

Status and Red List of Pakistan's Mammals

based on the
Pakistan Mammal Conservation Assessment & Management Plan Workshop
18-22 August 2003

Authors,
Participants of the C.A.M.P. Workshop

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Status and Red List of Pakistan Mammals

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List of Abbreviations Used in the Text:

AJ&K	Azad Jammu & Kashmir
BIS	Biological Information Sheet
BZU	Baha-ud-Din Zakariya University
CAMP	Conservation Assessment and Management Plan
CBSG	Conservation Breeding Specialist Group
CR	Critically Endangered
DD	Data Deficient
EN	Endangered
EW	Extinct in the Wild
HNP	Hingol National Park
HWES	Human Wildlife Ecological System
HWF	Himalayan Wildlife Foundation
IUCN	The World Conservation Union
KNP	Khunjerab National Park
KhNP	Kirthar National Park
LC	Least Concern
LSNP	Lal Suhanra National Park
MHNP	Maragla Hills National park
NCCW	National Council for the Conservation of Wildlife
NAs	Northern Areas
NE	Not Evaluated
NT	Near Threatened
NWFP	North West Frontier Province
PAs	Protected Areas
PU	Punjab University
QAU	Quaid-I-Azam University
RL	Red Lists
RSG	Reintroduction Specialist Group
SSC	Species Survival Commission
TDS	Taxon data Sheet
UNEP	United Nations Environment Programme
VU	Vulnerable
WWF	World Wide Fund for Nature
ZSD	Zoological Survey Department

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Foreword:

Acknowledgements:

In the conservation world today, Red Lists are widely accepted as a caution for the global and national communities towards the changing status of many plant and animal species. Many important and threatened species are left unguarded in the absence of effective information tools such as Red Lists. Red Lists involve a rigorous system of assigning a degree of threat in a particular category to a species declaring its updated status information. Currently, Red Lists are developed both at national and Global level. One basic and simple reason for initiating the country level red list work is the fact that global assessment does not necessarily assess and analyze the species status at the national scales and only those species gets chance for their inclusion in the Global Red List, if they are endemic in that region or country. Pakistan had no history of Red Lists development and now has finally taken the step towards developing the first National Red List beginning with mammalian species. Appreciation goes to every single participating institution and individual in Red List development through, who came all over from Pakistan to make it a historic and timely effort.

I must also appreciate the fact that two field biologists especially laid the foundations of detailed scientific research and studies on the mammals of Pakistan i.e. Dr. G.B. Schaller and Dr. T.J. Roberts. Their remarkable journeys through vast landscapes of Pakistan opened tremendous enthusiasm and basis for further research and conservation of magnificent mammalian species in the wild.

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The Status and Red List of Pakistan's Mammals is presented here which would hopefully serve as an information & guiding tool in prioritization of various conservation actions in Pakistan regarding mammalian species. This is the first step toward our important national mission in biological assessments, and we hope with the kind support of all concerned institutions, we all would be able to carry on the Red List endeavors for other groups of flora and fauna.

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Background

Situation Analysis:

Biological diversity or biodiversity refers to the variety of life forms: the different plants, animals and microorganisms, the genes they contain, and the ecosystems they form. Biodiversity is reduced when people modify ecosystems and destroy habitats of plants and animals. Scientists agree that the world's animals and plants are becoming extinct far faster than is historically normal and that collectively their loss will have grave consequences for humanity and conservation of biodiversity is a major concern throughout the world today. It is crucial to safeguard what remains of our biodiversity resources from the increasingly consumptive lifestyle and escalating urbanization overtaking countries and their wild areas. Unplanned human growth and settlements throughout the world are causing enormous pressure on wild resources.

The earth is estimated to have millions of species of which only 1.5 million have been described. Due to population growth and increasing rate of consumption, the natural wealth of our planet is being lost at an estimated rate of 5 % per decade. This is a tragic loss to the biological wealth of our planet for ethical, aesthetic, economic as well as for ecological reasons. The alarming loss of habitats and species, and the ecosystem processes dependent on them has stimulated conservationists around the globe to share knowledge and resources to document and monitor in an attempt to reverse the planet's declining wealth.

Preparing effective and safe programmes for conservation of species and ecosystems requires reliable data, dependable information sources and strategic planning are urgently required. Unfortunately in the developing world, due to economic struggle and competition for a better lifestyle impacts the priorities for environment and biodiversity conservation could not find satisfactory direction in recent decades. As a result, enormous loss of biodiversity has occurred. Another problem is lack of consistent approach and reliability in the departments and institutions working to collect first-hand information for the conservation prioritization process. Lack of adequate financial resources and trained personnel is another weak area for slow progress in biological assessments and conservation prioritization process.

Pakistan has no tradition of methodical and systematic data collection or of analyzing, assimilating or handling it for designing future conservation priorities. If we wait to develop such methodology before taking conservation action, it may be too late; therefore, we have relied on the best *available* information sources with the existing agencies and individuals at this time.

To start the assessment process, mammals are selected in the first case for their charisma and major role in the functioning of the ecosystems. Mammals also needed prioritization because of increasing human pressures and intrudence in the wild habitats.

To work on developing a list of the threatened mammals of Pakistan, the C.A.M.P. process was selected for its practical approach which is based on the premises of using the best currently available data sources, striving for a consensus among participants, validating output by review. This process will enable us to bring together sufficient data to design conservation priorities in specific sectors of flora and fauna'.

Red Data Books/ Lists: The concept of Red Data Books was given some thirty years ago by the late Sir Peter Scott, Chairman of the Species Survival Commission (SSC). He conceived IUCN International Red Data Books as a register of threatened wildlife that includes definitions of degrees of threat. This concept generated enormous interest throughout the world that was demonstrated by the production of many National Red Data Books. Still many countries are far behind in publishing their Red Data Books. It was soon recognized that the efforts on biodiversity conservation would fail if the expertise and information of all the countries, especially of the developing countries, is not rapidly reinforced.

In the conservation world today, IUCN Red Lists are the most comprehensive inventories of the global biodiversity of flora and fauna. It uses an evolving set of criteria to evaluate the risk of extinction of thousands of species, subspecies. These criteria are applicable to all species (except micro-organisms) in all regions and all countries.

The overall aims of Red Lists are to convey the urgency and scale of conservation problems to the public and to policy makers and motivate the global community to try and reduce species extinction.

The Red Data Lists/ Books are published on international, regional and national level.

Case of Pakistan:

Pakistan has rich sources of biodiversity, which belong to a unique blend of habitat and ecosystem types. These diverse ecosystems have their very own characteristic wild resources, which provide a web of living resources inter-depending on each other to sustain their life. Most of the southern parts of the country are rich with coastal ecosystem and arid plus desert habitat types with a variety of species. These habitats also refuge for the migratory wildlife resources coming from the northern landscapes to stage and winter and or breed in Pakistan. Indigenous local human communities are also residing here for centuries with their very own traditional knowledge and lifestyles in harmony with species.

Pakistan's mountain areas are world's exceptional wild resources, which harbor very different, isolated as well as hardy species that have learned to live in the harshness of the environment and in harmony with other species and communities. Medicinal plants of our mountains are famous for their role in the treatment of some very acute diseases of the human and animals. Some birds of prey in our northern landscapes are of majestic vision and isolate the beauty of this part from the rest of the world. It is very well said that they are the islands and paradise for wildlife species. Their inaccessible cliffs and peaks always challenge the desire to explore more and more on the information and management of remote wild resources.

With its dramatic ecology, broad latitudinal spread and immense altitudinal range, Pakistan spans a remarkable number of the world's ecological regions. These range from the mangrove forests fringing the Arabian Sea to the spectacular mountaintops where the Western Himalayas, Hindukush and Karakorums meet. These habitats support a rich variety of species (plants, mammals, birds, reptiles, amphibians, fishes, invertebrates) that contribute to the overall biodiversity of Pakistan.

Table 1: Animal diversity of Pakistan

Category	Total No. of Species Endemic	
*Mammals	195	3
Birds	662	0
Reptiles	174	15
Fish	525	36
Amphibians	16	3
Invertebrates	2000+	unknown

Sources (Various): IUCN-WCMC (1991) Roberts (1991), GAA (2004), Sheikh & Akhtar (2005)

*Note: Includes thirteen sub-species.

Pakistan has a number of the world's rarest animals like Indus River dolphin, Snow leopard, Western Tragopan, Markhor, etc. There are total of three endemics, one species and two sub-species, namely, the Indus Dolphin, Woolly Flying Squirrel, Balochistan Black Bear and Punjab Urial. All these and other species are in decline due to a combination of threats such as habitat loss and overuse of natural resources.

While human beings are without doubt a valuable resource for the country, escalating population growth has put enormous pressure on the country's natural resources. Unwise economic policies have widened income disparities and forced people to exploit biodiversity at rates that are not, and may never be sustainable. Although rich, Pakistan's biodiversity faces severe threats.

Following are some major threats to the biodiversity of Pakistan;

- Degradation of habitat
- Lust for hunting & over-harvesting
- Deforestation
- Land conversion
- Soil erosion
- Trade
- Chemical pollution

These factors and many others contribute to the erosion of Pakistan's biodiversity. Loss of habitat is the main cause of the present high rate of local extinction. Changes in habitat including habitat fragmentation also impacts plants and animals very dramatically. Habitat fragmentation, in particular, increases the risk of extinction by isolating small populations previously connected and now unable to exchange genetic material inevitably leading to inbreeding and loss of biological fitness. This results ultimately in population decline which ends in extinction.

Wildlife populations decline have been documented in Pakistan also because of illegal hunting for sport, meat and trade. There is a strong tradition of hunting in the country, and the impact of hunters has increased with the spread of modern weapons and increased mobility. Virtually all large mammals have declined in numbers as a result of hunting. A list of species believed to be declining due to extensive human use is illustrated in the table below:

Table 2: Human Use of Wildlife in Pakistan

Human Uses	Species Affected
Illegal hunting	Most ungulates, game birds, waterfowl
Prosecution (in response to livestock/crop losses)	All predators including (brown bear, black bear, grey wolf, snow leopard, common leopard, leopard cat, wild pig, rhesus macaque)
Falconry	Saker
Domestication – Trade	Cranes, rhesus macaque, parrot, bear.
Medicinal purposes	Rhesus macaque, bear, musk deer, dolphin, pelican
Decoration (Ornamental uses)	Most felids, mustelids (fur), ungulates (trophies), crocodile, snake, (skins) turtle, (shells, oils) pheasant (feathers)

(Source: GoP, WWF-P & IUCN 2000)

Rationale for National Level Biological Assessments

The assessment of the biological resources of a country is the crucial element in prioritizing species for conservation. The IUCN Red List Programme is responsible for assessing species at the global level which is extremely valuable for bringing home the conservation message to people around the world. These assessments do not and are not intended to describe the status of particular species at the national level. The global Red List assessment is accurate for a country only if a species is endemic to the country. Many of the taxa which do not qualify as threatened at the global level may be on the brink of extinction in a country or a continental region of more limited area due to more numerous human population and different cultural, economic and administrative factors. Therefore, national level assessments are necessary to address these anomalies of the global listing. National

level assessments provide justification for setting conservation priorities, for national level field studies, for funding conservation in ministries and departments, or generally for protection and recovery of threatened species. An analysis of the comprehensive global Red Lists of 1996, 2000 and 2002 and comparison with national action does not reveal any change or improvement in actions to halt population decline or address any specific threat in Pakistan. Therefore national level assessments of Pakistan's biodiversity are fundamental for undertaking effective action on behalf of threatened taxa, as well as determining overall biodiversity.

National governments and their related ministries are responsible to the people for biodiversity loss that occurs in their country, whether the species is endemic or not. The over-riding concept of biodiversity is that every species and subspecies is potentially or actually of intrinsic value. Therefore the loss of any species or subspecies at the country level is an embarrassing and tragic loss for a government, its conservation community, state wildlife agencies, conservation NGO's and for the common man. In practical terms, such as politics and raising funds for protecting biodiversity, it is a reflection on the efficiency of both governmental and non-governmental conservation agencies. Moreover, it is a loss of valuable biological wealth which could benefit all human beings. Timely warning is most desirable so that steps can be taken to prevent species loss. National assessments can provide such timely warning.

For these and other reasons, IUCN Pakistan now has taken the initiative to take up species assessment and develop Red Lists at a national level. Red Listing involves compilation and assessment of a large mass of information, further complicated by limitations of data, financial resources and coordination between agencies. It is not a small or simple task. It may be very difficult to assess all the components of biodiversity simultaneously in any country and in Pakistan our limitations are formidable. In order to begin this complex and cumbersome task, the mammals, a relatively well-studied group in comparison to others, and a group known to have a high percentage of extinctions (refer Table 3 below), were selected for the first assessment exercise.

Table 3: Number of Threatened Species by Major Groups of Animals at the Global Level: (Vertebrates)

Group	Total Number of Species	Threatened Species (1996)	Threatened Species (2000)	Threatened Species (2002)	Percentage of Threatened Species (2002)
Mammals	4,763	1,096	1,130	1,137	24%
Birds	9,946	1,107	1,183	1,192	12%
Reptiles	7,970	253	296	293	4%
*Amphibians	5,743	124	146	157	3%
Fish	25,000	734	152	742	3%

(Sources: IUCN Red Lists (1996, 2000, 2002)
* Global Amphibian Assessment (www.globalamphibians.org)

***Note:** According to the latest global amphibian assessments, a total of 1870 species are threatened with a percentage of 32% of the total species according to 2004 statistics. This number is much higher than the mammals where 23% and birds 12% are threatened respectively.

Mammalian Diversity and Pakistan:

There are various obvious reasons for prioritizing mammals for Pakistan's first Red List and some of these are listed below;

- Mammals are the most threatened group of vertebrates at global level.
- Out of eighteen orders of the world's mammals (4,763 species), Pakistan has representative species of ten orders that are among the most threatened in the world.
- As in the world total 1137 species of mammals are threatened, among approximately 1026 species belong to the orders whose representative species are also found in Pakistan.
- As it is clear from the table human use of wildlife in Pakistan, mammals may be comparatively more threatened than any other group.

Pakistan's wildlife biologists and other nature enthusiasts hold together a significant store of knowledge which is primarily on mammals:

- Wildlife departments and other biological institutions have done their work primarily on mammals.
- There are expert zoologists in Pakistan, whose work and knowledge on different groups of mammals is highly appreciable.
- Hunters, traders and others who spend time in natural areas have more information on mammals in detail than any other faunal group.

Having involved a variety of these experts and completed the assessment, we may draw the following benefits from the list of threatened mammals of Pakistan;

- We can identify and prioritize the 227 protected areas, particularly those which are relevant to mammals, where there is a need to extend conservation work.
- The exercise has raised morale and added to the knowledge of our scientists, field biologists, conservationists, researchers, academics and conservation NGO's by indicating deficiencies and therefore a need to initiate conservation action.

Assessments, Information, Research and Coordination:

Assessment of any group of biodiversity for conservation would require sufficient knowledge on both the quantitative and qualitative aspects of the taxon according to the various parameters as described in the data collection forms provided by the C.A.M.P. process, the Biological Information Sheet (BIS). Currently, in Pakistan we do not have any central database, where such information can be viewed in its totality. At the same time, there is no public or shared access to the information on the work that has been completed or ongoing by biodiversity research and conservation groups.

As far as Mammals are concerned, we do not have consistent research endeavors in Pakistan and there are no long lists of published material¹, except the work by Dr. G.B. Schaller (Mountain Monarchs 1977, Stones of Silence 1980); Dr. T. J. Robert (The Mammals of Pakistan, 1977 and 1997); Prof. Z.B. Mirza (Animal Biodiversity of Pakistan, 1999 and other publications), scientific contributions by Pakistan Museum of Natural History (Biodiversity of Pakistan, 1997), Zoological Survey Department and a diversity of individual research papers on small mammals and ungulates. All these efforts, however, frequently cover only qualitative aspects of the mammalian biodiversity. The pioneering work on Mammals of Pakistan by Dr. T. J. Robert covers the whole range of mammalian species, and gives us an overview of their current situation including the ecology and distribution in the country. In the recent past others have become involved in wildlife studies and there is a need to compile and make use of their knowledge for our collective wisdom. In the Pakistan

¹ A detailed list of relevant literature is cited in bibliography.

Mammals C.A.M.P. workshop an effort was made to gather concerned researchers/ individuals, organizations and institutions at one venue and combine their working knowledge with the aforementioned published material.

Communication, cooperation and coordination among organizations, institutions and researchers are of utmost importance. The Conservation Assessment and Management Plan (C.A.M.P.) workshop aims to gather people together and promote such sharing of knowledge for a common purpose. C.A.M.P. workshop has gained confidence as a systematic, scientific participatory methodology for efficient compilation of accurate checklists of species and assessment of their status at the national and regional level. The C.A.M.P. workshop is more lengthy and elaborate than most exercises. Trained facilitators supervise and direct the work on Biological Information Sheets collected from individual wildlife workers before the workshop. At the workshop, Working Groups of a few individuals organized by taxon groups together compile information from all sources on to an eight page Taxon Data Sheet after deliberating and deciding consensually the most accurate conclusion from compiled data. Later, this information is used in applying the IUCN Red List criteria to every species in order to determine its status and assign it to an IUCN Red List Category. All the contributors, informants and participants are given credit in the Taxon Data Sheet as contributors for the information and its assessment. All the Taxon Data Sheets are photocopied and collated, and given as a Draft Report to each participant to carry with him for subsequent review. Participants are encouraged to return the Draft with their comments and corrections which are incorporated into the typed Taxon Data Sheets. The Red List assessor uses these complete and corrected sheets to check the application of the IUCN Red List criteria and endorse or assign a different category. The final report is then compiled on the basis of the final assessments.

Executive Summary:

Introduction: A Conservation Assessment and Management Plan (C.A.M.P.) Workshop for the Mammals of Pakistan assessed a total of 195 taxa of mammals including 13 sub-species (Table 4) occurring in Pakistan using the 2001 version of the IUCN Red List Criteria, and made conservation, research and management recommendations on the basis of these assessments. Two species could not be assessed due to the lack of sufficient knowledge, information and consensus. The five-day workshop was conducted from 18-22 August 2003 at Hotel Margala in Islamabad with 45 mammalian experts and field biologists active in the field. The participants came from a variety of institutions such as wildlife departments, research institutions, universities and NGOs such as WWF-Pakistan.

The workshop was organized by IUCN Pakistan with facilitation from IUCN SSC Conservation Breeding Specialist Group's (CBSG) regional network for South Asia (CBSG, South Asia). Other collaborators included the Ministry of Environment, Pakistan, Zoological Survey Department, Pakistan and others. This was the first time that a conservation assessment workshop is conducted in Pakistan.

At the end of the C.A.M.P. a detailed draft report was handed over to the participants for further review linked with deadline. With a follow-up process of review and assessment of the taxon data sheets the final red list assessments were completed until the end of year 2004.

C.A.M.P.: The C.A.M.P. workshop process was developed by the Late Dr. Ulysses S. Seal, Chairman of the IUCN SSC Captive Breeding Specialist Group in the 1980's, originally to fill a request by Species Survival Commission Chairman, Sir Peter Scott, to evolve a method of prioritization of species for captive breeding. Since the programmes' inception, CBSG, later renamed as the Conservation Breeding Specialist Group has conducted more than 100 C.A.M.P. workshops all over the world. CBSG, aided by its regional networks, continues to improve the methodology, which evolves as a result of the various challenges presented at each workshop and from input received from wildlife experts worldwide. Many of the changes in format and assessments reflect CBSG's interest in responding to the concerns and needs expressed by its members and the users of its processes and tools.

