American Association of Zoological Parks and Aquariums

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

DATE: 15 November 1983

REPLY TO: Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apple Valley, MN 55124
(612) 432-9010, Ext. 255

John Payne, Ph.D.
Wildlife Section
Forest Department
P.O. Box 311
Sandakan, Sabah, Malaysia

Dear John:

The letter to Patrick is self-explanatory. I'm very optimistic we can implement the project.

However, the news about the possible loss of 1 to 3 rhinos is very disturbing.

I am in general agreement with your suggestion of organization for the project. As Bill Zeigler will have informed you, Khan (and Ratnam) are machinating to acquire control of the entire project. But we will resist to the death. The arrangement of having Khan (or Ratnam) as leader in W. Malaysia and Patrick in Sabah seems advisable. Then you (shadowy fellow that you are) can unofficially manage as much of the project as you and Patrick want. Van Strien and Parkinson could then coordinate and commute between the two regions.

Incidentally, unofficially and confidentially, it appears Van Strien will be appointed Chairman of the SSC Asian Rhino Specialist Group soon.

Warmest regards,

Tom

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator

TJF/slp

Enclosures

P.S. Where's my picture of Diana? My heart and other parts of my anatomy ache for her. Maybe I can visit again after the first of the year if we can convene a grand council on the Sumatran rhino project and then an Asian Rhino Specialist Group Meeting.

American Association of Zoological Parks and Aquariums

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

DATE: 15 November 1983

REPLY TO:

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apple Valley, MN 55124
(612) 432-9010, Ext. 255

Patrick M. Andau
Office of the Chief Game Warden
Jabatan Kehutanan
Peti Surat 311
Sandakan, Sabah, Malaysia

Dear Patrick:

Here is a copy of the letter from Datuk Harris.

As we discussed this morning, I believe we must move immediately to initiate at least the survey part of the project in Sabah. The enclosed letter from Parkinson, which I received today, is encouraging. We will move to get him out as he suggests.

Keep the faith.

Best regards,

Tom

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator

TJF/slp

Enclosure

Telegrams: "CHIEFMIN KOTA KINABALU"
Ref. CMO. CMDC.506/16

PEJABAT KETUA MENTERI
(THE CHIEF MINISTER'S OFFICE)
KOTA KINABALU
SABAH, MALAYSIA

29th October, 1983

Dr. Thomas J. Foose
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apple Valley, MN 55124
UNITED STATES OF AMERICA

Dear Dr. Foose,

Thank you very much for your letter of 11th October, 1983.

2. The State Government of Sabah is very appreciative of AAZPA's close cooperation with the State Forestry Department for the conservation of wild life. Undoubtedly, the State Government will assist and contribute fully towards the success of the joint program of ensuring that the 'Asian two-horned rhinos' occurring outside of the proctected main sanctuary of Silabukan, Lahad Datu will be brought under captive propagation of stock so that they do not become diminutive in number.

With kind regards.

Yours sincerely,

(HARRIS MOHD. SALLEH)
Chief Minister, Sabah

P.K. 1,000H-1/4532-82

Thomas J. Foose, Ph. D.
AAZPA Conservation Coordinator,
ISIS Office,
Minnesota Zoological Garden,
Apple Valley, MN 55124.

White House,
San Roque,
San Jose,
Occidental Mindoro,
Philippines.

10th November 1983.

Dear Tom,

Forgive me for not replying to your telegram before this, but when it arrived I was away in the Calamian group of islands and out of touch. Then upon my return home to San Jose, I caught flu and was in bed for nearly one week. Also you mentioned in your cable that a letter would follow, but to date it has not arrived and I now think it better to write you immediately.

Yes, I would still very much like to visit Sabah on your behalf and frankly, I can see no reason why PCCT should not release me for two or three weeks. We are at a complete standstill here with our own capture program, due to a lack of funds caused by the economic situation and the political crisis now prevailing.

Once I have been to Sabah and have been able to assess the chances of a successful operation or otherwise, it would make things much easier for both of us to make long term commitments. To be completely honest with you, at this moment I am in a quandary as what to do. The Philippine Government has treated both Bruce White and myself extremely badly over a long period, in that our salaries are never paid on time and other expences related to work are not reimbursed. On top of this we have largely financed our own operations to get the job done and as you know, we get little logistical support. There is a limit to what we can put up with and as an example, I am owed four months remuneration at this time. Bruce is I believe even worse off than me, but our big gripe is that due to lack of support it effects our professional reputation and we are both worried that we have been unable to complete this Tamaraw project. I am also angry that I was not released earlier for the Sabah trip, having been told I could go, then I got the same treatment recently when I was supposed to go to Scotland for the 3rd World Wilderness Congress meeting. I had made all arrangements in U.K. and was left here in San Jose on a standby basis to the last minute. Eventually I received a casual message from head office saying the trip was cancelled.

On the positive side though, we have made enormous strides and there is no doubt that conservation is on the move, albeit slowly. Recently I was part of a delegation representing the Philippines at an ASEAN

Nature Conservation Meeting, at which Heritage Parks were chosen in each country. I was able to persuade the meeting to accept the Iglit/Baco National Park as our priority heritage park and also to have PCCT accepted as the Agency to take the lead role in coordinating all the various Government bodies at the National level, as well as developing the Park. We have been working on the legislation and getting things organized by forming a local Council, but you cannot imagine the problems.

Bruce White has now completed his National Conservation Strategy and U.S. Aid may fund a Secretariate with a six months grant to help get things moving. Bruce has just left for the States via Europe but will I think, return here in February on a six months contract to run the Secretariate. In the meantime, to ensure that the Strategy does get to the President I used my influence and personally handed the document to him. This is something I rarely do but I felt it so important and if I had left it to our Minister, he would have merely used it for his own political ends.

Bruce and myself have made an effective team here and if the Sumatran Rhino project does go ahead, you should seriously consider having Bruce work with me on the project. As you know, the success of any project will depend on team work and not one individual. If I were to undertake the capture, it would be necessary to have such a person with me.

By the way, during the ASEAN meeting I had the opportunity of meeting and talking with Director Khan from Malaysia. We got on very well and I was most impressed with him. We discussed the Sumatran Rhino and I think he rather hopes I will take on the job, in the meantime I gave him some ideas of capture methods and it is agreed that he will send two of his men here, for training with the slide trap method. It was rather amusing because each delegate from the four ASEAN Countries took me on one side and offered me a contract to work for them. In the end it was debated that it might be possible for me to train a capture team at a regional level, but nothing was concluded and I think each country would rather have its own setup.

Anyway, please write Atty. Trinidad asking if I could now be released for an initial survey in Sabah as per his last letter stating that December/January would be a good time. You might mention that you hear PCCT is involved and taking the lead role in developing the Iglit/Baco Park as a Heritage Park which was chosen by ASEAN. It would help to use this ASEAN Connection to have PCCT release me.

My very best wishes Tom and hoping we can get things moving.

Yours sincerely,

D.A. PARKINSON.

N. Payne

American Association of Zoological Parks and Aquariums

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

DATE: 13 October 1983

REPLY TO: Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apple Valley, MN 55124
(612) 432-9010, Ext. 255

Peter Jackson
IUCN/SSC Consultant
Species Survival Commission
IUCN
1196 Gland
Switzerland

Dear Peter:

I appreciate the opportunity to provide input to the booklet summarizing status and conservation needs of Asian elephants and rhinos. Your similar effort on African forms is extremely well prepared and both should be very useful references for conservation programs on these species.

As you probably know, the American Association of Zoological Parks and Aquariums (AAZPA) is attempting to develop coordinated and scientific programs for propagation of many endangered species as an integral part of the global strategies for their conservation. Collectively, these programs are known as the Species Survival Plan (SSP).

Rhinos are naturally receiving the highest priority by the SSP. We are attempting to develop a comprehensive strategy for the entire family. Unfortunately, the space and resources of zoos are limited in relation to the relatively large populations that must be maintained for viability and the great number of taxa that seem to be in need of captive propagation. Therefore, we have to be selective about the taxa we adopt for SSP programs.

Based on such consideration, we have designated four species of rhino for SSP programs: Indian (Rhinoceros unicornis), Sumatran (Dicerorhinus sumatrensis), black (Diceros bicornis), and white (Ceratotherium simum). For each species, we are proposing a minimum population of 100 in AAZPA facilities.

Enclosed are three papers that will describe in more detail the process whereby these species were selected, and the programs being developed for their management:

1. A general discussion of SSP programs.
2. A description of the SSP strategy for the Rhinocerotidae.

3. A proposal for the grogram on Sumatran rhinos.

This third document is a preliminary draft of a proposal that is still being developed. Hence, the particulars of the actual project to collect Sumatran rhinos for captive propagation will be modified further before official submission to IUCN and various governmental officials. So please treat that part with discretion at the moment. However, I include the document to provide you with a conceptual background that reflects our philosophy for rhinos in general and the Sumatran rhino in particular.

Fundamentally, we believe survival of the rhinos (and most other mega-vertebrates e.g., elephants) will probably depend upon systems of both wild and captive populations that are interactively managed for mutual support. In no case does this situation seem truer than with the Sumatran rhino. The numbers of this species have become so reduced and fragmented that even if some of the remnants can be successfully protected, these small populations may not be viable genetically or demographically for long-term survival. More viable, and indeed vital we believe, is a strategy that incorporates both captive and wild populations. Thus we recommend that a strategic masterplan be formulated that:

(1) designates a few (perhaps only 5 can qualify) populations and sanctuaries as the main objectives for preservation in the wild.

(2) identifies other animals as candidates for captive propagation or translocation.

This basic approach could and, in our opinion, should be applied to the endangered megavertebrates in general. Hence, we would highly encourage more consideration of the role of captive propagation in conservation strategies in the book on Asian elephants and rhinos.

Concerning your formal questionnaire, it did not seem appropriate for me to complete them. The relevant information on captive populations of rhino is contained in the various enclosed papers. (I've been less personally involved with elephants in recent years. I believe Dr. Ed Gould of the National Zoo in Washington, D.C. is compiling some better data on Asian elephants in captivity in North America. I do enclose the latest ISIS reports. The SSP will probably establish a program for Asian elephants in the very near future.)

I will comment on your section, "Ranking of Species and Regional Populations". You will observe the AAZPA has not adopted the Javan rhino (Rhinoceros sondaicus). This exclusion was the result of two factors.

(1) Space and resources seem sufficient to develop programs for only 4 types of rhino. Believing all species to be in need of reinforcement by captive propagation, we have selected

the 4 species we believe represent the greatest diversity of the radiation. Therefore, we have selected a representative of each genus. Both the Indian and Javan are in Rhinoceros. Because we believe we have a better foundation for R. unicornis, we have selected this species over the Javan.

(2) Although the rarest of species in actual numbers, the Javan seems to us to be in a better position in the wild than the Sumatran. The fact that the population is not fragmented and seems reasonably well protected is encouraging. Of course, the concentration of all animals in one place incurs certain hazards. However, the proposal to translocate some animals to Wai Kambas in Sumatra would resolve this problem. In any case, we do not believe the species should be abandoned. However, the hard realities of our limited resources has argued for its exclusion, at the moment, from the AAZPA program. Moreover, because of the reasons presented above and in the attached proposal, we believe the Sumatran rhino should perhaps receive higher priority than the Javan in the IUCN SSC strategy.

Thank you again for the opportunity to provide input. Please keep me informed of developments and let me know if I can be of further assistance.

Best regards,

Tom

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator

TJF/slp

Enclosures

cc: R. Scott
W. King
G. Rabb
U.S. Seal

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

COMMISSION DE LA SAUVEGARDE DES ESPÈCES - SPECIES SURVIVAL COMMISSION

Dear Friend,

I have been entrusted with the task of preparing a booklet summarizing the status and conservation needs of Asian elephants and rhinos, similar to one I edited on the African species. The aim is to produce a document for presentation to governments and other authorities so that they have an overall understanding of the situation and conservation requirements. The document will include reports already submitted to IUCN/WWF and material provided especially for this project.

Enclosed with this letter you will find a photocopy of the African booklet in which there are elephant and rhino status tables and a section on conservation priorities. Some action plans have already been developed for the Asian species, as they were for Africa, but to bring them up to date and provide an opportunity to re-assess conservation priorities the enclosed questionnaire has been prepared, based on one devised and used by African elephant and rhino specialists.

Separate questionnaires should be completed for each discreet elephant/rhino population.

There are three categories of criteria:

1. the biological importance of the population and its local habitat;

2. the conservation status of the population and its local habitat;

3. socio-economic factors adversely affecting the population or likely to do so.

A scoring system is used to obtain a picture of potential priorities. The system does not dictate or select priorities, but it provides an orderly framework in which to examine and discuss conservation priorities.

The second section of the questionnaire concerns domestic elephants in order to obtain a picture of this important aspect of elephants in Asia.

PLEASE RETURN COMPLETED QUESTIONNAIRES TO ME c/o SPECIES SURVIVAL COMMISSION, IUCN, 1196 GLAND, SWITZERLAND, BY 30 SEPTEMBER 1983.

PETER JACKSON
IUCN/SSC Consultant

1 September 1983

PS Please excuse the lack of personalisation in this letter. I am leaving for Zimbabwe and shall not be present when the questionnaires are ready to mail.

PART TWO - DOMESTIC ELEPHANTS

NOTE: The following questions should only be answered on a national basis, except for the four Indian regions - southern, central, northern and northeastern.

1. COUNTRY or INDIAN REGION _____

2. DOMESTIC ELEPHANT POPULATION _____

2.1. Reliability of figure

3.1.1. Census ___
3.1.2. Sample survey ___
3.1.3. Informed guess ___

3.2. Activity (percentage employed)

3.2.1. Timber operations ___
3.2.2. Tourism ___
3.2.3. Temples ___
3.2.4. Private ___

4.2.5. Average annual recruitment

Bred in captivity ___
Captured from wild ___

5. Population trend up/stable/down

COMMENTS AND SUGGESTIONS

American Association of Zoological Parks and Aquariums

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

DATE: 11 October 1983

REPLY TO: Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apple Valley, MN 55124
(612) 432-9010, Ext. 255

YAB. Datuk Harris Mohd. Salleh
Chief Minister
Chief Minister Dept.
Kota Kinabalu, Sabah

Dear Datuk Harris:

The American Association of Zoological Parks and Aquariums (AAZPA) is the professional organization of the approximately 175 zoos and aquariums in the United States and Canada. Conservation of endangered species is the highest priority of the AAZPA and its considerable resources.

A species of particular importance is the Asian two-horned rhino which is one of the most endangered animals in the world. Fewer than 400 survive and are widely dispersed over S.E. Asia. Indeed, at least 25% occur as isolated individuals outside of protected sanctuaries. These remnants cannot contribute to the survival of the species. We believe these animals would best be collected for captive propagation of stock that could then be reintroduced in natural habitats. Captive propagation has been very successful with other types of rhino.

An estimated 28 to 38 of these rhinos occur in Sabah. Perhaps 8 to 18 occur outside the main sanctuary of Silabukan.

Consequently, for the last year, the AAZPA has been exploring possibilities for a cooperative project with the Wildlife Section of the Forestry Department of Sabah for captive propagation of rhinos using animals captured outside Silabukan. I visited Sabah in April and May to discuss this project with wildlife officials. A cabinet paper describing the proposal in detail has been prepared by the Forest Department and already submitted through official channels for your ultimate consideration.

We are hopeful you will be able to consider this proposal at your earlist opportunity. The situation is critical for many of the rhinos. Through this project, Sabah will have the chance to contribute to a conservation cause of international significance. Thank you very much.

Best regards,

Thomas J. Foose

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator

TJF/slp

American Association of Zoological Parks and Aquariums

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

DATE: 13 October 1983

REPLY TO: Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apple Valley, MN 55124
(612) 432-9010, Ext. 255

Mohd. Khan b. Momin Khan
Director-General
Department of Wildlife & National Parks of Malaysia
Block K-20/Jalan Duta
Kuala Lumpur, WEST MALAYSIA

Dear Chief:

To my chagrin, I have observed I inadvertently omitted double asterisks (**) from Silabukan in Table 2 to designate probably protectable sanctuaries. Enclosed are 3 corrected copies of Table 2 and Figure 2 where I've added Dent to Kretam to be more accurate. Please replace these pages in the 3 copies of the proposal you, Louis, and Khairiah have.

We will be anxious to receive your further comments on the proposal.

Warmest regards,

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator

TJF/slp

Enclosures

American Association of Zoological Parks and Aquariums

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

DATE: 13 October 1983

REPLY TO: Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apple Valley, MN 55124
(612) 432-9010, Ext. 255

John Payne, Ph.D.
Wildlife Section
Forest Department
P.O. Box 311
Sandakan, Sabah
Malaysia

Dear John:

Horror of horrors. The omission of the double asterisks from Silabukan in Table 2 was an oversight, the product of good old Yankee incompetence when confronted by the pressure of a deadline (the AAZPA Board Meeting). Enclosed are corrected copies of Table 2 and Figure 2 per your suggestions. Corrections are also en route to Khan, Van Strien, and Clive, the only recipients so far outside of AAZPA.

