Summary of the *Status of South Asian Primates*

Compiled by Sally Walker and Sanjay Molur

Illustrations by Arnab Roy

Credits

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The IUCN/SSC Primate Specialist Group was represented by the Vice-chair for Asia

Other organizers and collaborators were:

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Artwork by Arnab Roy.

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Status of South Asian Primates

Conservation Assessment and Management Plan (C.A.M.P.)
Workshop for South Asian Primates held in Coimbatore, India, March 2002

Introduction
The South Asian region (once called the Indian subcontinent) consists of seven countries (Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka), which constitutes an area of very high biodiversity. This is attested by the fact that Mittermeier, et al. (1999) have identified two mainland “hotspots” within the region, e.g. Western Ghats and Eastern Himalaya. The region’s biodiversity is threatened by developmental enthusiasm adopted by South Asian governments, and also by intermittent ethnic and political clashes. Primates, among other taxa, are facing varying degrees of extinction threats in the region. South Asia can claim 43 primate taxa, of which 2 are endemic species, 28 are endemic subspecies, 3 are endemic populations, 3 are non-endemic species and 7 are non-endemic subspecies.

In 1997, a C.A.M.P. Workshop for Indian Mammals, including 15 primate species which occur in India, was conducted as part of a larger project for India, the Biodiversity Conservation Prioritisation Project (BCPP). These assessments of endemic Indian primates were accepted by the IUCN SSC Primate Specialist Group (PSG) which sent it to IUCN SSC to be included in the 2000 IUCN Red List. The mammal workshop, of necessity, could include only a few primate specialists, as more than 400 mammals of India from all mammal groups had to be assessed. Therefore, five years later it was decided to conduct an entirely primate-focused C.A.M.P. Review of the 1997 assessments of Indian primates and a regional assessment of all primates of South Asia using IUCN Red List Criteria and Categories.

Primates form an integral part of biodiversity and a cognizable link between humans and nature. In South Asia several Hindu epics and plays of ancient times feature primates as integral to the philosophy of these works. This bond of kinship still exists between primates and humans in the region, which can be used to benefit biodiversity conservation by focusing on primates as flagship species. In addition, assessing the status of primates in this Workshop has not only provided conservation focus for this important taxonomic group regionally, but will also assist participating nations with a national assessment of primates for their country’s biodiversity strategy.

Extensive efforts were made to contact all primate field biologists and foresters through their Chief Wildlife Wardens, and to collect information from other sources both published and unpublished. Primate field biologists and foresters from the range countries were prioritised for inclusion in the workshop.
The C.A.M.P. Process

The Conservation Assessment and Management Plan (C.A.M.P.) Process was developed by the IUCN SSC Conservation Breeding Specialist Group (CBSG) initially to assist zoos to prioritise species for conservation breeding.

Now C.A.M.P.s are tools for other uses as well, such as for assessing the conservation status of species and also for national biodiversity strategic activities.

A C.A.M.P. workshop brings together a variety of professional wildlife managers, biologists, academicians, non-governmental organisations, zoo managers, etc. -- all "stakeholders" because their vocation or avocation concerns the vital issues which come up in such a workshop.

The "stakeholders" contribute several types of information which is used by the workshop to evaluate the current status of species, populations and habitats and make recommendations for specific conservation-oriented research, management and public education.

C.A.M.P.s are run according to a philosophy of sharing information, resolving conflict, putting conservation of species first and achieving consensus to forward conservation action. There is a set of Groundrules (opposite page) which people commit to follow so that the workshop runs efficiently.

C.A.M.P.s are very different and exciting kinds of workshops. Participants often work long into the night and agonise over minute details for days, but generally feel that they have contributed to a very useful product at the end.

The C.A.M.P. Process

The C.A.M.P. Process was developed by the IUCN SSC Conservation Breeding Specialist Group (CBSG). It includes assembling experts such as wildlife managers, SSC Specialist Group members, representatives of the academic community or private sector, researchers, captive managers and other stakeholders who provide the most current information in order to a) assign species and subspecies to IUCN Categories of Threat; b) formulate broad-based management recommendations, and c) develop more comprehensive management and recovery programs in situ and/or ex situ. Extensive review is carried out by participants who desire to do so before the final Report is compiled and finalised.

The 2001 IUCN Red List Criteria (Version 3.1)

C.A.M.P. workshops use the most recent version of the IUCN Red List Criteria and Categories and, where appropriate, the IUCN SSC Guidelines for Application of IUCN Red List Criteria at Regional Levels, as tools in assessing the status of a group of taxa. In the last decade IUCN has improved the method of assessing taxa by incorporating numerical values attached to the different criteria for threat categories. The 2001 version of the Red List Criteria and Categories use a set of five criteria (population reduction; restricted distribution, continuing decline and fluctuation; restricted population and continuing decline; very small population; and probability of extinction) to determine the threatened categories, which are Critically Endangered (CR), Endangered (EN) and Vulnerable (VU). Other categories are Extinct (EX), Extinct in the Wild (EW), Near Threatened (NT), Least Concern (LC), Data Deficient (DD) and Not Evaluated (NE).

The Workshop

A Conservation Assessment and Management Plan Workshop for South Asian Non-human Primates was held during 5-9 March 2002 at the State Forest Service College (SFSC) in Coimbatore, India. About 50 participants including field biologists and taxonomists from all over South Asia participated along with four Indian zoo personnel and two members of the IUCN SSC Primate Specialist Group from USA and UK. The workshop could take advantage of new information from the Indo-US Primate Project in India (USFWS/MoEF), the Primate Biology Program (Smithsonian Institution) in Sri Lanka and several other, smaller projects.

The South Asian Primate C.A.M.P. was endorsed by the IUCN SSC Primate Specialist Group, the IUCN SSC Conservation Breeding Specialist Group, the IUCN SSC Regional Biodiversity Programme (RBP), Asia and the Indo-US Primate Project.

The primary focus of the workshop was endemic primate taxa of South Asia which number 33 in 2 families, e.g. Cercopithecidae (25 taxa) and Loridae (7 taxa). These taxa were prioritised for first attention. Non-endemic primates were also covered, using the Regional Guidelines for Application of IUCN Red List Criteria at sub-global level. National assessments for species with distribution in more than one country were done.

The draft manuscript of the most recent taxonomic revisions by Brandon-Jones et al. (2002, recently published in Zoo's Print Journal, August 2004) as well as Colin Groves (2001) publication, stimulated intensive discussion at the workshop. The problem with both taxonomic systems was that some taxa, which had been considered as one species for some years and surveyed as such, had been split into several species (in the case of Groves) and subspecies (in the case of Brandon-Jones) and, on the other hand, some known subspecies had been ignored. It was decided to use the most recent draft of the Brandon-Jones et al. work with a few modifications as the workshop taxa list. Agreement on the final workshop species and subspecies list was the result of a consensus among taxonomists and a broad spectrum of field biologists that actually lived and worked in these species’ ranges and were familiar, in many cases through close study, with the primates under consideration.
A selection of zoo directors were exposed to the revised taxonomy for the first time and deliberated on the effect of these revisions on their conservation strategy. The first steps toward a Primate Captive Action Plan for the whole of South Asia was initiated.

**Workshop objectives**

-- Networking of all South Asian primatologists – academics, government agencies, non-governmental organizations and institutions, zoos, selected individuals and other stakeholders.
-- Providing an opportunity for all stakeholders, particularly those native to South Asia, to actively participate in a process that results in the derivation of the conservation status of primate taxa of the region using the IUCN Red List Criteria and Categories.
-- Deriving an accurate IUCN category for all South Asian primate taxa based on available information – published or unpublished – as a rapid assessment providing adequate documentation as required by the IUCN Red List protocol.
-- Drafting specific taxon-based and habitat-based action plans for the protection of the primates and their habitat.
-- Identifying immediate needs for practical conservation-oriented steps for follow-up.

The Workshop drew upon the collective expertise of local primate researchers gathered in a large group, perhaps the most representative ever for the South Asian Region. The "regional" focus, in which field biologists from at least four of the South Asian countries were brought together, had the real advantage of permitting discussion on trans-national issues of taxa ranging between countries.

The output from the workshop was submitted to the PSG Vice Chair for Asia for submission to IUCN Red List of Threatened Species 2003. This is a valuable practical application of data from local field biologists and primate students from South Asia and a credit to their work.

**Methods for assessment**

Primates are relatively well-studied in some South Asian countries so an innovation in this C.A.M.P. was to provide a separate spread sheet for listing all known localities, instead of a few lines as normally is provided in the Taxon Data Sheets. For some species such as Hoolock Gibbon, Golden Langur, Rhesus and Bonnet Macaques, and all Sri Lankan primates, participants filled more than three long pages with locality data. This very detailed locality data, which was coordinated with maps, made it possible for participants to correctly identify subspecies surveyed and assess them. Participants completed this demanding task before filling out their Taxon Data Sheets.

Data forms called "Biological Information Sheets" were distributed to all invitees and many who were not in a position to attend in person returned these forms with current information. Information from all sources was recorded in the C.A.M.P. Data Entry Programme for review by participants.

In a C.A.M.P., most of the work is done in working groups and reviewed in several plenary sessions. In this workshop the groups were organised by region with a South India Group, a North-East Alliance (including northeastern India, Nepal and Bangladesh), a North-Central Group (also included Nepal), and a Sri Lanka Group.

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**C.A.M.P. Ground Rules for Group Interaction**

*Participate ... don’t dominate; give all a chance to contribute*

*Set aside all special agendas except conserving the taxa under assessment*

*Assume good intent of all participants. Treat other participants with respect*

*Stick to the schedule... begin and end promptly*

*The primary work will be conducted in sub-groups*

*Facilitators of plenary sessions or working groups can call 'time out' when discussions reach an impasse or stray too far off the topic at hand*

*Agreements or recommendations are reached by consensus*

*Plan to complete and review of draft report by the end of the meeting*

*Flexibility is the key. We adjust our process and schedule as needed to achieve goals.*
THE IUCN RED LIST CATEGORIES, Ver. 3.1

EXTINCT (EX)
A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon’s life cycle and life form.

EXTINCT IN THE WILD (EW)
A taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity or as a naturalized population (or populations) well outside the past range. A taxon is presumed Extinct in the Wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon’s life cycle and life form.

CRITICALLY ENDANGERED (CR)
A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered (see inside front and back cover pages), and it is therefore considered to be facing an extremely high risk of extinction in the wild.

ENDANGERED (EN)
A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered (see inside front and back cover pages), and it is therefore considered to be facing a very high risk of extinction in the wild.

VULNERABLE (VU)
A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable (see inside front and back cover pages), and it is therefore considered to be facing a high risk of extinction in the wild.

NEAR THREATENED (NT)
A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.

LEAST CONCERN (LC)
A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.

DATA DEFICIENT (DD)
A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. It is important to make positive use of whatever data are available. In many cases great care should be exercised in choosing between DD and a threatened status. If the range of a taxon is suspected to be relatively circumscribed, and a considerable period of time has elapsed since the last record of the taxon, threatened status may well be justified.

NOT EVALUATED (NE)
A taxon is Not Evaluated when it is has not yet been evaluated against the criteria.
## Status of South Asian Primates 2002