Although the C.A.M.P. workshop was developed initially to assist zoos to priorities species for conservation breeding it is now used by IUCN for assessing species for the Red List of Threatened Animals and as means of assisting the regional and national biodiversity planning process. A C.A.M.P. workshop brings together a broad spectrum of experts and stakeholders (e.g., wildlife managers, biologists, representative of the academic community or private sector, researchers, government officials and captive managers) who contribute data from field studies 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 conflicts, putting conservation of species first and achieving consensus to forward conservation action.

A C.A.M.P. Workshop is intensive and interactive which facilitates objective and systematic discussion of research and management actions needed for species conservation, both *in situ* and *ex situ*. Information and recommendations are compiled for each species on a Taxon Data Sheet, which also provides documentation of the reasoning behind recommendations of the criteria used for deriving a status. All assessments are ratified in plenary sessions with much discussion ultimately leading to consensus within the workshop. The results of the initial C.A.M.P. workshops are reviewed by workshop participants in varying iterations and distributed as a report to experts and other users of the information in the greater conservation community. After assessments have been completed, participants form special issue working groups to highlight problem areas, which have been identified during the workshop for further discussion, and to formulate specific, action-driven recommendations. Some participants make personal commitments to carry out these recommendations.

The 2001 IUCN Red List Criteria (Version 3.1): The C.A.M.P. workshop process employs the IUCN Red List Criteria as a tool in assessing species status in a group of taxa. The structures of the categories include extinct, threatened, non-threatened, data deficient and not evaluated divisions. In the last decade IUCN has improved the method of assessment of species by incorporating numerical values attached to the different criteria for threat categories. The 2001 version of the Red List threatened categories are derived through a set of 5 criteria (population reduction, restricted distribution, continuing decline and fluctuation: restricted population and probability of extinction) based on which the threatened category is assigned. The term “threatened” according to the 2001 IUCN categories means Critically Endangered, Endangered or Vulnerable.

The Pakistan’s Mammals CAMP Workshop: Order Mammalia is represented by about 195 species and subspecies in Pakistan (Table 4, page 23). A strong motivation for organizing and conducting the C.A.M.P. workshop was to collect information for use in generating support for basic legal protection of these important wildlife species.

Status of Pakistan’s Mammals: It is important to note that four taxa of Mammals (2 at species level and 2 at subspecies level) are endemic to Pakistan. A total of 44 species of mammals are threatened in the category of Critically Endangered (12), Endangered (12) and Vulnerable (20). The final assessments of Pakistan Mammals are described in detail in the table 5 and 6 on page 40 and 41.

The results of the Pakistan’s mammals project are presented in print as well as made available on the web of the IUCN-P Biodiversity programme’s National Red List section i.e. www.biodiversity.iucnp.org or <http://202.38.53.58/biodiversity/redlist/mammals/index.htm>

Table 4: List of Pakistan's Mammals for Assessment in the C.A.M.P. Workshop:

INSECTIVORA
1. <i>Crocidura attenuata</i> – Grey Shrew
2. <i>Crocidura gmelini</i> – Steppie Pygmy Shrew
3. <i>Crocidura pergrisea</i> – Pale Grey Shrew
4. <i>Crocidura pullata</i> (Syn: <i>gueldenstaedtii</i>) Asiatic White-toothed Shrew
5. <i>Crocidura zarudnyi</i> – Zarudny's Shrew
6. <i>Hemiechinus auritus</i> - Long-eared Steppe or Afghan hedgehog
7. <i>Hemiechinus collaris</i> - Long-eared Desert Hedgehog
8. <i>Hemiechinus hypomelas</i> - Brandt's Hedgehog
9. <i>Hemiechinus micropus</i> - Indian Hedgehog
10. <i>Sorex thibetanus</i> - Asiatic Pygmy Shrew
11. <i>Suncus etruscus</i> - Savi's Pygmy Shrew
12. <i>Suncus murinus</i> - House Shrew or Musk Shrew
13. <i>Suncus stoliczkanus</i> - Anderson's Shrew or Yellow-throated Shrew
CHIROPTERA
14. <i>Barbastella leucomelas</i> – Asian or Eastern Barbastelle
15. <i>Cynopterus sphinx</i> – Short-nosed Fruit Bat
16. <i>Eptesicus bottae</i> – Botta's Serotine
17. <i>Eptesicus nasutus</i> – Sindh Bat, Sindh Serotine or Persian Serotine
18. <i>Eptesicus nilssoni</i> – Northern Serotine
19. <i>Eptesicus serotinus</i> – Common Serotine
20. <i>Hipposideros cineraceus</i> – Least Leaf-nosed Bat
21. <i>Hipposideros fulvus</i> – Fulvous Leaf-nosed Bat or Bicolour Round-leaf Horseshoe Bat
22. <i>Megaderma lyra</i> – Indian False Vampire
23. <i>Miniopterus schreibersii</i> – Schreiber's Long-fingered or Bent-winged Bat
24. <i>Murina tubinaris</i> – Gilgit Tube-nosed Bat
25. <i>Myotis blythii</i> – Lesser Mouse-eared Bat (extra-limital)
26. <i>Myotis emarginatus</i> - Geoffroy's Bat or Notch-eared Bat (extra-limital)
27. <i>Myotis longipes</i> – Long-fingered Bat (extra-limital)
28. <i>Myotis muricola</i> - Dark Whiskered Bat
29. <i>Myotis mystacinus</i> - Whiskered Bat (extra-limital)
30. <i>Nyctalus leisleri</i> – Leisler's Noctule or Hairy-armed Bat
31. <i>Nyctalus montanus</i> – Mountain Noctule
32. <i>Nyctalus noctula</i> – Common Noctule
33. <i>Otonycteris hemprichii</i> – Hemprich's Long-eared Bat or Desert Long-eared Bat
34. <i>Pipistrellus ceylonicus</i> – Kelaart's Pipistrelle
35. <i>Pipistrellus coromandra</i> – Indian Pipistrelle
36. <i>Pipistrellus dormeri</i> – Dormer's Bat
37. <i>Pipistrellus javanicus babu</i> – Himalayan Pipistrelle
38. <i>Pipistrellus kuhlii</i> – Kuhl's Pipistrelle
39. <i>Pipistrellus paterculus</i> – Thomas's Pipistrelle
40. <i>Pipistrellus pipistrellus</i> – Common Pipistrelle
41. <i>Pipistrellus savii</i> – Savi's Pipistrelle

42. <i>Pipistrellus tenuis mimus</i> – Least Pipistrelle
43. <i>Plecotus auritus</i> – Brown Long-eared Bat
44. <i>Plecotus austriacus</i> – Grey Long-eared Bat
45. <i>Pteropus giganteus</i> – Indian Flying Fox
46. <i>Rhinolophus blasii</i> – Blasius' or Peters' Horseshoe Bat
47. <i>Rhinolophus ferrumequinum</i> – Greater Horseshoe Bat
48. <i>Rhinolophus hipposideros</i> – Lesser Horseshoe Bat
49. <i>Rhinolophus lepidus</i> – Blyth's Horseshoe Bat
50. <i>Rhinolophus macrotis</i> – Big-eared Horseshoe bat
51. <i>Rhinopoma hardwickei</i> – Lesser Rate-tailed Bat or Small Mouse-tailed Bat
52. <i>Rhinopoma microphyllum</i> – Larger Rat-railed Bat or Mouse-tailed Bat
53. <i>Rhinopoma muscatellum</i> – Least Mouse-tailed Bat
54. <i>Rousettus egyptiacus arabicus</i> – Egyptian Fruit Bat
55. <i>Rousettus leschenaultia</i> – Fulvous Fruit Bat
56. <i>Scotoecus pallidus</i> – Yellow Desert Bat
57. <i>Scotophilus heathii</i> – Common Yellow-bellied Bat or Desert Scotophil Bat
58. <i>Scotophilus kuhlii</i> – Temminck's House Bat or Lesser House Bat
59. <i>Tadarida aegyptiaca</i> - Egyptian Free-tailed Bat or Wrinkle-lipped Bat
60. <i>Taphozous nudiventris</i> – Naked Rumped Tomb Bat or Kutch Sheath-tailed Bat
61. <i>Taphozous perforatus</i> – Tomb Bat or Egyptian Tomb Bat
62. <i>Triaenops persicus</i> – Persian Trident Bat
PRIMATES
63. <i>Macaca mulatta mulatta</i> – Rhesus Macque
64. <i>Semnopithecus entellus</i> – Grey Langur or Hanuman Langur
PHOLIDOTA
65. <i>Manis crassicaudata</i> – Indian Pangolin or Scaly Anteater
CARNIVORA
66. <i>Acinonyx jubatus</i> – Cheetah (extinct in Pakistan)
67. <i>Canis alpinus</i> – Indian Wild Dog or Dhole
68. <i>Canis aureus</i> – Asiatic Jackal
69. <i>Canis lupus</i> – Wolf
70. <i>Caracal caracal</i> – Caracal or Red Lynx
71. <i>Felis chaus</i> – Jungle Cat
72. <i>Felis margarita</i> – Sand Cat or Dune Cat
73. <i>Felis silvestris</i> – Indian Desert Wild Cat or Asiatic Steppe Wild Cat
74. <i>Herpestes edwardsii</i> – India Grey Mongoose or Common India Mongoose
75. <i>Herpestes javanicus</i> – Small Indian or Small Asian Mongoose
76. <i>Hyaena hyaena</i> – Striped Hyaena
77. <i>Lutra lutra</i> – Common Otter
78. <i>Lutrogale perspicillata</i> – Smooth-coated Otter or Indian Otter
79. <i>Lynx lynx isabellina</i> – Himalayan Lynx
80. <i>Martes flavigula</i> - Yellow throated Marten
81. <i>Martes foina</i> – Stone Marten
82. <i>Mellivora capensis</i> – Ratel or Honey Badger
83. <i>Mustela altaica</i> – Alpine Weasel or Pale Weasel
84. <i>Mustela erminea</i> – Stoat or Ermine

85. <i>Otocolobus manul</i> – Pallas' Cat or Steppe Cat
86. <i>Paguma larvata</i> – Masked Palm Civet
87. <i>Panthera leo</i> – Lion (extinct in Pakistan)
88. <i>Panthera pardus</i> – Panther or Leopard
89. <i>Panthera tigris</i> – Tiger (extinct in Pakistan)
90. <i>Paradoxurus hermaphroditus</i> – Toddy Cat or Common Palm Civet
91. <i>Prionailurus bengalensis</i> – Leopard Cat
92. <i>Prionailurus viverrinus</i> – Fishing Cat
93. <i>Uncia uncia</i> – Snow Leopard or Ounce
94. <i>Ursus arctos isabellinus</i> – Brown Bear
95. <i>Ursus thibetanus</i> – Asiatic Black Bear or Himalayan Black Bear
96. <i>Ursus thibetanus gedrosianus</i> – Balochistan Black Bear
97. <i>Viverricula indica</i> – Small Indian Civet or Rasse
98. <i>Vormela peregusna</i> – Marbled Polecat
99. <i>Vulpes bengalensis</i> – Indian or Bengal Fox
100. <i>Vulpes cana</i> – Blanford's Fox or King Fox
101. <i>Vulpes rueppellii</i> – Rueppell's Fox or Sand Fox
102. <i>Vulpes vulpes</i> – Common Red Fox
103. <i>Vulpes vulpes montana</i> – Tibetan Red Fox
PERISSODACTYLA
104. <i>Equus hemionus khur</i> – Indian Wild Ass or Onager
105. <i>Rhinoceros unicornis</i> – Great One-horned Rhinoceros or Indian One-horned Rhinoceros (extinct in Pakistan)
ARTIODACTYLA
106. <i>Antilope cervicapra</i> – Blackbuck (Extinct in the wild)
107. <i>Axis porcinus</i> – Hog Deer or Para
108. <i>Boselaphus tragocamelus</i> – Nilgai or Blue Bull
109. <i>Capra aegagrus blythi</i> – Wild Goat or Persian Pasang
110. <i>Capra aegagrus chialtanensis</i> – Chiltan Wild Goat
111. <i>Capra falconeri falconeri</i> – Flare-horned Markhor
112. <i>Capra falconeri megaceros</i> – Straight horned Markhor
113. <i>Capra ibex sibirica</i> – Himalayan Ibex
114. <i>Cervus duvaucelii</i> – Swamp Deer or Barasingha
115. <i>Cervus elaphus</i> – Red Deer or Kashmir Hangul
116. <i>Gazella bennettii</i> – Chinkara or India Gazelle
117. <i>Gazella subgutturosa</i> – Goitred Gazelle or Persian Gazelle
118. <i>Hemitragus jemlahicus</i> – Himalayan Tahr (extra-limital)
119. <i>Moschus chrysogaster</i> – Himalayan Musk Deer
120. <i>Muntiacus muntjak</i> – Indian Muntjac or Barking Deer
121. <i>Naemorhedus goral</i> – Himalayan Goral or Grey Goral
122. <i>Ovis ammon polii</i> – Marco Polo Sheep
123. <i>Ovis vignei cycloceros</i> – Afghan Urial
124. <i>Ovis vignei punjabensis</i> – Punjab Urial
125. <i>Ovis vignei vignei</i> – Ladakh Urial
126. <i>Pseudois nayaur</i> – Bharal or Blue Sheep
127. <i>Sus scrofa</i> – Wild Pig or Indian Wild Boar

LAGOMORPHA
128. <i>Lepus capensis</i> – Cape Hare
129. <i>Lepus nigricollis</i> – Indian Hare or Black-naped Hare
130. <i>Ochotona roylei</i> – Royle's Pika or Indian Pika
131. <i>Ochotona rufescens</i> – Afghan Pika or Collared Pika
RODENTIA
132. <i>Acomys cahirinus</i> – Cairo Spiny Mouse
133. <i>Allactaga elater</i> – Small Five-toed Jerboa
134. <i>Allactaga euphratica</i> – Long-eared Jerboa
135. <i>Allactaga hotsoni</i> – Hotson's Five-toed Jerboa
136. <i>Alticola roylei</i> (<i>Syn: argentatus</i>) – Royle's High Mountain Vole
137. <i>Alticola stoliczkanus</i> – Stoliczka's High Mountain Vole (extra-limital)
138. <i>Apodemus flavicollis</i> – Yellow-necked Field Mouse (extra-limital)
139. <i>Apodemus rusiges</i> (<i>syn: sylvaticus</i>) – Himalayan Wood Mouse or Field Mouse
140. <i>Bandicota bengalensis</i> – Lesser Bandicoot Rat or Sindh Rice Rat
141. <i>Calomyscus bailwardi</i> – Mouse-like Hamster
142. <i>Cremnomys cutchicus</i> – Cutch Rock Rat
143. <i>Cricetulus migratorius</i> - Migratory Hamster or Grey Hamster
144. <i>Dryomys nitedula</i> – Forest Dormouse
145. <i>Ellobius fuscocapillus</i> – Quetta or Afghan Mole Vole
146. <i>Eupetaurus cinereus</i> – Woolly Flying Squirrel
147. <i>Funambulus pennantii</i> – Northern Palm Squirrel or Five-striped Palm Squirrel
148. <i>Gerbillus cheesmani</i> – Cheesman's Gerbil
149. <i>Gerbillus gleadowi</i> – Indian Hairy-footed Gerbil
150. <i>Gerbillus nanus</i> – Balochistan Gerbil
151. <i>Golunda ellioti</i> – Indian Bush Rat
152. <i>Hylopetes fimbriatus</i> – Small Kashmir Flying Squirrel
153. <i>Hyperacrius fertilis</i> – True's Vole or Burrowing Vole
154. <i>Hyperacrius wynnei</i> – Miurree Vole
155. <i>Hystrix indica</i> – Indian Crested Porcupine
156. <i>Jaculus blanfordi</i> – Blandford's Jerboa or Greater Three-toed Jerboa
157. <i>Marmota caudata</i> – Long-tailed Marmot or Kashmir Marmot
158. <i>Marmota himalayana</i> – Himalayan Marmot
159. <i>Meriones crassus</i> – Sundevall's Jird
160. <i>Meriones hurrianae</i> – Indian Desert Jird or Desert Gerbil
161. <i>Meriones libycus</i> – Libyan Jird
162. <i>Meriones persicus</i> – Persian Jird
163. <i>Microtus juldaschi</i> – Pamir Vole or Juldaschi's Vole
164. <i>Millardia gleadowi</i> – Sand-coloured rate
165. <i>Millardia meltada</i> – Soft-furred Field Rat or Metad
166. <i>Mus booduga</i> – Little Indian Field Mouse
167. <i>Mus cervicolor</i> – Fawn-coloured Mouse (extra-limital)
168. <i>Mus musculus</i> – House Mouse
169. <i>Mus platythrix</i> – Indian Brown Spiny Mouse (extra-limital)
170. <i>Mus saxicola</i> – Grey Spiny Mouse
171. <i>Nesokia indica</i> – Short-tailed Mole Rat

172. <i>Petaurista petaurista</i> – Giant Red Flying Squirrel Or Indian Giant Flying Squirrel
173. <i>Rattus nitidus</i> – Himalayan Rat (extra-limital)
174. <i>Rattus norvegicus</i> – Norway or Brown Rat
175. <i>Rattus rattus</i> – Roof Rat or House Rat
176. <i>Rattus turkestanicus</i> – Turkestan Rat
177. <i>Rhombomys opimus</i> – Great Gerbil or Giant Day Jird
178. <i>Salpingotus michaelis</i> – Balochistan Pygmy Jerboa
179. <i>Sicista concolor</i> – Chinese Birch Mouse
180. <i>Tatera indica</i> – Indian Gerbil or Antelope Rat
CETACEA
181. <i>Balaenoptera edeni</i> – Bryde's Whale
182. <i>Balaenoptera musculus</i> – Great Blue Whale or Sulphur-bottomed Whale
183. <i>Balaenoptera physalus</i> – Common Rorqual or Common Finback
184. <i>Delphinus delphis</i> – Long-beaked Dolphin
185. <i>Dugong dugon</i> – Dugong (extra-limital)
186. <i>Kogia simus</i> – Dwarf Sperm Whale
187. <i>Megaptera novaeangliae</i> – Humpback Whale
188. <i>Neophocaena phocaenoides</i> – Little Indian Porpoise or Black Finless Porpoise
189. <i>Peponocephala electra</i> – Melon-headed Whale or Electra Dolphin
190. <i>Platanista minor</i> – Indus Dolphin or Bhulan
191. <i>Pseudorca crassidens</i> – False Killer Whales
192. <i>Sousa chinensis</i> – Indian Humpback Dolphin
193. <i>Steno bredanensis</i> – Rough-toothed Dolphin
194. <i>Tursiops truncatus</i> – Eastern Bottle-nosed Dolphin
195. <i>Ziphius cavirostris</i> – Goosebeak Whale or Cuvier's Beaked Whale

Note: For Caprinae categorization, Schaller (1975); Schaller & Khan (1975) and Shackleton (1996) are followed.

The Conservation Assessment and Management Plan (C.A.M.P.):

The C.A.M.P. workshop process employs the IUCN Red List Criteria (2001 IUCN Red List Criteria) (Version 3.1) as a tool in assessing species in a group of taxa. The IUCN Red List of Threatened Species is the world's most comprehensive status listing of the organisms, which make up the Earth's biodiversity. The IUCN Red List Criteria is an objective, systematic and scientific method of evaluating the risk of extinction or decline in the wild of taxa, which is reflected in the IUCN Red List Categories that describe the level of risk.

The 2001 version of the Red List Threatened categories are derived through a set of 5 criteria based on which the threatened category is assigned. The term threatened according to the 2001 IUCN categories means Critically Endangered, Endangered or Vulnerable. The criteria for threat categories (IUCN, 2001) are

- Population reduction
- Restricted distribution, continuing decline and fluctuation
- Population restriction / fluctuation and continuing decline
- Restricted population
- Probability of extinction

For a taxon to be categorized as threatened, it needs to qualify for any one of the above 5 criteria only. Not qualifying any of the above criteria could mean that a taxon is either not threatened or is data deficient.