Warmest regards,

Tom

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator

TJF/slp

Enclosures

cc: C. Marsh
P. Andau

blindoc : Payne

American Association of Zoological Parks and Aquariums

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

DATE: 13 October 1983

REPLY TO: Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apple Valley, MN 55124
(612) 432-9010, Ext. 255

Nico Van Strien
Molenweg 83
1601 ST Enkhuizen
Netherlands

Dear Nico:

To my chagrin, I've discovered I inadvertently omitted double asterisks from Silabukan on Table 2 of the proposal to designate a probably protectable and viable sanctuary. A corrected copy of Table 2 and Figure 2 is enclosed.

Warmest regards,

Tom

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator

TJF/slp

Enclosures

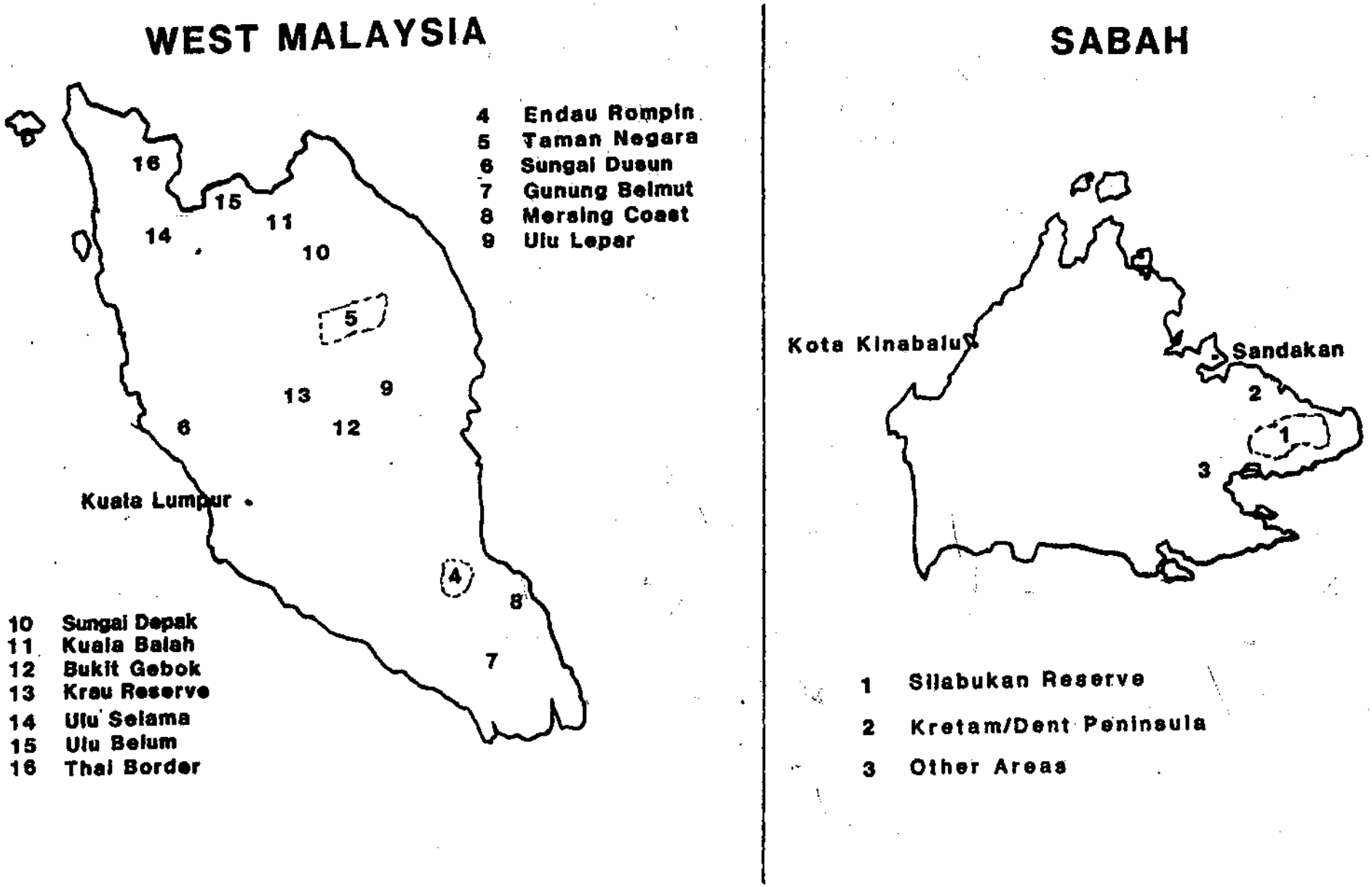
TABLE 2

SURVEY OF SURVIVING ASIAN TWO-HORNED RHINOS

AREA OR COUNTRY	LOCATION	ESTIMATE OF RHINOS	HABITAT AVAILABILITY PRESENTLY (Km^2)	HABITAT AVAILABILITY POTENTIALLY (Km^2)	HABITAT STATUS	REFERENCE	POTENTIAL CARRYING CAPACITY*
Sabah	Silabukan Reserve**	20+	250-1000	1000	Perhaps protectable.	Andau & Payne 1982	50
	Kretam/Dent Peninsula	8	~1000	None	Being converted to agriculture.	Andau & Payne 1982	None
	Other Areas	10	~2000	2000	Perhaps protectable.	Andau & Payne 1982	None
	TOTAL	28-38					
West Malaysia (Peninsular Malaya)	Endau Rompin**	20-25	1600	1000-1600	1000 km^2 Reserve; Park proposed.	Flynn & Abdullah 1982	50-80
	Taman Negara**	8-12	4400	4400	National Park, but under pressure.	Flynn & Abdullah 1982	110-220
	Sungai Dusun	4-6	40+	140+	State Wildlife Reserve	Flynn & Abdullah 1982	20
	Gunung Belumut	2-3	230	230	Wildlife Reserve proposed.	Flynn & Abdullah 1982	16
	Mersing Coast	2	N.A.	Prob. None	Being deforested.	Khan (pers. comm.)	0
	Ulu Lepar	3-5	1000	1000	Unprotected and being deforested.	Flynn & Abdullah 1982	0
	Sungai Depak	3-5	N.A.	Prob. None	Being deforested.	Flynn & Abdullah 1982	0
	Kuala Balah	3-4	N.A.	Prob. None	Being deforested.	Flynn & Abdullah 1982	0
	Bukit Gebok	1-2	N.A.	None	Being deforested.	Flynn & Abdullah 1982	0
	Krau Reserve	0-1	500	500	Unstable.	Flynn & Abdullah 1982	24
	Ulu Selama	3-5	N.A.	N.A.	Unprotected.	Flynn & Abdullah 1982	?
	Ulu Selum	3-5	N.A.	N.A.	Unsecure area.	Flynn & Abdullah 1982	?
	Thai Border	0-1	N.A.	N.A.	Unsecure.	Flynn & Abdullah 1982	?
	TOTAL	52-76					
Sumatra	Gunung Leuser**	50-200	1400	8000	National Park but disturbance.	Van Strien/Widodo 1982	200-400
	Kerinci/Seblat**	15-20	2000	4000	Protection meager.	Borner 1979	100-200
	Torgamba	1-5	?	?	Being deforested.	Borner 1979	0
	Sumatera Selatan	2-5	500	?	Deforestation occurring.	Borner 1979	20
	Siak River Region	None	?	None	Being heavily developed.	Borner 1979	0
	TOTAL	68-230					
Kalimantan	Banumuda	0	N.A.	N.A.	Being deforested.	WWF Yearbook 81-82	0
Thailand	Phu Khio Reserve Tenasserim Range Khao Soi Dao Reserve	6-15	N.A.	N.A.	Unstable.	McNeely & Cronin 1972 McNeely & Laurie 1977 Asia Week 1982	0
Burma	Schwe U Daung Reserve	4	N.A.	N.A.	No information.	Borner 1979	?
	Elsewhere	?	N.A.	N.A.	No information.	None recent and reliable.	?
Indochina		?	N.A.	N.A.	Very unstable.	None recent and reliable.	0
TOTAL		158-363	~15000	~22000	None totally secure.		590-1030

* Predicated on maximum density of 1 rhino/20 km^2 suggested by studies of Flynn and Van Strien (pers. comm.)
** Populations probably preservable in wild if interactively managed and adequately protected.

FIGURE 2


WEST MALAYSIA
4 Endau Rompin
5 Taman Negara
6 Sungai Dusun
7 Gunung Belmut
8 Mersing Coast
9 Ulu Lepar
10 Sungai Depak
11 Kuala Balah
12 Bukit Gebok
13 Krau Reserve
14 Ulu Selama
15 Ulu Belum
16 Thai Border
Kuala Lumpur
SABAH
Kota Kinabalu
Sandakan
1 Silabukan Reserve
2 Kretam/Dent Peninsula
3 Other Areas

660811
xxxxxxxxxxxxxxxxxxx

GW 7/207/Vol II/80

11 October 1983

Dr Tom Foose
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apply Valley
MN55124
U S A

Dear Tom

You should have received by now my 1 October 1983 letter with brief comments on the "Captive Propogation of Sumatran rhinos" proposal. Since then, I have discussed further the proposal with Patrick, and we have come up with a possible alternative scheme for the project personnel organisation. The aim of this alternative scheme is to minimise the number of expatriates involved, particularly in senior positions, a factor which is of great concern to some of the Malaysian agencies with an interest in the project.

(1) The project Director would be a citizen of the country or state concerned. In Sabah, this could be arranged in one of two ways, assuming that the candidate already has a permanent job. Either he is appointed to work on a part-time basis with relatively small renumeration paid in the form of an honorarium. In this case, responsibility would be limited primarily to liaising between the project and government agencies. Or, he is seconded to the post from his existing job and paid a salary by AAZPA for a full-time job. Such an arrangement would probably not be permitted for more than two years. Considerable responsibility would be involved, although not so much as originally enviaged for this post.

(2) The "Capture Operation Director" would become an "Operations Manager", whose job would include some of the work originally envisaged for the Project Manager. I believe this would be similar to the position now occupied by Tony Parkinson in Philippines.

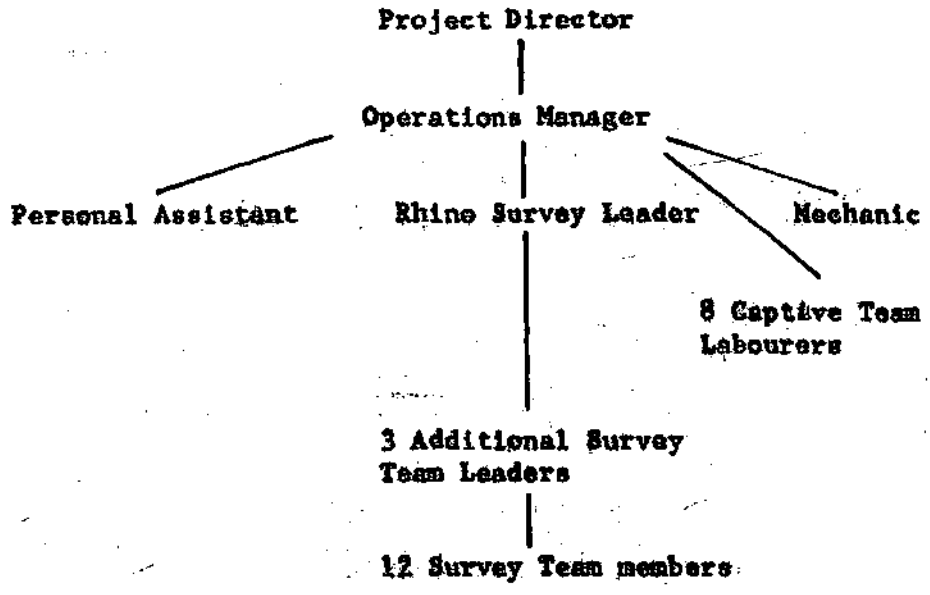
(3) The Personal Assistant to the Director would be allocated to work for the Operations Manager.

2/....

Under this scheme, there would be almost no alternative choices for candidates. For Sabah, the Project Director would be Patrick Andau and the Operations Manager, Tony Parkinson.

I believe that this should be added into your proposal as an alternative. Even if you or other AAZPA members do not support this alternative, its inclusion in the proposal is likely to be appreciated by at least some of the relevant Malaysian agencies.

The alternative scheme would be:



If you agree to this amendment but have already sent the proposal out officially, I think that it would be acceptable to send out the amendment with a short explanatory note. I would be inclined to be quite frank about the reason for the amendment, and say that although the original scheme would probably be favoured by AAZPA, it is appreciated that the governments concerned might prefer to have the project directed internally by a local citizen.

On to a second important matter. Judging from recent experience concerning permission to loan tarsiers to the Smithsonian Institution, processing of the rhino proposal will be very slow. The time is probably ripe to try and get a high-level request sent to Sabah's Chief Minister.

On less urgent points:

(1) Tony may be coming here in January, but do you know when his contract ends and whether he might renew it? I don't.

(2) Bottom of p.15 in the Proposal "..... feasibility early in 1984", not "... later .....", as written.

(3) Apart from the survey team leader, all other survey staff should be paid on a "bonus-according-to-results" system.

Regards

John.

John Payne

Dr. John Payne,
Forest Department,
P.O. Box 311,
Sandakan,
Sabah,
Malaysia.

White House,
San Roque,
San Jose,
Occidental Mindoro,
Philippines.

22nd September 1983.

Dear John,

I am sorry not to have written you sooner than this, but I had waited for the Committee Members of PCCT to make a decision about my proposed trip to Sabah. Now I learn that they refuse to second me at this time, as they feel our own work program is urgent. Since I am of course under contract to PCCT, I have to comply with their wishes. However, they did say that it might be possible for me to take time off in January 1984, but by that time no doubt, the AAZPA will have found somebody else and completed the survey.

As you can imagine, it is very disappointing for me because I am deeply interested in assisting wherever wildlife species are threatened, particularly so, when it comes to capture and translocation.

Bruce White, who tells me that he will shortly visit you in Sabah, showed me your letter in which you ask for my opinion of the AAZPA. To answer that question depends entirely what one wants and expects of them, they are without doubt a very powerful association, when such Zoo's as San Diego and the National Zoo in Washington are members. During the past ten years or so, the zoo world has undergone many changes and there is now a big effort towards conservation. The White Rhino and Arabian Oryx bears this out, but of course I am sure that the organization looks after its own interests, first and foremost. But if they are the ones footing the bill, then it is only fair that they should get something out of any deal. Their main strength is back home in the zoo's, where the technology is second to none, but this new direction of getting involved in field work seems to have brought them problems, they do not have experienced staff to undertake such projects as the one in Sabah. It is perhaps that for this reason they seek my services on the capture work, though ultimately I am sure they will replace any outsider with their own people.

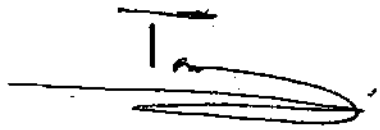
It is for this reason that I am not prepared to lose my present position merely for a short term contract, however much I may want to help.

There is also the point that we are making real headway with the Tamaraw and conservation in general, it would be a tragic thing if we were to abandon it now. We do of course have many frustrations, but then who does'nt when it comes to conservation, and the main thing is to keep fighting. Bruce is going through periods of depressions and at times seems to think we are not making any progress, but he is just completing his Strategy on Conservation which in all appearances is a great success, and of course he is tired out, needing a break from work. I am now urging him to return to the Philippines after his leave, so that he can be a guiding factor in the implementation of the strategy.

I may be going over to Scotland towards the end of this month to attend the 3rd World Wilderness Congress meeting, my Minister has asked me to represent him. I am now on a standby basis as clearance has to come from the President himself. In a way I am hoping that it will not be necessary for me to go, as I could then meet with Director General, Mohd. Khan Bin Momin Khan when he attends a meeting in Manila sometime in October.

With kind regards,

Yours sincerely,



D.A. PARKINSON.

American Association of Zoological Parks and Aquariums

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

DATE: 13 September 1983

REPLY TO:

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apple Valley, MN 55124
(612) 432-9010, Ext. 255

John Payne, Ph.D.
Wildlife Section
Forest Department
P.O. Box 311
Sandakan, Sabah
MALAYSIA

Dear John:

Enclosed is the proposal for the Sumatran Rhino Project that I will submit to AAZPA this week. If they approve, my intention then is to submit to the IUCN Asian Rhino Specialist Group and officially to West Malaysia and Indonesia. Let me know if anything seems out of order. Also, I'll be anxious to know what is the status of approval for Sabah from Datuk Harris.

Best regards,

Tony

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator

TJF/slp

cc: W. Zeigler

Enclosure

What do you think of Patrick's new Porn?

American Association of Zoological Parks and Aquariums

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

CAPTIVE PROPAGATION OF SUMATRAN RHINOCEROS

A Proposal

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
7 September 1983

INTRODUCTION

This document is a proposal for a cooperative project between the American Association of Zoological Parks and Aquariums (AAZPA) and the Wildlife Departments of Sabah, West Malaysia, and Indonesia for captive propagation of Asian two-horned or Sumatran rhino (Dicerorhinus sumatrensis). Analysis of the current status and prospects for this gravely endangered species suggests captive propagation could be very beneficial to reinforce efforts to preserve wild populations. Hopefully, the proposed project can be developed as part of a global strategy for the species that will incorporate both wild and captive programs and populations.