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Loridae</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Loris lydekkerianus lydekkerianus</td>
<td>Mysore Slender Loris</td>
<td>Near Threatened</td>
</tr>
<tr>
<td>2. Loris lydekkerianus malabaricus</td>
<td>Malabar Slender Loris</td>
<td>Near Threatened</td>
</tr>
<tr>
<td>3. Loris tardigradus grandis</td>
<td>Highland Slender Loris</td>
<td>Endangered</td>
</tr>
<tr>
<td>4. Loris tardigradus norticus</td>
<td>Dry Zone Slender Loris</td>
<td>Endangered</td>
</tr>
<tr>
<td>5. Loris tardigradus nycticeboides</td>
<td>Highland Slender Loris</td>
<td>Endangered</td>
</tr>
<tr>
<td>6. Loris tardigradus tardigradus</td>
<td>Red Slender Loris</td>
<td>Endangered</td>
</tr>
<tr>
<td>7. Nycticebus bengalensis</td>
<td>Slow Loris</td>
<td>Data Deficient (R)</td>
</tr>
<tr>
<td><strong>Cercopithecidae</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Macaca arctoides</td>
<td>Stump-tailed Macaque</td>
<td>Critically Endangered (R)</td>
</tr>
<tr>
<td>9. Macaca assamensis assamensis</td>
<td>Eastern Assamese Macaque</td>
<td>Endangered (R)</td>
</tr>
<tr>
<td>10. Macaca assamensis, Nepal population</td>
<td>Assamese Macaque</td>
<td>Endangered</td>
</tr>
<tr>
<td>11. Macaca assamensis pelops</td>
<td>Western Assamese Macaque</td>
<td>Endangered</td>
</tr>
<tr>
<td>12. Macaca fascicularis aurea</td>
<td>Long-tailed Macaque</td>
<td>Critically Endangered (R)</td>
</tr>
<tr>
<td>13. Macaca fascicularis umbrosa</td>
<td>Nicobar Long-tailed Macaque</td>
<td>Near Threatened</td>
</tr>
<tr>
<td>14. Macaca leonina</td>
<td>Northern Pig-tailed Macaque</td>
<td>Endangered (R)</td>
</tr>
<tr>
<td>15. Macaca mulatta mulatta</td>
<td>Indian Rhesus Macaque</td>
<td>Least Concern (R)</td>
</tr>
<tr>
<td>16. Macaca radiata diluta</td>
<td>Pale-bellied Bonnet Macaque</td>
<td>Least Concern</td>
</tr>
<tr>
<td>17. Macaca radiata radiata</td>
<td>Dark-bellied Bonnet Macaque</td>
<td>Least Concern</td>
</tr>
<tr>
<td>18. Macaca silenus</td>
<td>Lion-tailed Macaque</td>
<td>Endangered</td>
</tr>
<tr>
<td>19. Macaca sinica aurifrons</td>
<td>Wetzone Toque Macaque</td>
<td>Endangered</td>
</tr>
<tr>
<td>20. Macaca sinica opisthomelas</td>
<td>Hill Zone Toque Macaque</td>
<td>Endangered</td>
</tr>
<tr>
<td>21. Macaca sinica sinica</td>
<td>Dryzone Toque Macaque</td>
<td>Endangered</td>
</tr>
<tr>
<td>22. Semnopithecus (Trachypithecus) johnii johnii</td>
<td>Nilgiri Langur</td>
<td>Vulnerable</td>
</tr>
<tr>
<td>23. Semnopithecus entellus achatas</td>
<td>Western Hanuman Langur</td>
<td>Least Concern</td>
</tr>
<tr>
<td>24. Semnopithecus entellus ajax</td>
<td>Himalayan Grey Langur</td>
<td>Critically Endangered</td>
</tr>
<tr>
<td>25. Semnopithecus entellus anchises</td>
<td>Deccan Hanuman Langur</td>
<td>Near Threatened</td>
</tr>
<tr>
<td>26. Semnopithecus entellus entellus</td>
<td>Bengal Hanuman Langur</td>
<td>Near Threatened</td>
</tr>
<tr>
<td>27. Semnopithecus entellus hector</td>
<td>Lesser Hill Langur</td>
<td>Endangered</td>
</tr>
<tr>
<td>28. Semnopithecus entellus hypoleucos</td>
<td>Dark-legged Malabar Langur</td>
<td>Endangered</td>
</tr>
<tr>
<td>29. Semnopithecus entellus schistaceus</td>
<td>Central Himalayan Langur</td>
<td>Near Threatened (R)</td>
</tr>
<tr>
<td>30. Semnopithecus priam priam</td>
<td>Coromandel Grey Langur</td>
<td>Vulnerable</td>
</tr>
<tr>
<td>31. Semnopithecus priam thersites¹</td>
<td>Grey Langur</td>
<td>Endangered</td>
</tr>
<tr>
<td>32. Semnopithecus priam thersites²</td>
<td>Grey Langur</td>
<td>Endangered</td>
</tr>
<tr>
<td>33. Trachypithecus geei</td>
<td>Golden Langur</td>
<td>Endangered</td>
</tr>
<tr>
<td>34. Trachypithecus obscurus phayrei</td>
<td>Phayre’s Langur</td>
<td>Endangered (R)</td>
</tr>
<tr>
<td>35. Trachypithecus pileatus brahmanus</td>
<td>Buff-bellied Langur</td>
<td>Data Deficient</td>
</tr>
<tr>
<td>36. Trachypithecus pileatus durga</td>
<td>Orange-bellied Capped Leaf Monkey</td>
<td>Endangered</td>
</tr>
<tr>
<td>37. Trachypithecus pileatus pileatus</td>
<td>Blonde-bellied Capped Leaf Monkey</td>
<td>Endangered (R)</td>
</tr>
<tr>
<td>38. Trachypithecus pileatus tenebricus</td>
<td>Tenebrous Capped Leaf Monkey</td>
<td>Endangered</td>
</tr>
<tr>
<td>39. Trachypithecus vetulus monticola</td>
<td>Montane Purple-faced Langur</td>
<td>Endangered</td>
</tr>
<tr>
<td>40. Trachypithecus vetulus nestor</td>
<td>Western Purple-faced Langur</td>
<td>Critically Endangered</td>
</tr>
<tr>
<td>41. Trachypithecus vetulus philbricki</td>
<td>Dry Zone Purple-faced Langur</td>
<td>Endangered</td>
</tr>
<tr>
<td>42. Trachypithecus vetulus vetulus</td>
<td>Southern Lowland Wetzone</td>
<td>Endangered</td>
</tr>
<tr>
<td><strong>Hylobatidae</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43. Bunopithecus hoolock hoolock</td>
<td>Hoolock Gibbon</td>
<td>Endangered (R)</td>
</tr>
</tbody>
</table>

(R) - Regional Assessment for South Asia; the remaining species have been assessed globally

¹ Indian population;
² Sri Lankan population

<table>
<thead>
<tr>
<th>Category</th>
<th>Total #</th>
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<tbody>
<tr>
<td>Critically Endangered (CR)</td>
<td>4</td>
</tr>
<tr>
<td>Endangered (EN)</td>
<td>25</td>
</tr>
<tr>
<td>Vulnerable (VU)</td>
<td>2</td>
</tr>
<tr>
<td>Near Threatened (NT)</td>
<td>6</td>
</tr>
<tr>
<td>Least Concern (LC)</td>
<td>4</td>
</tr>
<tr>
<td>Data Deficient (DD)</td>
<td>2</td>
</tr>
<tr>
<td>Not Evaluated (NE)</td>
<td>0</td>
</tr>
</tbody>
</table>
### Status of South Asian primates with IUCN categories and criteria.

<table>
<thead>
<tr>
<th>Scientific taxon name</th>
<th>Status, 2002</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Loridae</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Loris lydekkerianus lydekkerianus</td>
<td>Near Threatened</td>
<td>-</td>
</tr>
<tr>
<td>2. Loris lydekkerianus malabaricus</td>
<td>Near Threatened</td>
<td>-</td>
</tr>
<tr>
<td>3. Loris tardigradus grandis</td>
<td>Endangered</td>
<td>A2cd+4cd; B1ab(i,ii,iii,iv,v)+ 2ab(i,ii,iii,iv,v)</td>
</tr>
<tr>
<td>4. Loris tardigradus nordicus</td>
<td>Endangered</td>
<td>A2cd+4cd</td>
</tr>
<tr>
<td>5. Loris tardigradus nycticeboides</td>
<td>Endangered</td>
<td>A2cd+4cd; B1ab(i,ii,iii,iv,v)</td>
</tr>
<tr>
<td>6. Loris tardigradus tardigradus</td>
<td>Endangered</td>
<td>A2cd+4cd</td>
</tr>
<tr>
<td>7. Nycticebus bengalensis</td>
<td>Data Deficient in SA</td>
<td>-</td>
</tr>
<tr>
<td><strong>Cercopithecidae</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Macaca arctoides</td>
<td>Critically Endangered in SA</td>
<td>C2a(i)</td>
</tr>
<tr>
<td>9. Macaca assamensis assamensis</td>
<td>Endangered in SA</td>
<td>C2a(i)</td>
</tr>
<tr>
<td>10. Macaca assamensis (Nepal population)</td>
<td>Endangered</td>
<td>B1a+b((i,ii,iii,v); C2a(i))</td>
</tr>
<tr>
<td>11. Macaca assamensis pelops</td>
<td>Endangered</td>
<td>B1ab(i,ii,iii)+2ab(i,ii,iii); C2a(i)</td>
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<tr>
<td>12. Macaca fascicularis aurea</td>
<td>Critically Endangered in SA</td>
<td>A2c+3c+4c; B2ab(i,ii,iii,iv,v); D</td>
</tr>
<tr>
<td>13. Macaca fascicularis umbrosa</td>
<td>Near Threatened</td>
<td>-</td>
</tr>
<tr>
<td>14. Macaca leonina</td>
<td>Endangered in SA</td>
<td>C2a(i)</td>
</tr>
<tr>
<td>15. Macaca mulatta mulatta</td>
<td>Least Concern in SA</td>
<td>-</td>
</tr>
<tr>
<td>16. Macaca radiata diluta</td>
<td>Least Concern</td>
<td>-</td>
</tr>
<tr>
<td>17. Macaca radiata radiata</td>
<td>Least Concern</td>
<td>-</td>
</tr>
<tr>
<td>18. Macaca silanus</td>
<td>Endangered</td>
<td>C2a(i)</td>
</tr>
<tr>
<td>19. Macaca sinica aurifrons</td>
<td>Endangered</td>
<td>A2cd+4cd</td>
</tr>
<tr>
<td>20. Macaca sinica opisthomelas</td>
<td>Endangered</td>
<td>A2cd+4cd; B1ab(i,ii,iii,iv,v) +2ab(i,ii,iii,iv,v)</td>
</tr>
<tr>
<td>21. Macaca sinica sinica</td>
<td>Endangered</td>
<td>A2cd+4cd</td>
</tr>
<tr>
<td>22. Semnopithecus (T.) johnii johnii</td>
<td>Vulnerable</td>
<td>C2a(i)</td>
</tr>
<tr>
<td>23. Semnopithecus entellus achates</td>
<td>Least Concern</td>
<td>-</td>
</tr>
<tr>
<td>24. Semnopithecus entellus ajax</td>
<td>Critically Endangered</td>
<td>B1ab(iii,v)+2ab(iii,v)</td>
</tr>
<tr>
<td>25. Semnopithecus entellus anchises</td>
<td>Near Threatened</td>
<td>-</td>
</tr>
<tr>
<td>26. Semnopithecus entellus entellus</td>
<td>Near Threatened</td>
<td>-</td>
</tr>
<tr>
<td>27. Semnopithecus entellus hector</td>
<td>Endangered</td>
<td>B2ab(i,ii,iii,iv,v)</td>
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<tr>
<td>28. Semnopithecus entellus hypoleucos</td>
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<td>B2ab(ii,iii)</td>
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<tr>
<td>29. Semnopithecus entellus schistaceus</td>
<td>Near Threatened in SA</td>
<td>-</td>
</tr>
<tr>
<td>30. Semnopithecus priam priam</td>
<td>Vulnerable</td>
<td>B2ab(i,ii,iii,iv,v)</td>
</tr>
<tr>
<td>31. Semnopithecus priam thersites (India)</td>
<td>Endangered</td>
<td>B2ab(ii,iii,iv,v)</td>
</tr>
<tr>
<td>32. Semnopithecus priam thersites (Sri Lanka)</td>
<td>Endangered</td>
<td>A2cd+4cd</td>
</tr>
<tr>
<td>33. Trachypithecus geei</td>
<td>Endangered</td>
<td>B1ab(i,ii,iii,iv,v); C1+2a</td>
</tr>
<tr>
<td>34. Trachypithecus obscursus phayrei</td>
<td>Endangered in SA</td>
<td>C1+2a(i)</td>
</tr>
<tr>
<td>35. Trachypithecus pileatus brahma</td>
<td>Data Deficient</td>
<td>-</td>
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<tr>
<td>36. Trachypithecus pileatus durga</td>
<td>Endangered</td>
<td>C1+2a(i)</td>
</tr>
<tr>
<td>37. Trachypithecus pileatus pileatus</td>
<td>Endangered in SA</td>
<td>C1+2a(i); D</td>
</tr>
<tr>
<td>38. Trachypithecus pileatus tenebricus</td>
<td>Endangered</td>
<td>C2a(i)</td>
</tr>
<tr>
<td>39. Trachypithecus vetulus monticola</td>
<td>Endangered</td>
<td>A2cd+4cd; B1ab(ii,iii,iv,v)</td>
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<tr>
<td>40. Trachypithecus vetulus nestor</td>
<td>Critically Endangered</td>
<td>A2cd+4cd+4cd</td>
</tr>
<tr>
<td>41. Trachypithecus vetulus philbricki</td>
<td>Endangered</td>
<td>A2cd+4cd</td>
</tr>
<tr>
<td>42. Trachypithecus vetulus vetulus</td>
<td>Endangered</td>
<td>A2cd+4cd</td>
</tr>
<tr>
<td><strong>Hylobatidae</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43. Bunopithecus hoolock hoolock</td>
<td>Endangered in SA</td>
<td>A2abcd+3bcd; C1+2a(i)</td>
</tr>
</tbody>
</table>
Loris tardigradus grandis, Endangered; Criteria: A2cd+4cd; B1ab(i,ii,iii,iv)+2ab(ii,iii,iv,vy).
Meaning: Population declined by more than 50% over last three generations and continuing to decline at the same rate due to decline in area, extent and/or quality of habitat, and due to exploitation; Restricted extent and area in fragmented locations with continuing decline in extent, area, quality of habitat, locations or subpopulations and mature individuals.

Loris tardigradus nordicus, Endangered; Criteria: A2cd+4cd.
Meaning: Population declined by more than 50% over last three generations and continuing to decline at the same rate due to decline in area, extent and/or quality of habitat, and due to exploitation.

Loris tardigradus nycticeboides, Endangered; Criteria: A2cd+4cd; B1ab(i,ii,iii,iv).
Meaning: Population declined by more than 50% over last three generations and continuing to decline at the same rate due to decline in area, extent and/or quality of habitat, and due to exploitation; Restricted extent in fragmented locations with continuing decline in extent, area, quality of habitat, locations or subpopulations and mature individuals.

Loris tardigradus tardigradus, Endangered; Criteria: A2cd+4cd.
Meaning: Population declined by more than 50% over last three generations and continuing to decline at the same rate due to decline in area, extent and/or quality of habitat, and due to exploitation.

Macaca arctoides, Critically Endangered in SA; Criteria: C2ai(i).
Meaning: Small population with <50 mature individuals in each subpopulation.

Macaca assamensis assamensis, Endangered in SA; Criteria: C2a(i).
Meaning: Small population with <250 mature individuals in each subpopulation.

Macaca assamensis Nepal population, Endangered; Criteria: B1ab(i,ii,iii,iv); C2a(i). Meaning: Restricted extent in fragmented locations with continuing decline in extent, area, quality of habitat, and mature individuals. Small population with <250 mature individuals in each subpopulation.