With the popularization of the 1994 IUCN Red List Criteria and its application around the world, various specialists and scientists of taxonomic groups suggested a more serious look at the criteria. The IUCN formed a Red List Review Committee in 1998 to suggest changes to the 1994 criteria and after nearly 2 years of workshops and deliberations, the 2001 IUCN Red List Criteria were drafted and accepted in October 2000. All assessment from 2001 are based on the latest version (3.1) of the Red List Criteria.

Wildlife – both flora and fauna is in crisis today. Reduction and fragmentation of habitat is occurring at a rapid and accelerating rate. For an increasing number of taxa, the results are small and isolated populations are at the risk of extinction. For these populations to survive and recover intensive management is urgently required e.g. habitat management and restoration, intensified information gathering, captive breeding as well other information.

Evaluating the status of taxa is a difficult task. Information is not readily available or complete, and the information, which exists, is scattered and often inconsistent. In order to assess species systematically, all information that exists on the target species has to be gathered and checked for accuracy and consistency. Both historical and current information from published literature and from working field biologists has to be collected, put in a systematic format, and discussed. Under ordinary circumstances, this could be a long, tedious and costly process, but a method has been developed to complete the procedure. It is a Conservation Assessment and Management Plan Workshop.

What is a C.A.M.P.? A C.A.M.P. workshop is a “process” which involves prioritization, assembling experts (e.g., wildlife managers, SSC Specialist Group members, representatives of the academic community or private sector, researchers and captive managers) to evaluate threat status of selected taxa in a broad taxonomic group (e.g., mammals, amphibians, etc.), geographical region or country (e.g., South Asia, Pakistan, etc). Information gathering is focused on the most recent available data, estimates, informed guesses and identification of needed knowledge that allow:

1. Assignment to an IUCN Category of Threat;
2. Broad-based management recommendations;

3. Specific conservation-oriented research recommendations useful to generate the knowledge needed to develop more comprehensive management and recovery programs *in situ* and/or *ex situ*.

C.A.M.P. process is participatory and egalitarian. Workshop participants make all decisions and recommendations. Trained facilitators from the Conservation Breeding Specialist Group (IUCN, SSC, CBSG) facilitate organized discussion and, if necessary, provide objective and expert advice. Facilitators guide participants to search their memory for bits of information, which would add to the information-base of the species and help with the derivation of a category of threat. All work is carried out in dynamic discussion groups, which facilitates recall as well as insight.

History and Evolution of C.A.M.P. Workshops:

Since the programme's inception, the IUCN SSC Conservation Breeding Specialist Group has conducted more than 100 C.A.M.P. workshops all over the world. CBSG continues to improve the methodology, which evolves as a result of the various challenges presented at each workshop and from input received from wildlife experts worldwide. Many of the changes in format and assessments reflect CBSG's interest in responding to the concerns and needs expressed by its constituents.

The C.A.M.P. process has been changing from being a taxon-based approach to focus on a wider range of regionally endemic taxa. A number of regional C.A.M.P.s have been held throughout the world. In Asia C.A.M.P.s have been conducted for South Asian Primates, South Asian Chiroptera, South Asian Amphibians, Indonesian Asian Mammals, Amphibians and Reptiles and others. This approach to the C.A.M.P. process, conducted in the regions, takes advantage of the broad base of information held in the experience of local biologists and managers. The information also is more readily formulated on a habitat and ecosystem basis with more explicit identification and assessment of threats and needed research and management activities. One significant by-product of the regional C.A.M.P. is increased communication and networking among local conservationists, frequently people with similar overall goals but rarely the opportunity to meet or interact.

The value of the C.A.M.P. as a rapid assessment tool has been demonstrated intensively in India and Costa Rica, as well as other countries. India is finding the C.A.M.P. process valuable in developing its national biodiversity strategy. In India, the Biodiversity Conservation Prioritization Project (BCPP) used C.A.M.P. process with Zoo Outreach Organization/CBSG, South Asia organizing and facilitating species assessments for nearly 2000 species of soil invertebrates, freshwater fish, amphibians, reptile, mammals, medicinal plants and mangrove ecosystems. C.A.M.P.s also have been recommended as the first step in developing Action Plans by Specialist Groups within the SSC and BirdLife International.

Scope of C.A.M.P. Workshop:

The challenge of organizing comprehensive taxon status reports is immense and presents an overwhelming task for one institution or individual specialist. C.A.M.P. workshop methodology enables an institution to collaborate with a very large number of other institutions and individuals and thereby reduce gaps in information, bias held by individuals and institutions and time frame for producing a comprehensive report. A C.A.M.P. workshop can be a dynamic organizing force for conservation in order to respond to the need for basic information, current trends and consensus among biologists and the greater conservation community.

Criticism of C.A.M.P. Approach:

One criticism of the C.A.M.P. workshop process is that it forces figures when there is no systematic study. In point of fact, trained CBSG facilitators merely make the best use possible of the elegant IUCN Red List Criteria and Categories and their guidelines. To understand the actual status, rigorous studies including surveys, monitoring, ecological studies and impacts of threats on the population, demography and habitat should be understood. However, given the lack of this information and the

large number of species yet to study, it is often decided by workshop consensus, to assess such species with whatever information is available, so that at least crucial research and management areas for the conservation of the species can be flagged. Declining to assess a species for want of information consigns it to a sort of purgatory in which little action is taken on its behalf. Thus, ignoring species for want of rigorous scientific information may in itself be a threat to the species considering the inaction, which results. In their wisdom, the creators of the IUCN Red List Criteria and Categories knew well the gaps in information that exist in perhaps the greater part of the world's species, particularly in high biodiversity countries.

Therefore, the Red List guidelines provide sufficient scope for assumptions (within reason) including inference and estimation for taxa, which have not been perfectly studied. In the C.A.M.P. itself this can be noted with strong recommendations for further studies, standardization of methodology and data collection in order to undertake a more realistic assessment. C.A.M.P. workshops can be considered as a platform to work on future actions to save the species in the wild.

Lack of Information:

When there seems to be “no information”, it may not really be so. Participants of C.A.M.P. workshops are surprised to observe how much they actually know when pooling information in the Taxon Data Sheet. Also, in using the IUCN Red List Criteria and categories, a species is not categorized as Data Deficient unless there is sufficient proof to indicate lack of information. This is contrary to the method of some biologists who proclaim a species Data Deficient without considering the minimum datasets available that can potentially lead to derivation of the status. In C.A.M.P. workshops, a standard approach can be adopted for any species to be assessed with careful use of the IUCN Red List guidelines and the honest use of the “data quality” values in the Taxon Data Sheet.

First Attempt for Species Survival:

The C.A.M.P. workshop is a “first cut” or first attempt to define the problem and make strategic decisions for management of the highly endangered species. In the conservation arena, when time and resources are scarce, such decisions can make a big difference for species survival. In C.A.M.P. workshops, we strive for the “best information available at this time” in order to go forward in conservation action.

C.A.M.P. Process:

The C.A.M.P. process involves the following stages.

1. Pre C.A.M.P. Activities
2. C.A.M.P. Workshop 3-5 days
3. Post C.A.M.P. Activities

Pre C.A.M.P. activities

- Identification of key individuals, organizations to be involved in the process.
- Coordination with the key informants/ group's 3-6months prior to the C.A.M.P. workshop.
- Distribution of biological information sheets to the contributors with guidelines

C.A.M.P. workshop

The five day C.A.M.P. workshop process would broadly involve following steps:

- Opening ceremony
- Brief overview presentations
- Red list, C.A.M.P. process instructions
- Define Problem/gather information using present experts and pre C.A.M.P. data forms

- Introduction of Taxon Data Sheets and IUCN categories of threat
- Demonstrate application of IUCN Red list.
- Describe effective use of maps for collecting, distribution information
- Organize working groups for assessments and groups select working group facilitator
- Identify group roles/tasks, and begin working group session; complete taxon data
- Short Plenary sessions will be conducted throughout if required.
- Distribute draft taxon data sheets/ working group reports in plenary sessions
- Special issue working groups
- Develop executive Summary if time permits
- Describe draft report compilation and review process – get consensus of workshop participants on method to be followed
- Workshop wrap up
- Closing Ceremony

Post Workshop Activities

- Edit and complete Draft Report
- Distribute draft report
- Solicit participants' comments
- Edit, publish and distribute final Report
- Follow up of recommendations actions
- Start thinking of the C.A.M.P. Review which should take place in 3 – 5 years

C.A.M.P. Preparation: Preparation for a C.A.M.P. primarily involves putting together two important lists: 1) a list of potential participants and 2) a list of target species. Assembling a list of participants for just any workshop may not be so difficult but for a C.A.M.P. one wants people who have genuine information, e.g., field biologists, taxonomists, foresters who have studied the target taxa. There are few readymade lists of these people so hunting them down demands painstaking work. The list of taxa also is not straightforward and this requires collecting lists from many sources and verifying each species and subspecies with published references. It also requires tracking down all synonyms and common names and recent taxonomic modifications. Preparation also requires collecting all published sources of field surveys, sightings and identifications for reference in the workshop. It takes months.

C.A.M.P. Implementation: When the C.A.M.P begins, no matter how much we tell the participants to be prepared for hard work, nobody can quite believe what this actually entails. It is not an easy task to fill out the 8-paged Taxon Data Sheets with information that participants might have come across in the field years ago; arguing with other participants, facilitators and learning the brain boggling IUCN Red List Criteria takes its entire toll. The first night that we work till 8 or 9 p.m. is kind of fun-something different for a workshop-but by the 3rd and 4th day of filling in the ubiquitous sheets, participants are wondering what kind of monsters had invented the C.A.M.P. Workshop. By the last day when every one thinks that they can not part with another piece of information, suddenly it's over- and there is a list of species, which have been carefully assessed and categorized using IUCN, Red List Criteria and Categories and more information on any one than has ever been compiled before.



This information is presented in a report (like this) that can be used to save species. This makes it all worthwhile. The participants are not the only ones to suffer! C.A.M.P. recorders also sit late at night with strained eyes and aching backs to record information in a computerized data base. This makes it possible for participants to take home a draft report right from the workshop. Official recorders put hours and days of recording. Even then, it is not over. Participants takes home the Taxon Data Sheets (TDS) and make corrections and supply missing information and send it back. It is another long, difficult task to incorporate the information, rectify the TDS and organize the Material for writing the Report. It takes many hours of many days over many weeks of checking and rechecking data.

Report

Mammals of Pakistan:

Pakistan lies on the western margin of the monsoon region of the Indian Subcontinent. Despite the monsoon winds, the country has an arid subtropical climate. There is annual fluctuation in the amount and frequency of the rainfall, with a maximum in the months of July and August. Moreover, the effectiveness of the monsoon rainfall for the vegetation is reduced because it takes place in the late summer when much is lost to evaporation. Only the southern slopes of the Himalayas and the submontane plateau regularly receive 700 to 1,000 mm annual rainfall (Shackleton, 1997).

Pakistan has a rich diversity of mammalian fauna, akin to two of the faunal regions e.g., the Palearctic (west of Indus) and the Oriental region (east of Indus). Out of eighteen world orders ten are represented in Pakistan. The varied composition of the mammalian fauna is largely due to its role as a transitional zone between two of the Palearctic and Oriental and some species have come from far Ethiopian region. The mixture of old forms of life forms and new evolved ones are because of the climatic changes in the late Pleistocene and the physical barriers to migration and colonization, which are important elements in Pakistan's geography (Roberts, 1997).

Pakistan's climate has changed from warm to dry over the last 10,000 years. The process of that change increased throughout the last few centuries. Most western parts of the country are out of the reach of the summer monsoon. There the terrain is dry and the climate arid with xerophytic plants and desert-adapted animals. Such habitats favored species of wild goat and sheep, which arrived from Eurasia, but were halted at the abrupt escarpments that mark the boundary between the mountains and plains. This resulted in a diversity of species of animals and plants, which had converged on this region from the three zoogeographical zones. Initially, some Indo-Malaysian taxa or species of oriental animals advanced and occupied new habitats along the southern slopes of the Himalayas and into the Indus plains; others arrived along the coast into Sindh south of the Thar desert; some species adapted and occupied the Thar desert itself. Next, Eurasian species occupied habitats in the northern and western mountain ranges to which they were suited. Finally, species from Africa arrived along the western coast into the Thar Desert (Mirza, 1998).

Having such diversity and variety of habitat association, the mammals of Pakistan have also gone through tremendous pressures of human development. Various industrial expansion projects, forests degradation, water pollution, land erosion, wetland clearing and landslides are one of the major factors leading to habitat loss of mammalian species. Many species, which were thriving in the wild habitats and were common have disappeared from sight and are restricted to core habitats in remote localities. After all this change, especially in last thirty years, there have been very few efforts to study and assess the wild populations of mammals. In the case of Ungulates, Pakistan is home to 7 species with 11 sub species of Caprinae, that occupy an array of habitats from the hills in the southern deserts to the high altitudes of Himalayas.

Information Status of Pakistan Mammals:

The information on the mammals of Pakistan has been very patchy throughout in the last few centuries. Most of the data is not consistent for many species. Roberts (1997) has made serious and consistent efforts as he wrote two volumes on the Mammals of Pakistan. However, detailed field information is still lacking on most species in remote mountains and desert areas of Pakistan. It was in late eighties that some local experts and foreign scientists worked on few aspects of the species of rodents and ungulates. Some institutions and individual researchers did tremendous work. Pakistan Museums of Natural History worked with Florida Museum of Natural History on small mammals in Balochistan and Northern Mountains. Daniel Blumstein from University of California Davis did research work on the high-altitude Marmots in Khunjerab (Blumstein, 1991, 1993) and Wildlife Conservation Society had a conservation and research endeavor focused on endemic Woolly Flying Squirrel (Zahler, 1997 and 1998). Ruddy Hess did his doctoral work on the species of Markhor in

Northern Mountains (Hess, 2001). Kashif Sheikh did in-depth doctoral field ornithological studies in the high-altitude environments of western Karakorums and also provided a detailed list of the mammals and their distribution from this part of Northern Pakistan (Sheikh, 2001). Himalayan Wildlife Foundation is conducting Brown Bear research in the Deosai Plains, carrying out detailed investigation on the various scientific aspects of the species. Currently there is ongoing research on ecology and biology of Uril in Punjab (Awan, 1998) and evaluation of the status trends of Wolf (R. Irshad) at Quaid-I-Azam University. WWF has been doing studies on Himalayan Ibex (Arshad, 2002) and Markhor and few species of small mammals are studied by the researchers of the Pakistan Museum of Natural History in various parts of the country.

It is also useful to mention that very random data collection efforts are going on by various institutions and departments that are mandated to conduct these activities throughout the country. However, there is lack of trained manpower in the country, which is also a big obstacle in the collection of the important data for these species. Even though these efforts are going on in the field, it is still very vague picture of the species as far as detailed ecological studies linking their habitats and ecosystems is concerned.

Moreover, there have been no efforts to assess the status and population of these species systematically. Most researchers and managers rely only on information available in IUCN global Red List. For other species there have been guesses and estimates. These factors have been the real motivation to start this kind of work in Pakistan.

IUCN-SSC has several specialist groups that are active in promoting the research, conservation and conservation management of the mammalian species around the world. This includes: Caprinae, Deer, Otter, Rodents and other specialist groups. There are some disciplinary specialist groups also such as Conservation Breeding Specialist Group (CBSG), Reintroduction Specialist Group (RSG), Veterinary Specialist Group (VSG), Invasive-Alien Species Specialist Group (IASG), etc. IUCN- Red List Endeavors have always included major species from Pakistan showing their status and such information from a global perspective. Much information is found in the 1996 Red Lists, 2000, 2002 and 2003.

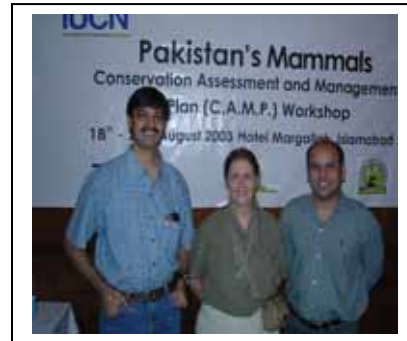
The C.A.M.P. workshop for the assessment of the Threatened mammals of Pakistan was held from 18-22 August 2003 in Islamabad with participation of key wildlife and academic professionals and others from diverse backgrounds having interest in the subject. A total of 45 experts participated including active field biologists from other countries working in Pakistan. Published literature and references were fully used during the course of the workshop and later in the review and compilation process. All provinces and departments were represented in the workshop. Out of a total 195 (including 6 sub species), 193 species were assessed and 2 could not be assessed during the workshop.

IUCN Pakistan's Biodiversity Programme was the key organizer, with assistance from IUCN Asian Regional Biodiversity Programme office. Zoo Outreach Organization, CBSG, South Asia facilitated the workshop. Other collaborators included Ministry of Environment Pakistan, Zoological Survey Department and of course all the institutions that spared their academic staff for one week to attend the workshop.

Conservation Assessment and Management Plan (C.A.M.P.) Workshop for Pakistan's Mammals

A conservation Assessment and Management Plan Workshop is in many ways a 'phenomenon'. It could not be implemented successfully without the collaboration and cooperation of a great number of people. The three stages of a C.A.M.P.- planning, implementation and follow-up are all exercises in chaotic and grueling work. The people who help it happen; planners, participants as well as those who put together the Report deserve special credit, which is the purpose of this page.

Pakistan's Mammals C.A.M.P. Summary:



A Conservation Assessment and Management Plan for Mammals (C.A.M.P.) of Pakistan was conducted at Hotel Margala, Islamabad, 18-22 August 2003. A total of 45 participants from the universities, colleges, forest and wildlife departments, research institutes, museums and other institutions of Pakistan spent five days discussing and deliberating the population, distribution and other aspects for 199 Mammals of the Country. The workshop was organized by the Biodiversity Programme of IUCN Pakistan in collaboration with IUCN Asia Regional Biodiversity Programme, the Federal Ministry of Environment, Pakistan, and Zoo Outreach Organization (ZOO)/ Conservation Breeding Specialist Group, South Asia. About twenty scientific and conservation institutions deputed participants to the workshop. This workshop assessed most of the species and derived IUCN Red List Categories for them using Taxon Data Sheets which required detailed information on population estimates, distribution, threats, quality of habitat, etc. Some species assessment required further refinement, which will go on for some time. National assessments were derived using the IUCN Regional Guidelines. The endemic were assessed using Global Criteria.

After a plenary session to review assessments and plan the strategy for producing a report, Special Issue Working Groups were formed on the topics of i) Education and Awareness, ii) Research (including taxonomy, data deficiency, need for field biologists, etc.) and iii) Habitat (including Protected Areas, legislation, etc.) and reports were produced.

A Valedictory ceremony was conducted in which Special Issues Working Groups gave their reports; CBSG Facilitators (Sally Walker and Sanjay Molur) gave an Overview of the C.A.M.P. and a presentation on requirements for follow up in education and research. Certificates were awarded and participants gave their remarks on the workshop. Kashif Sheikh from IUCN summed up the workshop recommendations and follow-up steps after which a vote of thanks was given by the chair. A draft report consisting of TDS for all species, participant list and their photos were prepared and given to each participant during the Valedictory ceremony itself.

Utilization of IUCN Criteria, Categories:

The 2001 IUCN Red List Criteria (Version 3.1)

The C.A.M.P. workshop process employs the IUCN Red List Criteria as a tool in assessing species status in a group of taxa. The IUCN Red List Criteria were revised in 1994 and these objective criteria were revised again in 2000 and ratified by the IUCN for use in threat categorization at the global level (IUCN, 2001). The structures of the categories include Extinct, Threatened, Non-Threatened, Data Deficient and Not Evaluated division; the first three divisions are further split into subcategories (Figure1). Since 1991, the old run data book categories have gone successive changes to accommodate general guidelines for across taxonomic groups. To make application of the criteria more universal, numerical values were attached to the different criteria for threat categories. The 2001 version (version 3.1) also includes a purely quantitative criterion, which involves computation of the probability of extinction (such as in a population viability analysis) over a time frame for a taxon.