BACKGROUND

The Asian two-horned rhino (Dicerorhinus sumatrensis) may be the most gravely endangered of the five surviving species of this family (Table 1). Although the total population estimated for the Javan rhino (Rhinoceros sondaicus) is lower, its situation seems more sanguine because of an active program of protection by conservationists (WWF 1981-82). Moreover, the Javan is not the only representative of its genus. Rhinoceros also includes the Indian (R. unicornis) which is at least superficially similar to the Javan despite some ecological differences (Groves 1967). In contrast, the Sumatran rhino is the sole survivor of a formerly more successful genus and is considered representative of a primitive type from which other extant rhinos may have evolved (Groves and Kurt 1972).

Information available from recent and reliable reports on the distribution of surviving Sumatran rhinos is summarized in Tables 2 and 3 and Figures 1 and 2. Numbers are precariously low and the decline continues inexorably. Both Borner (1979) and Flynn & Abdullah (1982) document the disappearance of rhinos from areas of former occurrence, even of moderate abundance, during the last ten years. One by one, the last remnants are being lost.

Even where rhinos do and will survive in natural habitats, populations may be so small and fragmented as to be genetically unviable. Such populations tend to lose the genetic diversity vital to enable species to adapt to constantly changing environments. The gene pool becomes a collection of

gene puddles. Population biologists have advised that a genetically effective population (N_e) of 500 may be necessary for long term survival of a species (Franklin 1980, Soule 1980). A number of population biologists believe even this number may be too few. Moreover, loss of genetic diversity and vitality is not the only problem. Small populations are vulnerable to extinction from other types of perturbations such as natural disasters, demographic stochasticity, etc. (Shaffer 1981).

In the case of the rhinos, there is yet another, probably greater threat. Poachers may be the final executioner. Unless sanctuaries can be secured against poachers, there is no hope for this species in the wild.

For the Asian two-horned rhino, there are several sanctuaries and populations that might be preservable in the wild because they are large enough to accommodate a genetically viable number of animals and because they can probably be protected from poachers and development (Borner 1979; WWF 1981; Andau and Payne 1982; Flynn and Abdullah 1982; M. Khan and N. Van Strien, personal communication). The five most probable places (designated by asterisks in Table 2) are: Gunung Leuser and perhaps Kerinci/Seblat in Sumatra; Endau Rompin and Taman Negara in Western Malaysia; and the Silabukan Forest Reserve in Sabah.

The other surviving rhinos are fragmentally distributed over the range of the species in remnants of usually one to five animals, frequently in areas with poor protection. These remnants cannot contribute to the survival of the species because:

(1) the groups are too small to be viable genetically or even to permit reproduction.
(2) the animals cannot be protected from poachers or their habitats from development for purposes other than wildlife preservation.

As many as 25% of the surviving rhinos may occur as such remnants or isolates (Table 3).

There seem to be two alternatives that might enable these animals to be redeemed as far as perpetuation of the species is concerned:

(1) translocation into the larger populations and protectable sanctuaries,
(2) capture for captive propagation.

Translocation is the more attractive alternative to many conservationists because it seems more natural. However, there can be formidable risks and limitations with translocation (Andau and Payne 1982; Callecott and Kavanaugh 1983):

(1) So little is known about the biology of this species that many biological problems could occur.
   (A) Introduction of new animals into an established population could be disruptive of the social order.
   (B) Many areas may already support the carrying capacity of rhinos under current conditions.
   (C) Rhinos may not remain in the new habitat. Repatriation is a persistent problem with many attempted translocations.
(2) There is great uncertainty about the stability and security of many potential repositories for the translocated animals. Indeed, the translocation could actually attract poachers.
(3) Opportunities for genetic management, perhaps vital to survival of the species, would be restricted.

Although a few populations of Sumatran rhino can hopefully be preserved in the wild, it may still not be possible to maintain large enough numbers to insure long term survival. Successful protection of the major sanctuaries and populations designated in Table 2, an objective of a considerable uncertainty, could probably produce, at most, a total of 1030 rhinos. These estimates are predicated on the area of the sanctuaries that can probably be protected and a maximal density of 1 rhino/20 km^2 suggested by the ecological studies of Van Strien (personal communication) and Flynn (personal communication). None of the separate populations enumerated in Table 2 could constitute a genetically effective number of 500 considered by many geneticists as essential for long term survival. If interactively managed to constitute a single population biologically through carefully regulated exchanges of animals periodically, these separate demes might be viable genetically. However, in the wild, N_e's are usually well below the actual population. N_e is not simply the total number of animals in the population. Genetically effective size depends on the mating system and other reproductive patterns of the population. N_e can vary anywhere from a tenth to twice the actual number of animals in the population. In the wild, an N_e less than half the total number of animals might

not be exceptional. Thus, even with some attempt at genetic management, the N_e of wild populations that could be protected may be below the threshold for long term viability. The subdivision of the rhino population into several demes might compensate somewhat, but the number of the different populations would still be low. Moreover, it cannot be overemphasized that protection of these populations and sanctuaries in the wild is likely to be an ever increasing challenge.

In contrast, a captive program for the Sumatran rhino could provide significant advantages against these problems. Presumably, animals would be easier to protect from poachers. More importantly, a captive population could be managed to maximize its N_e. By carefully regulating the reproduction of rhinos (i.e. who mates with whom and how many offspring each animal produces in a lifetime) the N_e of a captive population could actually be greater than the number of animals maintained. Finally, recent advances in reproductive technology (artificial insemination, embryo transplantation, gamete storage) could perhaps productively be applied to the Sumatran rhino. Research is already under way in the AAZPA on white, black, and Indian rhinos.

Thus, the potential of a captive population of several hundreds managed to maximize its genetically effective size could be a vital reservoir to reinforce and replenish the wild stock until or unless larger reserves could be secured in the wild. Survival of the Sumatran rhino (and many other species) may well depend upon an interactive system of both wild and captive populations.

The possible importance of a captive population is not a new idea. At least as early as 1959, the potential of a captive population to preserve the species was recognized (Anderson 1961). In that year, an expedition was sponsored by the Copenhagen, Basel and Boger Zoos to collect rhino along the Siak River in Sumatra. Ryhiner and Skafte conducted the operation.

Ten rhinos were collected in an unprotected area. Estimates of the local population at that time was 40-60 rhinos. Unfortunately, only one male was among the ten collected and he escaped. A female was consigned to each of the three zoos, the other six were released. Of the three placed in zoos, the animals at Bogor and Basel both died in 1961. The female at Copenhagen survived until 1972 when it succumbed to vandalism. Perhaps even sadder than the abor-

tive results of this well intentioned endeavor is the fact that a survey by Borner in 1975 discovered no evidence of rhino in the same Siak River area where in 1959 the species was described as plentiful and the 10 were actually collected. Borner concluded the Sumatran rhino had been exterminated in this region. (Borner 1979)

In 1976, Borner, who had conducted an extended study of the rhino all over Sumatra for IUCN/WWF and the Indonesian Government (Borner 1979), prepared a proposal for establishment of a captive population founded by remnant individuals and groups of Sumatran rhino with virtually no hope of surviving in their habitat and hence of contributing to perpetuation of the species. Naturally, this proposal was very knowlegeably and thoroughly prepared. Implicitly, the Borner proposal had the moral support of WWF and IUCN. The proposal was circulated to several zoos. Unfortunately, none of the individual institutions could provide the commitment of resources and leadership to implement this project. So the proposal expired and Borner moved onto other assignments in Africa where he still is located.

The current initiative by the American Association of Zoological Parks and Aquariums (AAZPA) on Sumatran rhino commenced in 1981 with the formal inception of the Species Survival Plan and the appointment of an AAZPA Conservation Coordinator. The AAZPA is the professional organization of the approximately 175 zoos and aquariums in the United States and Canada. Conservation has been established as the highest objective of the AAZPA. Collectively, the AAZPA represents many resources (technical and financial) that can be utilized for conservation. Indeed, the realization is emerging that individual zoos, regardless of how big or how good, are very limited in what they can contribute by themselves to conservation. Species can be preserved in captivity only if the various collections of a species can be managed as biological populations to insure the genetic diversity and demographic stability vital for long term survival. It is only through collective and coordinated efforts that zoos can manage populations and generate resources on a scale sufficient to save species. Consequently, the AAZPA has embarked upon a Species Survival Plan (SSP), an attempt to develop scientific and coordinated programs to propagate and preserve endangered species in captivity.

Naturally, the family Rhinocerotidae is receiving the highest priority by the SSP. Four of the five species representing all of the extant genera have been designated for the SSP: black, white, Indian, and Sumatran. (The Javan has not been designated because limitations of space and resources allow the AAZPA to develop viable programs for only four types of rhino. Since all four species are endangered, the decision has been to select one representative of each genera.) Programs for the black, white, and Indian are already very successfully in progress. However, the most endangered rhino is the Asian two-horned. The AAZPA strongly believes captive propagation can be beneficial, perhaps vital, to the survival of this species. Hence, the AAZPA is very interested in participating in development of a captive propagation program.

Through 1981 and 1982, preliminary explorations toward this objective were conducted by correspondence and conversations with various scientists and officials interested and involved with the Sumatran rhino. Particularly important were early contacts with wildlife officials and scientists in Sabah.

Basically, a few rhinos (30-40) are estimated to survive in Sabah. The largest concentration seems to be in the Silabukan Forest Reserve. However, there are evidently a number of rhinos inhabiting areas around Silabukan on the Kretam Peninsula that will be converted to agriculture (Area 2 on Figure 2). Additional rhinos evidently occur elsewhere in Sabah outside protectable sanctuaries. Wildlife officials in Sabah (Andau and Payne 1982) have strongly recommended these animals be collected for a captive population and have tentatively invited the AAZPA to assist in development of this effort.

Extensive discussion of the proposal to establish a captive population and program occurred at the IUDZG Rhino Symposium in London, August 1982. In attendance were representatives of major zoos around the world as well as many field conservationists including members of both the SSC Asian and African Rhino Groups and SSC Chairman Dr. Grenville Lucas. There was general agreement that a captive program would be a constructive, if not crucial, contribution to preservation of the Sumatran rhino. The sole qualification placed on the proposition was that only animals outside the main sanctuaries and populations be considered candidates for the captive programs.

To explore further the possibilities of developing a program for captive propagation, a reconnaissance was conducted in S.E. Asia from mid-April to mid-June 1983 by Dr. Thomas J. Foose, AAZPA Conservation Coordinator, and Mr. William Zeigler, General Curator of the Metrozoo-Miami and a member of AAZPA's Wildlife Conservation and Management Committee. The purpose of the trip was to visit as many officials, scientists, and sites as possible to reconnoiter the feasibility and desirability of a captive propagation project. The itinerary included the Philippines, Sabah, West Malaysia, Singapore, and Indonesia.

In the Philippines, there were consultations with Tony Parkinson, Field Director of the Tamaraw Project and a preeminent trapper of larger mammals in tropical forests. In Sabah, there was extended conferal with Patrick Andau (Assistant Chief Game Warden), Dr. John Payne (WWF-Malaysia), and many other local conservationists both in the governmental and private sectors. There were also visits to a number of areas where isolated rhinos that might be candidates for capture are reported to exist. In West Malaysia, the principal contacts were Mohammed Khan and his staff, notably Khairiah Bte Mohd. Shariff. and Louis Ratnam. There were also substantive discussions with the staffs and officials of Zoo Negara and the Wildlife Department Zoo in Malacca. A number of rhino habitats were explored in West Malaysia but mostly in the main sanctuaries. In Singapore, there were discussions with the staff of the zoo about the project. In Indonesia, much time was devoted to visits with Dr. Nico Van Strien concerning the project as well as with other scientists and officials concerned with rhino conservation in Indonesia including the staff of the Jakarta Zoo and members of the Indonesian Zoo Association.

The results of this reconnaissance were very positive. Much support was discovered for the concept of a cooperative attempt to develop a program for captive propagation of Sumatran rhinos. Similar responses have been received from a number of other persons with recent interest and involvement with this species and its conservation: Widodo Ramono, Dr. Marcus Borner, Rodney Flynn, Dr. Andrew Laurie. Further, although difficult, the reconnaissance in the field and the consultations with Tony Parkinson have been encouraging about the actual feasibility of capture. Based on these considerations, a proposal has been formulated for a specific plan of action to develop a project on captive propagation of Asian two-horned rhino.

PROPOSED PLAN FOR CAPTIVE PROPAGATION PROJECT ON SUMATRAN RHINO

1. The Asian two-horned rhino is one of the most endangered species in the world. Probably fewer than 400 survive in all of the S.E. Asia. Over half of these animals occur in relatively large groups within established sanctuaries. But many others occur in small and fragmented groups of 1 to 5 animals. It seems unlikely that these remnants can contribute to the survival of the species because:
   A. they are too small and isolated to be viable genetically;
   B. they occupy areas where their habitat will be developed for other purposes or the animals actually lost to poachers.

2. Viable alternatives for these remnants would be:
   A. translocation into the larger populations and protected sanctuaries;
   B. capture for captive propagation.

   Captive propagation may be preferable at this time because of the advantages it can provide compared to the uncertainties about the viability of translocation. However, it must be emphasized that the primary purpose of the captive propagation will be to reinforce the efforts to preserve this species in the wild.

3. Therefore, the AAZPA proposes to develop a cooperative project with the Wildlife Departments of Sabah, West Malaysia, and Indonesia for captive propagation of Asian two-horned, or Sumatran, rhinoceros.

4. The project would be developed under the auspices and oversight of the IUCN SSC Asian Rhino Specialist Group. Indeed, the project would optimally be a part of an international strategy for conservation of the rhino that designates certain sanctuaries as the main objectives for protection in the wild and that identifies other isolated animals for captive propagation.

5. It would also seem advantageous for the project to be developed in the context of the Association of South East Asian Nations (ASEAN) which is increasingly attempting to coordinate conservation as well as many other activities. Under the present proposal, four of the five ASEAN nations could be directly involved in the project. Rhinos would be collected and propagation attempted

in Malaysia and Indonesia. Singapore possesses an excellent zoo that optimally should be one of the S.E. Asian facilities where rhinos would be placed. The Philippines could contribute through the services of Tony Parkinson who is considered by many to be the most qualified candidate to be actual trapper of Sumatran rhinos and who currently is engaged by the Presidential Commission for the Conservation of the Tamaraw. Only Thailand is not presently proposed for participation. However, there are reports that some rhinos may still survive in Thailand. Certainly, the possibility of Thailand's participation is not precluded and eventually could be beneficial.

6. Animals collected for the captive program would derive only from the population remnants with no prospect of contributors to survival of the species. No animals would be collected from the main populations and preservable sanctuaries. However, perhaps 25% or more of the animals believed to survive represent genetically unviable and/or imminently imperiled remnants. Such remnants occur in all three areas proposed for the project: Sabah, West Malaysia, and Sumatra.

7. There would be an attempt to collect a total of 6 to 12 pairs of rhino from Sabah, West Malaysia and Indonesia combined over a 5-year period. To be viable for long term propagation, an adequate number of animals must be obtained for the foundation of the captive population. Of course, even one pair in captivity would be a start. However, population biology suggests 6 to 12 pairs of animals are normally necessary to insure a sufficient sample of the genetic diversity of the wild populations. In the case of the Sumatran rhino, it seems also important to pursue as many geographic sources of founder stock as possible. The species has been so decimated in the wild that no one area is likely to provide the genetic diversity or simple numbers advisable to found a captive population.

   A logical arrangement would therefore be to collect 2 to 4 pairs of rhino each from Sabah, West Malaysia, and Indonesia.

8. However, logistics and chance are likely to be more important influences than logic on the proposed project. It is very unlikely that animals will be collected in such convenient sequences as pairs. Indeed, it is not certain rhinos can be successfully captured at all.

The AAZPA is under no delusion that capture of Sumatran rhinos will be anything but formidable. It will be costly! Millions of dollars will be required to produce results. But preliminary explorations have been encouraging on the possibility of substantial support from outside donors. It will be slow. The field conservationists consulted so far suggest that a collection team will have to be in the field for perhaps 3 to 5 years. It will be difficult. The rhinos are rare and are elusive. If they weren't, they would already be extinct. However, 10 rhinos were collected in 1959. Borner delineated a rather precise and plausible protocol in his 1976 proposal. Flynn had attracted animals into traps in 1980 before he had to abort on his captive attempt for other reasons.

A likely key to success would seem to be the location and perhaps design of the traps. Orientation of traps around the wallows or saltlicks, which are the center of a rhino's activity, may be productive. By utilizing and perhaps supplementing natural saltlicks, it is believed rhinos might be attracted to areas where traps would be placed. However, a major part of the capture operations must be intensive surveys to localize rhinos at any particular time and hence determine where traps might productively be placed. In Sabah, it is proposed to deploy four survey teams for this purpose.

The nature of the traps will also be critical. Based upon preliminary consultations with Tony Parkinson, who has extensive experience capturing large mammals (black rhino, elephant), especially in tropical forests (bongo, tamaraw), it is proposed to try two types of traps. One will be a form of the stockade trap that was used successfully in the 1959 Siak River expedition and that at least attracted rhinos inside during the Rodney Flynn project.

However, it is also proposed to try what Parkinson designates a slide trap. This trap entails an excavation in the ground, but is not a pit

in the traditional and negative sense of the term. The slide trap is a sophisticated structure with a door mechanism that rather gently moves the animal down an incline into a well-cushioned substrate. Parkinson has used this type of trap on both bongo and tamaraw without major problems. The door can also be constructed to close after the rhino is in the trap to contain the animal in a limited and dark environment which seems effective in minimizing captive stress.