Macaca assamensis pelops, Endangered; Criteria: B1ab(i,ii,iii,iv); C2a(i). Meaning: Restricted extent and area in fragmented locations with continuing decline in extent, area, quality of habitat, and mature individuals. Small population with <250 mature individuals in each subpopulation.

Macaca fascicularis aurea, Critically Endangered in SA; Criteria: A2c+3c+4c; B2ab(i,ii,iii,iv,v). D. Meaning: Population declined by more than 80% over last three generations, continuing to decline at the same rate and predicted to decline at the same rate due to a decline in area, extent and/or quality of habitat; Restricted area in fragmented locations with continuing decline in extent, area, quality of habitat, locations or subpopulations and mature individuals; Very small population.

Macaca leonina, Endangered in SA; Criteria: C2ai(i).
Meaning: Small population with <250 mature individuals in each subpopulation.

Macaca silenus, Endangered; Criteria: C2ai(i).
Meaning: Small population with <250 mature individuals in each subpopulation.

Macaca sinica aurifrons, Endangered; Criteria: A2cd+4cd.
Meaning: Population declined by more than 50% over last three generations and continuing to decline at the same rate due to decline in area, extent and/or quality of habitat, and due to exploitation.

Macaca sinica opisthomelas, Endangered; Criteria: A2cd+4cd; B1ab(i,ii,iii,iv)+2ab(ii,iii,iv,vy).
Meaning: Population declined by more than 50% over last three generations and continuing to decline at the same rate due to decline in area, extent and/or quality of habitat, locations or subpopulations and mature individuals.

Macaca sinica sinica, Endangered; Criteria: A2cd+4cd.
Meaning: Population declined by more than 50% over last three generations and continuing to decline at the same rate due to decline in area, extent and/or quality of habitat, and due to exploitation.

Semnopithecus (T.) johnii johnii, Vulnerable; Criteria: C2ai(i).
Meaning: Small population with <1,000 mature individuals in each subpopulation.

Semnopithecus entellus axaj, Critically Endangered; Criteria: B1ab(ii,iii,iv)+2ab(ii,iv).
Meaning: Restricted extent and area in fragmented locations with continuing decline in extent, area, and quality of habitat and mature individuals.

Semnopithecus entellus hector, Endangered; Criteria: B2ab(i,ii,iii,iv,vy).
Meaning: Restricted area in fragmented locations with continuing decline in extent, area, quality of habitat, locations or subpopulations, and mature individuals.

Semnopithecus entellus hypoleucus, Endangered; Criteria: B2ab(i,ii,iii).
Meaning: Restricted area in fragmented locations with continuing decline in extent, area, quality of habitat, locations or subpopulations, and mature individuals.

Semnopithecus priam priam, Vulnerable; Criteria: B2ab(i,ii,iii,iv,vy).
Meaning: Restricted area in fragmented locations with continuing decline in area and quality of habitat.

Semnopithecus priam priam, Vulnerable; Criteria: B2ab(i,ii,iii,iv,vy).
Meaning: Restricted area in fragmented locations with continuing decline in extent, area, quality of habitat, locations or subpopulations and mature individuals.

Semnopithecus priam thersites (India), Endangered; Criteria: B2ab(i,ii,iii,iv,vy).
Meaning: Restricted area in fragmented locations with continuing decline in extent, area, quality of habitat, locations or subpopulations and mature individuals.

Semnopithecus priam thersites (Sri Lanka), Endangered; Criteria: A2cd+4cd.
Meaning: Population declined by more than 50% over last three generations and continuing to decline at the same rate due to decline in area, extent and/or quality of habitat, and due to exploitation.

Trachypithecus geei, Endangered; Criteria: B1ab(i,ii,iii,iv,vy); C1+2a(ii).
Meaning: Restricted extent in fragmented locations with continuing decline in extent, area, quality of habitat, locations or subpopulations and mature individuals. Small population with <250 mature individuals in each subpopulation declining at least 20% over two generations.

Trachypithecus obscurus phayrei, Endangered in SA; Criteria: C1+2a(ii).
Meaning: Small population with <250 mature individuals in each subpopulation declining at least 20% over two generations.

Trachypithecus pileatus durga, Endangered; Criteria: C1+2a(ii).
Meaning: Small population with <250 mature individuals in each subpopulation declining at least 20% over two generations.

Trachypithecus pileatus pileatus, Endangered in SA; Criteria: C1+2a(ii).
Meaning: Small population with <250 mature individuals in each subpopulation declining at least 20% over two generations; Very small population of less than 250 mature individuals.

Trachypithecus pileatus tenebricus, Endangered; Criteria: C2a(i).
Meaning: Small population with <250 mature individuals in each subpopulation.

Trachypithecus vetulus monticola, Endangered; Criteria: A2cd+4cd; B1ab(i,ii,iii,iv,vy).
Meaning: Population declined by more than 50% over last three generations and continuing to decline at the same rate due to decline in area, extent and/or quality of habitat, and due to exploitation; Restricted extent in fragmented locations with continuing decline in extent, area, quality of habitat, locations or subpopulations and mature individuals.

Trachypithecus vetulus nester, Critically Endangered; Criteria: A2cd+3cd+4cd.
Meaning: Population declined by more than 80% over last three generations and continuing to decline at the same rate and predicted to decline at the same rate due to a decline in area, extent and/or quality of habitat, and due to exploitation.

Trachypithecus vetulus philibricki, Endangered; Criteria: A2cd+4cd.
Meaning: Population declined by more than 50% over last three generations and continuing to decline at the same rate due to decline in area, extent and/or quality of habitat, and due to exploitation.

Trachypithecus vetulus vetulus, Endangered; Criteria: A2cd+4cd.
Meaning: Population declined by more than 50% over last three generations and continuing to decline at the same rate due to decline in area, extent and/or quality of habitat, and due to exploitation.

Bunopithecus hoolock hoolock, Endangered in SA; Criteria: B2abcd+3bcd, C1+2a(ii).
Meaning: Observed population declined by more than 50% over last three generations and continuing to decline at the same rate due to decline in area, extent and/or quality of habitat, and due to exploitation; Small population with <250 mature individuals in each subpopulation declining at least 20% over two generations.

* Refer to the inside front and back covers for IUCN criteria
South Asian primate taxonomy

Higher primate taxonomy remains unsettled and debatable. Extensive basic taxonomic research is still required. In the Asian Colubinae, for example, the number of genera and their species composition are disputed. Dissent over generic status influences the output of a C.A.M.P. workshop only in deciding the generic nomenclature adopted. Dissonance at lower taxonomic levels directly dictates the number of populations assessed and their geographic distribution. The C.A.M.P. workshop purpose was not to resolve these issues, but some participants possessed information which could clarify some of the problems.

One available classification was selected as the basis for the taxonomy followed by the workshop, so that the adopted generic arrangement would be apparent, and assessed taxa could be identified a precise definition of each taxon without including in the report. Where the workshop felt obliged to digress in any respect from the selected classification, this is specified and explained later in the report.

The objective of the C.A.M.P. workshop was not merely to assess the conservation status of primate species, but also that of the smallest primate populations considered potentially recognizably as distinct taxa. Such populations are usually termed subspecies, but where their status is equivocal, the term “evolutionary significant unit” or “ESU” has been used. To facilitate this objective, it was appropriate to select a work which included an Asian primate subspecific classification. This unfortunately eliminated two major works: Corbet and Hill (1992) and Groves (1993), which otherwise would have suited as widely known, recently published, reasonably consensual classifications. Ellerman and Morrison-Scott (1966) does include a subspecific classification, but its generic, specific and subspecific arrangement has been largely superseded by more recent research and therefore to employ it would have involved a considerable amount of documented modification, effectively creating a new classification. The only remaining options seemed to be to follow Groves (2001) or the species and subspecies list adopted by the C.A.M.P. participants based on Brandon-Jones et al. (2002,draft) and some older literature (like Hill, 1934).

Workshop participants decided to follow the work of Brandon-Jones et al. (2002, draft, when the C.A.M.P. was conducted) because two of the authors involved in the compilation of that report (“Primate Taxonomy for the New Millennium”, held at the Disney Institute, Orlando, Florida, USA, from 25-29 February 2000), Douglas Brandon-Jones and Aridith Eudey, were participants at the C.A.M.P. workshop and were able to respond to questions about this compilation. This classification had the added advantage of already having been adopted by the IUCN/SSC Primate Specialist Group as the basis for the 2001 Asian Primate Red List, and will be followed in the forthcoming list. Unlike Groves (2001), the Orlando workshop also made a concerted effort to identify all populations potentially recognizable as taxa, bringing it more in line with the objectives of the C.A.M.P. workshop.

Concern was expressed over the adoption of the generic name Semnopithecus for the Indian langurs. Some participants seemed to feel that, as there is still controversy over whether Trachypithecus is generically separable from Semnopithecus, the safer option would be to retain Presbytis, the generic name employed until recently. Brandon-Jones assured the workshop that, although a consensus might eventually decide to retain Trachypithecus in Semnopithecus, there is no longer any likelihood that Semnopithecus will remain in Presbytis. Presbytis is now firmly established as the generic name denoting a distinct group of species, including Presbytis melalophos, restricted to the Malay Peninsula and archipelago.

The absence of taxonomic clarity related in particular to the Hanuman langur, for example, apart from explaining the motivation behind the Orlando report, and providing general advice on Asian primate taxonomy, the chief task for Brandon-Jones was to overcome skepticism at the recognizability of Semnopithecus entellus subspecies. Most participants seemed unaware that the official tally, as sanctioned by Ellerman and Morrison-Scott (1966), is fifteen subspecies.

List of primates listed in 2001
Red List of Threatened Species

<table>
<thead>
<tr>
<th>Family</th>
<th>Genus</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loridae</td>
<td>Loris tardigradus lydekkerianus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loris tardigradus malabaricus</td>
<td></td>
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<tr>
<td></td>
<td>Loris tardigradus</td>
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<td></td>
<td>Loris tardigradus nordicus</td>
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<tr>
<td></td>
<td>Loris tardigradus nycticeboïdes</td>
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<tr>
<td></td>
<td>Loris tardigradus tardigradus</td>
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<tr>
<td></td>
<td>Nycticebus bengalensis</td>
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<tr>
<td>Cercopithecidae</td>
<td>Macaca arctoides</td>
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<td>Macaca assamensis</td>
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<td></td>
<td>Macaca assamensis assamensis</td>
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<td>Macaca assamensis pelops</td>
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<tr>
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<td>Macaca fascicularis</td>
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<td>Macaca fascicularis aurea</td>
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<td>Macaca fascicularis umbrosa</td>
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<td>Macaca leonina</td>
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<td>Macaca mulatta</td>
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<td></td>
<td>Macaca radiata</td>
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<td>Macaca radiata diluta</td>
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<tr>
<td></td>
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<td>Macaca silenus</td>
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<td>Macaca sinica aurifrons</td>
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<td>Semnopithecus entellus</td>
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<td>Semnopithecus entellus schistaceus</td>
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<td>Trachypithecus pileatus</td>
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<td>Trachypithecus pileatus brahma</td>
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<td>Trachypithecus pileatus durga</td>
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<td></td>
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<td></td>
<td>Trachypithecus pileatus tenenticus</td>
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<td></td>
<td>Trachypithecus vetulus</td>
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<td>Trachypithecus vetulus monticola</td>
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<td>Trachypithecus vetulus nestor</td>
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<td>Trachypithecus vetulus philbricki</td>
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<td></td>
<td>Trachypithecus vetulus vetulus</td>
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</tr>
<tr>
<td>Hyllobatidae</td>
<td>Bunipithecus hoolock</td>
<td></td>
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<tr>
<td></td>
<td>hoolock</td>
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</tbody>
</table>
Some participants evidently doubted the existence of more than one subspecies, and were under the misapprehension that recognized subspecies are of recent inception. The reverse is actually the case and both Groves (2001) and the Orlando workshop have reduced the number of recognized Indian langur taxa. Groves (2001) recognized seven, the Orlando workshop recognized ten. No subspecies have been described since 1928 and at present there is no indication that any more remain to be described. Those that exist are distinct. Their recognition by Groves (2001) as seven species is not unreasonable. There is no question that the conservation status of each one should be separately assessed, and zoos should make efforts to avoid hybridizing them. Brandon-Jones had inadequate time to prepare a detailed report on Indian langur subspecies before the C.A.M.P. workshop, but discussion with participants, field observations and a stop-over at Mumbai, allowing an examination of the Bombay Natural History Society Asian colobine collection, enabled him to combine this with other information already in his possession and a literature survey to produce a review of the subspecies, which is published in August 2004 Zoos’ Print Journal. This is the subspecific classification followed in the C.A.M.P. report.

Results
From the previous figure of 15 taxa recognized in South Asia (Molur et al., 1998), the current number of primate taxa stand at 43. The 2002 IUCN Red List of Threatened Species lists almost the same number of taxa of primates as assessed in this workshop. However, the assessments differ due to better and more current information available at the C.A.M.P. The overall status of primates as a group in South Asia is that 31 of the 43 taxa (73%) are threatened! Two of the 12 non-threatened species lack any information for a meaningful status assessment and therefore are classified as Data Deficient. A summary of primate taxa assessed in South Asia is provided on pages 5 and 6 along with the criteria for assessing the threatened taxa.

Thirty-three (77%) of the 43 primates are endemic to South Asia. Their representation in different countries within the region is indicated in page 14. India tops the list with 13 endemic taxa followed by Sri Lanka with 12 endemic primate subspecies. Nepal has one endemic primate population, while 8 primate taxa are distributed in more than one country within South Asia. India and Sri Lanka have one common subspecies of Semnopithecus priam thersites, but are assessed separately as 2 endemic populations. Comparing the status of endemics within India and Sri Lanka, all primates in Sri Lanka are threatened while 59% of the Indian primate taxa are threatened. In all 24 of the 33 endemic South Asian primates are threatened (73%). Restricted distribution and rapid habitat degradation are the main reasons for threatened endemic primate taxa in Sri Lanka, while in other countries of South Asia, endemic primates are mainly threatened due to restricted distribution.