The 2001 version of the Red List threatened categories are derived through a set of 5 criteria based on which threatened category is assigned. The term “threatened” according to the 2001 IUCN categories means Critically Endangered, Endangered or Vulnerable. The 5 criteria for treat categories (IUCN, 2001) are: (A) Population reduction, (B) Restricted distribution, continuing decline and fluctuation, (C) Population restriction / fluctuation and continuing decline, (D) Restricted population, (E) Probability of extinction.

For a taxon to be categorized as threatened, it needs to qualify for any one of the above 5 criteria only. Not qualifying for any of the above criteria could mean that a taxon is either not threatened or is data deficient. With the popularization of the 1994 IUCN Red List Criteria and its application around the world, various specialists and scientists of taxonomic group suggested a more serious look on the criteria. The IUCN formed a red List Review Committee in 1998 to suggest change to the 1994 criteria and after nearly two years of workshops and deliberations, the 2001 IUCN Red List Criteria were drafted and accepted in October 200. All assessment from 2001 are based on the latest version (3.1) of the Red List Criteria including the current Conservation Assessment and Management Plan (C.A.M.P) workshop for chiroptera of south Asia (2002). This C.A.M.P. workshop was the first to use the new version of the criteria on a large number of bat species as all previous assessments of bats around the world were based on the 1994 criteria. The changes in criteria can be referred in IUCN (2001) (Appendix I of this report) but the overall structure of the categories is shown in figure 1. The changes in the structure of the categories from 1994 criterion include the upgrading of Lower risk near threatened and least concerned to full categories Near Threatened and Least Concern. The subcategory of Lower Risk conservation dependent was removed completely from the new structure.

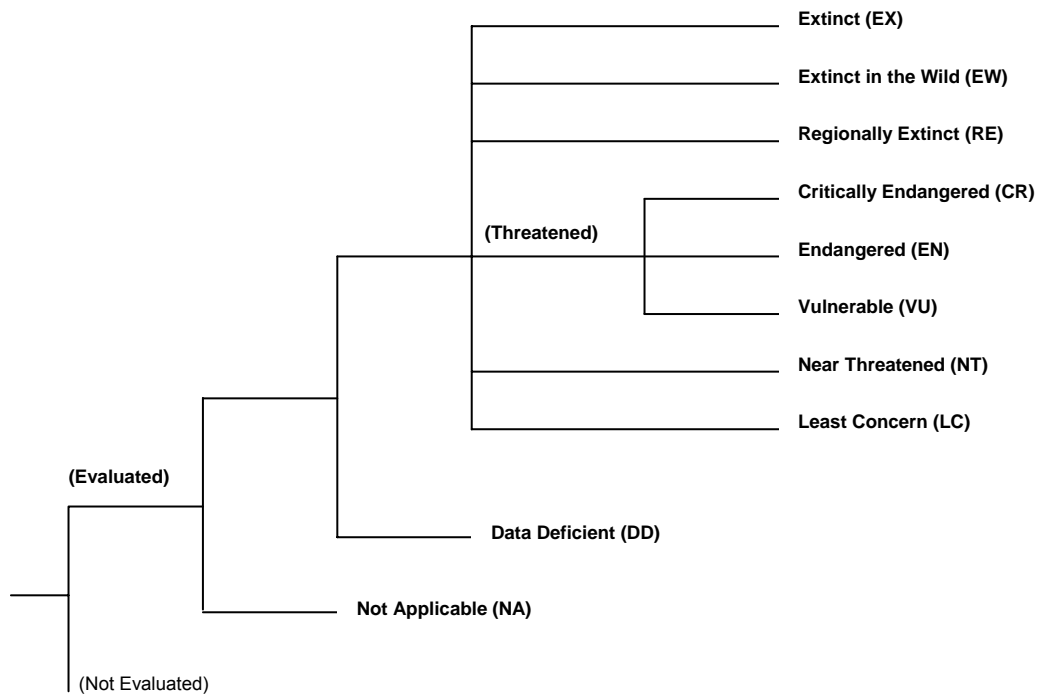


Figure 1. Structure of the IUCN Red List Categories at Regional Level

Interpretation and Data Sources:

The Taxon Data Sheet used at the workshop was divided into six parts;

1. Part One

General information including taxonomy, habit, habitat, distribution, locality information, threats populations, trade, field studies, data quality, qualifier and uncertainty.

2. Part Two

Status assessment as per information provided in Part One based on the 2001 IUCN Red List Criteria, CITES listing, national wildlife laws, presence in protected areas, previous assessments,

3. Part Three

Uncertainty issues related data quality, qualifier and group dynamics with respect to assessments.

4. Part Four

Recommendations for research, monitoring, captive breeding education and population and habitat and habitat viability assessment and comment on the species.

5. Part Five

Information on migration between adjacent populations across international boundaries, threats, colonization effects, etc. to do with assessment species at the national level.

6. Part Six

Compilers of primary working group, reviewers of the data and sources referred in deriving literature and other published information

Information was gathered in this 8-Page Taxon Data Sheet. The participants ratified all the assessments in the plenary sessions and with much discussion ultimately leading to consensus in the workshop. The Taxon Data Sheets are included in a separate section of the report. A synopsis of information compiled for the species and data interpretation is given below for better understanding of the process and status assessments.

Synopsis— Information Compiled for Species and Data Interpretation

Part one:

Synonyms and Vernacular names

Synonyms have been taken from the Mammal's of Pakistan (Roberts, 1997). Common names in English are derived from various sources, but mainly from Mammals of Pakistan and Wilson & Reeder (1993).

Habit, Habitat, Elevation and Niche

Information on habit, habitat, elevation and niche was decided and compiled on the basis of the personal observations of the participants. It was decided at the workshop to restrict “niche” to microhabitat information only and not include ecological and behavioral information.

Distribution

Distribution information was compiled and gathered only for Pakistan. Historical distribution was compiled on a very broad scale either at the country or regional level. The information with respect to Pakistan was recorded in as much as detail as possible especially with respect to locality information. Personal observations from field studies were recorded whether or not they had been published. Locality specific information with respect to habitat and threats were gathered and the Table presented in the Taxon Data Sheets on locality records includes habitat and threat information for some recent studies.

Range

Range (extent of occurrence) and Area (of occupancy) were mostly estimated based on available distribution records as well from the personal record of the workshop participants.

Locations and Subpopulations

Although the IUCN Red List defines locations and sub populations based on threats and migration, although the workshop participants felt that precise information for most bats was not available with respect to sub populations.

Habitat Status

Habitat status information was compiled for all species except those that had no type locality information. Since no monitoring or ecological studies have been conducted in detail, habitat information and influence of threats on habitat were inferred from literature and general trends in habitat in localities over years. Change in quality of habitat was inferred from similar data and also based on changes in use/ management pattern of habitats.

Threats

Threats to both habitat and population were compiled in the sheets for localities with recent studies. Since data on population is sparse, the workshop participants looked at the likely habitat threats that were to affect the species. General deductions from habitat loss were inferred for several species whose dependence on primary habitat is a limiting factor for their existence. Despite lack of proper understanding of their ecology, lack of information was overridden by a precautionary approach, especially of those species with highly restricted distribution. Information on trade included and was treated as threat when it was known that trade effected populations.

Mature individuals:

Mature individuals, global population and trends for mature individuals were discussed, but the information was infrequently recorded because of the lack of adequate data. In few cases, the mature individuals were being indicated as being more than 10,000, which is the threshold for small populations.

Population trends:

Population trends were also determined on the basis of the threat and protection. Several indications to the population declines in relative abundance from perceptions were noted and indicated, specific level of decline or ranges were not attempted.

Part two:

Status:

IUCN Red List (Version 3.1) status was derived at the workshop with information compiled and compared with the international status of species. For the purposes of the workshop, status was derived for the endemic species at the global level and national assessment for Pakistan for species with a wider distribution. For all other species, Guidelines for Application of IUCN Red List Criteria at Regional Levels were thoroughly applied for assessments.

Part three:

Assessments

Red List status assessments of Pakistan Mammals were derived from literature, observations and studies conducted by the participants at the workshop. For most species the status was derived as a result of wider consultation, discussion and reaching a consensus within the groups and during workshop plenary. Although uncertainty in information gathering, interpretation, analysis, statistics, inference, estimates, observations, predictions, etc is high, all plausible values were considered for the assessments and most assessments were based on evidence.

Part Four:

Recommendations

Looking at the available data according to IUCN Criteria, research and management, recommendations were made by the participants to help understand and improve the situation of the mammals of Pakistan. Captive breeding recommendations were made as part of management recommendations, either for research, education or conservation.

Part Five:

Global and national assessments

The assessments to determine IUCN Red List Categories were made at the global level for endemics and at the national level for Pakistan for species with wider distribution. Group consensus was taken at the workshop to derive the national assessment after the workshop.

Part Six:

Compiler and sources

The workshop participants were divided into groups – Rodent Group, Chiropteran Group, Carnivore group, Ungulate Group, and Cetacean Group. Compilers indicated in the Taxon Data Sheets are those who provided information in the working group sessions for the assessment. Reviewers include those participants who reviewed the information during the plenary session and later sent comments on the draft report. Sources include all literature consulted, unpublished Biological Information Sheet (BIS) consulted and personal communication from individuals those not present in the workshop.

Consistency in Deriving Status from Available Data:

The Pakistan's Mammals C.A.M.P. was conducted using the principles of Conservation Assessment and Management Plan Workshop and the status was derived according to the 2001 IUCN Red List Criteria, Version 3.1, IUCN, 2001 as ratified by IUCN in 2000. A set of guidelines in deriving the assessments was followed given the fact that although the process is objective, data interpretation can differ between groups. For example, when a species is known only from its type description and nothing is known of its distribution or habitat, there is obviously no scope for speculation of threats affecting either it or its wider population. In such cases the species was Data Deficient. Similarly, a logical system of gathering information in the Taxon Data Sheet and interpreting the data as per the IUCN Red List Criteria guidelines were followed. Various processes affect the status of a species in the wild.

Important Points to Consider for using National Red List Assessments:

- In assessments for Rodents population numbers are not taken into consideration. The assessments herein have also used information and assessments completed in the C.A.M.P. / Global Mammal Assessment for Non-volant Mammals of South Asia C.A.M.P. conducted by Zoo Outreach Organization / CBSG, South Asia in February 2004 in Coimbatore, Tamil Nadu, India.
- For a few species the assessments have been downgraded for the reason that their population is contiguous with that of neighboring countries.
- For most Cetaceans, Data Deficient category has been assigned since we have insufficient information available on which to give an assessment.
- Status of South Asian Chiroptera C.A.M.P. Report (2002) has been mostly referred for information and status on Chiroptera (Bats) for Pakistan's Mammals C.A.M.P.
- National Status has been defined according to 'Guidelines for Application of IUCN Red List Criteria at Regional Levels (Version 3.0)'. For a particular species which is not endemic to Pakistan it is represented as VU D2. However, for endemics it stays as Vulnerable (VU) because the same species only exists in this part of the world.
- The assessment is downgraded from one category such vulnerable to near threatened or from endangered to vulnerable since the current information is not sufficient to ascertain the critical level of the existing populations.
- *Calomyscus bailwardi* is considered as an endemic species occurring in Pakistan by Global Red List and taxonomically rated as *Calomyscus hotsoni*; and is also considered to be a threatened species. However, small mammals and bats are the least studied groups of mammals in Pakistan and there was no consensus by earlier researchers and Pakistan Mammals CAMP participants on its varied taxonomy as mentioned in the Global Red List.
- For species description, in the section dealing with Threatened Mammals of Pakistan, Roberts (1997) is followed.

Results:

Pakistan Mammals National Red List Assessments:

Mammals are not widely studied in Pakistan and it is only few individuals who have gathered details information and quantitative data on the species. There have had been limited field studies. Roberts (1997), Mirza (1998), Schaller (1975) have produced some remarkable information but the information is really lacking on the field studies after 1980. In fact, various line departments and agencies that aim to collect the data and information for these species are not equipped enough to collect consistent and reliable information. Records are poor. However zoo records and individual studies have helped the C.A.M.P. process to ascertain the status after going through detail discussion and consensus agreement on these species.

The Pakistan C.A.M.P. workshop was an effort to assess the status of its species with as much depth and accuracy as possible. After much discussion, workshop participants decided to undertake the assessment both at species and sub-species level.

In total 195 mammalian species (including 13 sub-species) exist in Pakistan and all of them were subjected for assessments. 2 species were not evaluated since there was no consensus on their assessments.

Table 5: Summary of the Total Species Assessed at Pakistan Mammals CAMP

Category of Threat	Code	Total	Non-Endemic	Endemic
Critically Endangered	CR	12	11	1
Endangered	EN	12	09	3
Vulnerable	VU	20	20	
Near Threatened	NT	32	31	
Least Concern	LC	71	71	
Data Deficient	DD	38	38	
Regionally Extinct	RE	08	08	
Not Evaluated	NE	02	02	
Extinct in the Wild	EW	00	00	
Total		195	191	4

Status of all Pakistan mammals is presented in the Table 6 on page 41.

Table 6: Pakistan Mammals National Red List Assessments

S. No	Order/ Species	National Red List Status	Criteria
INSECTIVORA			
1.	<i>Crocidura attenuata</i> – Grey Shrew	Data Deficient	DD
2.	<i>Crocidura gmelini</i> – Steppic Pygmy Shrew	Least Concern	LC
3.	<i>Crocidura pergrisea</i> – Pale Grey Shrew	Least Concern	LC
4.	<i>Crocidura pullata</i> Asiatic White-toothed Shrew	Least Concern	LC
5.	<i>Crocidura zarudnyi</i> – Zarudny’s Shrew	Least Concern	LC
6.	<i>Hemiechinus auritus</i> Long-eared Steppe or Afghan hedgehog	Least Concern	LC
7.	<i>Hemiechinus collaris</i> Long-eared Desert Hedgehog	Least Concern	LC
8.	<i>Hemiechinus hypomelas</i> Brandt’s Hedgehog	Least Concern	LC
9.	<i>Hemiechinus micropus</i> Indian Hedgehog	Least Concern	LC
10.	<i>Sorex thibetanus</i> ² Asiatic Pygmy Shrew	Near Threatened	VU D2 ↓ NT
11.	<i>Suncus etruscus</i> Savi’s Pygmy Shrew	Least Concern	LC
12.	<i>Suncus murinus</i> House Shrew or Musk Shrew	Least Concern	LC
13.	<i>Suncus stoliczkanus</i> Anderson’s Shrew or Yellow-throated Shrew	Least Concern	LC
CHIROPTERA			
14.	<i>Barbastella leucomelas</i> – Asian or Eastern Barbastelle	Data Deficient	DD
15.	<i>Cynopterus sphinx</i> – Short-nosed Fruit Bat	Data Deficient	DD
16.	<i>Eptesicus bottae</i> – Botta’s Serotine	Data Deficient	DD

² In the process of initial assessments to the final assessments, an assessment is downgraded from a higher category to lower category such as from vulnerable to near threatened. This is for the reason that available information is not sufficient to ascertain critical level of the existing populations and or if the population of the species is doing better in the neighboring countries.

17.	<i>Eptesicus nasutus</i> – Sindh Bat, Sindh Serotine or Persian Serotine	Data Deficient	DD
18.	<i>Eptesicus serotinus</i> – Common Serotine	Data Deficient	DD
19.	<i>Eptesicus nilssoni</i> – Northern Serotine	Data Deficient	DD
20.	<i>Hipposideros cineraceus</i> – Least Leaf-nosed Bat	Data Deficient	DD
21.	<i>Hipposideros fulvus</i> – Fulvous Leaf-nosed Bat or Bicolour Round-leaf Horseshoe Bat	Least Concern	LC
22.	<i>Megaderma lyra</i> – Indian False Vampire	Least Concern	LC
23.	<i>Miniopterus schreibersii</i> – Schreiber’s Long-fingered or Bent-winged Bat	Least Concern	LC
24.	<i>Murina tubinaris</i> – Gilgit Tube-nosed Bat	Near Threatened	NT
25.	<i>Myotis blythii</i> – Lesser Mouse-eared Bat (extra-limital)	Data Deficient	DD
26.	<i>Myotis emarginatus</i> Geoffroy’s Bat or Notch-eared Bat (extra-limital)	Not Evaluated	NE
27.	<i>Myotis longipes</i> – Long-fingered Bat (extra-limital)	Near Threatened	NT
28.	<i>Myotis muricola</i> Dark Whiskered Bat	Least Concern	LC
29.	<i>Myotis mystacinus</i> Whiskered Bat (extra-limital)	Vulnerable	VU D1
30.	<i>Nyctalus leisleri</i> – Leisler’s Noctule or Hairy-armed Bat	Endangered	EN D1
31.	<i>Nyctalus montanus</i> Mountain Noctule	Near Threatened	NT
32.	<i>Nyctalus noctula</i> – Common Nctule	Least Concern	LC
33.	<i>Otonycteris hemprichii</i> – Hemprich’s Long-eared Bat or Desert Long-eared Bat	Near Threatened	NT
34.	<i>Pipistrellus ceylonicus</i> – Kelaart’s Pipistrelle	Least Concern	LC
35.	<i>Pipistrellus coromandra</i> – Indian Pipistrelle	Least Concern	LC
36.	<i>Pipistrellus dormeri</i> – Dormer’s Bat	Least Concern	LC
37.	<i>Pipistrellus javanicus</i> –	Least Concern	LC

	Himalayan Pipistrelle		
38.	<i>Pipistrellus kuhlii</i> – Kuhl's Pipistrelle	Least Concern	LC
39.	<i>Pipistrellus paterculus</i> – Thomas's Pipistrelle	Least Concern	LC
40.	<i>Pipistrellus pipistrellus</i> – Common Pipistrelle	Least Concern	LC
41.	<i>Pipistrellus savii</i> – Savi's Pipistrelle	Vulnerable	VU B1ab(iii)
42.	<i>Pipistrellus tenuis</i> – Least Pipistrelle	Least Concern	LC
43.	<i>Plecotus auritus</i> – Brown Long-eared Bat	Near Threatened	NT
44.	<i>Plecotus austriacus</i> – Grey Long-eared Bat	Near Threatened	NT
45.	<i>Pteropus giganteus</i> – Indian Flying Fox	Least Concern	LC
46.	<i>Rhinolophus blasii</i> ³ – Blasius' or Peters' Horseshoe Bat	Near Threatened	NT
47.	<i>Rhinolophus ferrumequinum</i> – Greater Horseshoe Bat	Vulnerable	VU D1
48.	<i>Rhinolophus hipposideros</i> – Lesser Horseshoe Bat	Vulnerable	VU D1
49.	<i>Rhinolophus lepidus</i> – Blyth's Horseshoe Bat	Near Threatened	NT
50.	<i>Rhinolophus macrotis</i> – Big-eared Horseshoe bat	Near Threatened	NT
51.	<i>Rhinopoma hardwickei</i> – Lesser Rate-tailed Bat or Small Mouse-tailed Bat	Least Concern	LC
52.	<i>Rhinopoma microphyllum</i> – Larger Rat-railed Bat or Mouse-tailed Bat	Least Concern	LC
53.	<i>Rhinopoma muscatellum</i> – Least Mouse-tailed Bat	Near Threatened	NT
54.	<i>Rousettus egyptiacus</i> – Egyptian Fruit Bat	Vulnerable	VU D1
55.	<i>Rousettus leschenaultii</i> – Fulvous Fruit Bat	Least Concern	LC
56.	<i>Scotoecus pallidus</i> – Yellow Desert Bat	Near Threatened	NT
57.	<i>Scotophilus heathii</i> – Common Yellow-bellied Bat or Desert Scotophil Bat	Least Concern	LC

³ In personal communication with Z.B. Mirza, it was suggested that the species is data deficient since it is common at Pakistan Iran border and one specimen is also reported from Lahore in 1966, and the data on the species occurrence and ecology is missing from south-west Balochistan to the central Punjab.