It is impossible to predict in advance which type may be more appropriate. Both may be useful. Field trials should reveal relative merits.

A better analysis of the feasibility and the advisability of possible field procedures should be available from the anticipated reconnaissance by Tony Parkinson that is proposed for late 1983 or very early 1984.

9. One possible complication that must be considered is reproductive barriers between members of the disjunct Mainland and Island populations. Three extant subspecies are normally recognized (Groves and Kurt 1972). The northern most D. s. lasiotis probably would not be involved in the project being presently proposed. However, D. s. sumatrensis (Sumatra and West Malaysia) and D. s. harrisoni (Borneo) would be. It is possible that reproductive barriers may have already evolved between these subspecies. Such incompatibility would be revealed by results of matings in captivity. However, if no reproductive isolation exists, it is recommended there be no further concern with maintaining subspecific distinction in a captive population.

10. The project will be developed in phases over a period of 3-5 years.
    (1) Because of the biological situation and governmental receptiveness, captive operations would commence in Sabah and continue there for perhaps 3 years.
    (2) Operations would be extended to West Malaysia as resources, opportunity, and success permit. In general, it would be the intention not to initiate intensive or extended operations in West Malaysia until the project had been successfully in progress in Sabah for a year or more. However, opportunity or necessity may require some flexibility in this plan.

Indeed, one critical case has already emerged in West Malaysia. Two animals known to exist in Tenggaroh along the Mersing Coast will soon be deprived of their habitat as the forest patch they occupy is destroyed for development by FELDA (the government agency responsible for agricultural land clearance). These animals must be collected either for captivity or translocation very soon (October or November), probably before this proposal even can be properly considered by all relevant parties. Nevertheless, if pertinent parties act expeditiously, perhaps these animals can be saved.

(3) Capture of animals in Indonesia is not proposed until at least the third, perhaps fourth, year of the project. Information on the abundance and distribution of rhinos outside Gunung Leuser in Sumatra is meager. Thus, it is proposed that initially the project sponsor a survey by scientists already in Indonesia to determine better the current status of species in Sumatra as basis for conservation programs including possible capture for captive propagation. World Wildlife Fund Indonesia already has a large mammal survey in progress under leadership of Raleigh Blouch. Initially, the WWF survey will emphasize elephants and Southern Sumatra. But if financial support were available from AAZPA, the WWF Survey could be extended to the entire island and could include an intensive survey of the rhino. At least one Indonesian biologist, recently working on Javan rhinos, has indicated an interest in participating in this survey commencing in the summer of 1984. Additionally, further searches for rhino in Kalimantan, especially along the Sabahan border, would be most beneficial. Wildlife officials from both Sabah and Indonesia have indicated great interest in such surveys.

11. Captive propagation would be attempted in both S.E. Asia and North America. Animals would be evenly divided between captive facilities in both regions.

Ideally, as much captive propagation as possible should occur in S.E. Asia. However, current facilities for propagation of rhino are very limited in S.E. Asia. No zoos or other appropriate facilities exist at all in Sabah. There are major zoos in West Malaysia, Indonesia and Singapore but their experience with rhinos is restricted to exhibition, not propagation, and mostly to the African white rhino which zoo professionals tend to agree is the easiest to maintain in captivity. A spectacular zoo is being developed by the Department of Wildlife and National Parks in West Malaysia on the site of an existing but outdated facility in Malacca.

Certainly, an important part of the proposed project will be for the AAZPA to provide technical and perhaps other assistance in the development or improvement of captive management and propagation capabilities for rhinos in S.E. Asia. Some consultations have already occurred with the Zoological Society of Sabah, the planning team for the Wildlife Department's zoo in Malacca, and the staffs of the zoos in Kuala Lumpur, Jakarta, and Singapore. However, development of such capabilities in S.E. Asia will require considerable expense and more importantly time. In the experience of U.S. zoos, perhaps 3 years or more will be needed, especially in places like Sabah where no zoo yet exists. Postponing the attempt at captive propagation for 3 years could be very detrimental. The isolated animals are growing older all the time and many are in imminent peril. It is vital to place these animals in a situation conducive to reproduction as soon as possible.

Therefore, it is considered important at this time to move some of the rhinos that might be captured to zoos in North America. A number of AAZPA zoos have demonstrated considerable success in propagating all three species of rhino currently in captivity (Indian, black, and white). Placement in U.S. zoos would also provide access to the latest developments in reproduction technology (artificial insemination, embryo transplantation, gamete storage) that might be appropriate and productive. Moreover, facilities would be immediately available and could be in climates

that would not be too alien to the rhinos (e.g. Miami, San Diego, Los Angeles, St. Catherine's Island of the New York Zoological Society).

Beyond these technical and financial considerations, it simply seems advisable not to concentrate the captive rhinos in one region of the world. It is never good to place all of the "eggs in one basket" Hence, moving some rhinos to the U.S. could provide additional security for rhinos should some catastrophe or other vicissitudes afflict the rhinos in South East Asia.

The actual distribution of particular rhinos should be determined by consultations between AAZPA and the governments involved (and perhaps the IUCN Asian Rhino Specialist Group) based on a realistic evaluation of captive capabilities as well as other factors, including the benefits to conservation of exhibiting the species in their countries of origin.

Eventually, it would be proposed to place animals to remain in S.E. Asia in the zoos at Kuala Lumpur, Malacca, Kota Kinabalu (when developed), Jakarta, Singapore, and perhaps Surabaya and Sandakan. At this point, it would seem the first one or two pair of animals out of Sabah might best move to North America, while the first pair or two out of West Malaysia should remain in facilities there, e.g. Zoo Negara (Kuala Lumpur) and perhaps Singapore. Yet another possibility is a special facility directly under the Department of Wildlife and National Parks similar to what they have developed for seladang (Bos gaurus). By the time third or fourth pairs might be captured in Sabah and West Malaysia, facilities in Kota Kinabalu (or Sandakan) and Malacca may be ready to receive rhinos.

Wherever the captured rhinos are placed, there should be a commitment by all parties to manage the animals in captivity as a single population. If reproduction is successful, such a program will eventually entail much interchange of animals (or semen and embryos) between North America and S.E. Asia to insure the best genetic management of the species.

12. Any rhinos moved to North America would be on loan from the country of origin and would remain under its ownership. Any progeny produced would be equally divided between the country of origin and the AAZPA,

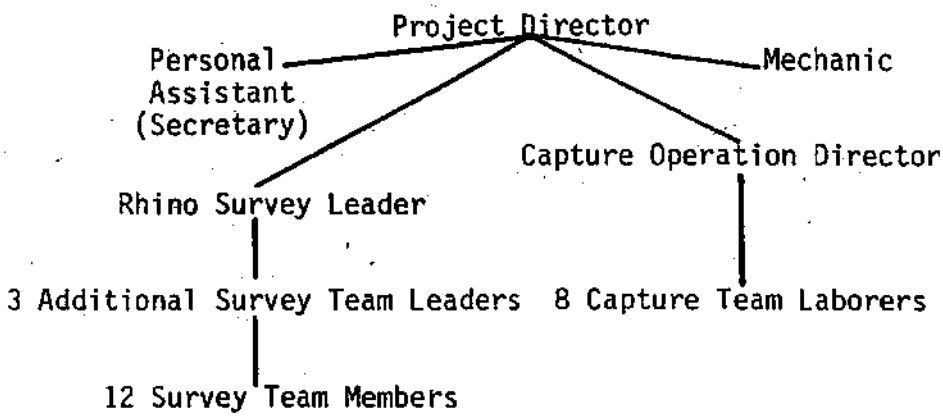
i.e. half the offspring to the country of origin and half to the AAZPA. The stock propagated in captivity will be used for two objectives:

A. reintroduction into natural habitats when and where available;

B. development of a self-sustaining population in captivity as an additional safeguard for survival of the species.

This arrangement on ownerhsip seems the most equitable and constructive under current circumstances. Eventually, there might be consideration of ceding ownership of the captive stock to the IUCN Asian Rhino Specialist Group. However, such consortial and international ownership would be a novel enterprise and will require much scrutiny. In any case, the technicalities of ownership should not in any way interfere with the commitment for collective management.

13. In cooperation with Malaysia and Indonesia, the AAZPA would organize the capture team and operations. Based upon the AAZPA reconnaissance to S.E. Asia, the preliminary proposal for organization is depicted below.



Under this arrangement, it is assumed the Survey Team Members would also be employed to assist, where appropriate, with capture operations.

Critical to the success of this program will be the selection of the Project Director and the Field Director of the Capture Operations. As discussed before, available evidence indicates that Tony Parkinson may be the most qualified candidate as the Captive Operation Director. Negotiations are in progress to engage Mr. Parkinson in this capacity. Hopefully, he will be available for a preliminary reconnaissance of capture feasibility later in 1984.

Concerning the Project Director, several candidates have emerged. One is Dr. Nico Van Strien who has 7 years experience with Sumatran rhino in Indonesia. He has indicated interest in possible involvement. Another prospect is Dr. John Payne who has been very active in the Sumatran Rhino program in Sabah and hence enjoys much orientation to the situation there. A number of other possibilities have been discussed by AAZPA representatives and Malaysian officials if none of the identified candidates are available.

It will be observed that the identified candidates for directorial positions are currently all expatriates, based upon their technical experience and expertise. Another objective of the project will be to prepare Malaysian and Indonesian nationals to assume these positions by the later years of the project. Indeed, the first year or two of the project proposed for Sabah could hopefully be a training ground for staff from West Malaysia and Indonesia, where later phases of the project would occur.

14. The AAZPA would provide the funds necessary for the capture and transport of animals to the captive facilities and would assume all costs of the propagation in North America. Further, the AAZPA would assist technically, and perhaps financially, with the development budget of the propagation project that would occur in Malaysia. A preliminary estimate of costs has been formulated:

Salaries, Allowances, Fees, Benefits, etc.	1 Year	3 Years
Project ~~Director~~ coordinator	$ 30,000	$ 90,000
Capture Operation Director / operations manager	30,000	90,000
~~Rhino Survey Leader~~ field coordinator	25,000	75,000
3 Additional Survey Team Leaders	10,000	30,000
12 Survey Team Members	25,000	75,000
8 Capture Team Laborers cut	16,500	49,500
Assistant/Secretary to Director	10,000	30,000
Mechanic	8,000	24,000
Consultant's Fees (vet - transportation - vet)	5,000	15,000
Internal Airfares	5,000	15,000
Medical Insurance, Other Benefits	20,000	60,000
	184,500	553,500

	1 Year	3 Years
Equipment, Supplies (Purchase)		
3 Long Wheelbase Landcruisers	$ 60,000	60,000
Truck with Hydraulic Life/Winch	45,000	45,000
Camping Equipment	5,000	5,000
Trapping Materials/Equipment	70,000	70,000
Food for Field Teams	15,000	45,000
Food, Drugs, etc. for Rhinos	5,000	15,000
Two-Way Radio System	5,000	5,000
Vehicle Maintenance	15,000	45,000
	220,000	290,000
Equipment Rental		
Helicopter (Small, for Surveys, etc.)	20,000	60,000
Helicopter (Large, for Rhino Transportation)	20,000	60,000
	40,000	120,000
Transportation of Rhinos to North America		
Air Freight	45,000	120,000
Expenses for AAZPA Representatives and Consultants		
Air Fare (2 trips/year)	5,000	15,000
Per Diem (60 days/year)	6,000	18,000
	11,000	33,000
Expenses for S.E. Asian Interns in U.S. Zoos		
Air Fare (2 trips/year)	5,000	15,000
Stipend (2 persons/year)	15,000	45,000
	20,000	60,000
TOTAL	$520,500	$1,176,500

Basic equipment may have to be purchased for each of the three areas: Sabah, West Malaysia, and Indonesia. All equipment would become property of the local Malaysian Wildlife Departments at conclusion of the project.

15. The AAZPA would also provide assistance in further developing management capabilities for rhino and other large mammals in S.E. Asia, including:
    A. development of a zoo or zoos as discussed earlier;
    B. transfer of technology in wildlife management, wildlife veterinary medicine, and captive husbandry techniques;
    C. degree programs for Malaysian students in Wildlife biology;
    D. promotion of tourist potential for wildlife;
    E. participation in field research on the rhino.

16. Although captive propagation is considered preferable at this time, it is arguable that a well managed translocation research project utilizing telemetry might be an appropriate adjunct to this program. Particularly if more than enough animals can be captured to satisfy the requirements to establish captive populations, this project might provide an excellent opportunity to scientifically evaluate the potential and problems of translocation. The AAZPA would certainly be amenable to consideration of such research. Indeed, the Animal Conservation and Research Center of New York Zoological Society is quite interested in possible support of field research by S.E. Asian scientists that would coordinate with the captive propagation project.

17. It is proposed the project commence 1 January 1984.

REFERENCES

Andau, P.M. and Payne, J.
1982. The Plight of the Sumatran Rhinoceros in Sabah. Unpublished Manuscript.

Anderson, S.
1961. Sumatran rhinoceros at Copenhagen Zoo. International Zoo Yearbook. 3:56-57.

AsiaWeek
1982. Extinction is forever. Article in AsiaWeek of 9 July 1982.

Borner, M.
1976. Sumatran Rhinoceros: Establishment of a captive breeding unit: Proposal. Unpublished manuscript.

Borner, M.
1979. A field study of the Sumatran rhinoceros. Ph.D. Thesis. University of Basel, Switzerland.

Caldecott, J. and Kavanagh, M.
1983. Can translocation help wild primates: Oryx. XVII:135-139.

Flynn, R.W. and Abdullah, M.T.
1982. Distribution and Status of the Sumatran Rhinoceros in Peninsular Malaysia. Submitted to Biological Conservation.

Franklin, I.R.
1980. Evolutionary change in small populations. In Conservation Biology, edited by M. Soule and B. Wilcox. Sinauer Associates; Sunderland, MA.

Groves, C.P.
1967. On the rhinoceros of Southeast Asia. Säugetierk Mitt. 15-221-237.

Groves, C.P. and Kurt, F.
1972. Dicerorhinus Sumatrensis. Mammalian Species. American Society of Mammalogists.

McNeely, J. and Cronin, F.W.
1972. Rhinos in Thailand. Oryx. 11:457-460.

McNeely, J. and Laurie, A.
1977. Rhinos in Thailand. Oryx. 13:486-487.

Schenkel, R.
1982. Report on Meeting of IUCN SSC Asian Rhino Specialist Group. Kuala Lumpur. June-July 1982.

Shaffer, M.L.
1981. Minimum population sizes for species conservation. Bioscience. 31:131-134.

Skafte, H.
1961. A contribution to the preservation of the Sumatran rhinoceros. Acta Tropica. 18:167-176.

Skafte, H.
1964. Rhino Country. Robert Hale, Ltd.; London, U.K.

Soule, M.E.
1980. Thresholds for survival, maintaining fitness and evolutionary potential. In Conservation Biology, edited by M. Soule and B. Wilcox. Sinauer Associates; Sunderland, MA.

Soule, M. and Wilcox, B.
1980. Conservation Biology. Sinauer Associates; Sunderland, MA.

Van Strien, N.J. and Widodo S.
1982. The present status of the Sumatran rhinoceros in Sumatra. Report presented to the IUCN SSC Asian Rhino Specialist Group. Kuala Lumpur. June-July 1982.

Van Strien, N.J.
1974. The Sumatran or Two-Horned Rhinoceros - A Study of Literature. Mededelinger Landbouwhogeschool Wageningen. (Nederland). 74-16.

World Wildlife Fund
1981. World Wildlife Fund Yearbook 1981-82. WWF; Gland, Switzerland.

