

IUCN/SSC PRIMATE SPECIALIST GROUP NEWSLETTER

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Cover photo: The murequi (*Brachyteles arachnoides*) of southeastern Brazil, largest and most endangered of the Neotropical primates (photo by Luiz Claudio Marigo).

A Word from the Editors

The first issue of our newsletter appeared in October, 1981, and we regret that it has taken nearly a year to produce this second issue. However, we now have a part-time staff member, whose duties include production of the newsletter twice or three times annually, depending on the amount of material provided by group members. This, hopefully, will ensure that future newsletters appear on a more regular basis.

We would like to emphasize again that the main purpose of this newsletter is to serve as a means of communication for members of the Primate Specialist Group and other people concerned with primate conservation. We urge all of you to contribute to the newsletter, and to use it in whatever way you feel appropriate to assist in achieving our common goal of conserving the current diversity of the Order Primates.

Please note that we have included a complete list of Primate Specialist Group members and their addresses in this issue. All members of the group receive the newsletter free-of-charge. Non-members interested in subscribing to the newsletter may do so at a cost of \$10 per calendar year. Checks should be made out to World Wildlife Fund — US and should be sent to William R. Konstant at the Stony Brook address.

Since many of you may be interested in applying to IUCN/WWF for project support, we are including once

again a copy of the submission guidelines for IUCN/WWF project proposals. Please note that this is an updated version and replaces the one that appeared in issue number 1 of the Primate Specialist Group Newsletter.

Please send any material that you would like to include in future newsletters to William R. Konstant. Contributions to the *News from the Field* section should be 1-3 double-spaced, typed pages in length, and we urge that you submit maps and photographs as well, particularly of the rare and little known primate species with which many of our readers may not be familiar. Contributions to the *Announcements* section should be kept as brief as possible, but matters of considerable importance to primate conservation will be given as much coverage as needed.

We hope that you enjoy this issue and look forward to hearing from you and receiving your newsletter contributions.

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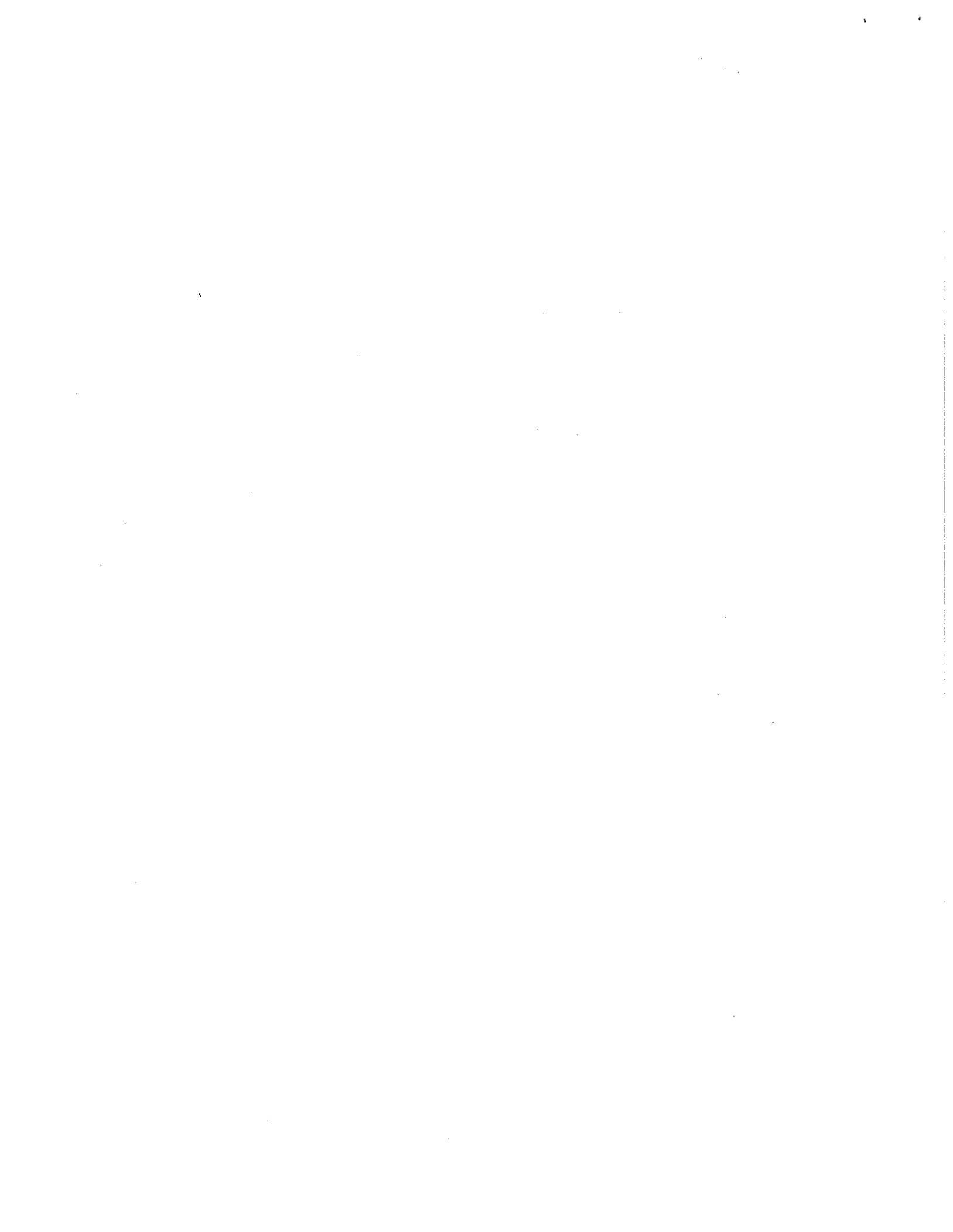


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ANNOUNCEMENTS

Prince Philip to Participate in Joint WWF — US/Leakey Foundation Seminar

H.R.H., Prince Philip, Duke of Edinburgh, will participate in a special seminar on Primates and the Tropical Forest being organized by WWF-US and the Leakey Foundation. The brochure on the seminar reads as follows:

"Wild populations of most of the world's 175 living species of nonhuman primates are disappearing rapidly, especially in the tropical forest belt which is the home of more than 90% of the Order Primates. The purpose of this seminar is to highlight the plight of these unique animals and their forest habitat, and to emphasize both their intrinsic scientific interest and their economic importance to their closest living relative, the human primate."

Papers will be presented on the following topics:

- The world's endangered primate species — an introduction and a case study on the monkeys of Brazil's Atlantic forests, by Russel A. Mittermeier

58th SSC Meeting and Third World Parks Congress to be Held in Southeast Asia in October, 1982

The next meeting of the SSC will be held in Kuala Lumpur, and is being organized by one of our PSG members, Mohd. Khan bin Momin Khan, Director-General of Wildlife and National Parks for Malaysia. The meeting will start on the morning of October 4 and will end on October 6. It will feature a special symposium on "Species Conservation Priorities in the Tropical Forests of Southeast Asia", with presentations to be given by six PSG members.

The meeting will be held in the Hotel Merlin in Kuala Lumpur, and all PSG members in the area are invited to attend. For further details, please write to:

The Director-General of Wildlife and National Parks
P.O. Box 611
Kuala Lumpur
Malaysia

The SSC meetings will be followed by the Third World Parks Congress in Bali. This important meeting, which is held only once every ten years, will bring together specialists from all over the world. It will run from October 11 to October 22. Further information can be obtained from:

Dr. H.K. Eidsvik
Environment Canada
Parks Canada
Les Terrasses de la Chaudiere
Ottawa, Ontario K1A 1G2
Canada

- The world's endangered primate species — a case study on the lemur fauna of Madagascar, by Alison Richard
- Living primates as a key to evolution, by John Fleagle
- Living primates as a key to human behavior, by Shirley Strum
- The world's disappearing tropical forests: the current situation, by Thomas Lovejoy
- Ethnobotany, conservation and the future of the tropical forest, by Mark J. Plotkin

The seminar will be held from 1:30-5:00 pm on September 21 in Beckman Auditorium on the campus of the California Institute of Technology in Pasadena. Tickets will be \$35, and further information can be obtained from the Leakey Foundation:

Leakey Foundation
Foundation Center 13-83
Pasadena, California 91125

The proceedings of the seminar will be published jointly by WWF-US and the Leakey Foundation. They should appear in late 1982, and will be available from both organizations.

WWF Tropical Forests and Primates Campaign to be Launched in October, 1982

In recognition of the global importance of tropical forests and the primates living in them, WWF will be carrying out a year-long fund-raising campaign with tropical forest and primates as its principal themes. Eleven major project areas have already been selected for the campaign, and they include the following:

- Ivory Coast — Tai National Park in the southwest
- Cameroon — lowland forests
- East Africa — Relic forests in Tanzania, Uganda and Rwanda
- Madagascar — northern and eastern moist forests
- Indonesia
- Papua New Guinea
- Peninsula Thailand
- Brazil — Atlantic forest region of eastern Brazil
- Peru — Manu National Park in Peruvian Amazonia
- Ecuador — Amazonian provinces
- Costa Rica — Atlantic slope gradient

The campaign will be launched on October 11 at the World Parks Congress in Bali, and we hope that PSG members present at this meeting will attend the launching. We also hope that the PSG will play a major role in the campaign's fund-raising activities and eventual project implementation.

World Health Organization (WHO) and Ecosystem Conservation Group (ECG) Adopt Primate Specialist Group's "Policy Statement on Use of Primates for Biomedical Purposes"

The World Health Organization (WHO) and the Ecosystem Conservation Group (which includes UNESCO, UNEP, FAO and IUCN) recently adopted the "Policy Statement on Use of Primates for Biomedical Purposes" that was drafted by the Primate Specialist Group. Those of you who have been on the PSG for several years will remember that it took us more than two years to develop a satisfactory statement, but we believe that the final product was well worth the effort.

Efforts to develop a suitable statement began in early 1979, and a number of drafts were circulated to PSG members. The resulting product was adopted by SSC as a whole at its Delhi meeting in February 1981, and several minor modifications were later approved at meetings in Gland (June, 1981) and Christchurch, New Zealand (October, 1981). The ECG approved the statement in August, 1981. Adoption by WHO came in November, 1981 at a meeting in Geneva to discuss plans for an International Pri-

mate Resources Program. IUCN was represented at this meeting by PSG Chairman, Russ Mittermeier, and by the Executive Officer of SSC, Robert F. Scott. PSG members David Chivers and James Else were also present.

It should be emphasized that WHO's adoption of the SSC statement merely signifies agreement on the ground rules relating to use of nonhuman primates for biomedical purposes; it does not in any way imply that IUCN, SSC or the PSG has given a blanket endorsement to the International Primate Resources Program. Each project in the WHO Program will be assessed on its own merits, and WHO has agreed to consult with IUCN during the course of program development.

For the benefit of new PSG members who may not yet have seen the policy statement, it is reproduced here in its entirety, together with a list of all primates listed in the IUCN *Red Data Book*.

Policy Statement on Use of Primates for Biomedical Purposes

The ECG and WHO recognize that nonhuman primates play an important role in biomedical research and testing, and that their use as experimental animals has made a significant contribution to advances in human health and disease control.

The ECG and WHO are committed to maintaining the current diversity of the Order Primates and to ensuring the survival of representative, self-sustaining populations of all species in their natural habitats.