Non-endemic primates taxa (10) were assessed for only the South Asian region. Regional guidelines of the IUCN Red List Criteria were applied as per Gärdenfors et al. (2001). Mainly distributed in the northeastern part of India and Bangladesh, these taxa have a range extending into southeastern Asia. Bunopithecus hoolock (previously called Hylobates hoolock) has a distribution extending beyond Myanmar into Thailand. The nominate subspecies found in South Asia (Bangladesh, Bhutan and India) also extends into Myanmar, but only up to the western banks of Chindwin River. Similarly, Nycticebus bengalensis, 5 Macaca taxa, 2 Trachypithecus subspecies and 1 Semnopithecus subspecies occur beyond South Asia. Since in most cases the distribution of the taxa is fragmented due to various reasons, the status in South Asia was derived using the regional guidelines, which either retained the global status for the taxa or increased the level of threat category in case of the South Asia population being a sink.

Endemic species by country

<table>
<thead>
<tr>
<th>Country</th>
<th>Endemic</th>
<th>Total spp</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
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</tr>
<tr>
<td>Nepal</td>
<td></td>
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<tr>
<td>Sri Lanka</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Endemic primates were assessed according to the diagram below:

No. of Endemics by country

<table>
<thead>
<tr>
<th>Country</th>
<th>Endemic</th>
<th>Total spp</th>
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</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Bhutan</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>India</td>
<td>13</td>
<td>29</td>
</tr>
<tr>
<td>Maldives</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Nepal</td>
<td>1</td>
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<td>2</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>
Threats

No primate in South Asia is beyond threat. All the Critically Endangered, Endangered and Vulnerable taxa are under severe pressure due to different threats acting upon them, while the non-threatened taxa still face threats of some kind. The facing page lists all threats identified for the taxa at the workshop. The list for most taxa is similar with the exception of site-specific threats. Habitat loss is one major threat that affects primates throughout the region.

Habitat loss due to logging, agriculture, development, habitation, industry, commerce and fragmentation has resulted in many taxa being threatened almost beyond hope. A summary of threats is given in the adjacent column for primates in South Asia. Seventy-six percent of the threats are habitat related and 24% are population related. Primates are under tremendous pressure because of continuing decline in habitat, which is more obvious in some regions than others. Northeastern India and Bangladesh face a continuing crisis with loss of habitat for primates due to such factors as illegal encroachments, clear-felling for human settlements, logging for firewood and mining. This has resulted in many forested areas becoming fragmented, discontinuous and inhospitable for primate migration. In various cases, the degree of threat to the habitat is reflected in very small population counts in restricted areas of specialized primates such as Hoolock Gibbons. Primates inherently are shy and require a fair component of the habitat including canopy trees and food trees for maintaining a healthy group size and for dispersal. Lack of continuous forests such as in the northeast has disturbed the population dynamics and is now a major threat.

Habitat loss in the past has resulted in reduced numbers of primates at present. Sri Lanka lost nearly half its forests in 40 years – forests that used to be home for primates. This amount of loss has been used as a basis to calculate population declines among primates there, which means that most of Sri Lankan primate taxa are threatened, usually Endangered.

Loss of habitat quality is another major threat identified for almost all primate taxa, although the effects of change in quality is not reflected in threat perception of a taxon. Man-made fires, minor forest produce collections, eco-tourism, human settlements in and around forest, among other activities, can cause changes to the quality of habitat, which in turn have a negative effect on many primate taxa.

Population declines were of concern with respect to all Sri Lankan primates and a number of mainland primates in South Asia. Due to loss of habitat over many years in the past, population trends were assessed based on correlations with habitat trends. Although no statistical interpretation was carried out to correlate the two, an understanding of the extent of habitat available in the past to that in the present gives an indication of the population trends.

Other threats to primates in the region are mainly from trade, accidental mortality, hunting/harvest. Primates are hunted for meat, medicine and in case of lorises particularly, as bad omen in different regions, a common significant threat to all primates. Reasons for hunting vary by region. Primates in the northeast are hunted mainly for food and for medicinal purposes, while in other regions they are hunted for reasons such as crop protection or as a taboo. Already impoverished populations of primates suffer from hunting, which could eventually lead to early local extinctions. Trade is an issue for only a few taxa, which may be taken for biomedical research or the pet trade. A summary of primates hunted and in trade is provided on page 13.
Threats affecting primates in South Asia, taxonomy by taxon

**Loridae**

*Loris lydekkerianus lydekkerianus*
Mysore Slender Loris
Hunting, traditional medicine, road kills, biomedical research, habitat loss, as bad omen.

*Loris lydekkerianus malabaricus*
Malabar Slender Loris
Hunting for trade, as bad omen, biomedical and laboratory research, habitat loss.

*Loris tardigradus grandis*
Highland Slender Loris
Clear-cutting, deliberate fires, trade, habitat loss by use of chemicals in agriculture. Koslanda, Thangamalai and Kotmale locations are heavily clearcut for timber and for other plantations. Increasing visitor pressure.

*Loris tardigradus nordicus*
Dry Zone Slender Loris
Hunting for folk medicine, habitat loss.

*Loris tardigradus nycticeboides*
Highland Slender Loris
Land and water pollution, habitat loss due to agriculture, dairy husbandry, vegetable cultivation.

*Loris tardigradus tardigradus*
Red Slender Loris
Deforestation due to urbanisation.

**Nycticebus bengalensis**
Slow Loris
Fisheries, habitat loss due to building roads, dams, power lines, fragmentation, soil loss/erosion, deliberate fires, hunting and trade for food, traditional medicine, and sport, accidental mortality, trapping, human interference, predators.

**Cercopithecidae**

*Macaca assamensis*
Assamese Macaque

*Macaca assamensis pelops*
Western Assamese Macaque

*Macaca fascicularis aurea*
Long-tailed Macaque
Aquaculture, agriculture, mangrove removal, human settlement, deforestation. Teknaf Peninsula population is completely decimated due to development activities (ship-building).

*Macaca fascicularis umbrosa*
Nicobar Long-tailed Macaque

*Macaca leonina*
Northern Pig-tailed Macaque
Selective logging, firewood and charcoal production, fisheries, timber extraction, building roads, dams, power lines, forest fragmentation, soil loss/erosion, deliberate fires, hunting and trade for sport, food and medicine cultural use, accidental mortality, deliberate fires, predators, habitat loss, jhuming, encroachment.

*Macaca mulatta melasa*
Indian Rhesus Macaque

*Macaca radiata diluta*
Pale-bellied Bonnet Macaque

*Macaca radiata radiata*
Dark-bellied Bonnet Macaque
Macaca silenus
Lion-tailed Macaque
Roads, dams, power lines, deforestation, fragmentation, crop plantations, agriculture, mining, hunting for food, trapping, habitat loss, changes in native species dynamics, pathogens/parasites, delayed sexual maturity and long inter-birth interval, inbreeding. Landslide is a future threat. In private forests and plantations, change in land use is a problem for the species.

Macaca sinica aurifrons
Wet Zone Toque Macaque
Deforestation and habitat loss (large plantations and estates, that might have harboured some pocketed populations, are being reduced into smaller holdings unsuitable to support macaque groups or populations), shooting, snaring, poisoning as this animal is considered a pest.

Macaca sinica opisthomelas
Hill Zone Toque Macaque
Habitat loss due to agriculture (coffee and tea plantation) in the past, fuel wood collection, vegetable plantations, encroachment, animal husbandry.

Macaca sinica sinica
Dry Zone Toque Macaque
Mortality by poisoning, habitat loss.

Semnopithecus (Trachypithecus) johnii johnii
Nilgiri Langur

Semnopithecus entellus achatas
Western Hanuman Langur
Agriculture, habitat loss, man-animal conflict.

Semnopithecus entellus ajax
Himalayan Grey Langur
Past threats: Overgrazing, building roads through forests, lopping, deforestation, agriculture, fire. Present and future threats: Agriculture and development.

Semnopithecus entellus anchises
Deccan Hanuman Langur
Agriculture, habitat loss, man-animal conflict, wildfires.

Semnopithecus entellus entellus
Bengal Hanuman Langur
Agriculture, habitat loss, man-animal conflict in Bangladesh.

Semnopithecus entellus hector
Lesser Hill Langur
Mining, stone mining, firewood and charcoal collection production, timber collection, land distribution (resettlement) for landless people.

Semnopithecus entellus hypoleucos
Dark-legged Malabar Langur

Semnopithecus entellus schistaceus
Central Himalayan Langur
Timber, firewood and charcoal production, habitat loss.

Semnopithecus priam priam
Cormandel Grey Langur
Hunting, habitat loss.

Semnopithecus priam thersites
Grey Langur (India population)
Power lines, roads, human settlement, accidental mortality, habitat loss.

Semnopithecus obscurus phayrei
Phayre’s Langur
Timber plantations, livestock ranching, shifting agriculture, firewood collection and charcoal production, selective logging, timber collection, human settlement, deforestation, fragmentation, trade, killed by domestic dogs, habitat loss, high juvenile mortality, inbreeding.

Trachypithecus geei
Golden Langur
Crop plantations, grazing, harvesting non-woody vegetation for firewood and charcoal production, selective logging, timber collection, human settlement, deforestation, fragmentation, collecting, illegal hunting for food, habitat loss, pesticides / chemical pollution, industrial pollution, inbreeding.

Trachypithecus pileatus brahma
Buff-bellied Langur
Not known.

Trachypithecus pileatus durga
Orange-bellied Capped Leaf Monkey
Crop plantations, timber, selective logging, firewood and charcoal production, human settlement, building roads, dams, power lines, deliberate fires, soil loss / erosion, fragmentation, hunting for sport, meat and traditional medicine, trapping, human interference, predators.

Trachypithecus pileatus pileatus
Blonde-bellied Capped Leaf Monkey
Shifting agriculture, grazing, plantations, agriculture, timber, selective logging, firewood and charcoal production, human settlement, building roads, dams, power lines, deliberate fires, soil loss / erosion, forest fragmentation, hunting for sport, food and traditional medicine, accidental mortality, trapping, human interference, predators, habitat loss, poor reproduction.

Trachypithecus pileatus tenebricus
Tenebricus Capped Leaf Monkey
Crop plantations, grazing, shifting agriculture, timber, roads, soil loss / erosion, deforestation, hunting for traditional medicine and food, poisoning, hooking, human interference, habitat loss.

Trachypithecus vetulus monticola
Montane Purple-faced Langur
Deforestation, fragmentation and habitat loss (crop plantation, development, human settlement) & hunting subsistence or small scale cash.

Trachypithecus vetulus nestor
Western Purple-faced Langur
Crop plantations, development (infrastructure, industry), human settlement, deforestation, fragmentation, illegal trade for food, pylon collision, habitat loss.

Trachypithecus vetulus philbricki
Dry Zone Purple-faced Langur
Shifting agriculture, deforestation, human settlement, development, hunting for food, habitat loss, occasional cyclones in far northeastern areas of range.

Trachypithecus vetulus vetulus
Southern Lowland Wet Zone Purple-faced Langur
Selective logging (wet zone forests in 1970s), human settlement, habitat loss (encroachment for agriculture/plantation/human habitation). Ill-conceived government organised translocation schemes of langur groups coming into conflict with man, pose a threat to taxon survival and overall biodiversity.

Hyllobatidae
Bunopithecus hoolock hoolock
Hoolock Gibbon
Selective logging, firewood and timber collection, charcoal production, human settlement, roads, dams, powerlines, fragmentation, soil loss / erosion, deliberate fires, cultural use, hunting for food, sport and traditional medicine, trapping (accidental mortality), unplanned tourism, predators (alien invasive species), habitat loss, poor reproduction.
Threats -- Hunting and Trade of Primates

**Loris lydekkerianus lydekkerianus**
Hunting, traditional medicine, biomedical research. Local and commercial trade for ears and as live animals for medicine, pet, zoos, road shows and research. Trade for medicine is a major threat.

**Loris lydekkerianus malabaricus**
Hunting as a taboo, for trade, biomedical and laboratory. Local, commercial and domestic trade for eyes, fur/skin, for medicinal purposes and live animal trade as pets for zoos, for road shows.

**Loris tardigradus grandis**
Hunting. Local (commercial) trade for eyes for folk medicine, meat for food.

**Loris tardigradus nordicus**
Hunting for folk medicine. Local and commercial trade for eyes, meat for food and as an aphrodisiac.

**Loris tardigradus nycticeboides**
Hunting. Local and commercial trade for eyes and meat by tea plantation workers. Possible village level trade for folk medicine.

**Loris tardigradus tardigradus**
Hunting. Local, domestic, commercial trade for meat.

**Nycticebus bengalensis**
Hunting and trade for food, traditional medicine, and sport. Local trade for meat, food and medicine, live animal as pets.

**Macaca arctoides**
Hunting and trade for food, sport and traditional medicine. Local trade for bones, meat for food, live animal as pets.

**Macaca assamensis assamensis**
Hunting for sport, hunting and trade for food and traditional medicine. Local trade for bones, meat for food and live animal as pets. Trade for meat is resulting in population decline.

**Macaca assamensis Nepal population**
Not in trade.

**Macaca assamensis pelops**
Hunting. Local trade as pets, domestic trade in bushmeat.

**Macaca fascicularis aurea**
Not in trade.

**Macaca fascicularis umbrosa**
Not known.

**Macaca leonina**
Hunting and trade for sport, food and medicine cultural use. Local trade for bones, meat for food and medicine, live animal as pets and for zoos.