TABLE 1

RHINOS IN THE WILD

	SPECIES	ESTIMATED NUMBERS	DISTRIBUTION	POPULATION TRENDS
AFRICAN	BLACK	10,000-20,000	Many Populations in Subsaharan Africa	Declining Precipitously
	WHITE:			
	NORTHERN	20+	Two Main Populations	Decreasing Rapidly
	SOUTHERN	2,600-2,800	Several Populations; More Being Established	Increasing
ASIAN	INDIAN	~ 2,000	Several Populations in India and Nepal	Increasing or Stable Temporarily
	JAVAN	< 57-66	One Population	Increasing
	SUMATRAN	158-363	Small and Fragmented Populations Over a Wide Range in S.E. ASia	Decreasing

TABLE 2

SURVEY OF SURVIVING ASIAN TWO-HORNED RHINOS

AREA OR COUNTRY	LOCATION	ESTIMATE OF RHINOS	HABITAT AVAILABILITY PRESENTLY (Km^2)	HABITAT AVAILABILITY POTENTIALLY (Km^2)	HABITAT STATUS	REFERENCE	POTENTIAL CARRYING CAPACITY*
Sabah	Silabukan Forest Reserve	20+	250-1000	1000	Perhaps protectable.	Andau & Payne 1982	50
	Kretam Peninsula	8	~1000	None	Being converted to agriculture.	Andau & Payne 1982	None
	Other Areas	10	~2000	2000	Perhaps protectable.	Andau & Payne 1982	None
	TOTAL	28-38					
West Malaysia (Peninsular Malaya)	Endau Rompin**	20-25	1600	1000-1600	1000 km^2 Reserve; Park proposed.	Flynn & Abdullah 1982	50-80
	Taman Negara**	8-12	4400	4400	National Park, but under pressure.	Flynn & Abdullah 1982	110-220
	Sungai Dusun	4-6	40+	140+	State Wildlife Reserve	Flynn & Abdullah 1982	20
	Gunung Belumut	2-3	230	230	Wildlife Reserve proposed.	Flynn & Abdullah 1982	16
	Mersing Coast	2	N.A.	Prob. None	Being deforested.	Khan (pers. comm.)	0
	Ulu Lepar	3-5	1000	1000	Unprotected and being deforested.	Flynn & Abdullah 1982	0
	Sungai Depak	3-5	N.A.	Prob. None	Being deforested.	Flynn & Abdullah 1982	0
	Kuala Balah	3-4	N.A.	Prob. None	Being deforested.	Flynn & Abdullah 1982	0
	Bukit Gebok	1-2	N.A.	None	Being deforested.	Flynn & Abdullah 1982	0
	Krau Reserve	0-1	500	500	Unstable.	Flynn & Abdullah 1982	24
	Ulu Selama	3-5	N.A.	N.A.	Unprotected.	Flynn & Abdullah 1982	?
	Ulu Belum	3-5	N.A.	N.A.	Unsecure area.	Flynn & Abdullah 1982	?
	Thai Border	0-1	N.A.	N.A.	Unsecure.	Flynn & Abdullah 1982	?
	TOTAL	52-76					
Sumatra	Gunung Leuser**	50-200	1400	8000	National Park but disturbance.	Van Strien/Widodo 1982	200-400
	Kerinci/Seblat**	15-20	2000	4000	Protection meager.	Borner 1979	100-200
	Torgamba	1-5	?	?	Being deforested.	Borner 1979	0
	Sumatera Selatan	2-5	500	?	Deforestation occurring.	Borner 1979	20
	Siak River Region	None	?	None	Being heavily developed.	Borner 1979	0
	TOTAL	68-230					
Kalimantan	Banumuda	0	N.A.	N.A.	Being deforested.	WWF Yearbook 81-82	0
Thailand	Phu Khio Reserve Tenasserim Range Khao Soi Dao Reserve	6-15	N.A.	N.A.	Unstable.	McNeely & Cronin 1972 McNeely & Laurie 1977 Asia Week 1982	0
Burma	Schwe U Daung Reserve	4	N.A.	N.A.	No information.	Borner 1979	?
	Elsewhere	?	N.A.	N.A.	No information.	None recent and reliable.	?
Indochina		?	N.A.	N.A.	Very unstable.	None recent and reliable.	0
TOTAL		158-363	~15000	~22000	None totally secure.		590-1030

* Predicated on maximum density of 1 rhino/20 km^2 suggested by studies of Flynn and Van Strien (pers. comm.)
** Populations probably preservable in wild if interactively managed and adequately protected.

TABLE 3

SUMMARY OF ASIAN TWO-HORNED RHINO POPULATIONS

AREA	TOTAL ESTIMATED POPULATION	TOTAL WITHIN PROBABLY PRESERVABLE POPULATIONS	TOTAL OUTSIDE PROBABLY PRESERVABLE POPULATIONS
Sabah	28-38	20+	8-18
West Malaysia (Peninsular Malaysia)	52-76	28-37	24-39
Sumatra	68-230	65-220	3-10 *
Kalimantan (Indonesian Borneo)	0	0	0
Thailand	6-15	?	?
Burma	4+	?	?
Indochina	?	?	?
TOTAL	158-363	113-277	45-86

*Probably more, but better survey needed.

FIGURE 1

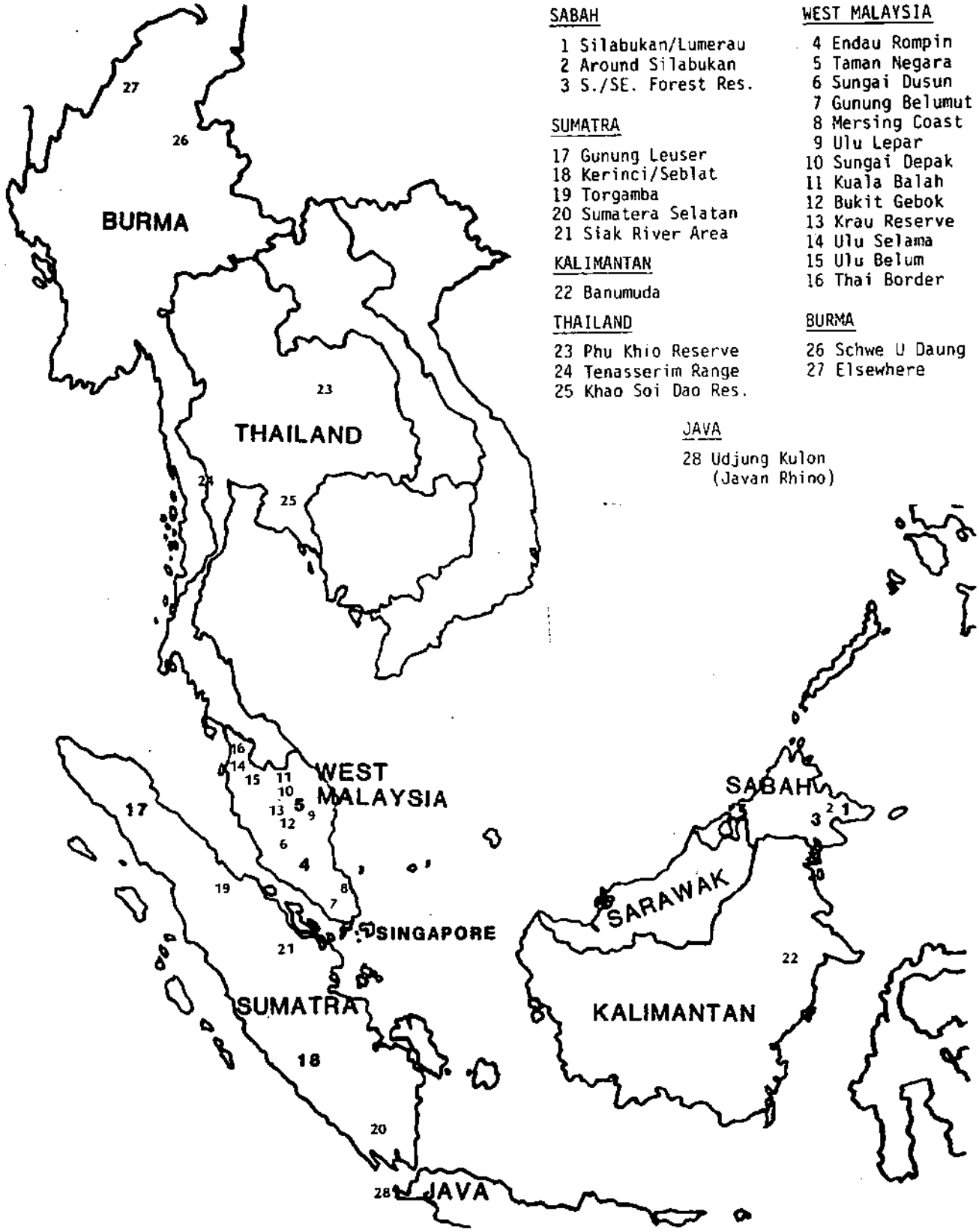
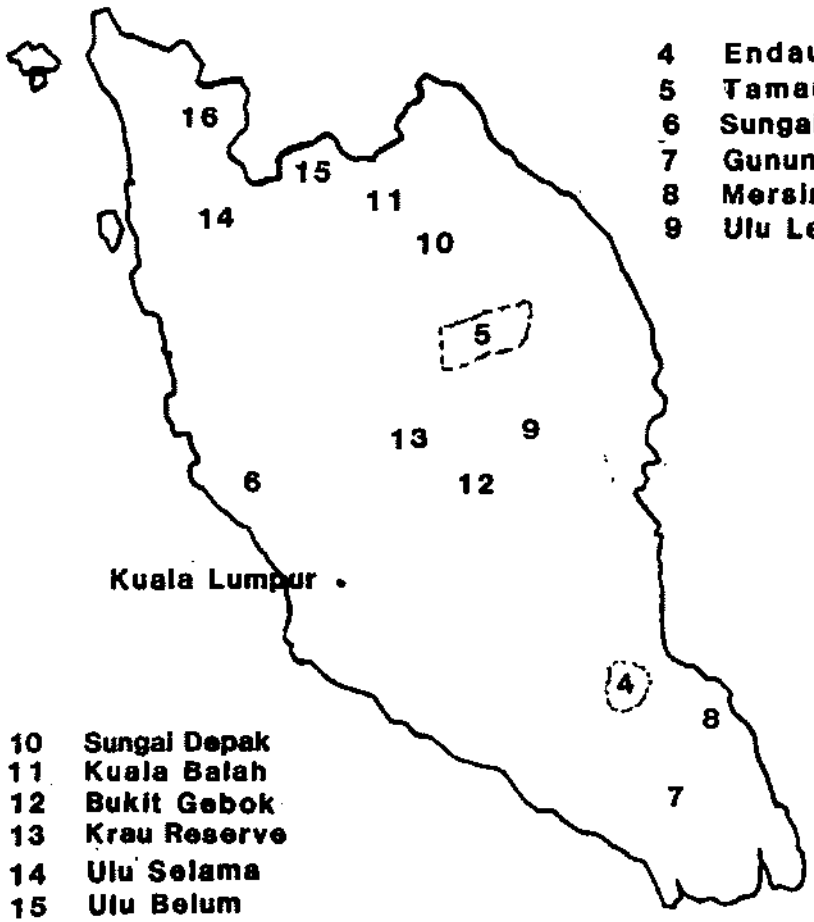

SABAH
1 Silabukan/Lumerau
2 Around Silabukan
3 S./SE. Forest Res.
SUMATRA
17 Gunung Leuser
18 Kerinci/Seblat
19 Torgamba
20 Sumatera Selatan
21 Siak River Area
KALIMANTAN
22 Banumuda
THAILAND
23 Phu Khio Reserve
24 Tenasserim Range
25 Khao Soi Dao Res.
WEST MALAYSIA
4 Endau Rompin
5 Taman Negara
6 Sungai Dusun
7 Gunung Belumut
8 Mersing Coast
9 Ulu Lepar
10 Sungai Depak
11 Kuala Balah
12 Bukit Gebok
13 Krau Reserve
14 Ulu Selama
15 Ulu Belum
16 Thai Border
BURMA
26 Schwe U Daung
27 Elsewhere
JAVA
28 Udjung Kulon
(Javan Rhino)
BURMA
THAILAND
WEST MALAYSIA
SABAH
SARAWAK
SINGAPORE
SUMATRA
KALIMANTAN
JAVA

FIGURE 2

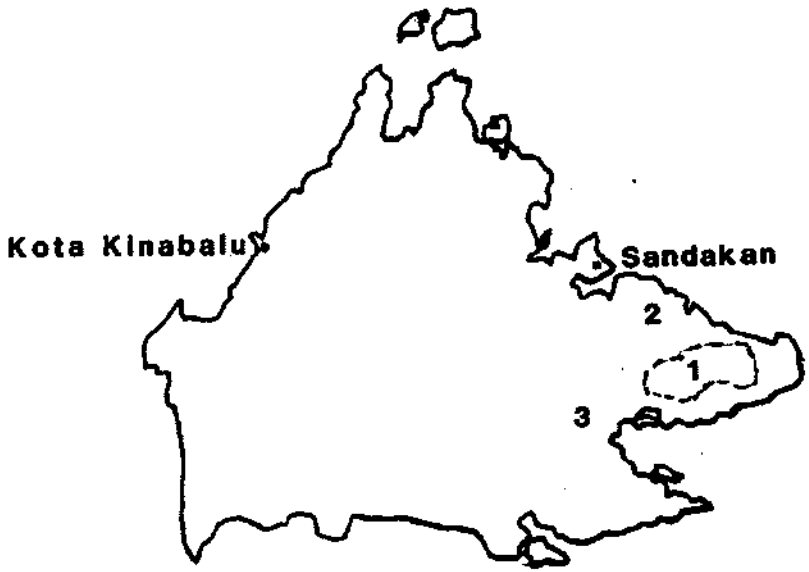
WEST MALAYSIA



4 Endau Rompin
5 Taman Negara
6 Sungai Dusun
7 Gunung Belmut
8 Mersing Coast
9 Ulu Lepar

10 Sungai Depak
11 Kuala Balah
12 Bukit Gebok
13 Krau Reserve
14 Ulu Selama
15 Ulu Belum
16 Thai Border

SABAH



1 Silabukan Forest Reserve
2 Kretam Peninsula
3 Other Areas

Forest Department,
P.O.Box 311,
Sandakan, Sabah,
Malaysia.

7 September 1983

Thomas J Foose, Ph.D.,
AAZPA Conservation Coordinator,
ISIS Office,
Minnesota Zoological Garden,
Apple Valley,
MN 55124,
U.S.A.

Dear Tom,

I was becoming a little perturbed at the complete lack of information from outside Sabah on anything relating to rhinos. The copy of the letter from O.V.Trinidad (the Tamaraw Conservation project executive officer) to you arrived here today. Disappointing, but good to have news so that I don't always feel I should be on "standby" for a visit by Tony Parkinson.

I am now perturbed by the fact that time is approaching for Nico van Strien to leave Asia, without a sign of a visit by him to Sabah. I cannot tell you the state of the paper submitted to the Sabah Chief Minister's Department, since I have been unable to contact the relevant man (William Shim) recently. This is something that can only be speeded up to a limited extent anyway.

To avoid a break in the train of events regarding Sabah's rhinos generally, would it not be as well to ask Nico if he would be willing to visit Sabah before leaving for Europe. As a member of the Asian rhino specialist group, I think it worthwhile that he see the Sabah situation first-hand.

Regards,

John

John Payne, Ph.D.
WWF representative in Sabah

c.c. Drs. Nico van Strien

Forest Department,
P.O.Box 311,
Sandakan, Sabah,
Malaysia.

7 September 1983

Drs. Nico van Strien,
P.O.Box 109,
Bogor,
Indonesia.

Dear Nico,

The enclosed letter is nearly self-explanatory. The letter alluded to (Trinidad to Foose) states that Tony Parkinson will be unable to visit Sabah until late December 1983 at the earliest.

I hope that you do not think it presumptious of me to write to Tom Foose directly suggesting that you visit Sabah. But time is getting short.

You would be welcome to stay with me in Sandakan if you do visit; but with a wife and child, a hotel would be necessary, since my appartment is small.

Regards,

John

John Payne, Ph.D.
WWF Representative in Sabah

c.c. Dr Tom Foose

AMERICAN ASSOCIATION OF ZOOLOGICAL PARKS AND AQUARIUMS
A·A·Z·P·A 1924

28 June 1983

Dear John:

Received a call from Tony Parkinson today about slight problem he is having liberating himself from tamaraw project for the rhino reconnaissance. The enclosed letter he requested should resolve the problem. But this complication will require postponement of his visit for about one week. Tony reported he had already notified you of delay but not exact date. I've requested him to keep you advised directly. Hopefully this snag won't be too disruptive to you or Clive.

Ticket stub arrived. Thanks.

Also received another letter from Olivier. Copy enclosed. Considering our conversation about Khan's attitude toward Rob, I don't know exactly how to respond. Really believe Van Strien is best choice.

Patrick is here and by all reports debauching himself in fine form. Expect to call him today.

Cheers!

Tom

from the desk of
TOM FOOSE

American Association of Zoological Parks and Aquariur

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

DATE: 28 June 1983

REPLY TO: Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apple Valley, MN 55124
(612) 432-9010, Ext. 255

Attorney Oscar V. Trinidad
Executive Director P.C.C.T.
N.D.M.C. Building
104 Gamboa
Legaspi Village
Makati, Manila
The Philippines

Dear Mr. Trinidad:

I am the Conservation Coordinator for the American Association of Zoological Parks and Aquariums (AAZPA), the professional organization of the 175 zoos and aquariums in the United States and Canada. Conservation is the major objective of the AAZPA and we have been actively developing programs for captive propagation of many endangered species.

One species of great interest to us is the Asian two-horned or Sumatran rhinoceros. Fewer than 300 survive in the wild, mainly in Sabah, West Malaysia, and Sumatra. None are currently in zoos. Because as many as half of the 300 rhinos occur as isolated animals outside of sanctuaries, it is believed that captive propagation may be vital for the survival of this species.

Consequently, we have been exploring possibilities for a cooperative project between the AAZPA and the countries where the rhino occurs for captive propagation of this species. The project will hopefully be developed as an ASEAN-AAZPA endeavor under the auspices of IUCN/WWF.

Recently, I have conducted a two-month exploratory trip to S.E. Asia to further this project. I visited Sabah, West Malaysia, and Indonesia. Interest is high and I am encouraged we can develop a significant project.

Perhaps the most formidable problem will be the actual capture of rhinos. During the trip, a colleague from AAZPA and I did attempt to assess the feasibility of capture. But we are not experienced trappers of large mammals in tropical forests. Thus the first and a very important stop on our trip was a visit with Tony Parkinson at the Tamaraw Project on Mindoro. We were very impressed by your project. In terms of its objectives and operations, it seems very similar to the project we are trying to develop. Clearly, Mr. Parkinson is an eminently qualified trapper in this type of situation.