A total of 76 primate taxa are currently considered *endangered*, *vulnerable* or *rare* by the IUCN. Since these taxa are either in serious decline or already at very low and precarious population levels, any exploitation of them threatens their continued survival. Therefore, the ECG and WHO strongly recommend that:

- (1) *endangered*, *vulnerable* and *rare* species be considered for use in biomedical research projects only if they are obtained from existing self-sustaining captive breeding colonies (i.e. in captive breeding, all animals are required to be at least F2 generation);
- (2) species categorized as *status unknown* or *indeterminate* also not be considered for use in such research projects until adequate data indicate that they are not *endangered*, *vulnerable* or *rare*.

Members of more than 30 species of nonhuman primates, the majority of them wild-caught, are currently being used worldwide in biomedical research and testing. However, sustained yield trapping strategies for wild primates, based on long-term ecological field studies and adequate demographic data, have not yet been developed for any primate species. Continuing habitat loss in most areas where primates occur makes demographic projections difficult and unreliable in most cases. The ECG and WHO therefore recommend that:

- (1) wild-caught primates be used primarily for the establishment of self-sustaining captive breeding colonies, the eventual goal of which should be to captive-breed most or all (depending on species) of the primates used in research;
- (2) populations of the apparently common primate species be trapped only in:
 - (a) special management areas where demographic data are available, where the populations are continually monitored to avoid overexploitation, and where sustained yield trapping strategies are being developed and tested;
 - (b) areas where the animals are living in agricultural or other man-modified environments and have been shown to be agricultural nuisances that would otherwise be destroyed; or
 - (c) areas where the habitat is already being destroyed, where the primates would otherwise be killed or would die from starvation or stress, and where translocation is not a viable alternative.

To minimize impact on free-living populations, the ECG and WHO urge that trapping, holding and shipping techniques be perfected to the point that accidental death, destruction of habitat, disruption of family groups, and other forms of wastage are kept to an absolute minimum.

The ECG and WHO urge researchers and their funding agencies to assist in the control of international commerce in primates by requiring proper export and import documentation on all animals that they purchase or otherwise obtain, and to refuse animals obtained in contravention of CITES and/or protective legislation in the source countries.

List of Primates in the IUCN *Mammal Red Data Book*

The number, e.g. 72, preceding each taxon is the date of the last revision of that data sheet. The letter preceding each taxon is the category. E = endangered; V = vulnerable; R = rare; I = indeterminate.

LEMURIDAE

72	E	<i>Lemur macaco macaco</i>	Black lemur
72	E	<i>Lemur macaco rufus</i>	Red-fronted lemur
72	E	<i>Lemur macaco flavifrons</i>	Sclater's lemur
72	E	<i>Lemur macaco sanfordi</i>	Sanford's lemur
72	V	<i>Lemur mongoz</i>	Mongoose lemur
72	E	<i>Lepilemur mustelinus ruficaudatus</i>	Red-tailed sportive lemur
72	R	<i>Lepilemur mustelinus dorsalis</i>	Nossi-be sportive lemur
72	E	<i>Lepilemur mustelinus leucopus</i>	White-footed sportive lemur
72	V	<i>Hapalemur griseus</i>	Grey gentle lemur
72	R	<i>Hapalemur simus</i>	Broad-nosed gentle lemur
72	R	<i>Allocebus trichotis</i>	Hairy-eared dwarf lemur
72	V	<i>Cheirogaleus medius</i>	Fat-tailed dwarf lemur
72	V	<i>Microcebus coquereli</i>	Coquerel's mouse lemur
72	I	<i>Phaner furcifer</i>	Fork-marked mouse lemur

INDRIIDAE

78	E	<i>Indri indri</i>	Indris
72	E	<i>Propithecus verreauxi</i>	Verreaux's sifaka
72	R	<i>Propithecus diadema perrieri</i>	Perrier's sifaka
72	V	<i>Avahi laniger occidentalis</i>	Western woolly avahi

DAUBENTONIIDAE

72	E	<i>Daubentonia madagascariensis</i>	Aye-aye
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TARSIIDAE

78	I	<i>Tarsius bancanus borneanus</i>	Bornean tarsier
78	I	<i>Tarsius spectrum</i>	Eastern tarsier
78	E	<i>Tarsius syrichta</i>	Philippine tarsier

CALLITRICHIDAE

81	E	<i>Callithrix flaviceps</i>	Buffy-headed marmoset
81	V	<i>Callithrix argentata leucippe</i>	White marmoset
81	E	<i>Callithrix aurita</i>	Buffy-tufted-ear marmoset
81	V	<i>Callithrix humeralifer</i>	Tassel-eared marmoset
81	E	<i>Saguinus oedipus oedipus</i>	Cotton-top tamarin
81	I	<i>Saguinus bicolor</i>	Bare-face tamarin
81	I	<i>Saguinus imperator</i>	Emperor tamarin
81	V	<i>Saguinus leucopus</i>	White-footed tamarin
81	E	<i>Leontopithecus rosalia</i>	Golden lion tamarin
81	E	<i>Leontopithecus chrysopygus</i>	Golden-rumped lion tamarin
81	E	<i>Leontopithecus chrysomelas</i>	Golden-headed lion tamarin
81	R	<i>Callimico goeldii</i>	Goeldi's monkey

CEBIDAE

81	E	<i>Saimiri oerstedii</i>	Central American squirrel monkey
81	V	<i>Callicebus personatus</i>	Masked titi
81	V	<i>Chiropotes albinasus</i>	White-nosed saki
81	E	<i>Chiropotes satanas satanas</i>	Southern bearded saki
81	V	<i>Cacajao calvus</i>	Uakari (red and white)
81	V	<i>Cacajao melanocephalus</i>	Black-headed uakari
81	I	<i>Alouatta fusca</i>	Brown howler monkey
81	I	<i>Alouatta villosa</i>	Guatemalan howler monkey
81	E	<i>Lagothrix flavicauda</i>	Yellow-tailed woolly monkey
81	V	<i>Lagothrix lagotricha</i>	Woolly monkey
81	E	<i>Brachyteles arachnoides</i>	Woolly spider monkey
81	I	<i>Ateles belzebuth</i>	Long-haired spider monkey
81	I	<i>Ateles fusciceps</i>	Brown-headed spider monkey
81	V	<i>Ateles geoffroyi</i>	Geoffroy's spider monkey
81	V	<i>Ateles paniscus</i>	Black spider monkey

CERCOPITHECIDAE

76	E	<i>Cercocebus galeritis galeritis</i>	Tana river mangabey
78	E	<i>Papio leucophaeus</i>	Drill
76	E	<i>Macaca silenus</i>	Lion-tailed macaque

76	V	<i>Macaca sylvana</i>	Barbary macaque
78	I	<i>Macaca pagensis</i>	Mentawai Islands macaque
76	E	<i>Colobus badius rufomitratu</i>	Tana river red colobus
78	R	<i>Colobus badius gordonorum</i>	Uhehe red colobus
78	R	<i>Colobus badius kirkii</i>	Zanzibar red colobus
78	E	<i>Colobus badius preussi</i>	Preuss's red colobus
76	R	<i>Colobus verus</i>	Olive colobus
78	V	<i>Colobus satanas</i>	Black colobus
78	V	<i>Presbytis johi</i>	Nilgiri langur
78	R	<i>Presbytis geei</i>	Golden langur
78	I	<i>Presbytis potenziani</i>	Mentawai Islands langur
78	V	<i>Nasalis larvatus</i>	Proboscis monkey
78	E	<i>Simias concolor</i>	Pig-tailed langur
76	R	<i>Rhinopithecus roxellanae</i>	Snub-nosed langur
72	E	<i>Pygathrix nemaus</i>	Douc langur

HYLOBATIDAE

78	V	<i>Hylobates klossi</i>	Kloss's gibbon
78	E	<i>Hylobates pileatus</i>	Pileated gibbon
78	I	<i>Hylobates concolor</i>	Black gibbon
78	E	<i>Hylobates moloch</i>	Javan gibbon

PONGIDAE

76	E	<i>Pongo pygmaeus</i>	Orang-utan
72	V	<i>Pan troglodytes</i>	Chimpanzee
76	V	<i>Pan paniscus</i>	Pygmy chimpanzee
76	V	<i>Gorilla gorilla</i>	Gorilla
76	E	<i>Gorilla gorilla beringei</i>	Mountain gorilla

Comments

1. *Macaca arctoides* is a *Red Data Book* candidate.
2. The Lemuridae, Indriidae and Daubentoniidae will be revised in 1982, and will possibly change in status and taxonomic arrangement.
3. Revised sheets for the Pongidae are now available in draft form.

The Center for Field Research Announces Decision to Increase Support for Primate Field Work

The Center for Field Research, which reviews and recommends projects for the EARTHWATCH program, has recently announced a decision to increase substantially its support for field research on primates.

For those who may not be familiar with it, the EARTHWATCH program is unique among funding agencies. All funds distributed to researchers and for research projects (about \$1,000,000 in 1982) are derived from volunteers who contribute not only money, but also labor, ideas and energy to the projects that they support.

Effective use of volunteers is a powerful way to increase the overall productivity of a field season, and many projects normally executed by a few highly-trained investigators can be redesigned to take advantage of the efforts of a larger number of enthusiastic non-specialists. This usually involves subdivision of data-gathering procedures into discrete and carefully defined tasks, which can be carried out by volunteers working under some supervision after a short orientation and training period. About half of all EARTHWATCH volunteers have graduate degrees in other fields and the majority can adapt quickly to the tasks presented to them. The payoff to the researcher is that a substantial amount of work can be carried out in a relatively short period of time.

EARTHWATCH, in contrast to most other funding agencies — both public and private, is growing significantly. Now in its twelfth year, it is one of the major sources of support for field research in both the sciences and the humanities. In

1982, EARTHWATCH distributed about \$1,000,000 and 1,500 volunteers to 78 projects in a wide variety of disciplines all over the world.

Primate Group members interested in EARTHWATCH assistance for their field projects are urged to write a two page letter to the Center for Field Research 9-12 months before an expedition is to go into the field. The letter should describe the intended project, its subject and objectives, background and significance, staff composition and qualifications, need for volunteers, dates, location and budgetary requirements. If the preliminary proposal is reviewed favorably, a more complete proposal will be promptly requested.

Dr. George McCully, Executive Director of the Center for Field Research, attended the International Primatological Society Congress in Atlanta this past August, and some of you may have had an opportunity to discuss EARTHWATCH with him already. Further inquiries about this interesting and important program can be addressed to Dr. McCully:

Dr. George McCully
Executive Director
The Center for Field Research
10 Juniper Road, Box 127
Belmont, Mass. 02178
U.S.A.
Telephone: 617-489-3030

Special Facility Available to Assess Natural Primate Habitat

Funding from the National Institutes of Health (NIH), through its Interagency Primate Steering Committee, has been made available for a three year period to establish an Image Analysis and Graphic Facility for Ecological Studies (IMAGES) in the Remote Sensing System Lab (RSSL) of the Department of Civil Engineering at the University of Maryland. This project is under the direction of PSG member Ken Green, and seed money for the facility has been provided so that primate field workers can utilize remote sensing data from LANDSAT satellites.

The facility will use IMPAC, a new computer hardware and software program package which allows one to quickly and easily derive useful information from digital imagery. Through an interactive approach, IMPAC combines the analysis power of digital computers with the scientist's conventional photo-interpretation skills. It is capable of creating and displaying full-color multispectral classification maps, provides full statistical analysis capabilities, including histogram generation, and allows image ratioing and correction. Interactive digital systems such as IMPAC provide the most cost-effective way for the user to transform images into information.