58.	<i>Scotophilus kuhlii</i> – Temminck’s House Bat or Lesser House Bat	Least Concern	LC
59.	<i>Tadarida aegyptiaca</i> Egyptian Free-tailed Bat or Wrinkle- lipped Bat	Least Concern	LC
60.	<i>Taphozous nudiventris</i> – Naked Rumped Tomb Bat or Kutch Sheath-tailed Bat	Least Concern	LC
61.	<i>Taphozous perforatus</i> – Tomb Bat or Egyptian Tomb Bat	Least Concern	LC
62.	<i>Triaenops persicus</i> – Persian Trident Bat	Vulnerable	VU D1
PRIMATES			
63.	<i>Macaca mulatta mulatta</i> – Rhesus Macque	Near Threatened	NT
64.	<i>Semnopithecus entellus</i> – Grey Langur or Hanuman Langur	Near Threatened	NT
PHOLIDOTA			
65.	<i>Manis crassicaudata</i> – Indian Pangolin or Scaly Anteater	Vulnerable	EN↓VU B2ab(ii, iii)
CARNIVORA			
66.	<i>Acinonyx jubatus</i> – Cheetah (extinct in Pakistan)	Regionally Extinct ⁴	RE
67.	<i>Canis aureus</i> – Asiatic Jackal	Near Threatened	NT
68.	<i>Canis lupus pallipes</i> – Wolf	Endangered	EN C2a(i); D
69.	<i>Caracal caracal</i> – Caracal or Red Lynx	Critically Endangered	CR C2a(i); D
70.	<i>Cuon alpinus</i> – Indian Wild Dog or Dhole	Data Deficient	DD
71.	<i>Felis chaus</i> – Jungle Cat	Least Concern	LC
72.	<i>Felis margarita</i> – Sand Cat or Dune Cat	Critically Endangered	CR C2a(i)
73.	<i>Felis silvestris</i> – Indian Desert Wild Cat or Asiatic Steppe Wild Cat	Data Deficient	DD
74.	<i>Herpestes edwardsii</i> – India Grey Mongoose or Common India Mongoose	Least Concern	LC
75.	<i>Herpestes javanicus</i> – Small Indian or Small Asian Mongoose	Least Concern	LC

⁴ Global Red List terminology uses the term Regionally Extinct (RE) for species assessment at regional and or national level. For the same reason, RE is used in the case of Pakistan to describe the nationally extinct species

76.	<i>Hyaena hyaena</i> – Striped Hyaena	Critically Endangered	CR C2a(i)
77.	<i>Lutra lutra</i> – Common Otter	Near Threatened	NT
78.	<i>Lutrogale perspicillata</i> – Smooth-coated Otter or Indian Otter	Near Threatened	NT
79.	<i>Lynx lynx isabellina</i> Himalayan Lynx	Least Concern	LC
80.	<i>Martes flavigula</i> Yellow throated Marten	Data Deficient	DD
81.	<i>Martes foina</i> Stone Marten	Data Deficient	DD
82.	<i>Mellivora capensis</i> – Ratel or Honey Badger	Critically Endangered	CR C2a(i)
83.	<i>Mustela altaica</i> – Alpine Weasel or Pale Weasel	Data Deficient	DD
84.	<i>Mustela erminea</i> – Stoat or Ermine	Data Deficient	DD
85.	<i>Otocolobus manul</i> – Pallas' Cat or Steppe Cat	Near Threatened	NT
86.	<i>Paguma larvata grayi</i> – Masked Palm Civet	Data Deficient	DD
87.	<i>Panthera leo persica</i> – Lion (extinct in Pakistan)	Regionally Extinct	RE
88.	<i>Panthera pardus</i> – Panther or Leopard	Critically Endangered	CR C2a(i); D
89.	<i>Panthera tigris</i> – Tiger (extinct in Pakistan)	Regionally Extinct	RE
90.	<i>Paradoxurus hermaphroditus</i> – Toddy Cat or Common Palm Civet	Least Concern	LC
91.	<i>Prionailurus bengalensis</i> – Leopard Cat	Data Deficient	DD
92.	<i>Prionailurus viverrinus</i> – Fishing Cat	Near Threatened	NT
93.	<i>Uncia uncia</i> – Snow Leopard or Ounce	Critically Endangered	CR C2a(i)
94.	<i>Ursus arctos isabellinus</i> – Brown Bear	Critically Endangered	CR C2a (i); D
95.	<i>Ursus thibetanus gedrosianus</i> – Balochistan Black Bear (Endemic)	Critically Endangered	CR C2a (i); D
96.	<i>Ursus thibetanus thibetanus</i> – Asiatic Black Bear or Himalayan Black Bear	Vulnerable	EN ↓ VU C1
97.	<i>Viverricula indica</i> – Small Indian Civet or Rasse	Near Threatened	NT
98.	<i>Vormela peregusna</i> –	Least Concern	LC

	Marbled Polecat		
99.	<i>Vulpes bengalensis</i> – Indian or Bengal Fox	Near Threatened	NT
100	<i>Vulpes cana</i> – Blanford's Fox or King Fox	Near Threatened	NT
101	<i>Vulpes rueppelli</i> – Rueppell's Fox or Sand Fox	Vulnerable	VU B2ab(ii,iii)
102	<i>Vulpes vulpes</i> – Common Red Fox	Near Threatened	NT
103	<i>Vulpes vulpes montana</i> – Tibetan Red Fox	Data Deficient	DD

PERRISODACTYLA

104	<i>Equus hemionus khur</i> – Indian Wild Ass or Onager	Critically Endangered	CR C2a(i)
105	<i>Rhinoceros unicornis</i> – Great One-horned Rhinoceros or Indian One-horned Rhinoceros (extinct in Pakistan)	Regionally Extinct	RE

ARTIODACTYLA

106	<i>Antilope cervicapra</i> – Blackbuck	Regionally Extinct	RE
107	<i>Axis porcinus</i> – Hog Deer or Para	Vulnerable	VU C1+2a(i); D
108	<i>Boselaphus tragocamelus</i> – Nilgai or Blue Bull	Endangered	B1ab(ii,iii)+2ab(ii,iii); C2a(i); D
109	<i>Capra aegagrus blythi</i> – Wild Goat or Persian Pasang	Near Threatened	NT
110	<i>Capra aegagrus chialtanensis</i> – Chiltan Wild Goat	Least Concern	LC
111	<i>Capra falconeri falconeri</i> – Flare-horned Markhor	Endangered	EN C2a(i)
112	<i>Capra falconeri megaceros</i> – Straight horned Markhor	Vulnerable	VU C1a; D
113	<i>Capra ibex sibirica</i> – Himalayan Ibex	Least Concern	LC
114	<i>Cervus duvauceli</i> – Swamp Deer or Barasingha	Regionally Extinct	RE
115	<i>Cervus elaphus</i> – Red Deer or Kashmir Hangul	Regionally Extinct	RE
116	<i>Gazella bennettii</i> – Chinkara or India Gazelle	Vulnerable	VU C1+2a(i); D
117	<i>Gazella subgutturosa</i> – Goitred Gazelle or Persian Gazelle	Critically Endangered	CR C2a(i); D
118	<i>Hemitragus jemlahicus</i> – Himalayan Tahr (extra-limalal)	Regionally Extinct	RE
119	<i>Moschus chrysogaster</i> – Himalayan Musk Deer	Endangered	EN B1ab(ii,iii); C2a(i)

120	<i>Muntiacus muntjak</i> – Indian Muntjac or Barking Deer	Endangered	EN B1ab(ii,iii); C2a(i)
121	<i>Naemorhedus goral</i> – Himalayan Goral or Grey Goral	Vulnerable	VU C1+C2a(i)
122	<i>Ovis ammon polii</i> – Marco Polo Sheep	Critically Endangered	CR B1ab(ii,iii)
123	<i>Ovis vignei cycloceros</i> – Afghan Urial	Vulnerable	VU C1
124	<i>Ovis vignei punjabensis</i> – Punjab Urial	Endangered	EN C 2a (i)
125	<i>Ovis vignei vignei</i> – Ladakh Urial	Endangered	EN B1ab(iii)+2ab(iii), C2a(i);
126	<i>Pseudois nayaur</i> – Bharal or Blue Sheep	Endangered	EN B1ab(iii)+2ab (iii), C2a (i); D
127	<i>Sus scrofa</i> – Wild Pig or Indian Wild Boar	Least Concern	LC

LAGOMORPHA

128	<i>Lepus capensis</i> – Cape Hare	Vulnerable	VU C1
129	<i>Lepus nigricollis</i> – Indian Hare or Black-naped Hare	Least Concern	LC
130	<i>Ochotona roylei</i> – Royle's Pika or Indian Pika	Least Concern	LC
131	<i>Ochotona rufescens</i> – Afghan Pika or Collared Pika	Least Concern	LC

RODENTIA

132	<i>Acomys cahirinus</i> – Cairo Spiny Mouse	Near Threatened	NT
133	<i>Allactaga elater</i> – Small Five-toed Jerboa	Least Concern	LC
134	<i>Allactaga euphratica</i> – Long-eared Jerboa	Not Evaluated	NE
135	<i>Allactaga hotsoni</i> – Hotson's Five-toed Jerboa	Least Concern	LC
136	<i>Alticola roylei</i> (Syn: <i>argentatus</i>) – Royle's High Mountain Vole	Least Concern	LC
137	<i>Alticola stoliczkanus</i> – Stoliczka's High Mountain Vole (extra-limital)	Data Deficient	DD
138	<i>Apodemus flavicollis</i> – Yellow-necked Field Mouse (extra- limital)	Data Deficient	DD
139	<i>Apodemus rusiges</i> (syn: <i>sylvaticus</i>) Himalayan Wood Mouse or Field Mouse	Vulnerable	VU D2
140	<i>Bandicota bengalensis</i> – Lesser Bandicoot Rat or Sindh Rice	Least Concern	LC

	Rat		
141	<i>Calomyscus bailwardi</i> ⁵ Mouse-like Hamster	Least Concern	LC
142	<i>Cremnomys cutchicus</i> – Cutch Rock Rat	Data Deficient	DD
143	<i>Cricetulus migratorius</i> – Migratory Hamster or Grey Hamster	Least Concern	LC
144	<i>Dryomys nitedula</i> – Forest Dormouse	Vulnerable	EN ↓ VU B1ab(iii)+2ab (iii)
145	<i>Ellobius fuscocapillus</i> – Quetta or Afghan Mole Vole	Near Threatened	VU D ↓ NT
146	<i>Eupetaurus cinereus</i> – Woolly Flying Squirrel (Endemic)	Endangered	EN B2ab(ii,iii); C2a(i)
147	<i>Funambulus pennantii</i> – Northern Palm Squirrel or Five-striped Palm Squirrel	Least Concern	LC
148	<i>Gerbillus cheesmani</i> – Cheesman’s Gerbil	Vulnerable	VU D; D2
149	<i>Gerbillus gleadowi</i> – Indian Hairy-footed Gerbil	Near Threatened	VU C1a+2a(i) ↓ NT
150	<i>Gerbillus nanus</i> – Balochistan Gerbil	Near Threatened	VU C1a+2a(i) ↓ NT
151	<i>Golunda ellioti</i> – Indian Bush Rat	Least Concern	LC
152	<i>Hylopetes fimbriatus</i> – Small Kashmir Flying Squirrel	Vulnerable	EN ↓ VU C2a(i)
153	<i>Hyperacrius fertilis</i> – True’s Vole or Burrowing Vole	Least Concern	LC
154	<i>Hyperacrius wynnei</i> – Murree Vole	Least Concern	LC
155	<i>Hystrix indica</i> – Indian Crested Porcupine	Near Threatened	NT
156	<i>Jaculus blanfordi</i> – Blanford’s Jerboa or Greater Three-toed Jerboa	Least Concern	LC
157	<i>Marmota caudata</i> – Long-tailed Marmot or Kashmir Marmot	Least Concern	LC
158	<i>Marmota himalayana</i> – Himalayan Marmot	Critically Endangered	B1ab(iii)+2ab(iii); C2a(i); D
159	<i>Meriones crassus</i> –	Near Threatened	VU C1 ↓ NT

⁵ *Calomyscus bailwardi* is considered as an endemic species occurring in Pakistan by the Global Red List and taxonomically rated as *Calomyscus hotsoni*; and is considered to be a threatened species. However, it is important to note that small mammals and bats are the least studied groups of mammals in Pakistan and there was no consensus by earlier field researchers and Pakistan’s Mammals CAMP participants on its varied taxonomy as mentioned in the Global Red List.

	Sundevall's Jird		
160	<i>Meriones hurrianae</i> – Indian Desert Jird or Desert Gerbil	Least Concern	LC
161	<i>Meriones libycus</i> – Liybyan Jird	Least Concern	LC
162	<i>Meriones persicus</i> – Persian Jird	Least Concern	LC
163	<i>Microtus juldaschi</i> – Pamir Vole or Juldaschi's Vole	Least Concern	LC
164	<i>Millardia gleadowi</i> – Sand-coloured rate	Least Concern	LC
165	<i>Millardia meltada</i> – Soft-furred Field Rat or Metad	Least Concern	LC
166	<i>Mus booduga</i> – Little Indian Field Mouse	Least Concern	LC
167	<i>Mus cervicolor</i> – Fawn-coloured Mouse (extra-limital)	Data Deficient	DD
168	<i>Mus musculus</i> – House Mouse	Least Concern	LC
169	<i>Mus platythrix</i> – Indian Brown Spiny Mouse (extra-limital)	Data Deficient	DD
170	<i>Mus saxicola</i> – Grey Spiny Mouse	Data Deficient	DD
171	<i>Nesokia indica</i> – Short-tailed Mole Rat	Least Concern	LC
172	<i>Petaurista petaurista</i> – Giant Red Flying Squirrel Or Indian Giant Flying Squirrel	Vulnerable	EN ↓ VU C2a(i)
173	<i>Rattus nitidus</i> – Himalayan Rat (extra-limital)	Data Deficient	DD
174	<i>Rattus norvegicus</i> – Norway or Brown Rat	Least Concern	LC
175	<i>Rattus rattus</i> – Roof Rat or House Rat	Least Concern	LC
176	<i>Rattus turkestanicus</i> – Turkestan Rat	Least Concern	LC
177	<i>Rhombomys opimus</i> – Great Gerbil or Giant Day Jird	Near Threatened	VU D2 ↓ NT
178	<i>Salpingotus michaelis</i> – Balochistan Pygmy Jerboa	Least Concern	LC
179	<i>Sicista concolor</i> – Chinese Birch Mouse	Least Concern	LC
180	<i>Tatera indica</i> – Indian Gerbil or Antelope Rat	Least Concern	LC

CETACEA

181	<i>Balaenoptera edeni</i> –	Data Deficient	DD
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	Bryde's Whale		
182	<i>Balaenoptera musculus</i> – Great Blue Whale or Sulphur-bottomed Whale	Data Deficient	DD
183	<i>Balaenoptera physalus</i> – Common Rorqual or Common Finback	Data Deficient	DD
184	<i>Delphinus delphis</i> Long-beaked Dolphin	Data Deficient	DD
185	<i>Dugong dugon</i> – Dugong (extra-limital)	Data Deficient	DD
186	<i>Kogia simus</i> – Dwarf Sperm Whale	Data Deficient	DD
187	<i>Megaptera novaeangliae</i> – Humpback Whale	Data Deficient	DD
188	<i>Neophocaena phocaenoides</i> – Little Indian Porpoise or Black Finless Porpoise	Data Deficient	DD
189	<i>Peponocephala electra</i> – Melon-headed Whale or Electra Dolphin	Data Deficient	DD
190	<i>Platanista minor</i> – Indus Dolphin or Bhulan (Endemic)	Endangered	EN C2a(i)
191	<i>Pseudorca crassidens</i> – False Killer Whales	Data Deficient	DD
192	<i>Sousa chinensis</i> – Indian Humpback Dolphin	Data Deficient	DD
193	<i>Steno bredanensis</i> – Rough-toothed Dolphin	Data Deficient	DD
194	<i>Tursiops truncatus</i> – Eastern Bottle-nosed Dolphin	Data Deficient	DD
195	<i>Ziphius cavirostris</i> – Goose beak Whale or Cuvier's Beaked Whale	Data Deficient	DD

Summary of Assessments:

Total Mammals Found (Species/ Sub-species): 195
Total Mammals Categorized/ Assessed: 193
Total Mammals Categorized/ Not Assessed: 2
Total Mammals Categorized/ Assessed at Species Level: 182
Total Mammals Categorized/ Assessed at Sub-species Level: 13
Total Endemic Species: 3 (1 at Species level and 2 at sub-species level)

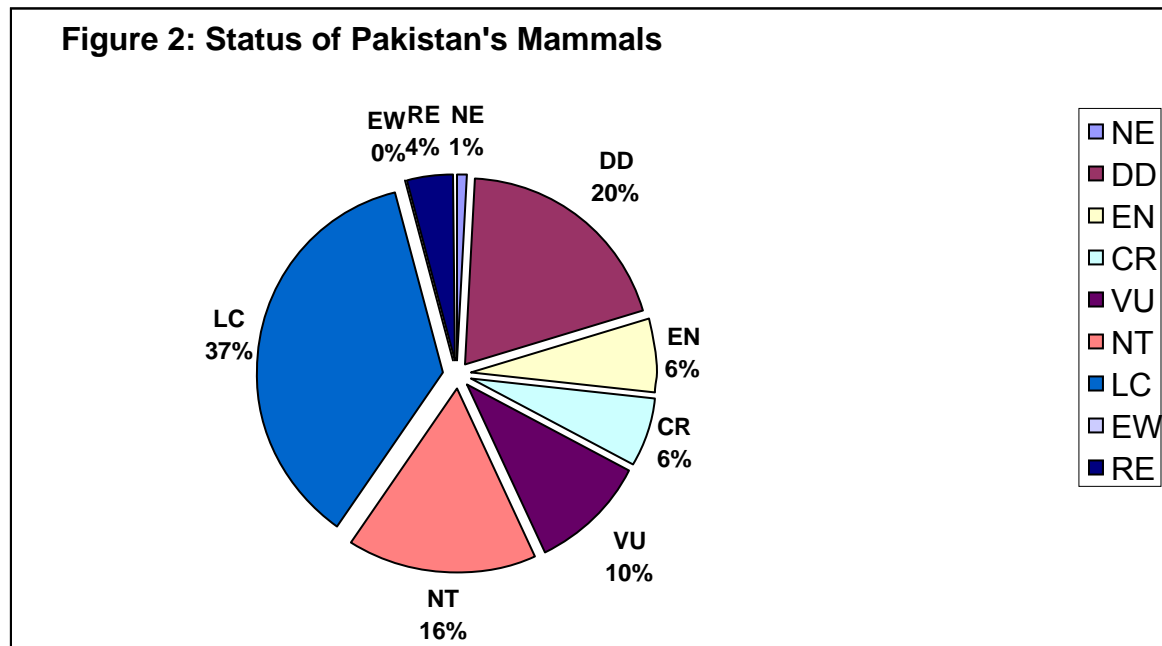
Description of Assessments:

Assessments were derived for Pakistan's geographic areas (four provinces and Azad Jammu & Kashmir) only and did not include the neighboring areas/ countries of Afghanistan, India, China, and Iran. The participants were all over from Pakistan including Punjab, North West Frontier Province, Balochistan, Sindh and AJK. There were fewer participants from Balochistan, however, there were scientists who had worked in Balochistan and they could bring information and data to fill in the gaps.