In this regard, it would be most beneficial to the project we are developing if Mr. Parkinson could advise us further on the feasibility of capture of rhinos based on a reconnaissance in the field. Therefore, may we request that Mr. Parkinson be seconded to the AAZPA for approximately 3 weeks commencing 11 July to conduct a feasibility study for us in Sabah and West Malaysia. All of Mr. Parkinson's travel expenses would of course be paid by the AAZPA.

We are very hopeful such an arrangement would be possible. It will advance development of our plans greatly and would involve yet another ASEAN member in the project. In return, perhaps in the future AAZPA could reciprocate with some type of technical assistance on the Tamaraw Project. Your cooperation will be greatly appreciated.

Sincerely,

Thomas J. Foose

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator

TJF/slp

c/o Dr. R. Malpas,
P.O. Box 48177,
Nairobi,
Kenya.
(Telex: 22152 ELEPHANTS).

Dr. T.J. Foose,
AAZPA Conservation Coordinator,
ISIS Office,
Minnesota Zoological Garden,
Apple Valley, MN 55124,
U.S.A.

21st June 1983.

Dear Tom,

Thank you very much for the cable you sent me sometime ago, prior to your trip to the Far East which, I understand from Clive Marsh, you have now completed. I gather also that you have obtained the support of all the relevant authorities, for which I congratulate you.

I imagine that apart from me, you were able to meet personally with all the other potential project managers during your trip, and discuss the project with them. I am thus conscious of being somewhat at a disadvantage, and therefore felt it prudent to write and let you know that my very keen interest in the project remains undiminished.

Given the importance of your being sure of selecting the best person for the job, and my being sure that I have the technical, managerial, and linguistic capabilities (including the ability to establish satisfactory working relationships with all the various personalities involved) to carry it out effectively and efficiently, I was wondering whether there was any chance of redressing the disadvantage referred to above and setting up a meeting between us?

Two possibilities suggest themselves, both of which unfortunately might require some financial assistance. I have to visit London before the end of the year anyway, so the possibility of catching Peoples Express across the Atlantic exists. If there is any merit in this idea, perhaps you could indicate optimal timing so I can try to arrange my visit to London accordingly. Alternatively, I believe a meeting of IUCN's Asian Rhino Group might be held in Kuala Lumpur this October to coincide with a meeting there of IUCN's Ecology Commission. If you were to attend this, perhaps I could get there too, or you could pass through Nairobi on your way to or from KL?

I am aware that both the possibilities suggested above are very much shots in the dark. Should they prove impractical, as seems quite likely, could I perhaps invite you (a) to take up my references amongst which I would like you please to include Markus Borner, who is one very relevant rhino person who has operated with me a lot in the field, and (b) to invite me in turn to submit my ideas on project implementation?

With reference to the latter, I would of course benefit from a full briefing on the progress and prospects resulting from your mission, as well as an outline on the probable duration, location, budget and structure of the project as presently envisaged. However, I have already formed a number of opinions (including some on the type of manager most suited to the success of such a project), and preliminary ideas on project implementation that I could present if so requested.

Before going any further however, I have to tell you that I have been offered a senior position with a local firm engaged in environmental consulting. Providing they obtain the necessary work permit, then I have agreed to accept the invitation, but for one year only initially. It is likely therefore that I would not be available for a rhino project in the Far East until August 1984. Knowing the long lead-up time for such projects, I very much hope that this nevertheless leaves me still in the running. I look forward to hearing from you soon.

With best regards.

Yours sincerely,

Rob

Dr. R.C.D. Olivier

cc: Dr. M. Borner
Dr. C. Marsh

American Association of Zoological Parks and Aquarium

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

DATE: 17 June 1983

REPLY TO: Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apple Valley, MN 55124
(612) 432-9010, Ext. 255

Tony Parkinson
White House
San Roque, San Jose
Mindoro, Occidente
The Philippines

Dear Tony:

This letter will confirm our arrangements for your visit to Sabah and West Malaysia on behalf of the AAZPA to assess the technical feasibility of capture of Sumatran rhino (Dicerorhinus sumatrensis). The schedule we have proposed is:

4 July	Manila to Kota Kinabalu
5 July	Kota Kinabalu to Sandakan
16 July	Sandakan to Kota Kinabalu to Kuala Lumpur
22 July	Kuala Lumpur to Manila

This schedule will enable you to reconnoiter the areas for potential capture of rhino in Sabah for about 10 days. Thereafter, you can proceed to West Malaysia to confer with Mohd. Khan and his staff about the proposed project in general and its possible extension to West Malaysia. As you know, Khan is also very interested in consulting with you on a number of other projects including kouprey and seladang. He will probably arrange for you to visit at least one of the sites (the Mersing Coast) where there might be an attempt to capture rhino in the near future. He may also desire to accompany you back to Mindoro to observe the tamaraw project if weather allows.

Unfortunately, as you know, Patrick Andau will not be in Sabah when you visit. However, he has arranged for his chief ranger in the rhino areas (Anthony) and Dr. John Payne to guide you to the appropriate areas. There have been a number of recent sightings outside the main sanctuary of Silabukan. In particular, there has recently been a report of a female and calf near Silam, an area we believe would be among the easiest logistically in which to operate.

Inconveniently, you cannot fly from Manila all the way to Sandakan in one day, hence the break in Kota Kinabalu. Dr. Clive Marsh of the Sabah Foundation who has a keen interest in the rhino will be

at the airport to receive you in Kota Kinabalu and guide you through to Sandakan where the Forest Department people will collect you. Here are the telephone numbers of the pertinent persons:

John Payne	660811 or 660726
Clive Marsh	58539 (Office) 32211 (Home)
Mohd. Khan	941466 (Office) 470721 (Home)

Please notify Payne and Khan directly of your exact flights and arrival times. You have their addresses.

I have wire-transferred $2500 U.S. to your external account to cover airfare and per diem. Based on our experience, we believe this should be adequate unless we are underestimating your airfare (~$600). Please advise us if this allocation is not satisfactory. Enclosed is a copy of my receipt for the transfer.

Basically, in Sabah, your assignment will be to assess the technical difficulty and feasibility of actual capture. You need not concern yourself with matters of governmental approval, financial support, etc. Bill Zeigler and I concentrated on those aspects. We also attempted a bit of reconnaissance in the field. Our expectations that the operation would be difficult were confirmed. We encountered little evidence of rhino ourselves. It is therefore our belief that any project would consist of two components:

(1) intensive surveys to determine where traps would optimally be placed.

(2) the actual capture operations.

Prior to your visit, the Forest Department will be placing salt in selected locations in an attempt to attract rhino activity.

In terms of organization to conduct this type of operation, we have formed some preliminary ideas. There might be separate supervisors for the surveys and for the capture. The survey supervisor could also be an overall administrator or coordinator of the project. Such an arrangement could permit you, if you decide to become involved as the trapper, to concentrate on the actual capture and not be encumbered with administrative or logistical details for the entire operation. Nico Van Strien, who has 9 years experience with Sumatran rhino (although no capture) has indicated an interest in possibly participating in a project, perhaps in this capacity. But we are flexible and solicit your suggestions.

Further, we would appreciate your advice on what equipment would be required. We're already thinking of two long-base land rovers/ jeeps, a flatbed truck, field radios, etc. It would be especially useful for you to investigate helicopter and airplane needs and resources more thoroughly. From our preliminary explorations, it seems the Royal Malaysian Air Force might be the only source of appropriate transport helicopters in Malaysia.

As we had discussed with you on Mindoro, our plan would be to initiate the project in Sabah. Most of the animals captured there would presumably be moved to North American zoos (at least during the early phases of the project) since there currently are no captive facilities for long-term propagation in Sabah. Part of the project would be to assist the Sabahans in developing such capabilities. But you need not be concerned with this aspect. However, one point for your consideration is whether it would be appropriate to develop an acclimatization station in Sabah; if so, where (the existing station for orangs at Sepilok may be a possibility). In any case, we would appreciate a feasibility study from you on how animals would be moved once captured.

It would be our desire to extend the project to West Malaysia if and when possible. As mentioned earlier, there is at least one pair of animals there for which immediate capture seems advisable. According to Khan and his Scientific Director Louis Ratnam, there may be 4 to 6 other rhinos which are likely candidates for capture in West Malaysia in the near future. Because facilities are further developed there, the plan would probably be to move the first pair or so of these animals into captivity in West Malaysia (Kuala Lumpur or Malacca) or perhaps Singapore. A later pair would hopefully be available for movement to North America to enrich the gene pool provided by the Sabahan animals. In any case, your main mission in West Malaysia will be to consult with Khan about the rhino project generally and its possible extension to West Malaysia, as well as about other problems of interest to them that may require large animal capture.

Once your report on feasibility is available, the plan for further development of this project is to prepare a formal proposal for approval by the AAZPA, the IUCN SSC Asian Rhino Group and the various governments to be involved. (Actually, the cabinet paper requisite for Sabahan government approval is already being submitted. It delineates the project in very general terms.) Therefore, we will appreciate a report from you as soon as possible, hopefully by mid-August so the information is available in time for consideration at the AAZPA Board Meeting in mid-September.

If you have any questions or problems with any of the above, please contact me immediately. We greatly appreciate your interest and involvement to date and are hopeful we can develop an actual project that might commence as early as next year.

Because of mail problems, I'm providing a complete copy of everything to Bruce White in Manila. Regards to Edith.

Warmest regards,

Tom

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator

TJF/slp

P.S. Vaughn Langman conveys his regards.

cc: P. Andau
M. Khan
B. White
J. Payne
C. Marsh
W. Zeigler
N. Van Strien
AAZPA

Cost Estimate for Rhino Translocation

For 1 year

(1) 10 traps; 4 men, 7 days / trap; @ salary of M$15 / day; allowance M$25 per day; replace every 3 months — 44,800

(2) 3 sites; 2 guards / inspectors / site; 365 days; @ ~ M$50 day — 109,500

(3) Materials + contingencies (5 chain saws, Salt, nails — 10,000

Each rhino caught

(4) Vet (standby) + assistant: 5 days / rhino; @ respectively M$150, M$50 per day; + materials: M$500 — 1,500

Helicopter to fly them ~ — 3,000

(5) Helicopter (from Brunei) (guess — 10 hours, manpower) — 40,000

Landing areas

(6) Landing area for helicopter in Silabukan (to be made rapidly) 10 men with chain saw, 1 day, @ M$65 each, + 5 chain saws @ M$1000 each — 650

(7) Landing area Danum Valley (intensive — 3900

(8) Men to collect food for Rusa unicolor caged (2, 7 days) @ M$50 — 700

(9) Men to direct guard operations @ Sclabula, + assistant, 5 days, M$80, M$50 — 650

(10) as (9), but for Darwin — 650

(11) Transportation cage — 3000

(12) 2-way radios, 3 Sets of two — 6000

(13) 1 man, 3 timber cargo, with 2-way radio; 1 year, daily, @ M$60 /day — 21,900

(14) Senior officer fly to Brunei to arrange helicopter, then to Pitcairn Island. — 400

(15) Salary of contractor to deal with operation (independent), M$5000 per month, 1 year. (at least) — 60,000

306,650

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FORESTS
SANDAKAN SABAH

ATTENTION DR JOHN RAXNE PAYNE
EVERYTHING ON SCHEDULE. ARRIVE KOTAKINABALU 24 APRIL. SANDAKAN 25 APRIL. IT DEVELOPS ANOTHER PERSON FROM AAZPA (BILL ZEIGLER) CAN ACCOMPANY ME. BELIEVE WOULD BE VERY BENEFICIAL. ANY PROBLEM FOR YOU IF THERE ARE TWO OF US? PARKINSON HAS RESPONDED. WILL VISIT HIM IN PHILIPPINES 20-23 APRIL. STATES HE CANNOT ACCOMPANY ME TO SABAH IN APRIL OR MAY, BUT WOULD BE AVAILABLE FOR RHINO ACTIVITY BY LATE JUNE.
WILL NEGOTIATE WITH HIM FURTHER IN PHILIPPINES. PLEASE CONFIRM RECEIPT OF CABLEGRAM. SEE YOU SOON.
TOM FOOSE, CABLE MZOO, MINNESOTA EOOLOGICAL GARDENS, APPLE VALLEY-MN

COL 25 25 20-23

NNNN
HUTAN MA82016
82075 MASN MA
0915/IBS

Forest Department,
P.O.Box 311,
Sandakan,
Sabah, Malaysia.

9 March 1983

Dr Thomas Foose,
AAZPA Conservation Coordinator,
Minnesota Zoological Garden,
Apple Valley,
MN 55124, U.S.A.

Dear Tom,

Thanks for your letters, with enclosures, of 18/2/83. I did receive your cablegram prior to that. I and Patrick Andau share an office; the telex number for both of us is MA 82016.

Your revised dates are suitable for us here. To date, I have had no response from Tony Parkinson, apart from a note dated 31/1/83, saying that he hopes you will visit him in Mindoro; there are no guidelines as to when he will be available. I hope that you have written to Tony indicating 29 March as a likely date of arrival. I shall write to him again, anyway, giving this date as your likely arrival in Philippines.

Clive Marsh will not be in Kota Kinabalu (K.K.) when you arrive, unless you are delayed in Philippines until after 4 April. As far as I know, the only flights from Manila to Sabah are the daily Malaysian Airline System (MAS) flights leaving Manila at 16.oo hrs. This arrives in K.K. just before 18.00 hrs - too late for the last flight from K.K to Sandakan. You will have to stay in K.K. for the night and fly on to Sandakan the following morning. Sabah is about the most expensive state in South-east Asia. Recommended hotels would be :
Borneo Hotel - this is a few minutes drive from the airport and near the beach. K.K. town is a 5 km drive away. 1 night is probably about M$110.
K.I.H. - in K.K town, the best hotel, about M$140.

Both of these hotels are often fully booked by early evening. Cheap, basic hotels cost about M$40. There are many; almost all taxi drivers know them.

Let me know your E.T.A. in Sabah and Sandakan; but incase you are unexpectedly delayed in Philippines, I will just wait in Sandakan. During office hours, get a taxi from the airport to Forest Department, mile 6. (About M$8 fare); or, better, phone me or Patrick (660726 or 660811 extn. 148) so that we can collect you. Outside office hours, phone Patrick at home, 660497. He will probably know where I am.

Regards,

John Payne

American Association of Zoological Parks and Aquarium

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

DATE: 18 February 1983

REPLY TO: Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apple Valley, MN 55124
(612) 432-9010, Ext. 255

Dr. John Payne
Wildlife Section
Forest Department
P.O. Box 311
Sandakan, Sabah
Malaysia

Dear John:

Hopefully you received my cablegram concerning adjustment of my travel plans to coordinate better with everyone's commitments and constraints, including my own. Enclosed is a copy of my letter to Patrick Andau discussing the important points about my proposed (hopefully impending) visit. I now propose to arrive in Sandakan on 1 April after an attempted rendezvous with Tony Parkinson in the Philippines. My tentative departure from the United States would be 28 March. I will know by 7 March if everything is approved at this end and will notify you immediately.

The only other items I want to communicate to you directly are:

(1) I greatly appreciate all the information you provided and in particular your careful review of my rough proposal. The next draft, which I will have by the time of my visit, will be revised to reflect all of this feedback.

(2) Some more perspective on Nico Van Strien's position toward captive propagation has become available. Enclosed are copies of letters from and to him indicating that he is apparently rather supportive as long as a captive project does not seriously impair field efforts to preserve the rhino in the wild. The AAZPA wants to avoid that problem at all costs.. I am encouraged by Nico's letter.

(3) Rod Flynn is going to visit with me next week to provide more background for me based on his experience in Malaysia. I am hopeful that one result that might emerge from the current flurry of activity is formulation of more of a masterplan for the Sumatran rhino over its entire range.

> From the rough draft of the minutes of the SSC Asian Rhino Group's 1982 meeting and the comments of various persons involved with the species, such a strategic action plan does not yet seem to have been developed very far.

Thanks again for all your advice and assistance so far. I am eagerly anticipating a visit with you. Your proffered hospitality while I'm in Sabah is especially appreciated.

I'll be in contact in early March as soon as my plans are finalized. In the meantime any assistance you can provide in facilitating communication with Tony Parkinson would be most helpful. (What are your sentiments about the letter of interest from Robert Oliver?)

Warmest regards,

Tom

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator

TJF/slp

American Association of Zoological Parks and Aquarium

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

DATE: 18 February 1983

REPLY TO: Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apple Valley, MN 55124
(612) 432-9010, Ext. 255

Patrick M. Andau
Office of the Chief Game Warden
Jabatan Kehutanan
Peti Surat 311
Sandakan
Sabah, Malaysia

Dear Mr. Andau:

Thank you very much for your letter of 27 January 1983. As you know, I am also in receipt of correspondence of 12 January from Dr. John Payne. I am extremely anxious to visit Sabah in the Spring to explore further with you the possibility of the AAZPA assisting with development of a captive propagation project for Sumatran rhino.

For several reasons, it does appear that a slight adjustment of my previously proposed schedule will be advised. I would now propose to arrive in Sabah on 1 April for the two weeks you have recommended for my visit. This schedule would seem to coordinate with the time considerations John Payne and you have described. Hopefully, this new plan will be acceptable to you and others with whom I should consult in Sabah. I would be arriving from the Philippines and would proceed directly to Sandakan. The final decision by the AAZPA on plans and funds for my trip should be delivered on 7 March. I will notify you immediately via cablegram with details at that time. Incidentally, is Telex communication with your office possible? If so, please provide me with your Telex number.