While IMPAC is useful for many image-oriented applications, it is ideally suited for natural resources exploration. Digital images of the entire earth's surface acquired by NASA'S LANDSAT satellites have been available to everyone for several years. However, until now, only people at large institutions, with very expensive computer analysis systems, have been able to utilize fully the information in these images. The vast majority of researchers have been limited to manual photo-interpretation and image-enhancement techniques. Analysis of satellite photographs by these techniques can only utilize about one half of the potential image resolution. These manual techniques rely on qualitative or poorly calibrated numerical reflectance information. Re-

World Wildlife Fund — US Primate Action Fund Provides Support for Small Primate Projects

Since 1979, the board of World Wildlife Fund — US has provided its Primate Program with a special Primate Action Fund intended for rapid support of worthy primate conservation projects in the \$500-3,000 range. The Primate Action Fund is especially important for emergency projects, for short term pilot studies and surveys needed to lay the groundwork for larger projects, and for projects conducted by researchers living in the tropical countries where most primate species occur. It is administered by the director of the Primate Program and has supported more than 30 projects in the past three years. Proposals are processed very quickly, usually within one month of receipt, and sometimes even in a matter of days in the case of emergency situations.

Further information on the Primate Action Fund and the World Wildlife Fund — US Primate Program in general is provided in the enclosed brochure. Inquiries and applications for support from the WWF-US Primate Action Fund should be sent to the PSG Chairman, Russ Mittermeier,

production of reliable quantitative data results only when the original data are used. The IMPAC system provides full digital capability.

Primate researchers will have access to this digital image processing and associated technology through the RSSL facility. Under the guidance of the project coordinator, the primate researcher will provide ground-truth and, if desired, can gain actual hands-on system experience. The researcher will be expected to agree to procedures established by the University of Maryland for the use of the facility. It will be available to a limited number of scholars at no charge.

Although intended presently for assessment of primate habitat, research will focus on tropical and subtropical ecosystems, providing a valuable tool for all interested ecologists.

For further information and guidelines for applying to use this facility, please contact: Dr. Ken Green, Project Coordinator, IMAGES, Remote Sensing System Lab, Dept. of Civil Engineering, University of Maryland, College Park, Maryland, Tel. no.: 301-454-3861.

Conservation Training Program Offered at the University of Florida at Gainesville

The National Zoological Park, Smithsonian Institution, and the Florida State Museum, University of Florida, offer a special Conservation Training Program for primatologists and wildlife biologists from developing countries. The training being given by the program will equip students to undertake research of threatened and endangered species and to take an active role in program planning and management of the wildlife habitats in their countries. Students enrolled in the program will receive academic training during the fall and spring semesters at the University of Florida, and they will participate in field courses organized by the program's faculty during the summer. The academic training is designed to accommodate both students who are seeking short-term specialized training, and those who wish to pursue a Master's or Ph.D. degree. At present, the program includes students from Peru, Colombia, Argentina, Brazil, Thailand and Uganda.

Field courses will be conducted at selected sites in tropical countries and at the Smithsonian Conservation and Research Center, Front Royal, Virginia. The duration of each field course will be 6-8 weeks, and they will introduce participants to field techniques and their applicability to different species. All students who wish to follow the curriculum of the Conservation Training Program must apply for admission to the University of Florida at Gainesville. Those candidates for whom English is not a first language must pass the TOEFLE (Test of English as a Foreign Language Exam). Application materials for the program may be obtained by providing a curriculum vitae and a statement of interest to:

Dr. John G. Robinson
Florida State Museum
University of Florida
Gainesville, Florida 32611
U.S.A.

Major Report on the Primate Trade Being Prepared as a Joint Project of TRAFFIC (U.S.A.), WTMU and the PSG

A major report on the trade in nonhuman primates is now in preparation as a joint project of TRAFFIC (U.S.A.), the Wildlife Trade Monitoring Unit (WTMU) of IUCN, and the PSG. This report is being edited by David Mack of TRAFFIC-US and Russ Mittermeier and will be published in book form in the first half of 1983. Topics to be covered in the report include the following:

1. A synopsis of legislation and the primate trade in habitat and user countries — M. Kavanagh and E.L. Bennett
2. A review of trading in primates around the world — M. Kavanagh
3. A review of the U.S. primate trade — D. Mack and A.A. Eudey

World Wildlife Fund — US and the PSG to Launch a New *Primate Conservation Monographs Series*

A new *Primate Conservation Monographs* series that was already mentioned in the last newsletter will be launched in late 1982. This series is intended primarily for longer conservation reports (over 50 pp.) that would be difficult to publish elsewhere because of their length. We feel that a major conservation problem is that many potentially important final reports on field projects funded by WWF and other conservation organizations never see the light of day. They are submitted by the researcher, read by a few people in the funding organization, and then frequently relegated to the oblivion of the file cabinet. Young researchers often labor under the misconception that funding organizations have the staff to follow up immediately on any and all recommendations included in the final reports of projects that they fund. This is usually not the case. However, both the researcher and the funding organization have an obligation to ensure that the results of their projects are used for conservation purposes. The first step in doing this is to publish project results and ensure that they receive proper circulation in the country where the work was conducted.

We hope that the *Primate Conservation Monographs* series will help to ensure wide circulation of conservation project results, at least for important primate projects, and we will be providing free circulation of these monographs in the countries where the work was conducted.

The *Primate Conservation Monographs* series is being funded by World Wildlife Fund — US and will be jointly sponsored by the WWF-US Primate Program and the PSG. The first monographs to appear will deal with the black spider monkey in Surinam, the primates of Bangladesh, primate hunting in Siberut, Mentawi Islands, and the Barbary macaque in North Africa.

Anyone interested in further details on this series should contact the PSG chairman.

4. Captive breeding and use of primates other than in the U.S. — M. Kavanagh and J.O. Caldecott
5. Use of primates and captive breeding programs in the U.S. — A.A. Eudey and D. Mack
6. The status of Asian primates used in the trade — A.A. Eudey
7. The status of African primates used in the trade — to be determined
8. The status of Neotropical primates used in the trade — R.A. Mittermeier and A.F. Coimbra-Filho

The first five chapters are currently available in draft form and a number of PSG members with expertise in trade matters should already have received copies for review. If you haven't received copies, but would like to act as a reviewer, please write to David Mack and indicate which of the above chapters are of interest:

David Mack
TRAFFIC (U.S.A.)
1601 Connecticut Ave., NW
Washington, D.C. 20009
U.S.A.

The final published version of the report will be available at a special price to all PSG members.

For those of you who may not be familiar with TRAFFIC (U.S.A.), it is a program of World Wildlife Fund — US and part of the international network of TRAFFIC offices, the purpose of which is to serve as a scientifically based, information gathering system monitoring the wildlife and plant trade. TRAFFIC (U.S.A.) produces a newsletter on the trade, the next four issues of which can be obtained by sending \$10.00 US to the TRAFFIC address given above.

New *IUCN Mammal Red Data Book Available*

The revised and updated *IUCN Mammal Red Data Book*, Part I has now appeared. Part I covers the threatened mammalian taxa of the Americas and of the Australasian zoogeographic region (excluding Cetacea), and it has been published in book form rather than the looseleaf format that was used in previous *Red Data Books*. This book is the standard reference on endangered, vulnerable and rare mammals, and we recommend it highly to all PSG members. Copies can be obtained for \$20.00 US from the IUCN Conservation Monitoring Centre in Cambridge, England:

IUCN Conservation Monitoring Centre
219 (c) Huntingdon Road
Cambridge CB3 0DL
U.K.

Two New Films Featuring Forest Primates

Two new films featuring rain forest primates in West Africa and South America have appeared during the past year. The first of these is entitled "Korup", and deals with the proposed Korup National Park in Cameroun. It was done by Partridge Productions, Ltd., is 55 minutes in length, and was filmed by Phil Agland, with PSG member J. S. Gartlan acting as scientific advisor. This superb film is probably the finest statement on rain forest diversity and complexity ever produced, and includes footage of a number of primates, some of them never before filmed. Among the primates in this film are the drill (*Mandrillus leucophaeus*), the white-collared mangabey (*Cercocebus torquatus*), two guenons (*Cercopithecus nictitans*, *C. pogonias*), Preuss's red colobus (*Colobus badius preussi*), the angwantibo (*Arctocebus calabarensis*), and the potto (*Perodicticus potto*).

The film is not yet available for general circulation, but

New Primate Books by PSG Members

Two new publications edited by PSG members have become available in the past year. They are:

Kavanagh, M., M. K. Vidyadaran, M. Nordin Haj. Hassan (editors), 1981. Proceedings of the Symposium on the Biology of Peninsular Malaysian Primates. *Malaysian Applied Biology*, Volume 10, Number 2.

This special issue of the *Malaysian Applied Biology* journal includes 19 papers on the ecology, behavior, cytogenetics, parasitology, and physiology of Malaysian primates, with two introductory chapters on the Malaysian Primates Research Program and a chapter on the trade. The volume is available from the Malaysian Society of Applied Biology:

Malaysian Society for Applied Biology
c/o Faculty of Science
Universiti Kebangsaan Malaysia
Kuala Lumpur
Malaysia

Coimbra-Filho, A. F. and R. A. Mittermeier 1981. *Ecology and Behavior of Neotropical Primates*, Vol. 1. Brazilian Academy of Sciences, Rio de Janeiro, Brazil.

This 496 page book includes chapters on systematics, the fossil record and ecology and behavior of eight of the 16 genera of New World monkeys (including *Callimico*, *Callicebus*, *Aotus*, *Saimiri*, *Cebus*, *Pithecia*, *Chiropotes* and *Cacajao*). The ecology and behavior chapters are arranged in a standardized format to facilitate comparisons among genera. The book is available to \$25.00 US from the PSG Chairman, Russ Mittermeier.

special presentations can be arranged by contacting J. S. Gartlan at the following address:

Dr. J. S. Gartlan
Wisconsin Regional Primate Research Center
University of Wisconsin
1223 Capitol Court
Madison, Wisconsin
U.S.A.

The second film is entitled "Cry of the Muriqui", and concentrates on the endangered primates of southeastern Brazil and their equally endangered Atlantic forest habitat. This 25 minute film was produced by the World Wildlife Fund — US Primate Program, and was filmed and edited by Andrew Young, an undergraduate at Harvard University. Field coordination was by Russ Mittermeier and Mark Plotkin.

"Cry of the Muriqui" includes the first ever wild-shot footage of the muriqui (*Brachyteles arachnoides*), the golden lion tamarin (*Leontopithecus rosalia*) and the brown howler monkey (*Alouatta fusca*), and uses these rapidly vanishing animals to symbolize the plight of the Atlantic forest ecosystem as a whole.

Distribution of "Cry of the Muriqui" is being handled by the WWF-US Primate Program, and special showings at universities and museums can be arranged by contacting the PSG chairman, Russ Mittermeier.

Important New Book on *Techniques for the Study of Primate Population Ecology* to be Distributed Free of Charge to Primatologists in Developing Countries

A new book entitled *Techniques for the Study of Primate Population Ecology* was published in 1981 by the National Academy of Sciences of the United States. This excellent book includes chapters on site selection, habitat description and specimen collection, census methods, techniques for sexing and aging, habitat use, primate population analysis, determinants of population density and growth, and several useful appendices. It is sure to become one of the standard references for field primatology.