Pakistan is represented by ten orders out of the total of eighteen mammalian orders of the world, which shows considerable diversity matching with the global trends. However, there are only four endemic species in the total of 195 species (including 13 sub species). There are 15 Cetacean, 48 Rodents, 22 Artiodactyls, 4 Lagomorphs, 2 Perissodactyles, 39 Carnivores, 1 Pholidata, 2 Primates, 49 Chiropteran and 13 species belonging to Insectivore.

These national assessments have their own importance compared to global assessments due to the following advantages;

- Smaller area of assessment resulting in greater accuracy
- Enhanced participation by local field biologists in the process of assessments
- Assessments are more accurate and based on more recent field information
- Importance and implications for regional and national action and management plans.
- Bottom-up approach for assessments
- Better environment and understanding for the post assessment follow-up actions such as surveys, monitoring and education
- Use for national biodiversity strategies and action plans



Distribution and restricted distribution was estimated, inferred or calculated based on available information at the workshop. In case of species with information only from literature or known only from type localities, depending on the information available of its original habitat, area of occupancy was inferred. Number of locations and populations were inferred or estimated based on the number of localities. Although IUCN definitions for the two terms are dependent on genetic flow and threats respectively.

Although lot of information is compiled from literature on the species but information pertaining to habitats, distribution, taxonomic validity, population data was derived during the course of the workshop.

The most species of mammals belong to Chiroptera, which is 49, however; this is the group, which is least studied in Pakistan. To comprehend this, the latest information and assessments of the 2002 C.A.M.P. on Bats was used and information is mostly taken as such. One species *Nyctalus leisleri* or Leisler's Noctule or Hairy-armed Bat was found Endangered and 6 other species were found threatened category as vulnerable. Habitat loss was considered one of the major threats to bats. Many commensal species with good adaptation to managing environment and wide distribution were not categorized as threatened. Those species categorized as threatened or near threatened with restricted distribution were assessed as such because of some significant change to their habitat, either in decrease in area or decrease in quality of habitat (Molur *et al.*, 2002).

Number of mature individuals was indicated for some well-studied species with restricted distribution or inferred from literature.

Comparative Analysis: National Assessments and Global Assessments (For Selected Species only):

A comparative analysis of national species assessments (2003) of Pakistan's Mammals with global assessments (IUCN Red List, 2003) is given below in table 6;

**Table 7: Comparative Analysis of National Assessments with Global Assessments
(Conservation Assessment and Status of the Pakistan's Mammals)**

No.	Order/ Species	IUCN National Status (2003)	IUCN Global Red List Status (2003)
CHIROPTERA			
1.	<i>Eptesicus nasutus</i> – Sindh Bat, Sindh Serotine or Persian Serotine	DD	VU A2c ver 2.3(1994)
2.	<i>Nyctalus leisleri</i> – Leisler's Noctule or Hairy-armed Bat	EN D1	LR/nt ver 2.3(1994)
3.	<i>Nyctalus montanus</i> Mountain Noctule	NT	LR/nt ver 2.3(1994)
4.	<i>Rhinolophus blasii</i> – Blasius' or Peters' Horseshoe Bat	NT	LR/nt ver 2.3(1994)
5.	<i>Rhinolophus ferrumequinum</i> – Greater Horseshoe Bat	VU B2ab(iii)	LR/nt ver 2.3(1994)
6.	<i>Rhinolophus hipposideros</i> – Lesser Horseshoe Bat	VU B1ab(iii)+2ab(iii)	VU A2 ver 2.3(1994)
PRIMATES			
7.	<i>Macaca mulatta mulatta</i> – Rhesus Macque	NT	LR/nt ver 2.3(1994)
8.	<i>Semnopithecus entellus</i> – Grey Langur or Hanuman Langur	NT	LR/nt ver 2.3(1994)
9.	<i>Manis crassicaudata</i> – Indian Pangolin or Scaly Anteater	EN ↓ VU B2ab (ii, iii)	LR/nt ver 2.3(1994)
CARNIVORA			
10.	<i>Acinonyx jubatus</i> – Cheetah	RE	VU C2a(i) ver 3.1 (2001)
11.	<i>Felis margarita</i> – Sand Cat or Dune Cat	CR C2a(i)	NT ver 3.1 (2001)
12.	<i>Hyaena hyaena</i> – Striped Hyaena	CR C2a(i)	LR/nt ver 2.3 (1994)
13.	<i>Lutra lutra</i> – Common Otter	NT	VU A2cde ver 2.3(1994)
14.	<i>Lutrogale perspicillata</i> – Smooth-coated Otter or Indian Otter	NT	VU A1acd ver 2.3(1994)
15.	<i>Otocolobus manul</i> – Pallas' Cat or Steppe Cat	NT	NT ver 3.1(2001)
16.	<i>Panthera leo persicus</i> – Asiatic Lion (extinct in Pakistan)	RE	EN C2a(i) ver 3.1 (2001)
17.	<i>Panthera tigris</i> – Tiger (extinct in Pakistan)	RE	EN C2a(i) ver 3.1(2001)
18.	<i>Prionailurus viverrinus</i> – Fishing Cat	NT	VU C2a(i) ver 3.1(2001)
19.	<i>Uncia uncia</i> – Snow Leopard or Ounce	CR C2a(i)	EN C2a(i) ver 3.1(2001)

20	<i>Ursus thibetanus</i> – Asiatic Black Bear or Himalayan Black Bear	EN ↓ VU C1	VU A1cd ver 2.3(1994)
21	<i>Vulpes bengalensis</i> – Indian or Bengal Fox	NT	DD ver 2.3(1994)
22	<i>Vulpes cana</i> – Blanford's Fox or King Fox	NT	DD ver 2.3(1994)
23	<i>Vulpes rueppellii</i> – Rueppell's Fox or Sand Fox	VU B2ab(ii,iii)	
PERISSODACTYLA			
24	<i>Antelope cervicapra</i> – Blackbuck	RE	NT ver 3.1(2001)
25	<i>Capra aegagrus blythi</i> – Wild Goat or Persian Pasang	NT	VU A2cde ver 2.3(1994)
26	<i>Capra falconeri megaceros</i> – Straight horned Markhor	VU C1a;D	EN A2cde ver 2.3(1994)
27	<i>Cervus duvauceli</i> – Swamp Deer or Barasingha	RE	VU C1 ver 2.3(1994)
28	<i>Gazella subgutturosa</i> – Goitred Gazelle or Persian Gazelle	CR C2a (i);D	NT ver 3.1(2001)
29	<i>Moschus chrysogaster</i> – Himalayan Musk Deer	EN B1ab(ii,iii); C2a(i)	LR/nt ver 2.3(1994)
30	<i>Naemorhedus goral</i> – Himalayan Goral or Grey Goral	VU C1+C2a(i)	LR/nt ver 2.3(1994)
31	<i>Ovis vignei punjabensis</i> – Punjab Urial	EN C2a(i)	VU A2cde ver 2.3(1994)
32	<i>Rhinoceros unicornis</i> – Great One-horned Rhinoceros or Indian One-horned Rhinoceros (extinct in Pakistan)	RE	EN B1+2cde ver 2.3(1994)
RODENTIA			
33	<i>Cricetulus migratorius</i> - Migratory Hamster or Grey Hamster	LC	LR/nt ver 2.3(1994)
34	<i>Dryomys nitedula</i> – Forest Dormouse	EN ↓ Vu B1ab (iii)+2ab(iii)	LR/nt ver 2.3(1994)
35	<i>Eupetaurus cinereus</i> – Woolly Flying Squirrel	EN B2ab(ii,iii) C2a (i)	EN A2ce, B1+2cd, C2a ver 2.3(1994)
36	<i>Marmota caudata</i> – Long-tailed Marmot or Kashmir Marmot	LC	LR/nt ver 2.3(1994)
CETACEA			
37	<i>Balaenoptera edeni</i> – Bryde's Whale	DD	DD ver 2.3(1994)
38	<i>Balaenoptera musculus</i> – Great Blue Whale or Sulphur-bottomed Whale	DD	EN A1abd ver 2.3(1994)
39	<i>Balaenoptera physalus</i> – Common Rorqual or Common Finback	DD	EN A1abd ver 2.3(1994)
40	<i>Dugong dugon</i> – Dugong (extra-limal)	DD	VU A1cd ver 2.3(1994)
41	<i>Megaptera novaeangliae</i> – Humpback Whale	DD	VU A1ad ver 2.3(1994)
42	<i>Neophocaena phocaenoides</i> – Little Indian Porpoise or Black Finless Porpoise	DD	DD ver 2.3(1994)

Endemic Species:

Only three taxa of mammals are endemic to Pakistan. One species i.e. Indus Dolphin *Platanista minor* is declared as an endangered (EN) species at the C.A.M.P. workshop.

Two endemic sub species including Balochistan Black Bear *Ursus thibetanus gedrosianus* declared as Critically Endangered (CR) and *Ovis vignei punjabensis* Punjab Urial as Endangered.



Table 8: List of Endemic Species/ sub-species of Pakistan:

Sr. No	Taxa	IUCN National Status
1.	<i>Eupetaurus cinereus</i> – Woolly Flying Squirrel	EN B2ab (ii,iii) C 2a (i)
2.	<i>Platanista minor</i> – ⁶ Indus Dolphin or Bhulan	EN C2a(i)
3.	<i>Ursus thibetanus gedrosianus</i> – Balochistan Black Bear	CR C2a (i); D
4.	<i>Ovis vignei punjabensis</i> Punjab Urial	EN C 2a (i)

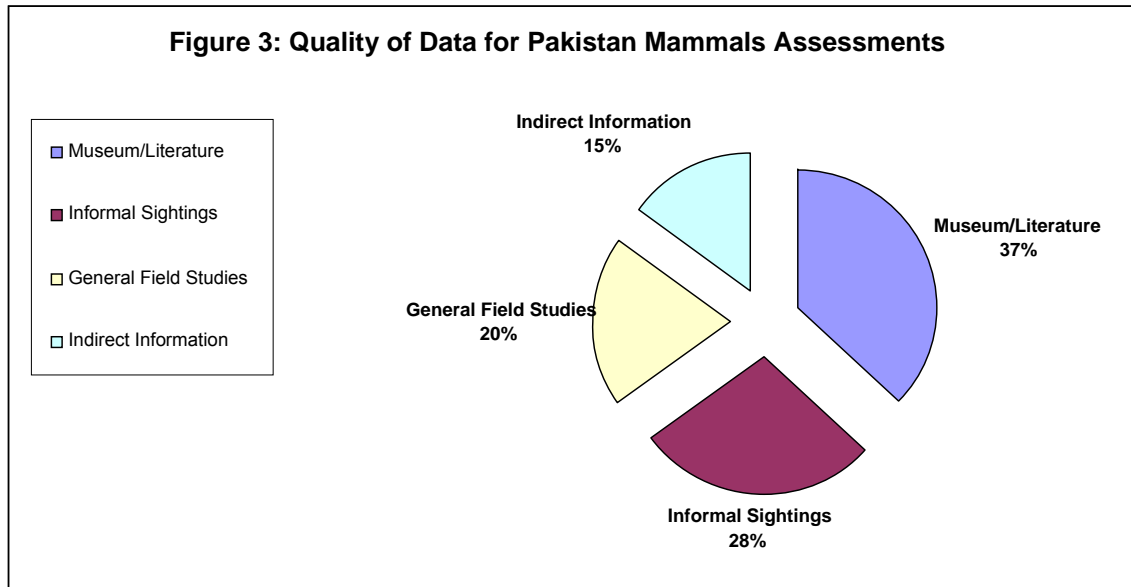
Note: Seventeen species of bats are endemic to South Asia. Endemic bats in South Asia are all highly restricted in distribution (Molur *et al.*, 2002).

For Endemic species also consult (Roberts, 1997; Mirza, 2004)

⁶ In Pakistan, Indus Dolphin *Platanista minor* is considered as an endemic species, different from *Platanista gangetica* occurring in Ganges in India. Please also see footnote on page 48.

Data Source and Quality:

Assessments were conducted from a wide variety and quality of data available at the workshop. Most of the information on taxonomy and distribution was gathered from literature. Information was available through more recent studies (such as Punjab Urial *Ovis vignei*, Woolly Flying Squirrel *Eupetaurus cinereus*, Wolf *Canis lupus*, Golden Marmot *Marmotta caudata*, Indian Pika *Ochotona roylei*, Himalayan Ibex *Capra ibex*, Markhor *Capra falconeri falconeri* and few species of small mammals) which provided updated information with respect to new localities, habitat characteristics, population information, threats, updated distribution information, habits and habitat of the species. The following figure illustrates the quality of data used in the assessments.



Data Deficient Species:

Thirty-seven (37) species were found to be Data deficient.

Most importantly, all species of Cetacean, apart from one, have been assessed as Data Deficient due to lack of specific information for these species. There have been very occasional sightings which have not provided sufficient data to assign them to any other category. Eight of the total of forty-nine (49) species of Chiroptera has been assessed as Data Deficient.

Some wildlife professionals think that it is not possible to determine the status of certain species in the wild on the small amount of hard data available. Individuals attempting to assess and categorize species using IUCN Red List Criteria and Categories often jump to the conclusion that a species is Data Deficient when information is sparse. On the contrary, the IUCN Red List Criteria and Guidelines are very clear in stating that if no observations are available, then inference, estimates, and predictions are permitted within reason. However, consistency in applying boundaries of the limits to inference is crucial (Molur *et al.*, 2002). In the C.A.M.P. workshop, there was a tendency by participants to declare many bats being Data Deficient. However, when the confidence level in the process of logical deduction provided by the criteria increased, many species were found to have sufficient data to assign a status, and with this limited data and inference within reason, the justification also could be adopted.

Threatened Mammals of Pakistan

(Category Wise Details of Threatened Species)

The species accounts are only given for the country of Pakistan, for species in threatened categories i.e. Critically Endangered, Endangered and Vulnerable. Habitat, distribution, threats and national status are compiled and assessed on the basis of Pakistan's Mammals CAMP data. Conservation measures and priorities are recommended after overall analysis of CAMP exercise as well as consideration of other dynamics.

CRITICALLY ENDANGERED (CR)

***Ursus thibetanus gedrosianus* Blanford, 1877** **Balochistan Black Bear**

Description: This subspecies is primarily distinguished by its much smaller size than others. The head and body length of an adult male with the tail is found to be 80 cm. This Balochistan subspecies has comparatively short, coarse fur and quite often this appears to change to a reddish brown color.

Habitat: Rugged arid mountains with sparse shrub vegetation.

Recently Known Localities: Khuzdar, Sheengar, Pab Range, Kohi-e-Siya in Kharan, Takhte-Suleman, Muth, Marghar, Neel Takhi, Tanbo, Khaseen Kund, Paritaghar, Tattoo, Chishki, Pichighar, Moonmandi, Sukhdasht and Koi Zindodasht.

Threats: Habitat degradation, killing for pride, thrill and bravery as it's is also considered an enemy species.

National status: Critically Endangered

Conservation Measures/ Priorities Suggested: Further research and data is needed to ascertain the population trends and prioritize conservation implications. Public education and awareness along with strict effective law enforcement is recommended.



***Ursus arctos isabellinus* Horsfield, 1826** **Brown Bear**

Description: The brown bear of the Himalayas varies much in size and color, which generally appears as a sandy or reddish brown. There is a conspicuous hump of longer hairs over the shoulders and no noticeable ruff of longer hair on the neck. The ears are small and rounded and the lips are noticeably protruding and mobile.

Habitat: Temperate grasslands, alpine meadows, sub alpine scrub zones, areas above tree line

Recently Known Localities: Deosai National Park, Lalazar, Kabkot, Sadpara, Khunjerab National Park, Askoli.

Threats: Disturbance in the habitat, considered enemy species, killing for thrill and bravery for medicinal uses of organs, including enhancing sexual potential; shooting out of excitement as people consider it as a harmful species; hunting- due to regional/international trade for medicine.

National status: Critically Endangered

Conservation Measures/ Priorities Suggested: Strict law enforcement, public education and awareness about this important species, effective implementation of the existing policies and management plans. Integrated research on wildlife and human conflicts and applied conservation aspects may be undertaken.



***Mellivora capensis* (Schreber, 1776)**
Ratel or Honey Badger

Description: Its coarse body fur is sharply divided horizontally in two contrasting colors. The top half of the head, upper neck and back are silvery-grey, whilst the limbs, belly, lower cheeks and muzzle are jet black. The fore-limbs are powerfully developed and bowed inwards like those of the bear. Males are slightly heavier and an adult specimen may weight up to 10kg.

Habitat: Hot desert, caves, other subterranean habitat near expanding human settlements due to the availability of bones.

Recently Known Localities: Extremely rare in the more densely populated tracts of the Indus basin but occurs in the southern part of Balochistan as well as southern Sindh. Some observations have been recorded in the Kirthar National park, Mahal Kohsitan Wildlife Sanctuary, Surjan, Sumbuk, Othiano, Eri game reserve, Mekran, Lasbela, Kalat and Chaghai.

Threats: Habitat fragmentation, reduction of food species and it is considered an enemy species.

National status: Critically Endangered

Conservation Measures/ Priorities Suggested: Further field research and public awareness is recommended.



***Hyaena hyaena* (Linnaeus, 1758)**
Striped Hyaena

Description: The Striped Hyaena has a conspicuous crest of longer hair extending like a mane from the crown of the head to the pelvis. The ears lack any bursa or pouch-like fold on their outer margin and are sharply haired and black skinned. The legs are relatively long and slim. The dorsal crest generally has black hair and these are erected when the animal is nervous or excited.

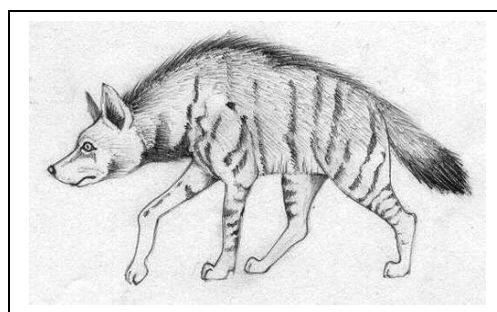
Habitat: Rocky areas, hot desert, wild open valley, semi-desert areas.

Recently Known Localities: Kall, Bhal, Palugram, Daphar Plantation, Jals park, Qaderabad, Sukh-Beas near Chunian & Changa Manga, Kirthar National Park.

Threats: It is considered as an enemy species, habitat destruction and fragmentation. Due to the non-availability of natural food tends it tends to scavenge near human habitations and increasing incidents for its killing.

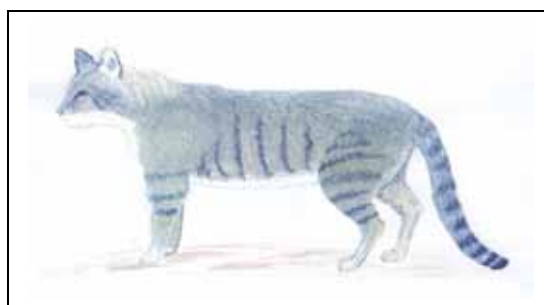
National status: Critically Endangered

Conservation Measures/ Priorities Suggested: Further field research wherever it is recently reported to determine the status and to understand better the negative trends, habitat quality and population trends.



***Felis margarita* Loche, 1858**
Sand Cat or Dune Cat

Description: *Felis margarita* is smaller than the other two species (*F. silvestris* and *F. chaus*), generally with a longer tail and shorter legs. The distal one-third of the tail bears two or more thin black rings and the terminal tuft is black. The fore legs have four or five faint, dark brown stripes on the upper part of the outside limb. A striking feature is



that the pads of the paws are entirely covered with long grayish hair. The length of the head and body of a male is 57cm.

Habitat: Hot desert

Recently Known Localities: Balochistan, Nushki

Threats: Persecution by Houbara hunters.

National status: **Critically Endangered**

Conservation Measures/ Priorities Suggested: Further research to assess the population and habitat assessments is recommended.