After my visit to Sabah, I'm hopeful I can proceed onto West Malaysia to reconnoiter the rhino situation there and to confer with Mohd. Khan. While the AAZPA is interested to commence and concentrate any captive propagation project in Sabah, we believe that extension of the program, if possible, to West Malaysia may be beneficial. Indeed, what would seem optimal is the development of a masterplan for the Sumatran rhino that would encompass the entire range of the species (at least Malaysia and Indonesia) and incorporate both wild and captive populations. Enclosed is a copy of a letter I have directed to Mohd. Khan informing him of our interests and proposal. I have assumed the liberty of suggesting that in his capacity as the Malaysian representative of the IUCN SSC Asian Rhino Group he might visit Sabah while I am there.

If a project on captive propagation can be developed, it will be constructive, perhaps critical, to recruit all the expertise available for the capture operations. Tony Parkinson has been highly recommended by a great number of persons as someone who could provide valuable assistance with capture operations for rhinos. As you know, he has been involved with the captive propagation project on tamarou in the Philippines. This project is evidently very successful. Parkinson is reputedly very skillful in the capture of large mammals under tropical forest conditions. At the least, I am hopeful I can visit with him in the Philippines en route to Sabah. It would also seem beneficial if he might accompany me to Sabah to advise on logistical aspects of a capture operation. Further, if he could and should become involved, perhaps at the end of my trip to South East Asia (i.e. in May after I've been to Sabah, West Malaysia, and Indonesia where I want to visit Gunung Leuser for perspective), it might be possible and desirable for you and perhaps another wildlife officer to accompany me on a visit to the tamaou project in the Philippines.

All of this would depend upon, among other considerations, Parkinson's availibility. Unfortunately, to date I have not been able to establish contact with him. I have directed letters to him at three different addresses, two of which John Payne recommended. But there has yet been no response. Dr. Payne has evidently been in preliminary contact with Parkinson and he has indicated an interest in visiting Sabah. I would appreciate your views on involving Parkinson and if favorable, any further assistance you and/or John Payne might provide in facilitating communications with him.

As an alternative or addition to Parkinson, another person Robert Oliver with apparently good qualifications has recently contacted me to indicate interest in participating in any project. He evidently has much experience with large mammals, although not too much on rhinos, in Asia. Enclosed is a copy of the letter and curriculum vitae from him. Your comments are invited.

Again, I greatly appreciate the opportunity to visit Sabah to explore a possible project involving the AAZPA on the Sumatran rhino. I am anxiously anticipating my trip.

Best regards,

Tom Foose

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator

TJF/slp

cc: John Payne

J. Payne

American Association of Zoological Parks and Aquariums

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

DATE: 17 February 1983

REPLY TO: Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apple Valley, MN 55124
(612) 432-9010, Ext.255

Mohd Khan b. Momin Khan
Director-General
Department of Wildlife and National Parks of Malaysia
Block K-20/Jalan Duta
Kuala Lumpur, (West) Malaysia

Dear Mr. Khan:

The American Association of Zoological Parks and Aquariums (AAZPA) is the professional organization of the 175 zoos and aquariums in the United States and Canada. I am the Conservation Coordinator for the AAZPA.

The AAZPA is committed to conservation as its major objective. Accordingly, the AAZPA is developing a strategic program, the Species Survival Plan (SSP), for propagation of endangered species in North American zoos. The primary purpose of these captive propagation programs is to reinforce wild populations. Thus, it is our goal that the SSP can be an integral part of a global strategy for wildlife conservation that will incorporate both wild and captive populations and programs.

Naturally, the family Rhinocerotidae is receiving the highest priority by the SSP. Four species representing the living genera of the family have been designated for development of SSP programs: Indian (Rhinoceros unicornis), black (Diceros bicornis), white (Ceratotherium simum), and Asian two-horned or Sumatran (Dicerorhinus sumatrensis). Enclosed is a copy of paper I presented at an International Rhino Symposium at the London Zoological Society last August. This paper will explain our program in more detail.

The AAZPA is extremely concerned about the Sumatran rhino. It is our belief that a program of captive propagation could greatly enhance the valiant efforts to preserve this species in the wild.

Our proposal would be to attempt to establish a captive propagation program for this species by collecting animals located outside the main populations and protectable sanctuaries. From our preliminary investigations (including reports from Schenkel, Flynn and Abdullah, Andau and Payne, Van Strien, and Borner), there would seem to be a relatively large number of such remnants distributed over the range

of the species in Sabah, West Malaysia, and Sumatra. It seems unlikely these remnants will contribute to the survival of the species because (1) they are too small and isolated to be viable genetically; (2) they occupy areas where the habitat will be degraded or the animals lost to poachers. The genetic considerations are very important. Even if adequately protected, very small populations are very vulnerable to extinction because of loss of genetic diversity.

Viable alternatives for these remnants would be (1) translocation into the main populations and protectable sanctuaries or (2) capture for captive propagation. Captive propagation might be preferable because of the opportunity for intensive management of this gene pool. In recent years, zoos have developed very successful programs for propagating Indian, black, and white rhinos. Also, there could be great uncertainties and risks in trying to translocate rhinos into new areas.

The actual captive propagation could be attempted in the native countries and/or in North American zoos. Good arguments exist for both alternatives and if enough of the isolated animals could eventually be collected, some combination of projects in the countries of origin and North America might be optimal. In any case, the AAZPA could potentially provide considerable resources and expertise for development of a captive propagation project.

Through some opportune contacts, we have already been discussing these possibilities with a number of persons in Sabah and in North America, notably Patrick Andau, John Payne, and Rodney Flynn. The situation in Sabah seems especially amenable to some attempts at captive propagation since there appear to be quite a few animals in areas being permanently converted to agriculture. However, based on the reports of Flynn and Abdullah and others, the same may also be true for West Malaysia.

The AAZPA is interested in preparing a more formal plan for a captive propagation project that would be integrated closely with the efforts to preserve the species in the wild. An important step toward such a plan would seem to be an exploratory trip to Malaysia perhaps later this spring. The purpose of the trip would be to visit as many officials, scientists, and sites as possible to reconnoiter the feasibility and desirability of a captive propagation project. Indonesia would probably also be included in the itinerary, but mostly for perspective on the entire rhino situation. I am very interested in visiting with Nico Van Strien and the Gunung Leuser National Park.

It does appear that the opportunity may exist for me to conduct such a trip in April and May 1983. Tentatively, I have already arranged to visit Sabah, at the invitation of Andau and Payne, during the first two weeks of April. I am most interested in visiting West Malaysia thereafter for a similar (or longer if advisable) period of time. I desire very much to confer with you and to visit some of the rhino areas: Endau Rompin, Taman Negara, possibly Sungei Dusun, and especially any places where there might be remnants appropriate for a captive propagation project.

Would you be receptive to such a visit by me? If so, the best schedule for me would be to proceed directly from Sabah to Kuala Lumpur early the week of 17 April. But if you have conflicts then, I could adjust my schedule by travelling from Sabah to Indonesia and then to West Malaysia in early May. Hopefully, you will be available at one of these times. Further, in your capacity as the SSC Asian Rhino Specialist Group Representative for Malaysia, might you also be available to visit Sabah during the time I expect to be there the first two weeks of April?

We are very hopeful you will be interested in what we are proposing. It must be emphasized again that our paramount interest is the survival of the Sumatran rhino in its natural habitat. But we believe that captive propagation could contribute greatly to this objective and we are most interested in assisting in this area. I am most anxious to visit Malaysia to explore this possibility with you in more detail.

Sincerely,

Thomas J. Foose

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator

TJF/slp

Enclosure

American Association of Zoological Parks and Aquariums

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003-1698 (304) 242-2160

DATE: 17 February 1983

REPLY TO: Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator
ISIS Office
Minnesota Zoological Garden
Apple Valley, MN 55124
(612) 432-9010, Ext. 255

Drs. Nico Van Strien
P.O. Box 109
Bogor, Indonesia

Dear Nico:

I greatly appreciated your informative and supportive letter of 10 January 1983 concerning the proposal for a captive propagation project on Sumatran rhino. I am more anxious than ever to visit with you in Indonesia to discuss this matter further. In the meantime, permit me to respond to some of the points in your letter.

To a great extent, I agree completely that conservation primarily applies to the preservation of wild populations in natural habitats, i.e. to ecosystems. The purpose of captive propagation must be to reinforce, hopefully never to replace, wild populations. At best, captive propagation provides a means for preserving gene pools, but not ecological or evolutionary systems. Nevertheless, such preservation in captivity may be a vital component of a conservation strategy for a megamammal like the Sumatran rhino, particularly over the next few decades or even century or so, during which our planet may be able to develop some semblance of ecological sanity and stability. Therefore, the AAZPA objective would be to assist with development of a captive propagation program for Sumatran rhino as part of a strategic masterplan whose primary objective is the preservation of the species in the wild.

I am also in agreement that a captive propagation program should not compete for funds with the field projects for conservation of the species. We believe that there probably will be support for a captive project from various private, corporate and even zoo sources. For the most part, our perception is that these monies would not be available for projects exclusively entailing conservation in the wild. But, these funds could contribute to the survival of the species through support of a captive project. Indeed, if an integrated program incorporating both captive and wild projects can be developed, some of these monies might be applied directly to the field efforts. Thus, while it is our hope that WWF and IUCN endorsement would be possible if a captive project is developed, there is no intention to solicit financial support from these sources.

Your comments about the "respectable commercial interests" from the participating zoos are pertinent. Certainly, all of the zoos currently participating in explorations of this project would be interested in eventually acquiring Sumatran rhinos. However, the philosophy of our SSP is that participating institutions will cooperate in the best interest of species in the program. In the long run, most institutions realize that such seeming altruism is really in their own best interest. The cooperative spirit manifested so far in development of our SSP programs for species already in captivity has been most encouraging. In the case of the Sumatran rhino, most (perhaps all) of the institutions interested in pursuing the project seem to accept that the number of animals that could or should be removed from the wild will be small and that consequently this nucleus must be distributed optimally among only a few of the best qualified (in terms of climate, experience, etc.) facilities. Therefore, the zoos realize that most would receive rhinos only if and when the captive propagation is successful. But the confidence that the species can be propagated well in captivity is high so that the institutions are willing to assume this risk.

We certainly should have much to discuss if I can visit. In this regard, it now appears that my previously proposed schedule will have to be modified slightly. I am now contemplating departure from the U.S. for the Orient about 28 March. With a few days in the Philippines to try to consult Tony Parkinson, two weeks in Sabah, and another two weeks in West Malaysia, I would now propose to arrive in Indonesia during the first week in May.

Your offer to assist with permits for and organization of my proposed trips to Gunung Leuser and Udjung Kulon is most appreciated. I will be prepared to rent a boat for Udjung Kulon. At Gunung Leuser, I do desire to visit the main rhino areas if possible. Therefore, I would be most interested in travelling to the Ketambe station. The commitment of a week or more to this trek is no real problem for me. You do refer to the possibility of a helicopter. Could one be rented with reasonable costs and effort?

If you are available, I am sure that the trips to Gunung Leuser (and Udjung Kulon) would be enhanced and facilitated if you could accompany me. Would this be possible in terms of your schedule? Our zoo sponsors would pay for your expenses.

In any case, I am extremely interested in visiting with you and discussing a possible project on captive propagation of Sumatran rhino in more detail.

Finally, Nate Flesness (project Director for ISIS) and I are glad the ISIS Mammalian Directory arrived and may be of use to you. Please don't be concerned about any reimbursement. We would appreciate if you could perhaps acquaint others in your area with ISIS as the opportunity occurs. It is optimal that the system becomes fully international in terms of participants. If any complimentary copies of your guide to Australasian mammals are eventually available, we would be most interested in receiving one.

Best regards,

Tom

Thomas J. Foose, Ph.D.
AAZPA Conservation Coordinator

TJF/slp

P.S. Rod Flynn is going to visit with me here next week to discuss the proposed project and trip.

Forest Department,
P.O.Box 311,
Sandakan,
Sabah,
Malaysia.

26 January 1983

AVM Instrument Company,
3101 West Clark Road,
Champaign,
Illinois 61820, U.S.A.

Dear Sir/Ms.,

We are considering the possibility of monitoring movements of two large mammal species in Sabah. The species are orangutan and Sumatran rhinoceros, both of which range in extensive areas of thick forest.

Can you please send details of suitable radiotelemetry equipment available from AVM, including prices?

With thanks,

Yours sincerely,

John Payne

John Payne.

PROPOSAL FOR A CAPTIVE BREEDING UNIT OF SABAH RHINOS

The most important contribution to rhino conservation would be gazettement of a Sanctuary in Silabukan-Lumerau forest reserves. Scattered however, throughout various parts of Sabah, are small numbers of rhinos which, if left as they are, will contribute nothing to the survival of the species. One alternative would be to ignore these rhinos. There are, however, other options which could put these rhinos to better use.

ADVANTAGES AND DISADVANTAGES OF FIVE OPTIONS FOR DEALING WITH RHINOS ~~EXISTING~~ EXISTING OUTSIDE CONSERVATION AREAS IN SABAH

~~Advantages~~ Advantages	Disadvantages
Option 1 : Do nothing.	
1. No financial costs.	1. Loss of probably the last chance to form captive breeding unit of Bornean rhinos.
Option 2 : Translocation (catching scattered rhinos and releasing them all within a single extensive forest reserve area or national park within Sabah).	
1. Depending on the choice of release site, may boost survival chances of the existing Silabukan population or form the nucleus of a new population elsewhere in Sabah.	1. Would be very costly; adequate financing may be impossible to obtain. 2. Poachers would be attracted to the release area. 3. Monitoring the success (otherwise) of the operatio would be virtually impossi

Option 3: Captive breeding unit within Sabah.

1. Prestige to Sabah.
2. A major tourist attraction.

1. Cost of the capture phase and maintenance of the unit would be prohibitively high to be borne within Sabah. It is highly unlikely that any foreign organisation would support the project without some substantial benefit in return.

2. Lack of a suitable authority within Sabah to organise and maintain the unit. Two relevant existing local societies (Sabah Zoological Society and Sandakan Zoo-botanic Society) do not have sufficient finance or expertise at present.

3. Lack of qualified personnel. Looking after the unit must be done by people and organisations with proven rhino-breeding experience.

Option 4: Captive breeding unit within an ASEAN country

1. The breeding unit would be within the natural range of the species. Local people should benefit by being able to see an endangered part of their heritage, which may stimulate more concern for conservation.

2. A chance for ASEAN countries to cooperate on a conservation matter.

1. As for Sabah, the cost of the operation is likely to be too great for financing by any particular country. A decision on the location of the unit would be problematical.

2. Lack of expertise. Few ASEAN zoos have kept rhinos of any species, and none have bred rhinos.

Option 5: Captive breeding unit in a foreign (probably U.S. or European) zoo.

1. A zoo with proven expertise and commitment to rhino breeding can be found, thus maximising the chances of success of the unit.

2. Adequate financing for both capture, transportation and maintaining the [illegible]

Assessment of the options

The first option – doing nothing – can be discounted: the species in question is endangered and there are many people, both within and outside Sabah, who have expressed interest in the ideas of either translocation or a captive breeding unit.

Although the aspects of preservation of an endangered species and national prestige are of prime importance in deciding which of the other four options is to be chosen, it should be clear that two other factors will strongly influence the final decision. Firstly, in all cases, adequate long-term financing will be crucial and a substantial proportion will probably have to be found from organisations outside Sabah. Secondly, suitable expertise both for directing the captive phase and for running

in Malaysia.

Translocation should be the cheapest of the remaining options, since essential costs involve only capt translocation and some form of subsequent monitoring. ~~capture and subsequent translocation.~~ It is important that the subsequent fate of the translocated individuals be monitored; indeed, financing organisations are, correctly, likely to insist on this. Any area chosen for the release of translocated rhinos would have to be large, fairly remote and guaranteed to remain under forest cover in the long term. The most obvious alternatives would be Silabukan (with the aim of boosting survival chances of the population already present), or Danum Valley, an area of extensive primary forest in the upper reaches of the Segama river. Silabukan should not be considered until we know much more about the existing population. Such would

necessitate a major, long-term project before any decision could be made. At best, Silahukan will remain (in the long term) an isolated tract of disturbed forest about 1230 Sq. km in extent — by no means an ideal home for an endangered large mammal caught and transported at great cost. If ~~Danum~~ Valley translocation is to be seriously considered, Danum Valley would (seem to) be a more suitable alternative since it is more remote and will certainly remain within a vast tract of forest reserve. ~~[illegible]~~ There are two major problems, however, associated with Danum Valley as a translocation area. Firstly, the Danum area is (largely) of rugged topography and far from any major human community. Monitoring released animals would have to involve radiotelemetry, necessitating the use of light aircraft at frequent intervals, ~~[illegible]~~

airbase. Apart from the cost (likely to be M$350,000 ~~estimated at~~ for one year of monitoring), this would be a ~~for one year~~ ~~weather and availability of aircraft~~ tasks make this an ~~enormously~~ difficult project. The second problem is of a different nature. There is very little information on the Danum area, but that available suggests an extremely small number of rhinos throughout the region. This is despite the ~~forest and present~~ until very recently, remoteness of the area, indicating a very low rhino population density even in the absence of hunting pressure. The implication is that this region may be ~~poor in some ecological~~ inferior for rhinos in some ecological aspect, which in turns sheds doubt on the advisability of translocating rhinos to the area. Only one - Kinabalu, 76000 ha. - National Park in Sabah is large enough even to

Consider the ~~suitability~~ of a rhino translocation

Unfortunately, the physiography of the Park is such that there are no ~~areas~~ ~~contiguous~~ contiguous areas sufficiently large to support a viable rhino population. There are several factors, therefore, financial, logistical and biological — ~~other~~ which combine to indicate that translocation within Sabah is not worthwhile option. Translocation to other parts of Borneo has not been considered. Apart from the fact that (factors similar to those above) ~~these factors~~ apply outside Sabah, it is hunting by indigenous people which has exterminated rhinos throughout most of Borneo. Such hunting pressure remains greater outside Sabah than within.