To ensure that this book is widely circulated, the Conservation Committee of the International Primatological Society (IPS), the World Wildlife Fund — US Primate Program and the PSG have agreed to purchase 100 copies of this book for distribution to primatologists in the developing countries, where books like this are often difficult to obtain. All PSG members from Africa, Asia and South America should be receiving a copy of this book in the next few months. If you know of other primatologists in these parts of the world that might benefit from a copy of this book, please contact either the PSG chairman, Russ Mittermeier or the IPS Conservation Committee chairman, J. S. Gartlan.

Primate T-Shirts Available from World Wildlife Fund — US

A number of different primate t-shirts are now available or will be available in the near future from WWF-US. These shirts are intended to increase interest in selected endangered primate species, both in the U.S. and in the countries in which the species actually live. As part of the conservation effort, they are being distributed free to guards working in the parks and reserves that harbor the species depicted on the shirts.

The first t-shirt in the series features the muriqui (*Brachyteles arachnoides*) from southeastern Brazil, largest and most endangered of all the Neotropical (Fig. 1). More than 100 of these shirts have already been distributed in southeastern Brazil, and they are now being sold for \$10 via WWF-US. They are available in small, medium, large and extra-large adult sizes, and in the following colors: light blue with dark blue lettering, beige with dark brown lettering, and yellow with bright green lettering (Brazil's national colors). Anyone interested in these shirts should contact William R. Konstant at the Stony Brook address. Checks should be made out to World Wildlife Fund — US.

T-shirts for the pygmy chimpanzee from Zaire, the lion-tailed macaque from India and the yellow-tailed woolly monkey from Peru will be produced over the next year.

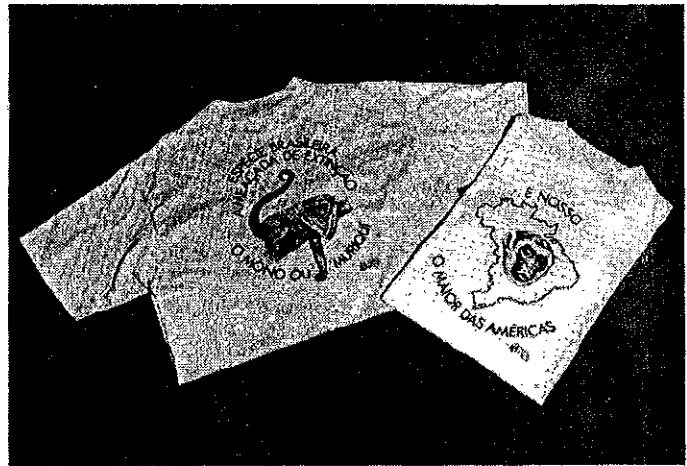


Figure 1: Muriqui t-shirts now available from World Wildlife Fund — US.

Availability of Volunteer Field Assistants

As mentioned in the last newsletter, we receive a number of requests every year from people interested in taking part in field projects on primates. Many of these people are university undergraduates or beginning graduate students who are willing to pay their own way and work as volunteers to learn more about primates and field research techniques. Others require some financial assistance, but may already have prior experience in field studies of primates or other animals. Many of these people will probably continue in conservation, and we believe it is important to help them in the early stages of their careers and, at the same time, to make use of the much-needed manpower that they provide.

Beginning in this issue, we will therefore provide a list of names, addresses and specific interests of people wanting to take part in primate field research. In addition, if PSG members need assistants with special qualifications, they may advertise here as well.

Volunteer field assistants:

Liz Campbell
903 Bellevue Pl. E.
Apt. 206
Seattle, Washington 98102

Ms. Campbell is interested in field research on primates. She has worked in zoos during the past eight years, most recently as an assistant primate keeper for the Woodland Park Zoological Gardens, Seattle, Washington.

Marvin Galperin
2006 Pearson St.
Brooklyn, N.Y. 11234

Mr. Galperin has had several months field experience in the

Peruvian Amazon and is working toward a career in tropical forest conservation. He is presently completing a Master's degree in Anthropology at Hunter College, N.Y.

Anke Hoogeveen
Thorbechestraat 478
6702 CK Wageningen
Holland

Ms. Hoogeveen is a student of the Agricultural University in Wageningen, Holland, and wishes to spend from 6-9 months doing primate field work. She can supply her own funding for travel and lodging.

Joe Macedonia
1907 Pecan St.
Ft. Collins, Colorado 80526

Mr. Macedonia is currently a junior zoology major at Colorado State University. He would like to spend a year working as a field assistant following his graduation in 1984 and prior to starting graduate work. His greatest interest is in Malagasy lemurs, followed by apes and leaf monkeys.

Carol Niemeyer-Boyd
526 16th St., Apt. 4
Modesto, California 95354

Ms. Niemeyer-Boyd has a Master's degree in Psychology from the University of Stirling, Scotland, and is interested in working on conservation projects involving South American Primates.

Janet Taylor
811 Herschel Road
Philadelphia, Pa. 19116

Ms. Taylor has an undergraduate in Anthropology from Swarthmore College, and would like to get some field experience with

primates in preparation for a graduate degree in Biological Anthropology.

Peter Jack Warshall
4500 West Speedway
Tucson, Arizona 85745

Dr. Warshall received his Ph.D in Biological Anthropology from Harvard University and is interested in doing field work on endangered primates. He has published on a number of subjects, including primate behavior, water conservation, and various aspects of natural history, and speaks both French and Spanish.

Request for Assistance from the Ethnobotany Specialist Group

A specialist group on ethnobotany and conservation was created by SSC in February, 1981, and further details on this unusual and important group are given in the attached reprint from *Oryx*. Since some PSG members work in areas where ethnobotanical information is available, we believe that the PSG and the new Ethnobotany Specialist Group might be able to exchange useful information. As a sidelight, it appears that many of the species that provide products of use to aboriginal man also happen to be important food trees for nonhuman primates.

PSG members interested in contacting the Ethnobotany Specialist Group should write to the group's secretary at the following address:

Mark J. Plotkin
Secretary, Ethnobotany Specialist Group
Harvard Botanical Museum
Oxford St.
Harvard University
Cambridge, Mass. 02138
U.S.A.

Request for Assistance from the Mustelid and Viverrid Specialist Group

A specialist group for mustelids and viverrids was established in October, 1980, and also needs assistance from the PSG. A major problem facing this group is that many mustelid and viverrid species are very poorly known, especially in the tropical regions. Several are known only from the type specimens or from very small museum samples, and assessing the status of these animals, which are frequently solitary, shy, nocturnal and/or arboreal, is quite difficult. However, it seems likely that at least some of the tropical forest species are disappearing in the face of widespread forest destruction — as is the case with so many primates.

The group's chairman, Robert Burton, feels that one of the best ways to obtain information on little-known mustelids and viverrids is to persuade field workers studying primates and other wildlife to keep an eye open for mustelid and viverrid species as well. All information is welcome, including field observations of live animals, data on use of mustelids and viverrids as a source of food for man, pelts appearing in local trade, etc. For many species, *any* information at all will be a significant addition to our present knowledge.

PSG members interested in providing information or establishing contact with the Mustelid and Viverrid Specialist Group should contact the group chairman at the following address:

Robert Burton
46 West Street
Great Gransden
Sandy
Bedfordshire SG19 3AU
U.K.

NEWS FROM THE FIELD

South and Central America

Hope for Brazil's Golden Lion Tamarin

The golden lion tamarin (*Leontopithecus rosalia* — Fig. 2) is another Brazilian endemic that is found only in the coastal region of the state of Rio de Janeiro. As with the miqui, widespread forest destruction has resulted in the almost total disappearance of its forest habitat, and wild populations of the species have been reduced to extremely precarious levels.

Surveys conducted by a WWF-US/CPRJ team in 1979, 1980 and 1981 succeeded in locating this species in only two areas, one the 5,000 ha Poco d'Anta Biological Reserve, which was established in 1974 mainly for the protection of the golden lion tamarin, and the other a stretch of forest along the coast to the south of the mouth of the Rio Sao Joao. The latter area has already been divided into lots for beachfront housing developments and appears to be doomed, leaving Poco d'Anta as the only hope for the survival of the golden lion tamarin in the wild.

Unfortunately, the situation in Poco d'Anta is far from satisfactory. The reserve is cut by a railroad and a road, a dam that will flood a portion of it is now being completed, poaching still takes place within its borders, and the guard force of six is not sufficient to patrol the reserve at maximum efficiency. Furthermore, a survey conducted by PSG member Ken Green in 1980 indicated that only about 10% of the reserve is mature forest and only about 30% is suitable habitat for the lion tamarins. The total population of lion tamarins in the reserve was estimated to be approximately 75 individuals.

The picture is certainly bleak, but help may finally be on the way. In June, 1982, several meetings were held in Rio and Brasilia to discuss the future of Poco d'Anta and wild populations of the golden lion tamarin. These meetings involved representatives from the Brazilian Forestry Development Institute (IBDF), which administers Poco d'Anta, from the Rio de Janeiro Primate Center (CPRJ), which has the only captive colonies of golden lion tamarin in Brazil, from the National Zoological Park in Washington, D.C., which holds the international studbook for the species, and from World Wildlife Fund — US, which has been involved in lion tamarin conservation for over 10 years. As a result of these meetings, it was decided that a long term research program was needed in the reserve to determine exactly how many individuals are still found there and what their ecological requirements are. This will have to be carried out hand in hand with a forest restoration program aimed at eventually making all of the reserve suitable habitat for the animals. Reintroduction of lion tamarins from the highly successful captive colonies in the U.S. was also discussed.

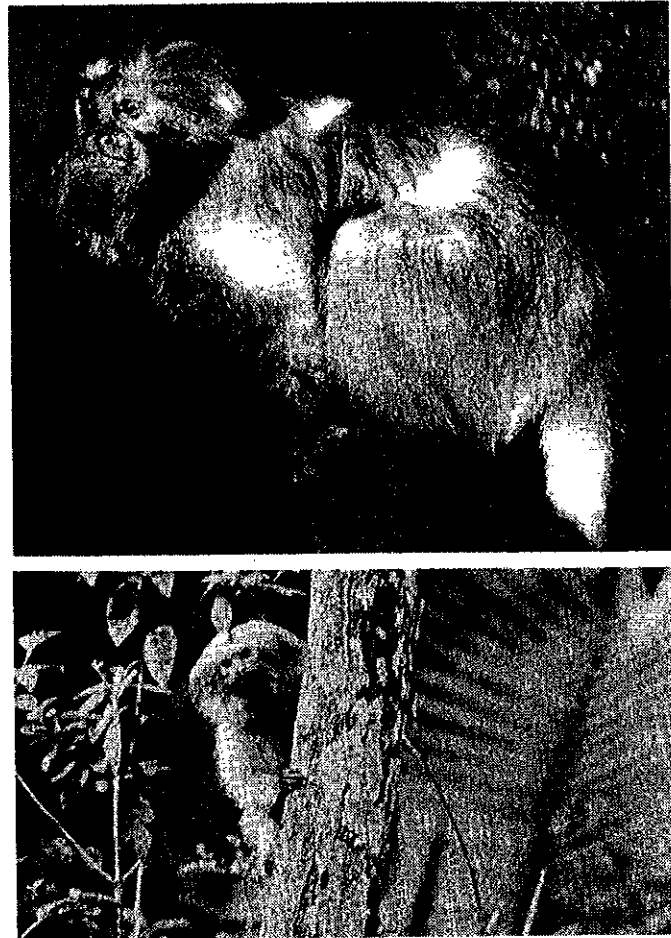


Figure 2: The golden lion tamarin (*Leontopithecus rosalia*) from Rio de Janeiro, Brazil (photos by R. A. Mittermeier).

