino rammed its horn into the palisade right in front of us. The fence creaked, and one of the poles splintered - but it held.

The rhino veered off and continued in a fast gallop along the fence. Mud and dirt literally shot out between the poles and hit our faces with a smack. Finally it calmed down and retreated to a slough within the fence.

The coming dawn also meant that the mud-bath was over as the rhino now thought it about time to return to the thicket to get some breakfast. Splashing and snorting it stumbled upon dry ground. It was a full-grown animal - a female. Our native assistants immediately christened her Subur - the Malayan word for fertility.

Subur stood quiet for a moment as if taking a bearing on her further course; then she slowly trotted over to the trap-door which had closed behind her the night before. Not being able to get out, she snivelled at the ground for a moment. Then she made a reconnaissance along the fence, wedging her horn between the poles now and then to see if they gave way. We hurried up to the fence with new poles in case Subur tried to break out. No sooner had Subur scented us, when she rose on her hindlegs and pressed the bulk of her body against the fence as if trying to overturn it. The fence sagged, but held - thanks to four or five supporting pillars which immediately were rammed down to strengthen it.

During our wanderings in the jungle we had learned which of the bushes the rhino preferred, and a large store of fresh leaves had been gathered early that morning. We placed a good supply of fresh leaves in one corner of the trap and retired. Soon after the rhino slowly advanced towards the pile and began breakfast.

Subur gradually calmed down and even seemed to feel quite comfortable inside the trap. But then, of course, she had everything a rhino could wish for - and more. She had her own private bath, a piece of dry land with bushes and grasses and several big trees, and she had all her meals served free - and good meals inforced with cooked rice-balls with multi-vitamins.

To our great amazement we discovered that she ate all day and night - merely interrupted by an occasional bath and a little nap. And before long her life went on as a time-table. She made her own path inside the trap and quickly adapted hereelf to the limited space.

Three of the four corners were used respectively as feeding-place (she always had her green leaves served at the same spot), bathing-ground (the slough), and dung-hill. The fourth corner was used as an observation-post, whenever love of adventure made her leave the beaten track.

Meanwhile the work of our expedition went on as usual. New traps were planned in other districts south of the Kampar river, and the trapping activity increased. The first part of the expedition lasted for nearly half a year, during which period we caught three female sumatrensis and a beautiful young male - this latter unfortunately escaped.

One of these three females died by accident. The two others are now in Bogor, Indonesia and Copenhagen, Denmark.

The second part of the expedition is now under preparation, and it is hoped that this time three male sumatrensis will be caught in order to complete the initial part of the programme - to secure breeding pairs for respectively Basel Zoo, the new Taman Magasatwa Nasional at Bogor, and Copenhagen Zoo.

It is hoped that this expedition will be the first step in a bigger programme to save the Sumatran rhinoceros from complete extinction.