**Macaca mulatta mulatta**
Hunting. Local trade for meat for food, whole animal for pets and road shows. Hunted for sustenance.

**Macaca radiata diluta**
Hunting. Local trade in live animals for research and road shows.

**Macaca radiata radiata**
Hunting. Domestic and commercial trade for research and road shows.

**Macaca silenus**
Hunting for food. Local trade for whole animal for pets. The taxon is hunted for sustenance for food near Amarambalam. There are reports of LTM used in medicine also.

**Macaca sinica aurifrons**
Not in trade.

**Macaca sinica opisthomelas**
Probably not in trade for meat.

**Macaca sinica sinica**
Hunting. Highly localised.

**Semnopithecus (Trachypithecus) johnii johnii**
Hunting. Local trade for live animal for pets, meat for food and medicine.

**Semnopithecus entellus achates**
Not in trade.

**Semnopithecus entellus ajax**
Not in trade.

**Semnopithecus entellus anchises**
Not in trade.

**Semnopithecus entellus entellus**
Not in trade.

**Semnopithecus entellus hector**
Not in trade.

**Semnopithecus entellus hypoleucos**
Hunting. Local trade for live animal, meat for food and medicine.

**Semnopithecus entellus schistaceus**
Not in trade.

**Semnopithecus priam priam**
Hunting. Local trade in meat and in live animal.

**Semnopithecus priam thersites**
India population. Not in trade.

**Semnopithecus priam thersites**
Sri Lanka population.

**Hunting for food. Local and commercial trade for meat. Taxon hunted for sustenance/subsistence living for food, threat has recently increased through commercial trade in meat.

**Trachypithecus geei**
Hunting. Local trade in live animals as pets, in road shows. Trade insignificant.

**Trachypithecus obscurus phayrei**
Illegal hunting for food, habitat loss. Local trade in live animal for zoos, meat for food.

**Trachypithecus pileatus brahma**
Not known.

**Trachypithecus pileatus durga**
Hunting for sport, meat and traditional medicine. Local trade for meat, tail for food, skin for knife covers and for fur, live animal as pets.

**Trachypithecus pileatus pileatus**
Hunting for sport, food and traditional medicine. Local, domestic and international trade for fur, meat, tail for food, live animals for zoos.

**Trachypithecus pileatus tenebricus**
Hunting for traditional medicine and food. Local trade for fur, meat, tail for food and medicine and whole animal for pets and zoos. Trade for food is resulting in population decline.

**Trachypithecus vetulus monticola**
Hunting subsistence or small scale cash. Local and domestic trade for meat and skin. Locally pocketed and isolated groups are prone to extinction owed to village-level subsistence exploitation.

**Trachypithecus vetulus nestor**
Hunting. Local trade at village level for meat but not significant.

**Trachypithecus vetulus philbricki**
Hunting for food. Local trade for meat and skin. Hunted mainly for subsistence living and trade at local village level. Skin in some areas are used to make drums.

**Trachypithecus vetulus vetulus**
Hunting. Local trade for meat for food and pelage for making drums at village level for subsistence.

**Bunopithecus hoolock hoolock**
Hunting for food, sport, traditional medicine and cultural use. Local, commercial and domestic trade for blood, bones, fur, meat and phalanges for food and medicine. Live animals are in trade for zoos and as pets.
### National Assessments

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<td><em>Bunopithecus hoolock hoolock</em></td>
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<td>CR</td>
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### Regional and National Guidelines

The Table on this page is a status summary of South Asian Primates country by country. After the initial assessment of the status in South Asia, national status for every country was derived based on the IUCN Red List Criteria Regional Guidelines (Gärdenfors et al., 2001). Assessing taxa nationally is advantageous for national conservation action, such as legislation and management planning.

For most non-endemic taxa in India, the national status is the same as the status of the taxon in South Asia due to the enormous area of this country which in most cases encompasses a large measure of the taxon distribution in the region. The status is different in other countries such as Bhutan, Nepal and Bangladesh, which have a relatively smaller area. In this instance, the status is based on the threats and the area occupied, along with the status of the species in neighbouring India, and therefore, different.
Primates in Protected Areas

Loridae

1. Loris lydekkerianus
   - lydekkerianus
   - India -- Andhra Pradesh: Nellapattu WLS, Sri Venkateswara NP, Karnataka: Biligir Rangaswamy Temple WLS

2. Loris lydekkerianus malabaricus
   - India -- Karnataka: Brahmagiri WLS, Someswara WLS, Kudremukh NP, Kerala: Aralam WLS, Idukki WLS, Parambikulam WLS, Periyar NP, Shendurney WLS, Thattakkad WLS, Wynaad WLS, Tamil Nadu: Indira Gandhi WLS, Kalakkad-Mundanthurai WLS, Muthurajawela Wetland Res., Belanwila Sanctuary, Ingiriya Siripagama WLS, Sigiriya Sanctuary, Victoria-IFS arboretum, Menikdena FR, Knuckles World Heritage site, Udawalawe Wilderness Sanctuary; Sinharaja Kurulukelle Sanctuary, Peak tardigradus
   - Sri Lanka

3. Loris tardigradus grandis
   - Sri Lanka -- Central Province: Knuckles Uva Province: Thangamalai WLS

4. Loris tardigradus norticus

5. Loris tardigradus ncticoboidea
   - Sri Lanka -- Central Province: Siripagama WLS Sabaragamuwa Province: Peak Wilderness Sanctuary

6. Loris tardigradus tardigradus
   - Sri Lanka -- Central Province: Gampola-Ambuluwela Biodiversity Park, Udawattekele Sanctuary, Victoria-Randi-ienyagala-Rantamban Sanctuary, Walker Estate Sabaragamuwa Province: Kurulukelle Sanctuary, Peak, Wilderness Sanctuary; Sinharaja World Heritage site, Udawalawe Sanctuary

Western Province: Attidya-Belanwila Sanctuary, Ingiriya (Dombegaskande) FR, Muthurajawela Wetland Res., Sri Lanka

7. Nycticebus bengalensis
   - India -- Arunachal Pradesh: Itanagar WLS, Mehao NP, Namdapha NP, Pakhui WLS
   - Assam: Gibson WLS
   - Meghalaya: Balipramak NP

8. Macaca arcioides
   - India -- Arunachal Pradesh: Itanagar WLS, Mehao WLS, Mouling NP, Namdapha NP
   - Assam: Gibson WLS

9. Macaca assamensis
   - India -- Arunachal Pradesh: Namdapha NP, Pakhui WLS
   - Assam: Gibson WLS

10. Macaca assamensis
    - Nepal: Central Province

11. Macaca fascicularis aurifrons
    - India -- Andhra Pradesh: Itanagar WLS, Mehao NP, Namdapha NP, Pakhui WLS
    - Assam: Gibson WLS

12. Macaca fascicularis umbrosa
    - India -- Andaman and Nicobar: Greater Nicobar: Campbell Bay NP, Galathea NP

13. Macaca fascicularis
    - India -- Andhra Pradesh: Itanagar WLS, Mehao NP, Namdapha NP, Pakhui WLS

14. Macaca leonina
    - Bangladesh -- Chittagong: Chunati WLS
    - Sylhet: Lawachara NP, Rama: Kelanga WLS

15. Macaca mulatta
    - Bangladesh -- Chittagong: Chunati WLS
    - Sylhet: Ruma Kalanga WLS

16. Macaca radiata diluta
    - India -- Kerala: Chinnar WLS, Munnar WLS, Eravikulam NP, Idukki WLS, Neyyar WLS, Pechi-Vazhini WLS, Periyar NP, Periyar WLS, Parambikulam WLS, Shendurney WLS, Thattekad WLS, Tamil Nadu: Grizzled Giant Squirrel WLS, Indira Gandhi WLS, Kalakkad-Mundanthurai TR, Mudumalai WLS, Muckurthi NP, Point Calimere WLS

17. Macaca radiata
    - India -- Andhra Pradesh: Etumargaram WLS, Lanja Madugu Sivaram, Nellapattu WLS, Sri Venkateswara NP, Mahavir Varasthal NP, Arunachal Pradesh: Mehao WLS, Goa: Bondla WLS, Molem NP, Molem WLS, Coligao WLS, Karnataka: Bandipur NP, Bannerghatta NP, Kudremukh NP, Nagerhole NP, Kerala: Aralam WLS, Silent Valley NP, Wynad WLS, Periyar WLS, Maharashtra: Radhanagar WLS, Sanjay Gandhi NP, Tansa WLS

18. Macaca silenus
    - India -- Karnataka: Brahmagiri WLS, Kudremukh NP, Mokamkibadi WLS, Pushpagiri WLS, Sharavathi Valley WLS, Someswara WLS, Talakaveri WLS

19. Macaca sinica aurifrons
    - Sri Lanka -- Central Province: Gannoruwa, Knuckles, Menikdena, Udawattekele, VRR Sanctuary Sabaragamuwa Province: Killukulalla Sanctuary, Kurulukelle Sanctuary, Peak Wilderness, Samanawila, Sinharaja FR, Udawalawe NP, Southern Province: Ramlaikandane FR, Uva Province: Thangamalai Sanctuary

20. Macaca sinica opisthomelas
    - Sri Lanka -- None in protected areas

21. Macaca sinica
22. Semnopithecus (Trachypithecus) johnii johnii
India -- Kamataka: Brahmagiri WLS
Kerala: Aaramal WLS, Chinnam WLS, Eravikulam NP, Induku WLS, Neyyar WLS, Parambikulam WLS, Peechi WLS, Perpara WLS, Periyar NP, Periyar WLS, Shendurney WLS, Silent Valley NP, Thattakadu, Wayanad WLS
Tamil Nadu: Indira Gandhi WLS, Kalakad WLS, Mudumalai WLS, Mundhantural WLS, Mukurthi NP, Grizzled Giant Squirrel WLS

23. Semnopithecus entellus achates
India
Gao: Bondla WLS?, Mollem WLS?, Cotigao WLS
Gujarat: Gir WLS and NP, WLS?, Cotigao WLS
Karnataka: Bandipur NP?
Nagarhole NP

24. Semnopithecus entellus ajax
Nepal -- Central Province: Langtang NP, Royal Chitwan NP, Eastern Province: Makalu Barun NP, Mid-Western Province: Royal Bardia NP
Pakistan -- NWFP: Manali WLS

30. Semnopithecus priam priam
India -- Andhra Pradesh: Sri Venkateswara NP, Nellapattu WLS
Karnataka: Bandipur NP, Biligiri Rangaswamy Temple WLS, Naraghar WLS?
Kerala: Wayanad WLS?, Silent Valley NP?
Tamil Nadu: Mudumalai NP & WLS

31. Semnopithecus priam thersites
India -- Kerala: Chinnar WLS, Neyyar WLS, Perpara WLS, India population Parambikulam WLS, Shendurney WLS
Tamil Nadu: Grizzled Giant Squirrel WLS, Indira Gandhi NP, Indira Gandhi WLS, Kalakad WLS, Mundhantural WLS

32. Semnopithecus priam thersites
India -- Kerala: Chinnar WLS, Neyyar WLS, Perpara WLS, Sri Venkateswara WLS
Maharashtra: Bhimashankar WLS? Uttaranchal: Sonanadi WLS, Binsar WLS

26. Semnopithecus entellus entellus
India -- Bihar: Valmiki NP, Valmiki WLS Chhattisgarh: Achankamar WLS, Gomada WLS
Jharkhand: Palamu WLS, Maharashtra: Andhari WLS?, Bhramragadh WLS?, Chaprala WLS?, Tapo NP?
Orissa: Chandaka-Damapra WLS, Bhitaranka NP

27. Semnopithecus entellus hector
India -- None in PA's
Nepal -- None in protected areas

28. Semnopithecus entellus hypoleucos
India -- Goa: Bondla WLS, Mollem WLS?, Cotigao WLS
Karnataka: Brahmagiri WLS, Kudremukh NP, Pushpagiri WLS, Sharavathi Valley WLS
Keral, Aaram WLS?, Silent Valley WLS?, Wayanad WLS?