Dr. Devra G. Kleiman of the National Zoo, who is the studbook keeper for the golden lion tamarin and who has been largely responsible for the success of the captive colonies (which now number more than 300 animals), will supervise the research project in Poco d'Anta in conjunction with PSG member Dra. Maria Tereza Jorge Padua of IBDF. Restoration of the Poco d'Anta forest will be the responsibility of PSG member, Dr. Ademar F. Coimbra-Filho, director of the Rio de Janeiro Primate Center.

Although the survival of wild populations of this highly endangered monkey still hangs in the balance, the outlook for the future will be at least a little brighter if this program is launched quickly and if it can achieve its goals.

Ademar F. Coimbra-Filho and Russell A. Mittermeier

Campaign to Save the Highly Endangered Muriqui Now Underway in Brazil

The muriqui or woolly spider monkey (*Brachyteles arachnoides* — Fig. 3a), is the largest South American monkey, and occurs only in the Atlantic forest region of southeastern Brazil. Widespread habitat destruction in this region, especially in the last 10-20 years, has almost entirely eliminated the forest habitat of this once abundant species, and illegal hunting threatens the few remaining populations.

Surveys conducted by teams from World Wildlife Fund — US, the Federal University of Minas Gerais (UFMG), and the Rio de Janeiro Primate Center (CPRJ) have so far succeeded in documenting the continued survival of this unique animal in only five protected areas: the Nova Lombardia Biological Reserve in the state of Espirito Santo, the Rio Doce State Forest Park, and two privately protected forests, Fazenda Montes Claros and Fazenda Corrego de Areia, in the state of Minas Gerais, and Fazenda Barreiro Rico in the state of Sao Paulo. A team from SEMA, the Special Secretary for the Environment, also located a captive juvenile in the vicinity of the Jureia Ecological Station in Sao Paulo, indicating that the species occurs there as well. Poaching is still a threat in all but two of these areas, and the total number of individuals thus far located with certainty does not exceed 100. Since the muriqui is a large species that breeds slowly and is dependent on high forest habitat, of which little remains in the Atlantic forest region, we believe that it is in a very critical position and should be considered the most endangered South American monkey species.

In addition to being the largest South American monkey, the muriqui is also the largest mammal endemic to Brazil. As such, it would be an excellent symbol for the Brazilian conservation movement. In recognition of the importance of this animal to the country, the Brazilian Conservation Foundation (FBCN) has launched a special fund-raising campaign on its behalf — the first campaign of this kind ever to be conducted in Brazil. The FBCN is being assisted in this campaign by the World Wildlife Fund — US and the Dept. of Zoology of the Federal University of Minas Gerais, and all three organizations have been involved in extensive press coverage for the muriqui and distribution of t-shirts (see announcements section), posters and stickers depicting the muriqui. In addition, the WWF-US produced film entitled "Cry of the Muriqui" is being translated into Portuguese and will be used on Brazilian television.

The first goal of the muriqui campaign is to purchase an 880 ha tract of privately-protected forest on the grounds of Fazenda Montes Claros in Minas Gerais. This forest has what may well be the largest remaining population of muriquis in the world, about 40 animals, and is an ideal study site for the species. The plan is to purchase part of the forest and simultaneously build a field research station that will serve as a training center for Brazilian students and will provide a continuing scientific presence to monitor the status of the forest and its primate population.

Fazenda Montes Claros has the highest primate densities of any forest thus far investigated in southeastern Brazil by the WWF-US/UFMG/CPRJ teams, and three of the four species occurring there are endangered. Many of the primate groups in the forest are also habituated, and the fazenda is readily accessible. Consequently, we feel that Fazenda Montes Claros could become a research and training center of major importance for this part of Brazil, and that it could eventually achieve for the Atlantic forest region a position similar to that of Barro Colorado Island in Panama, long a focus of Neotropical forest research activities.

In addition to the muriqui, Fazenda Montes Claros has populations of the buff-headed marmoset (*Callithrix flaviceps* — Fig. 3b), the brown howler monkey (*Alouatta fusca* — Fig. 3c), and the southern tufted capuchin (*Cebus apella nigrurus* — Fig. 3d). The buff-headed marmoset population is especially important, since this species thus far is known to occur in only one other protected area, the Nova Lombardia Biological Reserve in Espirito Santo.

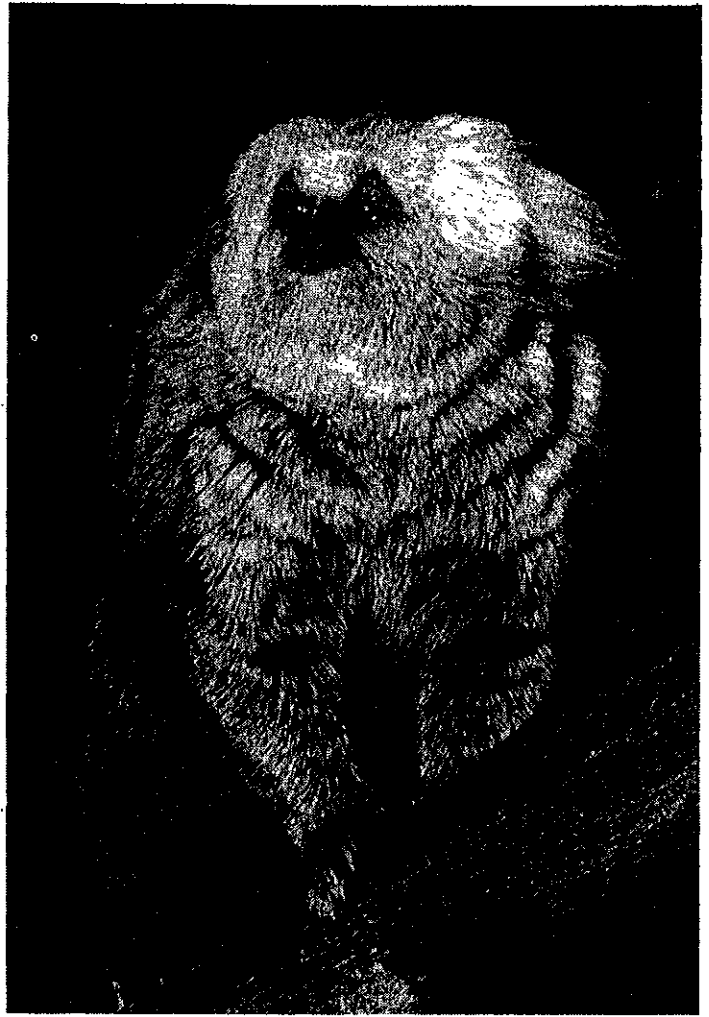
Celio Valle

Almirante Ibsen de Gusmao Camara

Russell A. Mittermeier

Figure 3: The four primate species found in the forest of Fazenda Montes Claros, Minas Gerais, Brazil.

- A. The muriqui (*Brachyteles arachnoides*)
- B. The buff-headed marmoset (*Callithrix flaviceps*)
- C. The brown howler monkey (*Alouatta fusca*)
- D. The tufted capuchin monkey (*Cebus apella nigrurus*)



Project to Study the Black Uakari and Other Colombian Primates to be Launched in the Rio Apaporis Region

The lower Apaporis and Caqueta River region of Colombia has long been of interest to INDERENA, Colombia's governmental agency in charge of national parks and natural resources. In November, 1982, a long-term project aimed at setting up a national park and learning more of the region's nine primate species will begin, funded by the New York Zoological Society. Of particular concern in this area are populations of the black uakari (*Cacajao melanocephalus* — Fig. 4), considered endangered in Colombia, the woolly monkey (*Lagothrix lagotricha*) and the poorly known tamarin, *Saguinus inustus*. Other primate species in the area include *Callicebus torquatus*, *Aotus trivirgatus*, *Saimiri sciureus*, *Cebus apella*, *Cebus albifrons*, and *Alouatta seniculus*. An inland study area will be developed and basic data on these different species will be gathered. Colombian biology students will be included in as many phases of the data collection as possible, in the hopes of encouraging them to follow in careers of field biology and conservation. As soon as appropriate data are available, a proposal to establish the Taraira National Park will be presented to INDERENA and the Colombian Academy of Sciences.

Thomas R. Defler



Figure 4: The black uakari (*Cacajao melanocephalus*) from Amazonia (photo by R. A. Mittermeier in the Sao Paulo Zoo).

Africa

Development of Outamba-Kilimi National Park, Sierra Leone

The Outamba-Kilimi National park project originated in 1980 during a nationwide survey of wildlife populations and wilderness areas in Sierra Leone. Funded by the New York Zoological Society and World Wildlife Fund — US, this survey focused on a number of primate species in the export trade and especially on chimpanzees, for which Sierra Leone had been the major source for many years.

The survey identified Outamba-Kilimi as the best surviving wildlife habitat in the country and this, coupled with the government's interest in setting up new parks and reserves, led to a joint program to establish this park, Sierra Leone's first fully-protected area. The program received strong presidential backing and was subsequently approved by Cabinet and Parliament.

The 1,000 km² of land demarcated for the park consists of a mosaic of grassland, woodland and forest, and contains several hundred chimpanzees. Other primates in the area include: baboons (*Papio anubis*), sooty mangabeys (*Cercocebus atys*), green monkeys (*Cercopithecus aethiops*), patas (*Erythrocebus patas*), monas (*Cercocebus campbelli*), spotnosed guenons (*Cercopithecus petaurista*), red colobus

(*Colobus badius*), black and white colobus (*Colobus polykomos*), dwarf galagos (*Galago demidovii*), and possibly lesser galagos (*Galago senegalensis*). In addition to protecting primates, the park also provides sanctuary for a wide array of flora and fauna and sets an example on a national and international scale. It has already drawn attention from both public and private sectors within Sierra Leone, and from international aid agencies.

A presidential ban on wildlife exports came into effect when the project started in December, 1981, and this has shut off the flow of primates and other rare species from Sierra Leone and surrounding countries as well, since Sierra Leone had long been a trade pipeline draining the region of wildlife.

The Outamba-Kilimi project is a fine example of how a limited investment of funds and expertise can generate major advances in conservation policy making and planning. In this particular case, the investment amounts to about \$200 per square kilometer of prime wildlife habitat, and it helps to ensure the continued survival of a number of species within Sierra Leone.

Geza Teleki

Report on a Survey of Rainforest Primates in Southwest Nigeria

A five month survey of rainforest primates in southwest Nigeria has just been completed. The survey was supported by the New York Zoological Society, World Wildlife Fund — U.S. and the Nigerian Federal Department of Forestry, and it focused on the red-bellied or white-throated guenon (*Cercopithecus erythrogaster* — Fig. 5), a species endemic to the area and one whose status has been a mystery. The survey, conducted from a base at the University of Benin in Bendel State, found that large tracts of forested land still exist in state government reserves, but that almost all forests are being exploited and disturbed. Lumbering is intensive, most of it by government permit but some of it illegal. Large areas of many reserves are being cleared for plantations and farms, and road-building and oil-extraction are causing further destruction. All the larger forest animals, including monkeys, are heavily hunted for their meat, very often in contravention of long-forgotten hunting legislation enacted in the colonial era.