***Caracal caracal* (Schreber, 1776)**

Caracal or Red Lynx

Description: *Caracal caracal* is more slender in build and smaller than the Himalayan Lynx. The body fur is comparatively short and dense. The backs of the ears are entirely black with a frosting of white hairs. The face bears conspicuous black marking in the form of two short vertical bars above each eye and a broad black smudge above the corner of the mouth and at the base of the vibrissae. The area around the lips and the chin is whitish.

Habitat: Subtropical / Arid subtropical thorn forest, scrubland, rocky areas, hot desert, wild open valley, semi desert.

Recently Known Localities: Lal Sohanra National Park, Kirthar National Park, Runn of Kutch Wildlife Sanctuary

Threats: habitat fragmentation, shortage of food due to drought effects, poisoning by shepherds, and increasing human disturbance in the core habitats.

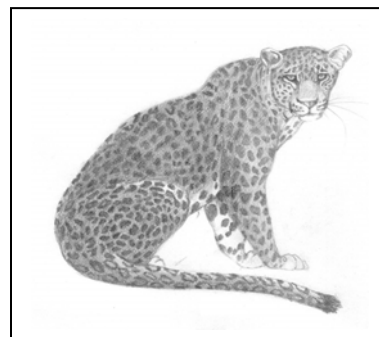
National status: **Critically Endangered**

Conservation Measures/ Priorities Suggested: Further research on the state of habitat and status of the species in the wild is recommended in Lal Sohanra National park, Kirthar National park, Nara Game Reserve, Kala Chitta Range, Dureji Game Reserve and Chumbi Surla Wildlife Sanctuary and wherever reported.

***Panthera pardus* (Linnaeus, 1758)**

Panther or Leopard

Description: A large male *Panthera pardus* may stand up to 66cm at the shoulder; the head and body length is 117cm. The tail is very long and slender averaging about two third of the head and body length. Panthers from the more arid regions of Balochistan weigh more than 40 kg. It has a deep, laterally compressed body with comparatively short, stout legs and very broad and large paws. The neck is thick and muscular; ears are black on their dorsal surface with conspicuous round, white spots. The body color varies from a golden orange color to a paler greenish fawn, closely marked all over with black rosettes. The tail and forehead bears spots.



Habitat: Oriental faunal zone in the northern mountains westward along the western mountains into ranges around Quetta.

Recently Known Localities: Ayubia National Park, Manglot Wildlife Park, Dareen, Toreshore, Zari, Khalifat range, Penchar

Threats: Considered as enemy species, degradation and fragmentation of the habitats, shortage of food species, shooting out of excitement or fear, over exploitation, hunting-and gathering of parts for illegal trade.

National status: **Critically Endangered**

Conservation Measures/ Priorities Suggested: Research to evaluate status of the food species, state of the remaining habitat, status of the wild populations and census of the species, especially in NWFP is recommended. Funding for research and conservation is crucially required.

***Uncia uncia* Schreber, 1775**
Snow Leopard or Ounce

Description: *Uncia uncia* is similar in general appearance to *Panthera pardus*. It is generally smaller in size with a relatively longer tail which is much thicker and bushier. The tail is the most striking feature. The head and body length varies from 100-120 cm; it stands about 56-60cm at the shoulder. The forelegs are relatively short and powerful and the paws appear particularly large. It has long, broad nose with powerful jaws and relatively short, rounded ears. The body color is grey to grayish buff with widely scattered black spots on the outer surface of the limbs, merging to large, black rosettes along the upper flanks and back.

Habitat: Alpine dry steppe, permanent snow fields, rocky areas in the palaerctic range of northern mountains.

Recently Known Localities: Bar valley in Gilgit, Skardu, Ghizar, Tooshi game reserve in Chitral, Chitral Gol National Park, Kohistan, Naran, Mahodand and Utrot valleys in Swat, Khunjerab National park (Dhee nullah), and Passu Glacier.

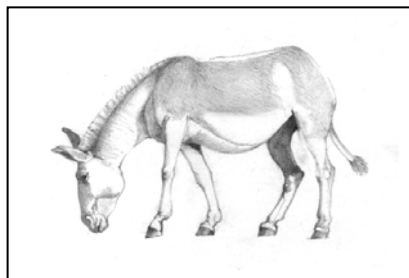
Threats: Human disturbance through livestock grazing, habitat fragmentation, reduction in the population of prey animals, poisoning by shepherds, Illegal trade of animal parts, hunting for regional/international trade in its fur.

National status: Critically Endangered

Conservation Measures/ Priorities Suggested: Investigative research needs to be carried out on human-wildlife conflicts in this case, evaluation of the availability of food species, state of habitat and status of species is recommended. It is important to explore exact numbers of the adequate populations of wild ungulates in the core habitat, satellite imagery techniques may also be used to study its dispersal and migration for effective monitoring and conservation efforts; effective conservation education and awareness is needful.

***Equus hemionus khur* Pallas, 1775**
Indian Wild Ass or Onager

Description: It is larger than the Wild Asses of Ethiopia and the Sudan. Onager is a reddish tan animal with creamy white legs, lower neck, belly, inside of thighs and buttocks. It differs from the domestic strain. The upright stiff mane of hairs ends abruptly and consists of dark chestnut hairs.



Habitat: Hot desert, semi-desert, areas with poor vegetation cover.

Distribution: Nagar parker bordering areas, mud flatlands of Runn of Katch.

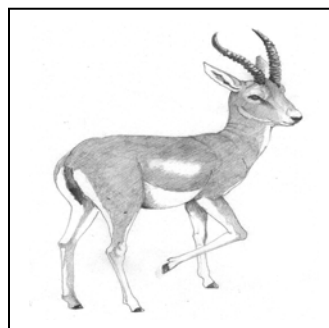
Threats: habitat loss, poaching, taming for domestication, killing out of excitement, picking of young ones for domestication.

National status: Critically Endangered

Conservation Measures/ Priorities Suggested: Research is needed to know current remaining individuals in fragmented areas of Sindh. Strict law enforcement is imperative for future survival of the species.

***Gazella subgutturosa* (Sykes, 1831)**
Goitred Gazelle or Persian Gazelle

Description: *Gazella subgutturosa* is indistinguishable from the much more familiar Indian Gazelle. The head and body length is about 100.7cm (3.5ft). Adult males weigh up to 24 kg. The ears are long and slender. The inside of the ear is thickly fringed with white hairs. The tail is longer than that of the wild goat. The body is covered with long, rather coarse reddish-grey hairs in winter. In summer the body fur is shorter and reddish- brown in color.



Habitat: Sandy-stony flats and rocky/ stony flats, hot desert of

Balochistan.

Recently Known Localities: Jhalwar in Balochistan.

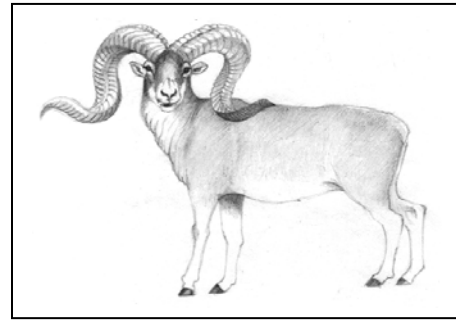
Threats: Ruthless hunting is the main threat, loss of habitat through up-rooting of anchor plants, habitat fragmentation through increasing human intrusion, over grazing from domestic livestock, prolonged drought, mining (extraction) activities and excessive hunting.

National status: **Critically Endangered**

Conservation Measures/ Priorities Suggested: Control illegal hunting by strict law enforcement, habitat quality assessment is recommended and monitoring of existing populations and public awareness is highly recommended.

***Ovis ammon polii* Linnaeus, 1758**
Marco Polo Sheep

Description: The long outward curving horns, developed in mature males are striking features of *Ovis ammon polii*. The legs and belly are creamy-white without any darker pattern on the frontal area. The neck in the rams tends to be heavy and muscular. The tail is short and not bushy. In both sexes the legs appear relatively long and slender.



Habitat: Alpine areas near high mountains and snow fields, alpine scrubland and grassland

Recently Known Localities: Extreme southern tip of Pamir plateau in Pakistan at Khunjerab Pass and Kilik Mintika Passes. Northern ranges of Karakorums, Karchnai nullah in Khunjerab National Park, Sakhtarabad

Threats: Poaching and trade of parts, human disturbance, competition with domestic livestock in its core habitat.

National status: **Critically Endangered**

Conservation Measures/ Priorities Suggested: Further research to know latest population trends is recommended in the core habitats in the areas of Khunjerab National Park and Kilik Mintika reserves. Education of remote mountain communities about the importance of the species, strict law enforcement as well as regular mentoring of the existing populations is highly recommended. Reduction in grazing pressure is highly recommended.

***Marmota himalayana* (Hodgson, 1841)**
Himalayan Marmot

Description: This Marmot is about the same size as the long-tailed marmot, but can be distinguished by the more subtly colored long tail. The top of the head is not black nor is there any distinctive outer ring of black hairs around the eyes. The face is a darker brown than the rest of the body. The ears are small, rounded and thickly fringed with hairs both inside and outside.

Habitat: Alpine grasslands at the edges of the glaciers and rocky areas with deep soil.

Recently Known Localities: North and North-east of Skardu, North of Shyok river. It is confined to fewer parts in Pakistan; otherwise it is widely distributed extraliminally.

Threats: Grazing activities in its limited habitat

National status: **Critically Endangered**

Conservation Measures/ Priorities Suggested: Further research to ascertain the current status of population and state of habitat is recommended.

ENDANGERED (EN)

***Moschus chrysogaster* (Hodgson, 1839)**
Musk deer

Description: This little deer has very peculiar speckled coarse fur, hind legs longer than the fore, longer than a high arched spine and conspicuous upstanding ears which are rounded in outline and

thickly fringed on the inside with white hairs. It is a shy species confining to upper limits of the high altitude grasslands and shrub lands.

Habitat: Mixed coniferous forest in winter and Birch forest in summer, also high altitude grasslands and shrub lands.

Recently Known Localities: Machiara National park, Salkhla Game reserve, Ghamot Game reserve, Bar palas, Gumrat valley, Fairy meadows, Darel range, Dir Kohistan, Moji game reserves.

Threats: Very high human interference through poaching, hunting, timber collection, over grazing from livestock. At times the young ones mix with the domestic livestock herds. Regardless of the sex and age group and maturity of musk pods the pods are collected even in the non-breeding season. Local trade is common, over exploitation of the medicinal and other diet plants from its core habitat.

National Status: **Endangered**

Conservation Measures/ Priorities Suggested: Strict law enforcement, field-based research to determine current latest population in all areas of occurrence is urgently needed. Development and implementation of the species recovery plans is crucially important.

***Canis lupus pallipes* Sykes, 1831**

Wolf

Description: This species is considerably smaller than those found in subarctic regions of the northern hemisphere. A large male weighs 24kg. There is little color variation and usually grayish fawn in color. The face is greyer having a mixture of black and white hairs, being blacker on the forehead with predominantly white and fawn hair around the eyes. Short bushy tail which barely reaches the hocks and is black-tipped with black predominant on the dorsal surface.

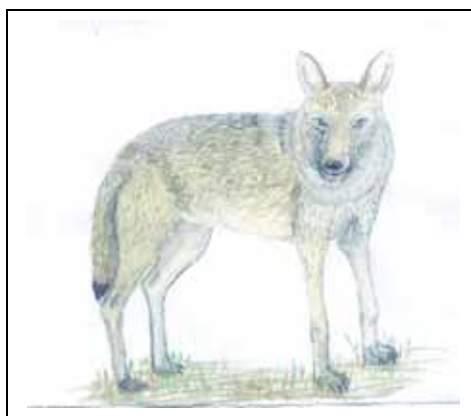
Habitat: Subtropical scrubland, tropical dry scrubland, hot desert, open areas, tropical thorn forest.

Recently Known Localities: Occurs in all mountainous regions from Balochistan up to Chitral, Gilgit, and Baltistan in the north. Also in Deosai National park in the areas of Karabos, Bubind and Sadpara. Extremely rare throughout the Indus plains and survives mainly in the desert regions such as Cholistan and Tharparkar. In Balochistan its range appears to extend over the whole province from the Makran coast to Zhob.

Threats: Decline in habitat quality due to decline of prey species, it is considered an enemy species, also habitat is degraded due to the land-use pattern and fragmentation, increasing human interference through developmental activities, decrease in the quality of habitat due to forest clearing, hunting and decline in its prey species. It is almost gone from Khirthar National Park and Thar.

National status: **Endangered**

Conservation Measures/ Priorities Suggested: It is difficult but restoration of food species in the wild should be one priority. Conservation education and public awareness is recommended. Further research highlighting status of the wild populations, man-wildlife conflicts and potential solutions through changing public attitudes and education is recommended.



***Muntiacus muntjak* (Zimmermann, 1780)**

Indian Muntjac or Barking Deer

Description: *Muntiacus muntjak* has short hind legs. The outer vestigial hooves are hardly developed at all and may even be entirely lacking. It has large round ears; in males upper canines are elongated. Adults stand 41-61cm high at the shoulder with the body length 80-100cm. The body fur is short, soft and highly glossy with no under-fur and it is generally a bright yellowish-red color. Unique head appearance as the male develops two long bony pedicles covered with skin and from these the short horns extend. The horns are less than 165mm in length usually inward curving at the tips and shed annually (May or June).

Habitat: Himalayan foothill zone, tropical dry deciduous forest, tropical thorn forest, remaining fewer numbers only in bushlands.

Recently Known Localities: Margalla Hills National Park, Khanpur range, Lethrar.

Threats: Habitat loss, poaching near the Margalla Hills National Park boundaries, non-woody vegetation collection from the core habitat.

National status: **Endangered**

Conservation Measures/ Priorities Suggested: Strict law enforcement, research investigating habitat quality and current population trend is recommended.

***Nyctalus leisleri* (Kuhl, 1817)**

Leisler's Noctule or Hairy-armed Bat

Description: This is a medium-sized Noctule of a darker color than the common Noctule. The dorsal fur is blackish-brown and the belly fur is a paler brown. The low, rounded ear is blackish and naked, both anterior and hind margins being convex when viewed from the side. The average head and body length is 67mm.

Habitat: Buildings, forested regions and hollow trees.

Recently Known Localities: northern Mountains of Pakistan.

Threats: Habitat degradation but further investigation is required.

National status: **Endangered**

Conservation Measures/ Priorities Suggested: Extensive field research to know its habits, ecological role, status trends, distribution and public awareness is recommended.

***Boselaphus tragocamelus* (Pallas, 1766)**

Nilgai or Blue Bull

Description: Nilgai are sturdy animals with stout legs and a rather long, sloping horse-like neck and a coarse mane of long hairs mixed with grey and white. The hair covering the body is short and wiry. Adult males are bigger than females with noticeably higher sloping shoulders and very thick muscular neck. The tail is white on the ventral surface.

Habitat: Scrubland, desert scrubland, temperate grasslands and areas of tropical thorn forest.

Recently Known Localities: Dodlan, Bajwat, Changa Manga, Kasur (only bordering areas), Lal Sohanra, Ravi Siphon.

Threats: Habitat loss due to human interference through shifting agriculture patterns, over-grazing pressure due to excessive domestic livestock, non-woody vegetation collection, poaching, drought and restricted range and pollution in the habitat.

National status: **Endangered**

Conservation Measures/ Priorities Suggested: Research is needed to further investigate the present status and state of the habitat. Public awareness is very important to terminate the developmental activities taking place in its core habitat. Effective law enforcement is crucial.



***Capra falconeri falconeri* (Wagner, 1839)**

Flare-horned Markhor

Description: The spiraling horns of this Markhor are diverging outwards. The average head and body length is 149.8cm. In appearance the animal is sturdy with short, thick legs and broad hooves. Both sexes are a reddish-grey color with more yellowish buff tones in the summer coat and more grey in winter. The short tail with black hair is naked at the ventral surface. The belly and legs are creamy white with a conspicuous dark brown stripe extending from the shoulders to the base of the tail.

Habitat: Rocky areas, open valleys, dry alpine and cold desert zone, temperate steppic forest, dry temperate forest.

Recently Known Localities: Tooshi, Chitral Gol National Park, Gilgit region.

Threats: Habitat loss through increasing human settlements and pressure as well as poaching are the main causes of its population loss.

National status: **Endangered**

Conservation Measures/ Priorities Suggested: Further conservation research is recommended to determine the exact population trends in the areas such as district Kohistan. Monitoring of remaining populations and their habitats is also required throughout its occurrence range. Sustainable use through community-based trophy hunting programmes to be further promoted.

***Pseudois nayaur* (Hodgson, 1833)
Bharal or Blue Sheep**

Description: Similar to the wild sheep but with slightly shorter legs and more stocky. The coat of this species is blue and legs and belly is white. There is no trace of any chest ruff in adult males. In the summer coat the underwool is shed in ragged patches and the fur becomes reddish grey in color. Slightly longer tail with hairs on it. The horns of the male are cylindrical and very broad at the base, curving almost horizontally outwards.

Habitat: Alpine pastures and snow fields, alpine scrub zones.

Recently Known Localities: Northern ranges of Karakorums, Shimshal Valley, Sakhtarabad nullah, Knunjerab national Park.

Threats: Habitat loss due to extensive livestock grazing in the core habitat, poaching and disease.

National status: **Endangered**

Conservation Measures/ Priorities Suggested: Extensive research and monitoring of remaining population is recommended. Strict law enforcement and community-based conservation/ sustainable use are recommended depending on the population size and habitat conditions.

***Ovis vignei punjabensis* Lydekker, 1913
Punjab Urial**

Description: Punjab Urial is a social animal which travels gregariously. Often males tend to be smaller and stockier in build compared with the sub species in Balochistan and mature rams develop a conspicuous saddle mark in the form of a vertical band of mixed and black and white hairs. It often has horns which are much larger at their base than those of the Balochistan population



Habitat: Subtropical/tropical dry scrubland, scrub forest tropical thorn forest, low-hill range, rolling stones

Recently Known Localities: Salt Range, Kala Chitta Hills, Kalabagh Reserve.

Threats: Habitat fragmentation creating isolated pockets of the species, increasing human interference, roadways, habitat loss due to over grazing and shifting agriculture, capturing of fawns as pet, hybridizers, sub-national/national trade.

National status: **Endangered**

Conservation Measures/ Priorities Suggested: Effective system of sustainable use may provide a long-term answer for its conservation. Creation of wildlife corridors in isolated pockets to safeguard existing populations is strongly recommended. Habitat assessment and regular monitoring of the various scattered populations is imperative.

***Ovis vignei vignei* Blyth, 1841
Ladakh Urial**

Description: The body fur is more grayish in winter and less red, chest ruff is comparatively short with black hairs predominantly. The horns turn inwards at their tips and often the wrinkles or corrugations are rather shallow and indistinct.

Habitat: Gentle slopes of alpine areas and upper temperate zone.

Recently Known Localities: Northern Himalayas, Chitral, Gilgit, Shigar, Bunji, Rondu Baltistan.

Threats: Habitat degradation, poaching, lamb picking, disease transfer from domestic livestock.

National status: Endangered

Conservation Measures/ Priorities Suggested: A systematic range management practice for livestock and wildlife is recommended. Public awareness about the importance of the species and research is recommended evaluating impact of local communities on the core habitat. Sustainable use may be recommended to have a long-term conservation solution.

***Eupetaurus cinereus* Thomas, 1888** **Woolly Flying Squirrel**

Description: Slightly larger in body size, with a comparatively smaller bushy tail than the other species inhabiting Pakistan. The dorsal fur is brownish grey having a scattering of pale buff-tipped hairs. The ears are slightly smaller and feet are comparatively larger and stronger than *Petaurista*.

Habitat: Dry temperate ecological zone, blue pine and juniper forests, cavity dweller in the rocks and cliffs at around 9,000 feet.