29. Semnopithecus entellus schistaceus
India -- Bihar: Valmiki WLS
Himachal Pradesh: Chail WLS, Renuka WLS, Bandipur NP, Great Himalayan NP, Tirthan WLS, Sainj WLS, Naina Devi WLS
Jammu and Kashmir: Changthang WLS, Dachigam WLS, Kararakom WLS
Uttarpradesh: Corbett NP

35. Trachypithecus pileatus
India -- Bihar: Valmiki WLS
Himachal Pradesh: Chail WLS, Renuka WLS, Bandipur NP, Great Himalayan NP, Tirthan WLS, Sainj WLS, Naina Devi WLS
Jammu and Kashmir: Changthang WLS, Dachigam WLS, Kararakom WLS
Uttarpradesh: Corbett NP

36. Trachypithecus pileatus durga
Bangladesh -- Chittagong: Chunati WLS
Sylhet: Singal-Kalenga WLS
India -- Mizoram: Damba WLS, Trinbago WLS, Trishna WLS

37. Trachypithecus pileatus brahma
None

38. Trachypithecus pileatus tenebricus
Indi -- Royal Manas NP
India -- Arunachal Pradesh: Manas NP, Nameri NP

39. Trachypithecus pileatus monticola
India -- Arunachal Pradesh: Lawachara NP, Rama-Kalenga WLS
India -- Assam: Chakrasila WLS, Brahmaputra NP, Trishna WLS

40. Trachypithecus vetulus nestor
India -- Arunachal Pradesh: Kiphuputigala WLS, Kurulikale Sanctuary
Western Province: Atidiya-Belanwila Forest, Ingeni, Muthurajawala

41. Trachypithecus vetulus philippicolor
Sri Lanka -- Central Province: Knuckles FR (east)
North Central Province: Angamida, Nandurapahara Sanctuary, Flood Plains NP, Kaudulla NP, Minneriya-Giritale NP, Mihintale Sanctuary, Moragaswewa NP, Polonnaruwa Sanctuary, Ritigala Strict Nature Reserve, Somawathie WLS, Wasgamowa NP North Western Province: Wilpattu NP
Uva Province: Madura Oya NP

42. Trachypithecus vetulus vetulus
Sri Lanka -- Arunachal Pradesh: Udawalawe NP, Peak Wilderness (Kotagala sector), Gilimale-Eratne Conservation Forest, Morahela Conservation Forest, Sinharaja Conservation Forest (NWHS) Forest Reserve
Southern Province: Dombaghakanda Forest Reserve, Kukunadara Conservation Forest (CF), Oiyagankale (CF), Heycodi (CF), Kombala-Kottawala (CF), Kaunelia (CF), Messava (CF), Nath-Mukalana (CF), Deltawale (CF)

43. Bunopithecus hoolock hoolock
Bangladesh -- Chittagong: Chunati WLS, Sylhet: Lawachara WLS
India -- Arunachal Pradesh: Kiphuputigala WLS, Mehao WLS, Boraj WLS, Dhadhim WLS, Kaimlung WLS, Garampani WLS, Gibbon WLS, Kizairanga NP, Muirwala NP, Nengpui WLS, Trishna WLS

44. Trachypithecus veruulus veruulus
India -- Arunachal Pradesh: Eagle Nest WLS, Pakhi WLS
Assam: Manas NP, Nameri NP

45. Trachypithecus veruulus monticola
Sri Lanka -- Central Province: Peak Wilderness Sanctuary, Horton Plains NP, Hakagala Nature Reserve, Victoria, Rendernagala, Rantembe Sanctuary

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Thanks to foresters who returned the primate survey forms

The protected areas listed on the previous pages are those for which, after an extensive literature search and input from 50 primate field biologists, foresters and other academics, there is recorded presence.

An effort was made to collect minimum “presence/absence” information from all protected areas. A letter requesting the following information and a handy form was dispatched to over 400 protected areas in India:

1. Common name & Scientific name
2. Is this species found in your Protected Area?
3. How many groups (estimated) in your P.A.?
4. How many individuals (estimated) in P.A.?
5. Is species found in areas adjacent to your P.A.?

Only 35 out of the 400 odd P.A. managers replied. Their WLS and name is listed below. Many, Many thanks to them! Their information is included in the list of P.A.s with recorded primates and they have been credited by name for Sources of the complete Report.

1. S.D. Badgaiyan, WL Sup., Achanakmar Sanctuary, Bilaspur Dist., CH
2. P. Srivastava, DCF, Bhamragadh WLS Gadchiroli Dist., Chandrapur MH
3. Rashid Y. Naqash, Wildlife Warden (Central Division), Dachigam NP, Srinagar
4. B.J. Pathak, CF & B.P. Pati, DCF&d Wildlife Div., Gir.PA, Sasang, GJ
5. Gumin Santha, ACF, Jorhat, AS
6. S. Mahadev, DFO, Kinnerasani WLS, Khammam, AR
7. Mehao WLS, Lower Dibang Valley Dist., AR
10. B. Srinivas, DFO, Wildlife Management, Pakhal WLS, Warangal Dist., AH
11. Chukku Loma, DFO, Pakhui WLS, East Kameng, AR
12. S.P. Samant, ACF, Project Tiger Circle, Palamau Tiger Reserve, Palamau, HP
14. Mrigen Barua, Range Forest Officer, Pobitora WLS
15. A.D. Baruah, WL, Warden, Point Calimere WLS, Kodikkarai, TN
16. T.U. Utup, Shendurney WLS, Shendurney Wildlife Division, Thenmala, Kollam, KE
18. Nilin H. Kakodkar, DCF, Tadoba NP and Aushiri WLS, Chandrapur Dist., MH
19. Parashuram Ram, CF, cum-Field Director, Valmiki Tiger Project, West Champaran, Bettiah
20. Sada Ram, Inspector WL, Bir Sikaraha WLS, Pinjore Dist., Panchkula, HY
22. M.M. Raheem, ACF Sup., Gumda WLS, Gumda PA., Sarangarh (CG)
23. A. Shankaran, DFO, Mahavir Vanasthali National Park, Shamsh, Kullu, HP
24. Conservation of Forests, Great Himalayan National Park, Dr. K. Ramakrishan, Palampur, HP
25. S. Arekal, DCF, Kudremukh NP, KN
26. Anil Joshi, DFO, Hamipur, HP
27. C.L. Joshi, RFO, Bandli Wildlife Sanctuary, Mandi, HP
28. Dharjait Naik, RFO, Bondla Wildlife Sanctuary, Panaji, GO
29. Mathew Manjunath, RFO, Mollem Wildlife Sanctuary, Panaji, GO
30. RFO, Colagao Wildlife Sanctuary, Panaji, GO
31. DFO, Bilharakanka National Forest Park Div. (WL) Rajnagar, AT/P.O. Rajnagar Dist., OR
32. G.V. Vadi, DCF, Jambughoda WL Sanctuary, Panchnahal Taluka, Sangli Dist., Vadodara, GJ
33. Amit Kumar, DCF, Gir East Division, Gir Wildlife Sanctuary, Dhari, GJ
34. S. Krishnaiah, DFO, Sri Venkateswara Sanctuary, Tirupati, AP

This kind of primate information is still very much required. Another effort is being made to collect this information by post.

In fact, systematic surveys by field biologists need to be carried out for all the protected areas and reserve forests in all the countries of South Asia in order to get a true picture of primate status.

Names of field biologists capable of carrying out such studies are listed on page 19 along with their address and email. You may like to invite some of them to carry out studies in your protected area.

Indian Protected Areas for which NO primate presence was reported

Andaman & Nicobar Islands
Note : there are 105 protected areas in A&N islands. Macaca fascicularis umbrosa (Miller, 1902) is restricted to three WLS, Greater Nicobar Island, Katchal Island and Little Nicobar Island. Remaining islands, if there is a primate presence, it is introduced rhesus or bonnet macaques which are not useful for assessments.

Therefore this long list has been left out to save space.

Andhra Pradesh
Mugavani NP
Gundla Brahmeswaran WLS
Kaundinya WLS
Papikonda WLS
Pulicat Lake WLS
Roochipal WLS
Sro Lankamalleswaran WLS
Sri Penusilla Narasimha WLS

Arunachal Pradesh
D’Ering Memorial (Lali) WLS
Dibang WLS
Kane WLS
Assam
Bardolipur-Bemukhri
WLS
Barmodi WLS
Burachapori WLS
Diparbeel WLS
Laokhowa WLS
Panidighing WLS
Sonai Rupali WLS
Bihar
Barelia S.A.Z.S. WLS
Bhimbandh WLS
Gautam Budha WLS
Kanjwarheel WLS
Kaimur WLS
Nagi Dam WLS
Nakti Dam WLS
Rajgir WLS
Udaypur WLS
Vikramshila Gangetic Dolphin WLS
Chandigarh
Sukhna Lake WLS
Chhattisgarh
Indravati NP
Kangerghat NP
Sanjay NP
Badalkhol WLS
Barnawapara WLS
Bhairamgarh WLS
Pamed WLS
Semarsot WLS
Sitamad WLS
Tamorpingla WLS
Udanti WLS
Daman & Diu
Fudam WLS
Delhi
Indira Priyadarshini WLS
Goa
Charao Island WLS
Madei WLS
Netravali WLS
Gujarat
Bansda NP
Marine (Gulf of Kachchh) NP
Blackbuck NP
Balaram Ambaji WLS
Baroda WLS
Gaga Gt Indian Bustard WLS
Hingolgarh NatureReserve WLS
Jesore WLS
Lala Great Indian Bustard WLS
Kachchh Desert WLS
Khijadiya WLS
Marine (Gulf of Kachchh) WLS
Nal Sarovar WLS
Naranay Sarovar WLS
Paniya WLS
Porbandar Lake WLS
Purna WLS
Rampura Vidi WLS
Ratnamahal WLS
Shoolpaneswar (Dhumkal) WLS
Thol Lake WLS
Wild Ass WLS
Haryana
Sultanpur NP
Abusheer WLS
Bhindawas WLS
Bir Bara Ban WLS
Chhichila WLS
Kalesar WLS
Khaparwas WLS
Nahar WLS
Saraswati Plantation WLS
Himachal Pradesh
Pin valley NP
Churdhar WLS
Daranghati WLS
Darlaghat WLS
Dhualadhar WLS
Gangui Shahbarhi WLS
Govind Sagar WLS
List of South Asian Primate field biologists who can be called upon for help with surveys

Dr. Rauf Ali
Andaman Nicobar Environment Team (ANET)
North Wandoor, Andamans
Tel: 03192 - 80081

Mr. Joydeep Bose
Field Officer, Wildlife Trust of India, Delhi
Email: jbose@satyam.net.in; jbose100@hotmail.com

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Reg. Secretary for Asia / IPS NSTP
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Recommendations

Management
Recommendations for habitat management and public education were highest, followed by monitoring of populations, monitoring of habitat, wild population management, and limiting factor management. Other recommendations having to do with species conservation and recovery were recommended for a few taxa.

Addressing habitat loss was considered the first step in tackling conservation of threatened primate taxa in South Asia. Wild habitat management was designated as the first priority, mainly to stem the loss by human interference and further to develop suitable habitats for the primates. In achieving this, it was felt that management cannot be done in isolation, so public awareness and education were strongly recommended for many taxa. In conjunction the two recommendations would work well in conserving the remaining habitat and populations of primates in their range states/countries.

A hurdle to better management is the lack of knowledge of current trends of a taxon. Monitoring was recommended as a priority to understand the current status of all populations and habitats and implement a holistic conservation action plan.

All primates, except 2 macaques (M. fascicularis aurea and M. sinica opisthomelas), 1 common langur (S. entellus hector) and 1 piledate langur (T. pileatus brahma) occur in P.A.s in South Asia. Problems with the taxonomy of the *Semnopithecus entellus* group still poses a challenge to many a field biologist and taxonomists as to their correct distribution and thereby their occurrence in protected areas in India. Nonetheless, at the species level the *S. entellus* group is represented in many protected areas. Pages 16-17 show the available information on primate taxa in protected areas in South Asia. Pages 18 and 20 show the P.A.s in India for which no published record of primates was contributed! Page 19 lists primate field biologists who could rectify this situation intime.

Captive breeding was not considered an important tool in the long-term conservation of primates, not because of its lack of intrinsic importance, but due inadequacies in the conduct of captive propagation in the region historically.

Research
With any taxonomic group, research is ongoing. What was largely thought as a single taxon of the Common Hanuman Langur is now split into 8 subspecies, each of which is either geographically isolated or forms a cline in the total species distribution. Phylogenetic studies recommended by the new taxonomy suggest further studies in the area since populations vary in their genetic composition and could be distinct. An example from this workshop is of *Semnopithecus entellus thersites*, which is found in India and Sri Lanka forming two distinct populations due to a geographical break. Although recent changes in taxonomy suggest the two populations to be *thersites* sub species, since the populations have been distinct for a very long period, further research is required into establishing their difference. Taxonomic research then is an important recommendation and was a major recommendations made at the workshop.

Surveys were recommended for newly recognised taxa, especially subspecies of the *Semnopithecus entellus* group and the *Trachypithecus pileatus* group. Life history studies were recommended for a few taxa, especially *Loris* and *Nycticebus* and some of the lesser-studied taxa.

Population and Habitat Viability Assessment (P.H.V.A.) was recommended for at least half the taxa assessed because of the need for developing an overall conservation action plan. Since more than 70% of the primates in the region are under threat, conservation action recommendations need to incorporate all variables for the taxa and all stakeholders. A P.H.V.A. allows for broad participation in developing this plan and also allows for the interpretation of variables affecting taxa in determining their probability of extinction. Some of the other important research recommendations included epidemiological studies and limiting factor research.
Note on Captive Breeding and Education

In the list of Research and Management Recommendations to the left it is noteworthy that neither public education or captive breeding were listed under research. Captive breeding is a tool in conservation which is recognised the world over as a back up management strategy which can save a species when all else fails. It was noted that captive breeding was not recommended for management in South Asia because of the lack of confidence in its efficacy in the region, yet it has not been suggested for research. This is an unfortunate mistake.

Also public education has been listed as the second most frequently recommended management strategy for many species, yet public education has yet to save a single species in this region. Although some importance is given to environmental education, there has never been an instance of an education programme being linked by recovery. It is noteworthy also that Public Education has not been listed in Research recommendations as a studies of current methods of education and awareness building in South Asia, their efficacy or failure, would point the way towards improved educational techniques which might swing public opinion towards voting for conservation or refraining from habits which are counter to conservation.

For this reason, special sections have been devoted to captive breeding and education on the following pages.

Summation

Finally, the South Asian Primate C.A.M.P. Workshop provided an excellent opportunity address the conservation needs for an entire group of taxa and their habitat, as well as the resolution of important issues identified by all stakeholders.

Research focus and management recommendations from the Primate C.A.M.P. workshop will help conservation organizations, agencies and institutions nationally, regionally and internationally, to formulate and implement appropriate action on behalf of primate conservation.

Funding agencies can use this Report as a reference for prioritizing proposals for maximum benefit of funds. As part of the mandate of the workshop, national assessments of all widely distributed primates were made using the the Regional Guidelines of the IUCN Red List Criteria. These national assessments are compiled on the following page.