In addition to the white-throated guenon, the other typical forest monkeys of the area are the Mona monkey (*Cercopithecus mona*), the putty-nosed guenon (*Cercopithecus nictitans*), and the red-capped mangabey (*Cercocebus torquatus*). In spite of all the pressures against them, the survey

found that populations of all four species still have a wide distribution, but their densities are generally very low. Hunters' reports suggested that a fifth species, the olive colobus, lives in the swamp forests of the lower Niger River and its delta, but none of these monkeys were sighted. Chimpanzees were once widespread in southwest Nigeria, but although many hunters report that they still occur in small numbers, none were heard or seen on the survey and no nests were encountered. By contrast, the two small nocturnal primates of southwest Nigeria, the potto and Demidoff's galago, are still abundant. They are not hunted to any significant extent.

What can be done to halt the trends which will soon lead to loss of all forest in southwest Nigeria and to the probable extinction of most of the monkeys, the chimpanzee and many other forest mammals? Rapid economic development, a tremendous human population growth rate and political realities make it unlikely that there can be any general reversal of current trends. However, effective wildlife reserves could be established in particular areas if state governments can be persuaded to make a serious commitment to resource conservation. Many existing forest reserves are in areas where there is still a low human population, and although all such reserves are more or less disturbed, some have been subjected to controlled selective felling only and represent potentially viable rainforest ecosystems.

One wildlife reserve is already being established at Ifon, in Ondo State on the northern fringe of the forest zone. Although the reserve depends very much on the dedication of one man, Bola Akinsiku, the head of Ondo's Wildlife Conservation Unit, it has good potential. However, Ifon is not a typical evergreen rainforest site and can probably not support major populations of forest monkeys. In Bendel, the state with the most remaining rainforest in southwest Nigeria, there is no effective wildlife reserve, although three game reserves exist on paper. Our survey identified the Okomu Forest Reserve as the site in Bendel with the greatest potential for rainforest conservation. At 1,200 km² it is the largest forest reserve in the state and contains viable populations of *Cercopithecus erythrogaster* and the three other typical forest monkeys. We have made a specific proposal for 300 km² in the center of the reserve to be set aside as an inviolate sanctuary, with the remainder of the reserve forming a buffer zone of controlled exploitation. This proposal has been accepted in principle by the Bendel State Ministry of Agriculture.

There is a long way to go from proposal to effective reserve. However, the proposal has the support of the newly-formed Nigerian Conservation Foundation based in Lagos, which will be actively lobbying for the creation of an Okomu sanctuary.

John Oates

Pius A. Anadu
University of Bendel



Figure 5: The red-bellied or white-throated guenon (*Cercopithecus erythrogaster*), a very rare and poorly known species found only in southwest Nigeria.

A. Captive red-bellied guenon.

B. Red-bellied guenon shot for food by local hunter.

A Proposed Protected Area for the Pygmy Chimpanzee in Zaire

The pygmy chimpanzee (*Pan paniscus* — Fig. 6) is found only in a relatively small area south of the Zaire River in Zaire, and is the only great ape not yet protected in a national park or reserve. Fortunately, the possibility now exists to establish a large protected area for this important species in the Lomako region of Equateur Province. The area in question centers on the Lomako River, and incorporates a field site where ecological studies of the pygmy chimp are being conducted by PSG members Randall Susman and Noel Badrian of the State University of New York and their colleagues. At present, the Lomako forest region is intact, and hunting of primates is not a serious problem. However, a large West German company has purchased logging concessions throughout Equateur Province, and has already started to log the western part of the province. At present rates, they could reach the Lomako forest in less than a year.

It is therefore urgent that the Lomako forest be included in a national park or nature reserve as soon as possible. Susman and Badrian have outlined a 3,000 km² area bordered on the south by the Lomako River and on the north by the Yekkokora River that would be an excellent location for a park. They have also located a potential park director and discussed the idea of establishing a protected area with the Zaire government. The Institut de Recherche Scientifique (IRS) has already expressed enthusiastic support for the plan, and other Zaire government agencies are in the process of being contacted.

Needless to say, a park or reserve in this part of Zaire would protect many other species in addition to the pygmy chimp, including many not found in the larger Salonga National Park to the south. At least eight other primate species occur in the area, among them the red-tailed monkey (*Cercopithecus ascanius*), the mona monkey (*Cercopithecus mona*), Allen's swamp monkey (*Allenopithecus nigroviridis*), the red colobus monkey (*Colobus badius*), the black and white colobus (*Colobus angolensis*), the black mangabey (*Cercocebus aterrimus*), and at least two species of prosimians.

A special day-long symposium on the pygmy chimp was held at the International Primatological Society Congress in Atlanta, Georgia on August 9. This symposium was dedicat-

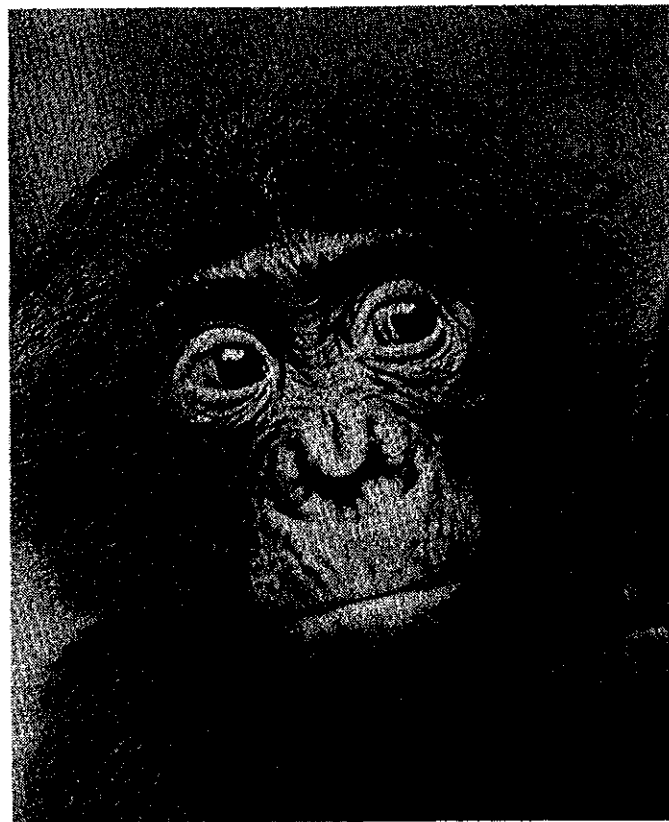


Figure 6: A juvenile pygmy chimpanzee (*Pan paniscus*) from Zaire (photo by Noel Badrian)

ed to Harold J. Coolidge (Fig. 7), discoverer of the pygmy chimp and one of the pioneers in both primatology and international wildlife conservation. Mr. Coolidge gave the opening address at the symposium, and this was followed by papers on behavior, ecology, systematics, morphology, and the relevance of the pygmy chimp for the study of human evolution. The symposium was a great success, attracted a lot of press coverage, and pointed out the importance of this animal and the need to act very quickly on its behalf.

Randall Susman

Noel Badrian



Figure 7: Harold J. Coolidge and other guests at a reception held in honor of Mr. Coolidge and his work on the pygmy chimpanzee, International Primatological Society Congress, Atlanta, Georgia, August 9, 1982.

From left to right: Russ Mittermeier, Randall Susman (organizer of the pygmy chimp symposium), Nancy Handler (member of the pygmy chimp project in Zaire), Harold J. Coolidge, Martha Coolidge, Julie Calvert Webb, Noel Badrian (member of the pygmy chimp project), Richard Malenky (member of the pygmy chimp project).

Preliminary Results of a Gorilla and Chimpanzee Survey in Gabon

Since November, 1980, surveys of the western lowland gorilla (*Gorilla g. gorilla*) and the common chimpanzee (*Pan t. troglodytes*) have been conducted in northeastern Gabon, under the auspices of the C. I. R. M. F. Prior to the initiation of these surveys, no quantitative data on either ape species existed for this West African nation, but it was believed that as many as half the world's gorillas and a quite large population of chimpanzees might inhabit portions of Gabon's 268,000 km² of unsurveyed tropical forest.

The initial survey emanated from a base camp at Makokou at the junction of the Ivindo and Djoua Rivers, and investigated a 6,066 km² zone bordered by these two rivers. For survey purposes, this area was divided into a grid of 10 km squares through which line transects were conducted. The transects followed predetermined courses, distances being measured with the aid of a topofil (a small box worn by surveyors that dispenses thread while the person is walking and records distance via a system of roller-activated counters). As nests were the major indicators of both gorilla and chimpanzee presence, considerable information was collected at nest sightings. Local assistants and Pygmy trackers also helped the researchers to locate nests.

Ten different habitat types were recognized in the initial survey zone, and it is expected that more will be located as the census extends into other regions of the country. Densities of chimpanzees and gorillas both averaged approximately 0.4 weaned individuals per km². Though chimpanzees tended to be more evenly distributed than gorillas throughout the survey zone, gorillas, when present, often occurred at much greater densities than chimpanzees. Gorillas in Gabon appear to prefer thickets and secondary forest for nesting purposes. Chimpanzee nests, on the other hand, were most often found in dense primary forest, by far the predominant forest type in the study area. Despite the apparent differences in habitat preferences, considerable dietary overlap was recorded in this region, a finding that contrasts somewhat with what was reported for the same two species in Equatorial Guinea.

Human population density in northeastern Gabon is low, the total population in the survey zone being 17,150, with small towns and villages being located on rivers bordering the zone or along roads which penetrate into the interior. Local hunters use guns and cable snares, but usually do not venture far from the roads and rivers and apparently use fish as an alternative protein source. Though ape flesh is considered a delicacy by some and a number of animals are

known to have been shot during the course of this study, reports from hunters suggested that it was rare for gorillas and chimpanzees to be deliberately sought as prey.

The results of this survey are encouraging, since it seems that populations of both species in Gabon may be greater than previous estimates had suggested. Furthermore, given present levels of human population and activity in Gabon, it would appear that the potential for gorilla and chimpanzee conservation in this country is good.

Caroline Tutin
Michel Fernandez
C. I. R. M. F.

Conference on the Barbary Macaque Held in Gibraltar in June

The Barbary macaque (*Macaca sylvanus*) is the only member of its genus found outside Asia, and it now occurs only in Morocco and Algeria, with a reintroduced population on Gibraltar. The species is considered vulnerable by IUCN, and it is threatened by habitat destruction and competition with man in most of the places where it occurs. At the same time, the species breeds so well in captivity that several European zoos and animal parks have a surplus of animals that can no longer be easily accommodated. Reintroduction of the Barbary macaque into natural habitat in Morocco and Algeria has been suggested as a solution both to captive overpopulation and the decline of wild populations, but this is fraught with a variety of difficulties.

To summarize what is known of this species and to develop solutions to both the captive and wild conservation problems, PSG member John Fa organized a conference on the Barbary macaque, which was held from June 16-20, 1982 in Gibraltar. Papers were presented on the behavior, ecology and conservation of wild populations, and on the status of captive populations and their potential role in conservation of the species in the wild. Resolutions were passed, and a strategy was developed to ensure the long-term survival of this monkey.

Proceedings of the conference will be published in the WWF-US/PSG *Primate Conservation Monograph Series* to be launched later this year.