Which, if any, of the three alternative strategies for a captive breeding unit materialises depends ~~for~~ ~~JOR~~ primarily on:

(a) ~~whether the Sabah [illegible]~~

(1) which options are permitted and recommended by the Sabah government;

(2) the interest and enthusiasm expressed by those organisations who may wish to contribute to a captive breeding unit;

(3) availability of adequate long-term funding.

A unit within Sabah would be welcomed by most Sabah authorities and many people outside Sabah, too. The two organisations most appropriate for forming and maintaining the unit are the Sabah Zoological Society (based in Kota Kinabalu) and the Zoobotanic Society (based in Sandakan). Both societies are still in their infancy, however, and would have to draw on expertise from outside Sabah. Regarding financing, this would have to come

government funds or from a foreign organisation, which would undoubtedly want some form of benefit in return or a combination of both. It would be helpful if the Sabah societies would indicate ~~in which way they would hope or prefer to obtain funding (assuming they are~~ if they are willing to undertake the formation of a breeding unit, and, if so, in which way they would hope and prefer to obtain funding. At the same time, proposals from any foreign organisations willing to put funding and/or expertise into a Sabah unit would be welcome.

Organisations and individuals outside Sabah ~~wishing to~~ with relevant ~~experience~~ comments, and those able to provide expertise or funds, should be encouraged to write to the Wildlife Section, Sabah Forest Department. Without an any ~~wishing to~~

preclude the possibility of a venture financed entirely within South-east Asia, it seems likely that a U.S. or European zoo is ~~most likely~~ or zoological association will come up with the most realistic proposal, because of the greater resources at their disposal. Bearing this in mind, consideration should be given to the sorts of benefits the foreign organisation might give to Sabah in return for the rhinos.

One ~~possibility~~ possibility is to buy the rhinos. The first problem here is deciding how much such a very rare animal is worth — none have been bought by a zoo since before World War 2. Secondly, ~~there~~ there is no precedent for such a deal, and the question of who would receive the money and to what use it would be put would have to be resolved. Thirdly, buying something [illegible]

buying organisation which
~~target~~ has already invested a great deal, and ~~itself~~ ~~which~~
attained primarily by its own efforts, is a peculiar
~~offer~~ arrangement which is likely to attract unfavourable
comment. Far more acceptable would be one or
~~more~~ a combination of the following:

(1) the foreign organisation donates expertise ~~for~~ fo
setting up a zoological garden for the Sabah
Zoological Society and/or a garden for the
Zoobotanic Society,

(2) an agreement to donate an African rhino to
a zoo, once one has been set up in Sabah,

(3) providing personnel and equipment to conduct an
ecological study of rhinos in Silabukan, ~~which~~
~~results~~ results of which would be valuable in
managing the Silabukan population.

Donation of one of the rhinos caught in
Sabah to a local zoo would not be

since it is likely that only a very few will be caught. Every individual caught will count a lot towards the success of the breeding unit, which is the first priority of the whole programme. If the unit proves to be successful, then there would be grounds for sending a young one back to Sabah once a zoo has been well-established locally.

COMMENTS ON "IN PURSUIT OF THE SUMATRAN RHINO. A PROPOSAL"

(p = page number; l = lines from top, excluding paragraph separation lines)

p2. l12. refer to "Silabukan and Lumerau Forest Reserves"; this is their correct name. The other area (3 on your maps) is merely a region. For clarity, better to refer to this region as "the Forest Reserves of south and south-eastern Sabah".

p3.l17. "... a captive breeding population of several hundreds.. 2..". This seems over-optimistic; and more importantly, could be a source of criticism by those against captive breeding.

p4. 5 lines from bottom. Here and elsehere, Patrick Andau.

p5. l13. (as p2.l12).

p5. 2 lines from bottom. Rewrite as "... they stated that the Wildlife Section of the Forest Department would welcome the AAZPA to conduct....".

p6. l2. Omit "The invitation is expected in the near future". Rewrite as "Dr. John Payne (WWF-sponsored Conservation Officer with the Wildlife Section, Sabah Forest Department), writing on behalf of the Wildlife Section (23 November 1982) has stated the need for an assessment of the Sabah situation by an organisation such as AAZPA and suggested that an AAZPA officer visit Sabah early in 1983".

p6. l 11-12. Unless you are sure that this (and any future) paper will not be seen by anyone with political sensitivities in Malaysia, omit ".. and political..". See my accompanying letter. Don't use the word "political".

p6. l 15. "The states of Peninsular Malaysia and Sabah (on the island of Borneo) are in the Federation of Malaysia". Omit "all" so "There are indications that a project to collect animals ...." etc.

p6. l.19. Asiaweek magazine (July 1982).

p6. last paragraph. I raised the matter at both meetings in K.L. (Kuala Lumpur) but there was no subsequent discussion.

p8. l 14-15. You can take it as certain that Malaysia will argue for retaining at least the first rhinos caught within Malaysia. I must leave it to you to deal with this fact as you think fit. Perhaps you can play it down (both within U.S.A. and when writing letters to Malaysia) until after you have arrived in Sabah. I suggest that for the time being you rewrite this as "Depending on the number that become available, it is proposed that rhinos brought to U.S.A. be placed in 2-4 zoos.... etc).

p8. 8 lines from bottom. (1) Salt appears to exert an enormpus influence on rhino movements in Sabah (2) Getting rhinos out of the forest will be very difficult. I suggest building stockade traps together with artificial salt licks on existing roadsides. Pit fall traps could be tried if someone as skilled as Tony Parkinson is involved. And "baiting" traps with dung of "foreign" rhinos.

p9. Candidates for the capture programme.. I favour Tony Parkinson by a very wide margin. His trapping experince appears to be unrivalled in the world and he evidently works weal under difficult political situations. Whether or not he eventually does become involved in this project on a long term basis, he should accompany you to Sabah, or while you are in Sabah, and possibly even visit Peninsular Malaysia with you. I met him recently, and he agreed in principle to visiting Sabah.

I know that Clive Marsh is writing to you to suggest some modification in your timing. While it would be good if Clive can take part in out field trips in Sabah, it is availability of Patrick Andau, Tony Parkinson and myself which are more crucial factors. I can make myself available at any time until about 14 April (but probably not after - at least not for long periods). I suggest that we both write to Tony Parkison without delay. I have just done so. We should ask him (1) to give precise instructions to you as for a date and place for your meeting him on your arrival in Philippines. (2) ~~and~~ If and when he could come to Sabah for a field trip, potentially of one week or more. It would be as well for you to address one letter to Tony at his Mindoro address and a copy to Bruce White's address in Manila, in case Tony is there.

p9. l 23. omit "for political reasons". (This is a particularly sensitive issue).

p9. l 26. "general" not "political".

p 10. l 5. I have no strong feelings as to whether an IUCN representative accompanies you. You might suggest in your letter to Mohd. Khan that he might visit Sabah while you are here, since he is the IUCN SSC Asian Rhino group rep. for Malaysia. You should not be expected to pay for his visit, however.

p 12. paragraph numbered 3. While it is appreciated that Clive has been invaluable in forming your link with Sabah, it will not be considered accepatble within Malaysia to regard him as a continuing official link (unofficial, yes). I suggest a general revision in the ordering of the names that you list in this paragraph. A better to ordering, which would reduce this and other such sensitivities, would be:
Mohd Khan b. Momin Khan, Patrick Andau, Rudolph Schenkel, Tony Parkinson, John Payne, Clive Marsh, Nico van Strien, Marcus Borner.

p 13. paragraph numberd 4. I have never heard Professor Schenkel's own views on captive breeding; but whatever they are, they may be strong. Nico v. Strien, incidentally, on balance, is against. It is quite important that you demonstrate your good intentions to Mohd. Khan whenever the opportunity arises.

p 14. Your planned itinerary seems fine. Two comments, however:

(1) Unless you have special plans for Singapore, 2 days are probably adequate. 2 weeks is probably more than adequate for Peneinsular Malaysia, but this will depend largely on how things go with Mohd. Khan.

(2) If your budgeting and timing can stand it, I would suggest ~~for~~ a modification to the end of your trip. After Sumatra, fly from Medah to K.L.. Meet Mohd. Khan to tell him of what happened in Indonesia. It would be much appreciated in Sabah if there was a chance for one or two officers to accompany you to see Parkinson's site at Mindoro. This would demonstrate Parkinson's abilities to the Sabahans and also help to prove that you have a genuine interest in Sabah, rather than a desire to rob them of their rhinos. I suggest, therefore, that you might proceed from K.L to Sabah (Kota Kinabalu), and accompany Patrick Andau and perhaps one other officer to Manila, thence to see the trapping area. This assumes that Tony or one of his team will be available to accompany you. If this does work out, then you should need only one day in Manila on your arrival in Asia, to meet Tony and then proceed immediately to Sabah.

Table 2. Silabukan/Lumerau estimate should be 20+ (not 7-12).

Table 3. Sabah estimate should be 28-38 (not 15-30), and 20+ (not 7-12).

Budget - if you can take two people from Forest Dept. to Philippines, add about US$700 to the budget for airfares. Expenses within Philippines should be considered as the responsibility of the officers concerned. A helicopter view of the rhino areas may prove to be useful. You may get a free trip, but if possible, it would be advisable to allow up to US$1000 for such flights.

John Payne
12 January 1983

Wildlife Section,
Forest Department,
P.O.Box 311,
Sandakan,
Sabah,
Malaysia.

12 January 1983

Dr Tom Foose,
AAZPA Conservation Coordinator,
ISIS Office,
Minnesota Zoological Garden,
Apple Valley, MN 55124, U.S.A.

Dear Dr Foose,

Thank you for your letter (16 December 1982). Your coming to Sabah would be welcome, since an initiative by an independent body is probably the best stimulus we can have towards starting a captive breeding programme. I hope that the enclosed notes on Sabah, rhinos, logistics etc. will be useful in organising and obtaining approval for your planned visit to South-east Asia.

Recently, I met Mr Tony Parkison. He seems to me to be ideal for advice on trapping and transportation of rhinos and is only a short distance away from Sabah. I recommend that you do indeed contact him without delay, with a view to a simultaneous visit (along with you) to Sabah, and possibly Peninsular Malaysia. I enclose details on how to contact him.

I think that Encik Mohd. Khan b. Momin Khan, Director-General of the (Federal) Department of Wildlife and National Parks of Malaysia, and Malaysian representative of the Survival Service Commission Asian Rhino Specialist Group should be contacted at an early stage. You might write to him, saying that you would like to visit him; suggesting dates; and mention that you will be visiting Sabah.

I shall be available until about 14 April 1983, after which time I have other comittments.

Yours sincerely,

John Payne

John Payne, Ph.D.

c.c. Patrick Andau

blind to Ken Scriven + Clive Marsh

Wildlife Section,
Forest Department,
P.O.Box 311,
Sandakan, Sabah,
Malaysia.

11 Jan 1983

Dear Tony,

On arriving back in Sabah I received a letter from Tom Foose, Conservation Coordinator for the American Association of Zoo Parks and Aquariums. He is planning to visit Sabah and other parts of South-east Asia with a view to initiating a project to capture two-horned Asian rhinos for captive breeding (this is the rhino species occurring in Sabah, Sumatra and Malaya). His tentative itinerary is to arrive in ~~Malaysia~~ Manila about 17 March 1983 and try to contact you immediately; and then come on to Sabah for two weeks. I am writing to him to suggest that he does indeed make a point to see you, whether it be in Manila or San Jose. I have told him about your work, location etc. I am also suggesting that he should encourage you to accompany him on his visit to Sabah, for at least part of the two weeks. I think that it would be most valuable if you could spare the time to accompany Tom Foose to Sabah, with a view to assessing capture/transportation methods for the rhinos in Sabah.

I hope that ypu will receive news from Tom Foose directly in the near future. I will write to you again when his and my plans for March-April are clearer. Dates have not been fixed, but your proposed visit to Sabah would have to be some time between about 18 March and 14 April 1983.

Regards,

John

John Payne.

Irs. NICO J. VAN STRIEN
P.O. Box 109
BOGOR
INDONESIA

Thomas J. Foose AAZPA Conservation Coordinator

ISIS Office

Minnesota Zoological Garden.

Apple Valley, MN 55124

U.S.A.

Bogor, 10 Jan 1983

Dear Tom,

Thank you very much for your letter and reports, and , most particular, for the Mammalian Directory. It was a great surprise and I am very grateful that you have sent it. I am working on a comprehensive guide to the mammals of the Australasian archipelago and the directory will be of great help. Please inform me about the costs so that I can reimburse you.

I have read your proposal with great interest and basically I can agree with what you have written. I think that your estimate for the costs and the duration of the project are very realistic and I agree that the best opportunities seem to be in Sabah and west Malaysia.

The most important remark I would like to make is that in my opinion too much emphasis is placed on the conservation side of the whole thing. There is certainly an important conservation aspect, and I am aware that there is a tendency now to call almost everything conservation, but I am convinced that conservation should primarely aim at conserving habitats and ecosystems. It is not that I am against the sort of operations that you proposes, but my concern, and that of many others working here in conservation, is that they tend to divert attention and money from other conservation programmes that are in my opinion more important, but that are less glamourous and attractive.

I still believe that there is a good chance that large reserves can be preserved in Southeast Asia, and that animals like the rhino have a fair chance for survival if we continue the present efforts. There are of course problems and risks, but for the same amount of money and energy more can be done for conservation by investing it in the development of reserves, than by setting up of breeding units.

Nevertheless I would welcome serious attempts to set up captive breeding units, because there seems to be a good opportunity now, with some rhinos still surviving in areas that cannot be reserved. But I would resent if money available for conservation, like WWF funds, are diverted to this plan and, more important, I would like to prevent a situation in which people could claim that they have saved the Sumatran rhino and that consequently there is now no more reason to protect Gunung Leuser, Kerinci, etc. This might sound exaggerated, but this sort of ideas comes up continuesly here in Government circles.

I presume that there are also respectable commercial interests, certainly from the sides of the participating zoos, but nothing is written about this aspect in your proposal. The zoos will certainly see the money they will donate to this project as an investment, and will ask something in return in the form of a share in the catch. This sort of things should be worked out very carefully and be included in the proposal. In my opinion this would increase the credibility of the operation and make it more acceptable, certainly for the authorities here.

drs. NICO J. VAN STRIEN
P.O. Box 109
BOGOR
INDONESIA

I am quite sure that Schenkel holds a similar opinion, and it is strange that he has so far not reacted. This plan was not discussed in Kuala Lumpur at the Specialist Group meeting, and I cannot understand why Schenkel did not bring it up. I have not heard from him since the meeting, and I often wonder whether he is still effective as chairman.

Sabah certainly seems to offer the best possibilities, particularly with regard to the existing infrastructure in the country and probably also because of the attitude of the government. It seems that the areas where rhino survive are more or less accessible and I have the impression that it will be possible to develop a good cooperation with the authorities. But it might be that the density of the rhino is now so low there that itwill be very difficult to trace and catch them.

There are in Sumatra also rhinos left in areas outside the reserves, but access will be a very great problem, and there will be very big organisational problems for an operation like this in Indonesia. The authorities will certainly insist that half or more of the catch will be used to set up a breeding unit in the country, which would in principle be a good idea, if there was any chance that it will be properly managed later.

I can help you in organising trips to Gunung Leuser and Ujung Kulon. The permits can be arranged for in Bogor (usually), but the main problem is how to get there. For Ujung Kulon you will have to rent a boat, which will cost about $ 200 or more, and it takes one day to get there. Facilities in the reserve are quite adequate.

Gunung Leuser is a very big reserve, and rhino occurs only in the very centre of the reserve, which can only be reached by helicopter or by organising a one-week expedition. If you want to see something of rhino the Endau-Rompin is probably the best place. In a few hours walking you can be in the rhino area. If you only want an impression of the area and the terrain, you best go the the Bohorok rehabilitation station, which is at the eastern boundary of the reserve, a few hours from Medan. Going to the Ketambe station, which is much closer to the rhino area, will take several hours by car, and you will need a special permit to enter the station.

My present contract with the School of Environmental Conservation Management expires in October next, but there is a possibility that it can be extended. I would in principle be happy to get involved somehow in the catching operations, and get the opportunity to do some work in the field. But we better discuss this when you are here in April.

I will probably be away for some days in April for a field exercise, but the dates are not yet known. I will let you know when more definite plans have been made, but these trips are subject to be changed on short notice.

I hope that I have been able to help you so far and I am looking forward to meeting you and discuss things in detail.