In addition to assessing each species and subspecies of South Asian primates individually, the workshop provided opportunities to test hypotheses generated about primate relations in the new PSG taxonomy, to access the field data that had been gathered under both individual and institutional efforts and, of course, to provide an opportunity for primate biologists, foresters and other specialists within the South Asia region to meet and discuss matters of mutual concern.
Primates in South Asian Zoos

Of the 164 public zoos, mini zoos and deer parks in India, which have been recognised by the Central Zoo Authority, the 54 Large, Medium and Small Zoos, which are the better facilities, hold from one to eight species of primates. Sometimes these highly social animals are held in appropriate groupings of numbers and sex ratios but all too often, as solitary inmates of an enclosure, or a single sex group, or occasionally even as mixed species. The status of many of them is uncertain because of recent taxonomic changes. The number in the 112 Mini-zoos and Deer Parks has not been updated but is “considerable.” In the remaining South Asian countries there are 14 major zoos, all of which hold from 1-9 species of primates, with approximately 222 individuals.

The C.A.M.P. workshop provided a forum for the Central Zoo Authority and the Indian zoo community, represented by three Indian zoo directors, to address revisions in primate taxonomy and nomenclature. India and the other South Asia zoos in Pakistan, Bangladesh, Nepal, and Sri Lanka, will find the revised taxonomic system a major challenge in identifying subspecies within existing collections. The Conservation Breeding Working Group recommended that zoos with such species and subspecies refrain from breeding until they could be correctly identified and organized to avoid unwanted propagation of hybrids. They also recommended that zoos update their signage and educational materials and focus on planned programmes for non-controversial species.

List of primates in zoos in India

Gibbon, Hoolock (Bunopithecus hoolock) 3.5.0.8
Langur, Common (Semnopithecus entellus) 59.35.6.100
Langur, Capped (Trachypithecus pileatus) 8.5.0.13
Macaque, Assamese (Macaca assamensis) 52.37.10.99
Macaque, Lion-Tailed (Macaca silanus) 28.22.0.50
Macaque, Pig-tailed (Macaca leonina) 11.9.0.20
Macaque, Rhesus (Macaca mulatta) 184.192.70.446
Macaque Bonnet (Macaca radiata) 254.204.168.626
Macaque, Stump-tailed (Macaca arctoides) 20.21.0.41
Langur, Nilgiri (Semnopithecus johii johnii) 11.14.2.27
Langur, Golden (Trachypithecus geei) 2.5.0.7
Macaque, Crab-eating (Macaca fascicularis) 9.7.0.16
Total 641.556.256.1453

List of Primates in South Asian Zoos other than India

Gibbon, Hoolock (Bunopithecus hoolock) 3.3.0.6
Langur, Common (Presbytis entellus) 10.11.0.32
Langur, Capped (Trachypithecus pileatus) 3.6.0.10
Macaque, Assamese (Macaca assamensis) 2.1.0.3
Macaque, Lion-Tailed (Macaca silanus) 3.4.0.7
Macaque, Pig-tailed (Macaca leonina) 48.77.12.165
Loris, Slow (Nycticebus bengaliensis) 4.6.0.10
Total 75.108.12.235

References

SAZARC (2002). Database of animals in South Asian Zoos. Prepared by Zoo Outreach Organisation with information collected from the participants from South Asian countries who attended the 3rd Annual meeting of the South Asian Zoo Association for Regional Cooperation, at 6-9 October 2002 at Bangladesh.

22 South Asian Primate C.A.M.P. Summary, Coimbatore, 2004
Keeping in view the classification of primates into various subspecies, it will be appropriate that the Indian zoos prevent breeding of the following species until they can be properly identified:

1. Bonnet macaque
2. Common langur / grey langur
3. Assamese macaque
4. Capped langur
5. Slender loris

The animals may be segregated on the basis of morphological differences. The help of qualified taxonomists, ideally from the IUCN SSC Primate Specialist Group may be taken by the zoos in determining how the animals should be segregated. The help of the Centre for Cellular and Molecular Biology (CCMB) may also be taken for identification of different subspecies when appropriate.

During the next 3 years time the zoos can be made aware of the revised taxonomy and the anomalies in their collection. Priority can be fixed on non-controversial species to be covered under planned breeding programmes. Zoos will also make the visitors aware of the status and importance of different subspecies in their natural habitat and encourage them to support conservation of the in situ population. With respect to other species the details are as follows:

1. Slow Loris (Nycticebus bengalensis)
   
   At present 8 zoos in India are displaying 12 (6 males and 6 females) slow lorises. Out of the 8 zoos, four are located in the animals’ habitat area. The species has so far bred very well in captivity. Assam State Zoo, Guwahati and Sanjay Gandhi Biological Park, Patna has good experience in breeding the animals. A special conservation breeding programme of the species needs to be initiated for conserving the gene pool, facilities can be created at the zoos located at Guwahati, Itanagar and Patna. Itanagar zoo is already creating an enclosure on CZA guidelines for housing of this species. Not recommended for captive breeding.

2. Stump-tailed Macaque (Macaca arctoides):
   
   At present 10 zoos in India are displaying 41 (20 males and 21 females) stump tailed macaque. Out of the ten zoos, three zoos are located near the animal habitat. Only a few zoos have a sizable number, but the sex ratio is skewed. Thus, pooling of the animals has to be done in the zoos which are near the animals habitat, so that if at any animal that is rescued, or confiscated from traders can be brought to these zoos and involved in the breeding programme. Recommended for captive breeding.

3. Pig-tailed Macaque (Macaca leonina):
   
   At present 7 zoos in India are displaying 20 (11:9) Pig-tailed macaques. Only 2 zoos are located near the habitat of the animal. These 2 zoos alone make up for 14 animals with the rest of them are distributed singly in 5 zoos. The present population in the zoos is not sufficient to start a breeding programme; such programme requires at least 20 founder animals. Therefore, help of zoos outside India and the animals rescued from wild areas would be required to initiate a fruitful breeding programme. Not recommended for captive breeding.

4. Lion-tailed Macaque (Macaca silenus):
   
   At least 18 zoos in India are displaying lion-tailed macaque. Out of these 10 zoos are located in proximity to the animas habitat, i.e. the Western Ghats. 50 (28:22) animals are on display.
   
   A studsbook for all the Lion-tailed macaque’s in Indian Zoos has been prepared by the Wildlife Institute of India. It has also been established that a managed conservation breeding programme for the species can be initiated from the present captive population. The CZA will make all efforts to pool the single animals in other zoos and send breeding age individuals to the breeding center. Recommended for captive breeding.

5. Golden Langur (Trachypithecus geei):
   
   Five zoos in India are displaying 7 (2 males and 5 females) of Golden langur. Two zoos are located in the proximity of the animals’ habitat. It is suggested that, as Assam State Zoo, Guwahati has a very good enclosure for Golden langur in an off-display area, the single animals in other 4 zoos should be shifted to Guwahati. Controlled captive breeding can be carried out at Guwahati, but long term captive breeding of the species cannot be recommended at this stage. Not recommended for captive breeding.

6. Nilgiri Langur (Semnopithecus johnii):
   
   Eight zoos in India are displaying 27 (11 males, 14 females and 2 juveniles) Nilgiri langur. Six zoos are located in the proximity of the animals’ habitat. Single animals (if they are of breeding age) can be pooled in the above zoos, which are located near the animals habitat, for use in a breeding programme. These zoos may receive animals rescued from the wild, which can then be added to the existing groups. Recommended for captive breeding.

7. Long-tailed Macaque (Macaca fascicularis umbrosa)
   
   This species of primate is distributed only at one zoo at Port Blair, Andamans −16 (9:7). If at all any programme is initiated for conservation breeding of the species, on offsite area in the new zoo has to be acquired from the wild. The present population may be inbred. Not recommended for captive breeding.

8. Hoolock Gibbon (Bunopithecus hoolock hoolock):
   
   Five zoos in India are displaying 10 (4 males and 6 females) Hoolock gibbon. Three zoos are located near the animal habitat. This is the only zoo which had success in breeding of the Hoolock gibbon, but survival rate was very poor. Being monogamous, breeding of the animals is limited to suitable pairing. Much study is needed on the behaviour of the species, before any serious breeding programme can be taken up. The zoos located near the animals habitat may in the meantime try to form compatible pairs for breeding. Not recommended for captive breeding.
Public Education was the second most frequently suggested recommendation under Management Recommendations. In that regard an Education / Awareness Working Group met and made a report. One of the recommendations was that ZOO / CBSG, South Asia undertake the coordination of this programme. Several months ago an education programme was launched with the primary objective of disseminating information from the workshop to three major target groups: i. policy-makers, foresters and academics, ii. adult laypersons in both English and vernacular, and iii. youngsters of different age groups.

This programme is going on currently and will be enhanced significantly by the publication of this Report, associated report summaries for very wide distribution, and other material. Some illustrations of materials being used in the programme are included in the sidebars of these pages, and described on the following page. A summary of the education suggestions of the Working Group Report is below.


The Group stated its mandate as describing ways to translate the results from the Primate C.A.M.P. to field action. The challenge is to successfully communicate the right message to the right individual or organisation.

Recommendations
-- A macrolevel (television, websites, press etc.,) and microlevel (village level interaction) of education as crucial for a successful education programme.
-- Identify important persons (local leaders) from local communities to sensitize their colleagues and friends.
-- Forest departments can play a major role in disseminating the facts and conservation needs. Local NGOs can be entrusted as communicators and facilitators to do effectively the same.
-- Youth from marginal communities can be selected and trained as efficient interpreters or guides of primates in their nearest natural habitats and thereby promote ecotourism from which they get a financial benefit also.
-- A stakeholder workshop can be organized with the help of NGOs and forest department to communicate the prime values of primates and their conservation. These will help to derive site-specific education and awareness strategies to be followed in concerned areas.
-- The names of the important primates should be used for some important roads, trains and seminar halls.
-- Z.O.O. can develop and distribute education packets on primates to various zoos, NGO’s and other interested and concerned individuals, institutions, and forest departments to conduct nature camps and education programmes.
-- Conservation of many primates have been built in with the religious and cultural system, especially in India. Important religious personalities can be motivated to sensitize their audience to the fact that many primates are endemic to this region and the importance of conservation of the concerned primate species.
-- Develop small booklets with interesting stories, many pictures, stickers, and brochures in vernacular language for local communities and some relevant materials for policy makers and administrators in English.
-- In education compare human with primate behaviour to create interest.
-- Information provided should neither be too complex nor too simple. Information should be precise and should be appropriate for the community.
South Asian Primate Education Project (SAP EP)
The South Asian Primate Project began long before this Report was published. Some of the sponsors of the C.A.M.P. came forward to fund the education project, such as Appenheul Primate Park and Primate Conservation, Inc. Others were the Margot Marsh Biodiversity Fund, Flora and Fauna International, Thrigby Hall Wildlife Park and Primate Society of Great Britain.

Following the lead of the Education Working Group, Zoo Outreach Organisation "developed and distributed education packets on primates to various zoos, NGO's and other interested and concerned individuals, institutions, and forest departments to conduct nature camps and education programmes". A couple of packet items highlighting primate welfare were prepared in time for Animal Welfare Fortnightly, 2003 and included in the three types of animal welfare packets produced for dozens of zoos and welfare ngo's. By the time Earth Day and World Environment Day came around packets were ready and more than 1000 were distributed to 14 zoos and other organisations. Wildlife Week is another big occasion in India in which zoos, conservation organisations, and forest departments conduct events and functions and like to have a theme and a focus for their activities. The packets have proven very popular. For the surrounding South Asian countries, primate packets have been given to visiting biologists to carry back and also taken to Nepal, Pakistan, Bangladesh and Sri Lanka where zoo educator training and teacher training course were conducted.

The packets are of two types, one for very young children containing an attractive primate face mask of an assortment of primates -- a macaque, a langur, a gibbon and a loris. Also in the packet were a set of finger puppets of primates, a monkey wrist bracelet, tiny simple handout entitled "Protect Primates" and a booklet called "Monkey Tales". A certificate of participation and promise to protection was included for children to sign and, finally, 4 child-size stickers with simple catchy slogans about primates.

The older children's packet contained some of the same items such as the mask, wrist bracelet and sticker, but also a higher level booklet called "Threatened Primates" which focused on subjects like taxonomy, threats to primates, and the IUCN Red List Criteria and Categories. A pocket class schedule was included with a tiny head of a loris which peeked up out of the pocket and a bookmark. Both of these packets were offered widely to zoos, NGO's and primate biologists who wished to conduct programmes.

A booklet of Guidelines for using the packets was issued to all organisations and institutions which agreed to run programmes, describing how to use every item effectively in a group situation with games, dramas, marches and other activity-based learning tools.

Some of the stickers were targeted for adults rather than children and focused on issues discussed in the C.A.M.P. such as the problem of people feeding monkeys in temples.

There are many other items under production. This Summary booklet itself is one of the major educational tools as it can be very widely circulated to and important groups of policy makers, professionals foresters, conservation organisations, wildlife institutions and other academics numbering over 1000 individuals in India alone. Sufficient numbers of these summaries have been produced so that primate biologists can order them in dozens and even hundreds if they wish to use them for education in their own region. A similar, but much simpler booklet will be produced for laypersons in English and in some regional languages. The SAP-EP has many components which are yet to be implemented and will keep people mindful of primates for many months and even years to come.
C.A.M.P. Workshops and the IUCN Red List

What is the relationship of C.A.M.P. workshop output to the IUCN Red List? The IUCN Red List has replaced the old IUCN Red Data Books which were established in the 1960s. The IUCN Red Data Books used an older version of the IUCN Red List categories which were not associated with objective, scientific criteria as is the case today. The IUCN Red List Criteria (Ver. 3.1) used in this C.A.M.P. workshop, replaced several other versions which were in the development and testing process for nearly a decade.