John E. Fa

Forest Conservation in Cameroon: the Current Situation

The government of Cameroon is officially committed to the creation of three new National Parks in the forest zone of the country; Korup (#1 on accompanying map), Pangar-Djerem (2) and Dja (3). These three parks will complement the five already existing in the savanna zone (4-8). The extent of government commitment may be gauged from the budgetary allocation to the General Delegation for Tourism for the creation and study of these three parks and for their development. For the first category an allocation of 200 million francs CFA (\$700,000 US) and for the second 350 million francs CFA (\$1.2 million US) has been made. It is expected that the project will take some six years to complete. The sequence in which the parks will be created is Korup first, followed by Pangar-Djerem and finally by Dja.

The administrative sequence that must be followed in the gazetting of new National Parks in Cameroon is established by government decree. This is a fairly straightforward, if lengthy, process culminating in public hearings at which objections to the plan by interested parties (including villagers living inside the park area who must be resettled) must be resolved. Then the boundaries of the new park are published in the official gazette, and the park is created by Pres-

idential Decree. The final public meeting was held 15th June 1982 and at this time the villagers living inside the park agreed to a resettlement plan. This information was forwarded officially to the Presidency and it is expected that the final step, publication of the boundaries and the Presidential Decree, will very shortly follow.

The new park of Korup is located in a Pleistocene refuge area, and is accordingly exceptionally rich both florally and faunally. The area of the park will be increased by some 30% to 125,000 hectares from the area of the current Forest Reserve.

At this point, government has recruited 10 game guards, principally from the villages affected by the establishment of the new park, and has trained them at the Wildlife School, Garoua. They have now been back in Korup for two months, are being paid by government, and are protecting the fauna of the park.

At the end of this year, during the brief dry season, it is hoped to begin resettlement of the villagers from the southern part of the new National Park. Resettlement sites have been selected. It is also proposed to begin construction of the park headquarters and of the trail system within the park.

The second park to be created, Pangar-Djerem, is on the forest-savanna boundary and includes examples of the flora and fauna of both ecotypes. The current area of the reserve is some 400,000 hectares. Surveys will have to be carried out in order to determine the optimum size of the National Park. A well-entrenched population of professional poachers within the area will make the establishment of this park the most difficult of the three. Meat poached from the reserve is taken by train for sale in the capital of Yaounde.

The final park, Dja, is located in the center-south of the country. It is almost completely surrounded by the Dja River and thus forms a natural unit, being virtually isolated by the river. It is thus expected that few, if any, changes will have to be made to current boundaries. The size of the area is approximately 400,000 hectares. The forest type is transitional between that characteristic of the coastal strip and that found in the Congo basin. The primate fauna is rich and includes a population of western gorillas as well as of pygmies.

The importance of this project for primate conservation may be seen from the following statistics. The three parks together contain at least 26 different species of primate ranging in size from Demidoff's bushbaby to the western gorilla. There are approximately 50 species of primate in Africa (the exact total depending on taxonomic preference). These three parks will protect at least half, and probably more, of the primate species of Africa — most of them with populations large enough to be viable in the long-term. This represents about one-seventh of the world's extant primate species. It would not be overstating the case to say that this is a key-stone project for the long-term conservation of Africa's primates.

J.S. Gartlan

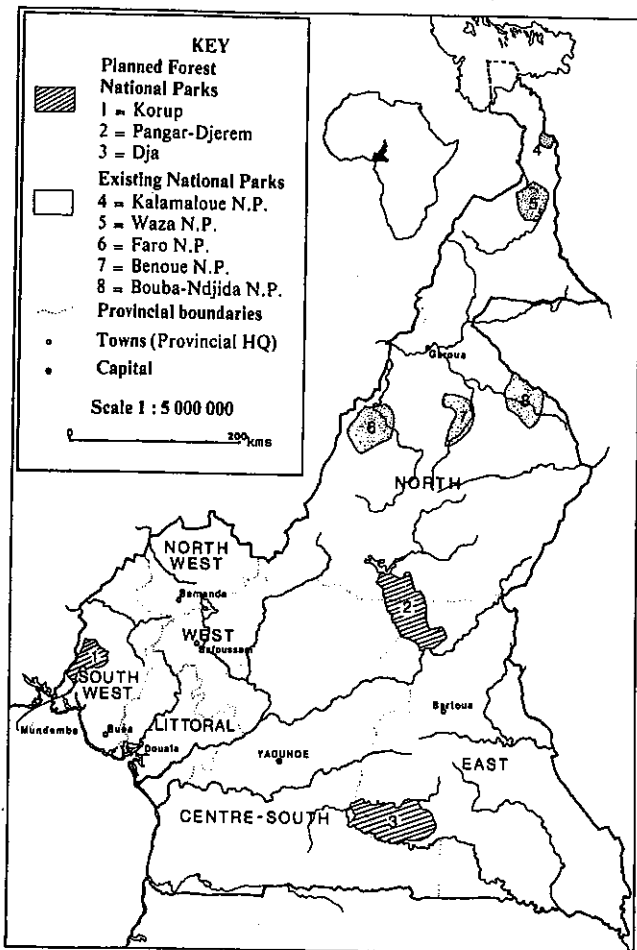


Figure 8: Map of Cameroon showing the location of existing and planned national parks.

Update on the Status of India's Lion-Tailed Macaque

The lion-tailed macaque (*Macaca silenus* — Fig. 9) is the most endangered Indian primate and one of the world's most endangered monkeys. Its status in the wild and the outlook for captive populations was the subject of a conference held in the Baltimore Zoo from May 19-21, 1982 and attended by a number of Indian, American and European specialists. The proceedings of the conference will be published as a supplement of the *American Journal of Primatology* and further details can be obtained from the conference organizer, Paul G. Heltne.

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A summary of the status of the lion-tailed macaque was given by PSG member, Rauf Ali. He indicated that there are definitely 61 known groups of this species distributed among five main areas in the Western Ghats range of south India. Given an average of 11 animals per group, there would be a minimum of 670 animals in the wild. Censusing is difficult, and an accurate estimate of the total population is not yet at hand, but it is unlikely to exceed 2000 animals.

The major threats to the survival of the species are habitat destruction and poaching. Habitat destruction in this area includes conversion to tea, coffee and rubber plantations, and some selective felling, the effects of which remain to be determined. Hydroelectric projects have also contributed substantially to habitat destruction. The main reason for poaching is the mistaken belief that the lion-tailed macaque's flesh has medicinal properties.

Four areas probably contain over 75% of the total wild population, and have been earmarked for conservation action. Additions to existing sanctuaries and national parks are needed in each of these areas:

1. Agasthyamalai, the southernmost part of the Western Ghats
2. The Nilgiri western slopes
3. The Anaimalai Hills
4. Periyar Tiger Reserve and adjacent areas

All of these areas appear to have populations of less than 500 animals, a number that some experts consider the minimum needed to maintain genetic diversity. However, an increase in protection would substantially improve the existing situation in all of the areas. In addition, a major research effort is required to assess the consequences of various forestry practices on lion-tailed macaques, and to gather information on the demography, ecology and behavior of wild populations. Education programs in the most important areas are also vital.

One research project is already underway, and is being conducted by PSG member, Ajith Kumar. Educational campaigns are planned as part of this project and also by another PSG member, J. Mangalraj Johnson. These campaigns will make use of stickers, posters, t-shirts and other materials to increase awareness of the importance of the lion-tailed macaque as a local, regional and national symbol, and to point out that its flesh does not have medicinal properties.



Figure 9. The lion-tailed macaque (*Macaca silenus*) from south India (photo by R.A. Mittermeier in the Delhi Zoo).

Rauf Ali

Five Year Management Plan Prepared for Conservation Area on Siberut, Mentawai Islands, Sumatra

In the October, 1981 issue of the PSG Newsletter, there was brief mention of the progress in establishing a nature reserve on Siberut, largest island in the Mentawai group lying west of Sumatra. Siberut and the other three Mentawais have been isolated from the mainland since Pleistocene times. Life evolved there independently from that on the Sunda shelf landmass, resulting in many endemic plants and animals, including four primates — a supposedly primitive gibbon, the *bilou* (*Hylobates klossi*); a macaque (*Macaca pagensis* — Fig. 10b), smaller and darker than the common pig-tailed macaque on Sumatra and locally known as *bokkoi*; a langur (*Presbytis potenziani*) known as *joja* and the only Old World monkey known to be exclusively monogamous; and the pig-tailed langur or *simakobu* (*Simias concolor* — Fig. 10a), whose closest living relative appears to be the proboscis monkey from Borneo, over 1,000 km away. The Mentawai Islands have the largest number of endemic primates species per unit area of all the islands of the world, including even Madagascar. However, the Mentawai archipelago is relatively small, the islands together having an area only slightly greater than that of Bali.

Traditionally, the indigenous people of Siberut were animists, believing that all things, both animate and inanimate, possess a spirit that can wander at will. They believe in

an environment where all spirits are in harmonious contact until man's activities have disturbed the balance. Consequently, they have developed complex rituals for restoring the balance and reducing disturbance caused by their actions. Hunting primates and other game is an activity surrounded by ritual, and primate skulls strung across rafters of field houses and decorated with leaf garlands, are believed to have magical properties. Regulations traditionally controlled the hunting of all game, but in many areas customs are beginning to break down. The forest-based economy of the indigenous people does not involve great dependence on clearing fields for survival, and the people enjoy a remarkably stable relationship with the land. Their system of agriculture requires that small patches of forest be felled but not burned, thus allowing nutrients to be released slowly back into an otherwise poor soil and preventing erosion due to heavy rainfall.

While commercial logging has rapidly altered the natural ecosystem and culture of the southern islands, Siberut remains largely undisturbed, though logging is an increasing threat. A timber concession within the reserve has not yet been cancelled and although cutting has stopped, it may resume at any time. Other problems result from the long, drawn out shape of the 56,000 ha reserve, which makes it dif-



Figure 10: Two of the endemic primate species from the Mentawai Islands, Sumatra (photos by Arthur Mitchell). A. Infant simakobu (*Simias concolor*). B. Juvenile bokkoi (*Macaca pagensis*).

difficult to manage and vulnerable to future disturbance from splitting. Several species of animals are threatened with local extinction, among them the pig-tailed langur, which is among the world's rarest primates. The Indonesian government has recently given high priority to halting further destruction by renegotiating concessions and by establishing nearly one third of the 4,500 km² island as a conservation area zoned for both strict protection and traditional use by the indigenous people. Logging concessions will be limited to areas outside the reserve, and rattan collection is coming under regulation. To assist the government's Director of Nature Conservation (PPA), WWF/IUCN recently prepared a five year management plan for the reserve as a follow-up to an earlier, preliminary master plan. This plan describes the island, provides an evaluation of present conditions and problems, and prescribes management for an additional conservation area, or *Kawasan Pelestarian Alam*. The duration of the management plan is from April, 1983 to March, 1988.

It is well known that the protection and conservation of this tropical forest ecosystem is dependent upon meeting the needs of the indigenous people who consider a healthy forest the basic element of their culture and subsistence economy. The primary aims of management of the reserve can be summarized as follows:

- 1) to maintain ecological and genetic diversity in the functioning lowland tropical rainforest where the variety of existing ecosystems, flora and fauna are preserved;
- 2) to benefit local people by respecting customary rights to forest within the reserve and traditional use which does not threaten the conservation value of the reserve;
- 3) to integrate the reserve into a regional land use plan for the Mentawai Islands that ensures both long term conservation and local socioeconomic development; and
- 4) to utilize the qualities of the reserve to their best advantage through training and research that promotes the first three objectives.