Although C.A.M.P. workshops and other methods conducted even by individuals use the IUCN Red List Criteria, there are often individual differences in how well the criteria are understood and even the rigour and integrity with which they are applied. Therefore, the Species Survival Commission of IUCN has a procedure and protocol for such assessments to determine whether the assessment is correct. This is a process of review.

When a C.A.M.P. is conducted, it is ideal to have the individual who has been designated as the IUCN Red List Authority for the taxon under assessment. This individual is often the taxon specialist group Chair and in this instant, for primates of South Asia, it is the Vice Chair for Asia. Although C.A.M.P. has been finalised and the last attempt to assess the species done, the category and rationale (which is the criteria used) should be submitted to the Chair for review. The Chair may request other specialists to review the assessment. After being satisfied that the assessment and rationale is correct, the Chair sends it to the Red List Committee. It is again examined and, if controversial, may be reviewed again. When it is accepted it is taken as part of the IUCN Red List for that year.

In the case of national or regional assessments, only species which are endemic to a particular country or region would be eligible for consideration for the Red List which uses global criteria for assessment. Otherwise, non-endemic species which have been assessed in a country or region, could still be submitted to the Specialist Group Chair to be used by him or her as part of the picture in deriving the status for a species with a wider range.

Regional assessments have their own importance compared to global assessments, however, due to the following advantages:

a. Smaller area of assessment resulting in greater accuracy*

b. More participation by local field biologists in the assessment process

c. Assessments based on more recent field information

d. Implications for regional action plans and management plans

e. Bottom-up approach to assessments, i.e. regional/national information feeding into global assessments

Post assessment follow-up actions such as surveys, monitoring and education

The Hoolock Gibbon is an example of a species whose range extends beyond South Asia, but was assessed for South Asia.

The Hoolock Gibbon is found in around 126 locations and 97 subpopulations in India and Bangladesh in South Asia most of which is threatened due to habitat interference (see under threats). Habitat fragmentation over the years has depleted the area available for this habitat-specific taxon and restricted it to several small pockets that are non-viable. Hunting along with habitat degradation has been observed to reduce the population of Hoolock Gibbon in South Asia by more than 50% in the last 50 years (3 generations) due to continuing decline in extent of occurrence, area of occupancy and quality of habitat along with exploitation of the taxon in the wild. The rate of decline is also predicted to continue at the same level over the next 50 years (3 generations) since more habitat destruction is predicted for human settlements, increasing population, refugee problems, encroachments and hunting. The number of mature individuals is around 440 in South Asia, with no subpopulations having more than 250 mature individuals and a continuing decline of over 20% over 2 generations. The South Asian population is bigger than the few individuals found in Myanmar, hence the status is retained as Endangered.

National Status

Bangladesh: Critically Endangered C1+2a(i)
The population within Bangladesh is severely fragmented and there are no migrations between the neighbouring populations. Since the threats to the taxon are high, the restricted and small population is under severe threat. The category of Critically Endangered is therefore retained for the population within the country.

India: Endangered A2abcd+3bcd; C1+2a(i)
The Indian population of this taxon, which is fragmented from the Bangladesh or Myanmar populations is further fragmented into many non-viable remnants, which due to threats to habitat, are highly threatened. Hence the category of Endangered is retained for this taxon in India.

Red List Case Study: Hoolock Gibbon

Bunopithecus hoolock hoolock (Harlan, 1834)

Status South Asian CAMP 2003 (Ver. 3.1) ENDANGERED in South Asia A2abcd+3bcd; C1+2a(i)

The Hoolock Gibbon is an example of a species whose range extends beyond South Asia, but was assessed for South Asia.

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*The same is true for national assessments, for which the Regional IUCN guidelines are used.
The IUCN Red List CRITERIA

CRITICALLY ENDANGERED (CR)
A taxon is Critically Endangered when the best available evidence indicates that it meets any of the following criteria (A to E), and it is therefore considered to be facing an extremely high risk of extinction in the wild:

A. Reduction in population size based on any of the following:
   1. An observed, estimated, inferred or suspected population size reduction of > or =90% over the last 10 years or three generations, whichever is the longer, where the causes of the reduction are clearly reversible AND understood AND ceased, based on (and specifying) any of the following:
      (a) direct observation
      (b) an index of abundance appropriate to the taxon
      (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
      (d) actual or potential levels of exploitation
      (e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.
   2. An observed, estimated, inferred or suspected population size reduction of > or = 80% over the last 10 years or three generations, whichever is the longer, where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1.
   3. A population size reduction of > or =80%, projected or suspected to be met within the next 10 years or three generations, whichever is the longer (up to a maximum of 100 years), based on (and specifying) any of (b) to (e) under A1.
   4. An observed, estimated, inferred, projected or suspected population size reduction of > or = 80% over any 10 year or three generation period, whichever is longer (up to a maximum of 100 years in the future), where the time period must include both the past and the future, and where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1.

B. Geographic range in the form of either B1 (extent of occurrence) OR B2 (area of occupancy) OR both:
   1. Extent of occurrence estimated to be less than 100 km², and estimates indicating at least two of a–c:
      a. Severely fragmented or known to exist at only a single location.
      b. Continuing decline, observed, inferred or projected, in any of the following:
         (i) extent of occurrence
         (ii) area of occupancy
   2. Area of occupancy estimated to be less than 10 km², and estimates indicating at least two of a–c:
      a. Severely fragmented or known to exist at only a single location.
      b. Continuing decline, observed, inferred or projected, in any of the following:
         (i) extent of occupancy
         (ii) area of occupancy
         (iii) number of locations or subpopulations
         (iv) number of mature individuals.
   3. A population size estimated to number fewer than 250 mature individuals and either:
      1. An estimated continuing decline of at least 25% within three years or one generation, whichever is longer, (up to a maximum of 100 years in the future) OR
      2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals AND at least one of the following (a–b):
         a. Population structure in the form of one of the following:
            (i) no subpopulation estimated to contain more than 50 mature individuals, OR
            (ii) at least 90% of mature individuals in one subpopulation.
      b. Population size estimated to number fewer than 50 mature individuals.
   4. An observed, estimated, inferred, projected or suspected population size reduction of > or = 50% over any 10 year or three generation period, whichever is longer (up to a maximum of 100 years in the future), where the time period must include both the past and the future, and where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1.

B. Geographic range in the form of either B1 (extent of occurrence) OR B2 (area of occupancy) OR both:
   1. Extent of occurrence estimated to be less than 5000 km², and estimates indicating at least two of a–c:
      a. Severely fragmented or known to exist at no more than five locations.
      b. Continuing decline, observed, inferred or projected, in any of the following:
         (i) extent of occurrence
         (ii) area of occupancy
   2. A population size estimated to number fewer than 500 mature individuals.
   3. A population size estimated to number fewer than 250 mature individuals.
   4. An observed, estimated, inferred, projected or suspected population size reduction of > or = 50% over any 10 year or three generation period, whichever is longer (up to a maximum of 100 years in the future), where the time period must include both the past and the future, and where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1.

ENDANGERED (EN)
A taxon is Endangered when the best available evidence indicates that it meets any of the following criteria (A to E), and it is therefore considered to be facing a very high risk of extinction in the wild:

A. Reduction in population size based on any of the following:
   1. An observed, estimated, inferred or suspected population size reduction of > or = 70% over the last 10 years or three generations, whichever is the longer, where the causes of the reduction are clearly reversible AND understood AND ceased, based on (and specifying) any of the following:
      (a) direct observation
      (b) an index of abundance appropriate to the taxon
      (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
      (d) actual or potential levels of exploitation
      (e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.
   2. An observed, estimated, inferred or suspected population size reduction of > or = 50% over the last 10 years or three generations, whichever is the longer, where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1.
   3. A population size reduction of > or = 50%, projected or suspected to be met within the next 10 years or three generations, whichever is the longer (up to a maximum of 100 years), based on (and specifying) any of (b) to (e) under A1.
   4. An observed, estimated, inferred, projected or suspected population size reduction of > or = 50% over any 10 year or three generation period, whichever is longer (up to a maximum of 100 years in the future), where the time period must include both the past and the future, and where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1.

B. Geographic range in the form of either B1 (extent of occurrence) OR B2 (area of occupancy) OR both:
   1. Extent of occurrence estimated to be less than 5000 km², and estimates indicating at least two of a–c:
      a. Severely fragmented or known to exist at only a single location.
      b. Continuing decline, observed, inferred or projected, in any of the following:
         (i) extent of occurrence
         (ii) area of occupancy
   2. A population size estimated to number fewer than 500 mature individuals.
   3. A population size estimated to number fewer than 250 mature individuals.
   4. An observed, estimated, inferred, projected or suspected population size reduction of > or = 50% over any 10 year or three generation period, whichever is longer (up to a maximum of 100 years in the future), where the time period must include both the past and the future, and where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1.

Continued on back inside cover page.
2. Area of occupancy estimated to be less than 500 km², and estimates indicating at least two of a–c:
a. Severely fragmented or known to exist at no more than five locations.
b. Continuing decline, observed, inferred or projected, in any of the following:
   (i) extent of occurrence
   (ii) area of occupancy
   (iii) area, extent and/or quality of habitat
   (iv) number of locations or subpopulations
   (v) number of mature individuals.
c. Extreme fluctuations in any of the following:
   (i) extent of occurrence
   (ii) area of occupancy
   (iii) number of locations or subpopulations
   (iv) number of mature individuals.

c. Population size estimated to number fewer than 2500 mature individuals and either:
   1. An estimated continuing decline of at least 20% within five years or two generations, whichever is longer, (up to a maximum of 100 years in the future) OR
   2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals AND at least one of the following (a–b):
      a. Population structure in the form of one of the following:
         (i) no subpopulation estimated to contain more than 250 mature individuals, OR
         (ii) at least 95% of mature individuals in one subpopulation.
      b. Extreme fluctuations in number of mature individuals.

D. Population size estimated to number fewer than 250 mature individuals.

E. Quantitative analysis showing the probability of extinction in the wild is at least 20% within 20 years or five generations, whichever is the longer (up to a maximum of 100 years).

VULNERABLE (VU)

A taxon is Vulnerable when the best available evidence indicates that it meets any of the following criteria (A to E), and it is therefore considered to be facing a high risk of extinction in the wild:

A. Reduction in population size based on any of the following:
   1. An observed, estimated, inferred or suspected population size reduction of > or = 50% over the last 10 years or three generations, whichever is the longer, where the causes of the reduction are: clearly reversible AND understood AND ceased, based on (and specifying) any of the following:
      (a) direct observation
      (b) an index of abundance appropriate to the taxon
      (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
      (d) actual or potential levels of exploitation
      (e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.
   2. An observed, estimated, inferred or suspected population size reduction of > or = 30% over the last 10 years or three generations, whichever is the longer, where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1.
   3. A population size reduction of > or = 30%, projected or suspected to be met within the next 10 years or three generations, whichever is the longer (up to a maximum of 100 years), based on (and specifying) any of (b) to (e) under A1.
   4. An observed, estimated, inferred, projected or suspected population size reduction of > or = 30% over any 10 year or three generation period, whichever is longer (up to a maximum of 100 years in the future), where the time period must include both the past and the future, and where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1.

B. Geographic range in the form of either B1 (extent of occurrence) OR B2 (area of occupancy) OR both:
   1. Extent of occurrence estimated to be less than 20,000 km², and estimates indicating at least two of a–c:
      a. Severely fragmented or known to exist at no more than 10 locations. b. Continuing decline, observed, inferred or projected, in any of the following:
         (i) extent of occurrence
         (ii) area of occupancy
         (iii) area, extent and/or quality of habitat
         (iv) number of locations or subpopulations
         (v) number of mature individuals.
      c. Extreme fluctuations in any of the following:
         (i) extent of occurrence
         (ii) area of occupancy
         (iii) number of locations or subpopulations
         (iv) number of mature individuals.
   2. Area of occupancy estimated to be less than 2000 km², and estimates indicating at least two of a–c:
      a. Severely fragmented or known to exist at no more than 10 locations.
      b. Continuing decline, observed, inferred or projected, in any of the following:
         (i) extent of occurrence
         (ii) area of occupancy
         (iii) area, extent and/or quality of habitat
         (iv) number of locations or subpopulations
         (v) number of mature individuals.
      c. Extreme fluctuations in any of the following:
         (i) extent of occurrence
         (ii) area of occupancy
         (iii) number of locations or subpopulations
         (iv) number of mature individuals.

C. Population size estimated to number fewer than 10,000 mature individuals and either:
   1. An estimated continuing decline of at least 10% within 10 years or three generations, whichever is longer, (up to a maximum of 100 years in the future) OR
   2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals AND at least one of the following (a–b):
      a. Population structure in the form of one of the following:
         (i) no subpopulation estimated to contain more than 1000 mature individuals, OR
         (ii) all mature individuals are in one subpopulation.
      b. Extreme fluctuations in number of mature individuals.

D. Population very small or restricted in the form of either of the following:
   1. Population size estimated to number fewer than 1000 mature individuals.
   2. Population with a very restricted area of occupancy (typically less than 20 km²) or number of locations (typically five or fewer) such that it is prone to the effects of human activities or stochastic events within a very short time period and is capable of becoming Critically Endangered or even Extinct in a very short time period.

E. Quantitative analysis showing the probability of extinction in the wild is at least 10% within 100 years.

IUCN Red List Categories and Criteria
Version 3.1

Prepared by the IUCN Species Survival Commission
As approved by the 51st meeting of the IUCN Council Gland, Switzerland

The Red List Categories and Criteria, Version 3.1 are available at:
http://www.iucn.org/themes/ssc/red-lists.htm#Explanation of Criteria