Proper management of Mentawai primate populations will require considerable research as well as maintenance of good relations with the traditional hunting society. With the modern disintegration of traditional rituals and taboos surrounding the hunting of primates, a once acceptable balance between hunter and hunted is becoming unstable and may lead to extinctions without the implementation of new controls. The management plan recommends that traditional hunting of two of the four primates be allowed to continue with regulation. However, both the gibbon and the pig-tailed langur should be protected from all hunting, and the ban should be strictly enforced throughout Mentawai. Although

both the macaque and the Mentawai langur are totally protected within the core zones of the reserve, hunting of these two species by traditional methods (bow and arrow) may continue in the other zones of the reserve as well as outside the reserve on Siberut. However, this may be done only in accordance with PPA regulations and permits issued through the village leaders. Hunting of either species may be banned at any time in any part of the guard districts or outside the reserve if PPA determines that local populations cannot sustain continued hunting. Due to rapid modernization of some areas of Siberut, a partial or total ban on hunting of primates should be considered by PPA at the end of the period covered by this plan. At that time, a complete review of the data from reserve guards' primate survey reports from the preceding five years should be made to determine the advisability of a new primate management program. A total ban on export of Mentawai primates must continue to be enforced. Confiscated Siberut primates that are too young or tame to be released into the forest should be given by PPA preferably to only one or two Indonesian zoos, perhaps Ragunan or Surabaya, where breeding groups could be developed and properly cared for. Captive breeding of the southern subspecies of *Simias* and *Presbytis* from the islands of Sipora and Pagai should be given highest priority in a separate program because these animals are quite rare and their habitat is rapidly being destroyed. A hunting ban for all four species also should be put into effect in the southern islands.

An important part of the strategy for management is the establishment of the entire island as an MAB Biosphere Reserve. With the agreement of Indonesia's Director of Nature Conservation, the Indonesian MAB Committee, which was formed in 1974 by LIPI (the Indonesian Institute of Sciences), proposed that the island be included with the MAB International Network of Important Environmental Research Sites. The International Coordinating Council of UNESCO's MAB Program in Paris officially declared the island a Biosphere Reserve on December 15, 1981. The local program is to be administered by the Environmental Study Center of Andalas University in Padang, West Sumatra. The cooperation of Indonesian development planners, university environmentalists and local people is needed for the design and management of a Biosphere Reserve on Siberut that will benefit the indigenous population while supporting the aim of conservation and species protection. The result of a successful project could provide an excellent case of the integration of conservation and development in an emerging society that would serve as a model for similar situations in other parts of the world. Continuing international interest in and attention to Siberut is vital to the success of this plan.

Arthur Mitchell

Survey of Sarawak's Proposed Lanjak-Entimau Wildlife Sanctuary Indicates Presence of Important Orangutan Population

The first PSG Newsletter discussed plans for a WWF/IUCN-sponsored survey of Sarawak's proposed Lanjak-Entimau Wildlife Sanctuary (Fig. 11), a 168,755 ha tract of relatively inaccessible upland forest that is expected to become the last stronghold for the orangutan (*Pongo pygmaeus*) in this East Malaysian state. The survey was conducted between late August and early November, 1981, by personnel of the National Parks and Wildlife Office of the Sarawak Forest Dept. and a five member team of biologists sponsored by WWF-Malaysia. The project was divided into two parts, an intensive survey at a single location in the core of the proposed sanctuary and shorter surveys of human activity and attitudes along river emanating from the interior.

The population of orangutans in Lanjak-Entimau is considered viable, though perhaps below the area's carrying capacity because of illegal hunting. The results of an aerial survey of nests revealed that orangutans may in fact be more widespread in and around this area than was expected. Other than the Lanjak-Entimau population, orangutans in Sarawak are known only from distinct pockets of lowland forest in a highly accessible area where the habitat is being destroyed rapidly by timber exploitation and shifting cultivation.

In addition to orangutans, the Lanjak-Entimau area has at least 42 other mammal species and 165 bird species, among them a number that are legally protected in Sarawak: the Bornean grey gibbon (*Hylobates muelleri*), the Bornean tarsier (*Tarsius bancanus*), seven of Sarawak's eight hornbill species, the grey-headed fish eagle and the great argus. Hearsay evidence had suggested the presence of the Sumatran rhinoceros in Lanjak-Entimau as well, but this could not be confirmed.

A widespread, sophisticated concern for conservation was found to exist among the local Iban people living along the

rivers, but there was some confusion about conservation regulations. The native population, in general, favored establishment of a sanctuary, but only if traditional utilization was allowed and exploitation by foreigners prevented.

A draft management plan for Lanjak-Entimau has been prepared and circulated for comment. The next step involves review of the plan by a government-appointed Commission of Enquiry. Once the commission has made its recommendations, formal declaration of the sanctuary is expected to follow.

Michael Kavanagh

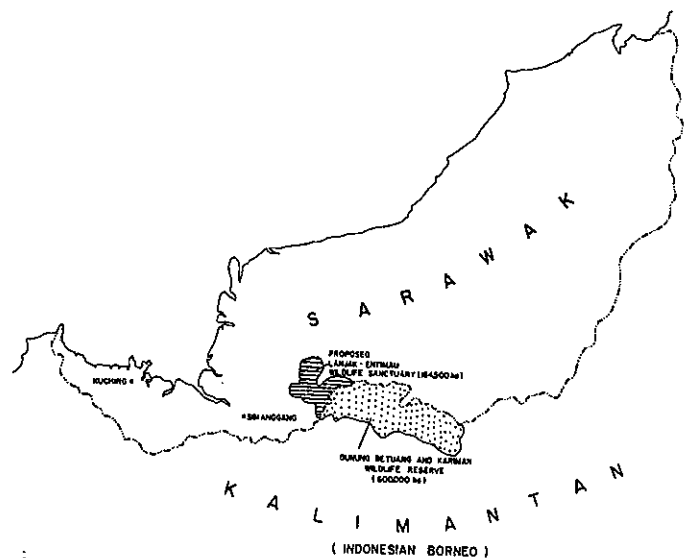


Figure 11. Map of Sarawak showing the location of the proposed Lanjak-Entimau Wildlife Sanctuary.

APPENDIX 1

Membership List — IUCN/SSC Primate Specialist Group

At the present time, the IUCN/SSC Primate Specialist Group is composed of 79 members from 25 countries that include all the major geographical areas in which primates occur*. A list of current members and their addresses is given here:

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APPENDIX 2

Project Proposal Format — Request for Funds from WWF and IUCN

I. Project Proposal Summary

1. Date of Submission: date of sending project to WWF/IUCN
2. Name and address of originator: give office and home address, telephone numbers and telex number when available.
3. Title: short and precise.
4. Name and address of Project leader (s): as in 2 above.
5. Project period: period from which financial support is requested, for example: January, 1982-July, 1983.
6. Funds requested: Give budget both in US \$ and in local currency.
7. Endorsements: Institutional: give names of Institutions and; Governmental: organizations which support the project.
8. Abstract: succinct account of justification, background, objectives, expected results and intended follow-up.

II. Project Proposal Description

1. Justification

Demonstrate that the proposal (a) is *important* to IUCN and WWF (why it is needed), (b) is *urgent* (why it is needed now), (c) is *feasible* (it can be done), (d) produces benefits for people in the project area or elsewhere (e.g. through provision of jobs, income from tourism, improved land management, enhancement of cultural values, provision of educational and training facilities).

2. Background

2.1 Brief Description

A general description of the topic (i.e. area, species, institution) sufficient for its identification.

2.2 Conservation problems

Give details of imminent or potential problems or dangers. This description should justify the need for the project and should provide indications on the degree of urgency of the activities to be undertaken. If possible, it should be supported by documentary evidence, drawings, maps, etc. which should be listed under this item and presented as an appendix.

2.3 Other factors relevant to the project

- a) historical aspect: provide information on past work undertaken on this subject;
- b) present aspect: provide information on related work, and the current status of related projects, including those of intergovernmental, governmental and non-governmental organizations;
- c) legal status (where applicable): indicate the category of ownership (public or private) and, in the case of privately owned land, whether public acquisition is in process or being considered. Private details of protective, legal and administrative measures envisaged or already taken for the conservation of the area or a species. Give details on the state of human occupancy of the conservation area and its accessibility to the public. Give details on legal status of species in relation to its utilization (if this is not applicable please state n/a).

2.4 Objectives

Define what the project is meant to achieve, in terms of both its immediate and long-term results.

2.5 Success indicators

Specify in detail what will be available after completion of the project, by which achievements of the project can be determined.

3. Proposed Implementation

3.1 Activities

Describe in specific terms the activities to be undertaken under the project.

3.2 Workplan and Timetable

Present workplan in the form of a timetable which covers the duration of the project and indicate when the main activities, phases or tasks start and are to be completed. Each stage should be easily identifiable and directly related to the stated objectives (please cross-reference).

3.3 Equipment Utilization

Justify the need for any equipment requested.

3.4 Involvement of Local Resources

- a) government agencies: indicate which governmental organizations in the country in question support the project, if any. Describe also in what way they would participate and/or how they would use the results.
- b) funds: indicate if government and/or non-governmental organizations in the country or other agencies have been approached for financial support. If so, indicate amount (in US \$) and donor.
- c) non-governmental: indicate which non-governmental organizations in the country in question support the project, if any. Describe also in what way they would participate and/or how they would use the results.
- d) people: indicate in what way and to what extent local people will be involved, for example as counterparts. If the project is to be carried out in a foreign country by expatriates, this must be justified.

3.5 Environmental Education and Training

- a) Indicate what measures in the field of public awareness and conservation education/information might be incorporated into the project so as to make its purpose understood by the local people and authorities to secure support for the project, and to promote the cause of conservation generally.
- b) training element, as in a)

3.6 Reports and publications

Indicate if the project will lead to a publication for general distribution. If this is an essential component of the project and requires funding, identify potential distribution and specify the costs for preparation of the manuscript.

Estimates for printing and distribution will be established by WWF/IUCN following a decision on the desirability of giving the results of the project broader dissemination.

Indicate if the project, apart from above, may provide the basis for a paper in a scientific journal. IUCN and WWF will welcome the publication of such papers, providing due credit is given.

3.7 References

Give names and addresses of people who endorse the project, or who may provide supporting information on the proposal.

3.8 Literature

List relevant literature in alphabetical order.

III. Managerial Aspects of the Project Proposal

1. Personnel

1.1 Project Leader

Give name, title, institutional affiliation of the person(s) who will carry out the project. Attach brief curriculum vitae (qualifications) and personal histories for each investigator.

1.2 Project Administrator

Name, title and address of the person or organization responsible for the administration of the project.

2. Budget

2.1 Estimated Costs (in local currency and US \$ equivalent)

These should be listed under the following categories (where applicable). Appropriate justification of each expenditure must be provided in the project description:

- i. Project personnel costs

- ii. Travel and subsistence costs

- iii. Equipment (itemize)

- iv. Telephone, telex, postage

- v. Publication costs

- vi. Other (itemize)

2.2 Payment Schedule

Timing of payments should be indicated preferably by quarters of the year.

2.3 Payment Method

Bank account for payment: give name, address, telephone number and telex number of bank, and name and number of account (alternatively payment can be made by mailed cheque).

Note: Originator must check locally that the proposed method of payment will not result in unnecessary delays in receiving funds.

3. Other Resources Available

3.1 Financial

Disclose which other funds you have available.

3.2 Other

Indicate what other support (e.g. equipment, free transport, accommodation) you have obtained, including services in kind.

4. Other Resources Applied for:

4.1 Financial

4.2 Other