Recently Known Localities: Hindukush range in Chitral and Gilgit.

Threats: Fast habitat loss/ degradation and fragmentation through timber extraction, selective logging in the core habitat.

National status: Endangered

Conservation Measures/ Priorities Suggested: Conservation education and public awareness about its importance, research to evaluate the status and state of habitat is recommended. Timber extraction from its core habitat must be stopped.

***Platanista minor* Owen, 1853** **Indus Dolphin or Bhulan**

Description: *Platanista minor* is one of the worlds most specialized Freshwater dolphins, confined to the fluvial. It differs from other dolphins in the broad, spade-shaped flippers and the rostrum, or beak which is relatively long and very slender. The color is purplish grey, being paler ventrally. The skin is soft and satiny to the touch in surprising contrast to harsh skin of shark.

Average body length is 1.3 m and average weight is 21kg.

Habitat: Fresh waters, riverine habitats such as Indus.

Recently Known Localities: Sukkur, Guddu and Chashma barrages.

Threats: Habitat degradation due to construction of dams and barrages, increased water pollution, over fishing practices, considered harmful species by fishermen, occasionally got stranded in Canals.

National status: Endangered

Conservation Measures/ Priorities Suggested: Conservation education, public awareness and habitat assessment is recommended and effective law enforcement is crucial. Industrial effluents entry must be stopped in the tributary rivers. Sustainable fish harvesting practices in its habitat would keep the species safe.



VULNERABLE (VU)

***Rousettus aegyptiacus* (E. Geoffroy, 1810)** **Egyptian Fruit Bat**

Description: Medium sized fruit bat with a comparatively large head and dog like muzzle. There is short vestigial tail. The hind feet are large with well developed claw on each of the five digits. The wing span is about 61cm (24 in).the skin of the wing and the tail membranes is dark brown in contrast to jet black of other species. When hanging vertically in its diurnal roost the head is normally carried at right angles to the rest of the body. The dental formula is incisors 2/2, canines 1/1, pre molars 3/3 and molars 2/3 and weight of this species is 78g.

Habitat: Inhabit in caves, in the sea cliffs near Clifton.

Recently Known Localities: Sindh (Karachi and at Lak Bidok in Lasbela)

Threats: Habitat destruction, further investigation is needed.

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Further research to evaluate the status of population, diurnal roosts and state of habitat is recommended. Public awareness is recommended.

***Rhinolophus ferrumequinum* (Schreber, 1774)**

Greater Horseshoe Bat

Description: The noseleaf of Greater Horseshoe Bat consists of a thin, flattened disc of naked pinkish brown skin just above the upper lip. At its upper or posterior end and between the eyes the noseleaf narrows to a thin pointed appendage which is referred to as the lancet. As the name implies, this bat is one of the larger species and is almost twice the size of the other four *Rhinolophus* recorded in Pakistan.

Habitat: Northern Himalayan valleys, dark roosting places, dry climate of southern Balochistan.

Recently Known Localities: Dir Kohistan, Balochistan (Kalat and Nushki)

Threats: Habitat degradation, however, further investigation is needed..

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Further research to evaluate the status of population, diurnal roosts and state of habitat is recommended.

***Triaenops persicus* Dobson, 1871**

Persian Trident Bat

Description: These bats exhibit great diversity in coloration, through gray, brown, and red. Individuals in some areas are pale buff, almost white. Head and body length is 35 to 62mm and adult weight is 8 to 15 grams.

Habitat: Dry temperate forest; inhabit sheltered natural caves, underground channels, crevices, cliffs.

Recently Known Localities: Sindh (Gharo, Thatta)

Threats: Habitat degradation, however, further investigation is needed.

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Further research to evaluate the status of population, diurnal roosts and state of habitat is recommended.

***Myotis mystacinus* (Kuhl, 1817)**

Whiskered Bat

Description: Distinctively colored with the dorsal fur blackish basally, but brown distally. Ventrally, the hairs are again blackish basally but whitish or creamy white distally. In their diurnal roost at the onset of dusk they can be heard giving a rather low-pitched buzzing squeak.

Habitat: Desert, semi desert, warm tropical land montane forest, moist temperate forest.

Recently Known Localities: Punjab and North West Frontier province

Threats: Habitat degradation, however, further investigation is needed.

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Further research to evaluate the status of population, diurnal roosts and state of habitat is recommended

***Pipistrellus savii* (Bonaparte, 1837)**

Savi's Pipistrelle

Description: This is relatively small pipistrelle with the dorsal fur markedly darker and contrasting with pale brown belly-fur. The tragus is half the ear length and the thumb is relatively short.

Habitat: Well wooded areas.

Recently Known Localities: NWFP and Punjab

Threats: Habitat degradation, however, further investigation is needed..

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Further research to evaluate the status of population, diurnal roots and state of habitat is recommended

***Rhinolophus hipposideros* (Bechstein, 1800)**
Lesser Horseshoe Bat

Description: These bats are distinguished from those of the genus *Rhinolophus* by the feature of nose and ear, the character of teeth and greater posterior width of the skull. Many species of *hipposideros* have a sac behind the nose leaf that can be averted at will. The nose leaf and ears often twitch while these bats are hanging. These bats fly lower than most bats and catch insects.

Habitat: Inhabit in sheltered natural caves, man made tunnels and pathways.

Recently Known Localities: Gilgit, Malakand agency, Zhob district in Balochistan.

Threats: Habitat degradation, however, further investigation is needed.

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Further research to evaluate the status of population, diurnal roots and state of habitat is recommended.

***Manis crassicaudata* Gray, 1827**
Indian Pangolin or Scaly Anteater

Description: The Indian Pangolin has a relatively tiny head, a hump-backed body and a thick tapering tail almost equal in length to its body. The scales bear fine longitudinal striation on their surface. There is hardly any external ear and the muzzle tapers to a narrow, down-curving snout. The hind legs are stout and rather columnar with five blunt pinkish white toe nails.

Habitat: Desert areas, barren hilly areas, also in sub-tropical thorn forest.

Recently Known Localities: Around Mangla, Potohar and Salt Range across Indus south to near Karachi and northward in the mountainous areas upto Kallat.

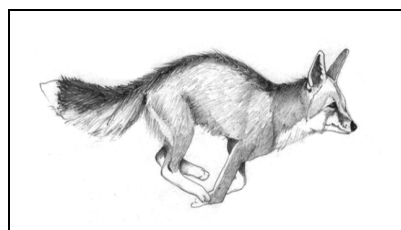
Threats: Habitat Loss, occasionally killed out of fear for having an odd shape.

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Extensive field research to evaluate the state of habitat and status of population as well as public awareness is recommended.

***Vulpes rueppelli* (Schinz, 1825)**
Rueppell's Fox or Sand Fox

Description: Smaller than the common red fox but similar in its general appearance. The enormous ears are its distinctive feature. The tip of the tail is white. There is an area of black-tipped hairs about three inches from the base of the tail. The soles of the feet are completely covered with long, soft fawn hairs which conceal the pads.



Habitat: Desert, rolling sand dunes

Distribution: Balochistan, Chaghai & Kharan desert, It is a palerartic species.

Threats: Habitat degradation, also considered as a game enemy species, exploited for skin trade.

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Extensive field research to evaluate the state of habitat and status of population as well as public awareness is recommended.

***Ursus thibetanus thibetanus* G. [Baron] Cuvier, 1823**
Asiatic Black Bear or Himalayan Black Bear

Description: *Ursus thibetanus* in northern Pakistan has the black body fur at back reaches a length of 50mm. There is a ruff of extra-long, coarse hairs fringing the cheeks and running down each side of the neck. The body is jet-black except for the muzzle which is reddish brown.

Habitat: Himalayan moist temperate forest and Himalayan dry temperate forests. Unlike the Brown Bear, it does not ascend above the tree line alpine regions.

Recently Known Localities: North West Frontier Province, Azad Kashmir.

Threats: Habitat degradation, killing out of excitement, considered as an enemy species and there is gradual decline of population.

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Habitat assessment, public awareness, and conservation education is recommended.

***Axis porcinus* (Zimmermann, 1780)
Hog Deer or Para**

Description: Small deer with short delicate legs and rather bulky heavy body. Its pelage is coarse, and the general coloration is dark olive-brown, lacking any rufescent tinges when viewed from a distance. It has round ears which are fringed from inside with white hairs. The short tail is quite bushy. The surface of the horns is somewhat smooth with less corrugation.



Habitat: Shrub dominated wetlands, artificial terrestrial plantations like Changa Manga, riverine area.

Recently Known Localities: Changa Manga Plantation, Head Qadarabad, Ferozwalla, Head Marala, Taunsa wildlife Sanctuary, Riverine forests in Sindh.

Threats: Degradation of its core riverine habitat and high poaching pressure, habitat loss.

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Effective Law enforcement, monitoring of the commercial exploitation of the habitat (typha cutting) is a high priority. Public awareness and control of the increasing human induced habitat changes are recommended.

***Gazella bennettii* (Sykes, 1831)
Chinkara or Indian Gazelle**

Description: The fur smooth, highly glossy and reddish-buff in color. The tail is medium long and covered with a dorsal crest of black hairs. Chinkara resembles closely the Goitered Gazele in external appearance and color but without enlarged larynx. The sides of the face are patterned with broad dark chestnut stripes from the corner of the eye to the muzzle bordered above, and below by white stripes.



Habitat: Hot desert, subtropical/tropical scrubland, tropical thorn forest, riverine areas, semi deserts and foothills.

Distribution: Manglot Park, Hingol, Cholistan, Thal and Thar

Threats: Over-exploitation through ruthless hunting, poaching, fawn picking, habitat degradation and fragmentation.

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Further research is recommended to assess the quality of the wild habitat and status of population. Monitoring of remaining population and effective law enforcement is recommended to safeguard the remaining population.

***Naemorhedus goral* (Hardwicke, 1825)
Himalayan Goral or Grey Goral**

Description: Head and body length is 105cm and weight 25-35kg. Small in size with small horns. Body coloration in summer is generally dark grayish blue. The tail is longer than that of wild goat species, not extending below the level of the belly and covered with black and grey hairs. The legs are sturdy and goat like in appearance. The chest and belly are paler grey and there is a conspicuous white patch in the upper throat with one or two white spots on the lower muzzle and cheek.

Habitat: Subtropical pine, high altitude of scrubland, moist temperate forest.

Distribution: Margala National Park, Palas, Mardan mountains

Threats: Habitat loss due to fragmentation, wild fires, fuel wood collection, poaching.

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Human Intrudence in the core habitat should be minimized through improvement management measures and strict law enforcement is recommended.

***Capra falconeri megaceros* Hume, 1875**

Straight-horned Markhor

Description: It is diurnal, gregarious and crepuscular species.

Habitat: Temperate steppic forest, temperate semi evergreen scrub forest, scrub forest.

Distribution: Kohe-e-Safed, Takatu range, Suleman range, Torghar mountains.

Threats: degradation of habitat and excessive illegal poaching, local trade.

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: State of habitat, latest distribution patterns, and habitat quality should be assessed. Effective law enforcement as well as prioritization of species in provincial and national wildlife surveys and conservation plans is recommended. There is an urgent need to control the human interference in the core habitat.



Ovis vignei cycloceros

Afghan Urial

Description: This species is gregarious, diurnal, prefers gentle slopes of the higher mountain ranges in association with scattered Junipers.

Habitat: Juniper forests

Recently Known Localities: Tanishpa, Shin Narai, Kundar, Khund in Torghar, Wakhan, Zarghoon areas.

Threats: habitat loss in the quality of habitat and fragmentation, drought and increasing human interference, hunting and lamb picking for recreation.

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Further research to assess the quality of the habitat, overall population trends is recommended. In future, sustainable use may be recommended after determining overall populations level.



***Lepus capensis* Linnaeus, 1758**

Cape Hare

Description: Distinguishable in the field by its generally greyer body fur and slightly heavier build. It differs from the desert hare in having a much longer and softer pelage with a thick, blue-grey under wool during the winter. There is a fairly distinctive black margin to the tips of the ears and the back of the tail is pure black. The head-body length averages 413mm and the tail averages 85mm. The belly fur is comparatively longer and pure white.

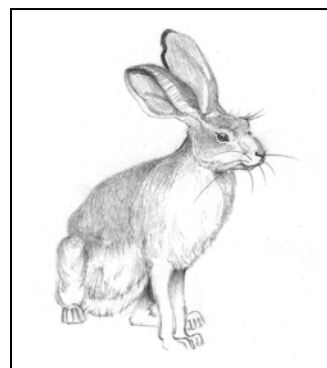
Habitat: Arid, semi-arid, gravel sandy and sandy habitat.

Recently Known Localities: Azad Kashmir, Northern areas, western mountains and mountains and western Balochistan, Soon valley, Nag valley, Kharan.

Threats: Poaching, habitat degradation through human interference, use of pesticides, over grazing and fuel wood cutting.

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Assessment of the habitat and extensive field research and public awareness is recommended.



***Petaurista petaurista* (Pallas, 1766)**

Giant Red Flying Squirrel or Indian Giant Flying Squirrel

Description: Head and body length up to 520mm. Tail up to 630mm. Dorsal pelage rich chestnut-brown. Tail black-tipped and hind foot with completely naked sole. In the dorsal region there is a scattering of creamy hairs. The long tail with black tip generally averages slightly more than head and body length. The head is round with a blunt muzzle and the area around the nose is pinkish in color.

Habitat: Moist & dry temperate forest in the northern mountains of the oriental zone.

Recently Known Localities: Baluchistan, Murree Hills, Kaghan Valley, Swat, Chitral and Azad Kashmir

Threats: Habitat loss due to small scale subsistence logging, selective logging and clear cutting

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Extensive field research to evaluate state of habitat, distribution and status of the current population as well as public awareness is recommended.

***Hylopetes fimbriatus* (Gray, 1837)**

Small Kashmir Flying Squirrel

Description: Smaller than *Petaurista*, having a comparatively short tail, more upstanding prominent ears and a relatively short tail, and a more pointed muzzle. The ears are hairless with the outer margin sharply concave towards the tips. The body fur is shorter and the belly fur is creamy white in color. The dorsal fur is a dull pinkish buff color mixed with black hairs. There is a distinctive 'V' shaped pattern of black hairs across the shoulders. The incisor teeth are coated with bright red enamel.

Habitat: Moist & dry temperate forest in the northern mountains.

Recently Known Localities: Murree Hills, Kaghan Valley, Azad Kashmir, Kohistan, Hazara, Swat, Nathiagali and some areas in Gilgit.

Threats: Habitat loss due to small scale subsistence logging, selective logging and clear cutting

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Extensive field research and public awareness is recommended.

***Dryomys nitedula* (Pallas, 1778)**

Forest Dormouse

Description: The body fur is pinkish-grey in color. The lower cheek and the throat are yellowish-white. The feet are strongly developed with naked soles. The tail is darker grey than the rest of the body and feather-shaped.

Recently Known Localities: Kharwaki Baba, Shirani State Forest, Kurram Valley, Kingergali Game Reserve, Pallas, Harboi

Habitat: Riverine and mountain slopes, juniper forest of Balochistan.

Threats: Habitat loss and further investigation is necessary to understand the threats.

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Extensive field research and public awareness is recommended.

***Apodemus sylvaticus* (Linnaeus, 1758)⁷**

Himalayan Wood Mouse or Field Mouse

⁷ Few researchers strongly believe that this species of *Apodemus* is not threatened and may put into near threatened category as it is easily trapped and encountered. Many specimens were collected by ZB Mirza in Chitral Gol National park.

Description: In general appearance this field mouse looks like a rather large house mouse with the same semi-naked tail and sharp pointed muzzle. The tail is also markedly bi-colored, the dorsal surface being brownish-grey and the ventral surface whitish.

Distribution: Himalayan range, Dir, Chitral, Kaghan, Higher mountain slopes.

Habitat: Rocky mountain slopes, sub-alpine shrub, temperate forest, dry temperate coniferous forest.

Threats: Land sliding, Habitat loss through selective logging and clear cutting as it lives in the vulnerable habitats.

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Extensive field research to know the status of population and quality of habitat is recommended.

***Gerbillus cheesmani* Thomas, 1919**

Cheesman's Gerbil

Description: This is another gerbil adapted to burrowing in shifting sand dunes. In external appearance it resembles *G. gleadowi* in all respects, having a pale gingery buff or reddish fawn pelage with pure white belly, throat and cheeks.

Habitat: Desert subtropics.

Distribution: Balochistan

Threats: habitat Loss, human intrusion and huge traffic in the core habitat.

National status: **Vulnerable**

Conservation Measures/ Priorities Suggested: Extensive field research to assess the habitat, and public awareness is recommended.

Threatened Mammals in Protected Areas of Pakistan:

The following table shows the total Protected Areas of Pakistan. It is clear that most of area is still found in the game reserves leaving considerable opportunity for the interference of man with wildlife.

Table 9: Protected Areas in Pakistan

Region/ Province	National Parks	Wildlife Sanctuary	Game Reserves	Total PAs
Azad Jammu & Kashmir	2	0	7	9
Balochistan	2	14	9	25
Punjab	2	39	20	61
NWFP	5	3	28	36
Sindh	1	35	14	54
Federal Territory Northern Areas	1	1	1	3
Northern Areas	4	5*	9	18
Total	17	97	88	206
% of Country's Land Surface	3.41	3.23	4.52	11.16

(Source: Sheikh, K. 2003)

* Two of the Wildlife Sanctuaries in the Northern Areas were redesignated as Controlled Hunting Areas in October 1998.

** 11.16 means that this much area belongs to PA from the total land surface area of Pakistan.

The following table shows few Protected Areas of Pakistan and other key areas with distribution of the selected species of mammals.

Table 10: Few Selected Species of Mammals with their distribution in Protected Areas of Pakistan and other locations.

Sr. No.	Scientific and Common Name	IUCN National Red List Status	Protected Areas/ Other Respective Location
1.	<i>Caracal caracal</i> – Caracal or Red Lynx	Critically Endangered	Lal Suhanra National Park, Kirthar National Park, Runn of Kutch Wildlife Sanctuary
2.	<i>Felis margarita</i> – Sand Cat or Dune Cat	Critically Endangered	Around Zangi Nawar lake in Chaghai district
3.	<i>Hyaena hyaena</i> – Striped Hyaena	Critically Endangered	Kirthar National Park
4.	<i>Uncia uncia</i> Snow Leopard	Critically Endangered	Naltar Wildlife Sanctuary, Chitral Gol National Park, Khunjerab National Park
5.	<i>Ursus arctos isabellinus</i> – Brown Bear	Critically Endangered	Deosai National Park, Khunjerab National Park, Satpara Game Reserve
6.	<i>Ursus thibetanus gedrosianus</i> – Balochistan Black Bear	Critically Endangered	Zhob (Sulaiman Range), Pub Range,
7.	<i>Canis lupus</i> Wolf	Endangered	Hazar Ganji National Park.
8.	<i>Capra falconeri falconeri</i> Flare-horned Markhor	Endangered	Chitral Gol national park,

9.	<i>Dryomys nitedula</i> – Forest Dormouse	Vulnerable	Kharwaki baba in NWFP
10.	<i>Eupetaurus cinereus</i> Woolly Flying Squirrel	Endangered	Sai Nullah in Chilas
11.	<i>Moschus chrysogaster</i> Musk Deer	Endangered	Machira National Park
12.	<i>Muntiacus muntjak</i> Barking Deer	Endangered	Margalla hills National Park
13.	<i>Nyctalus leisleri</i> – Leisler's Noctule or Hairy-armed Bat	Endangered	Punjab and NWFP province
14.	<i>Ovis vignei punjabensis</i> Punjab Urial	Endangered	Kirthar National Park, Kalabagh Game Reserve
15.	<i>Petaurista petaurista</i> – Giant Red Flying Squirrel Or Indian Giant Flying Squirrel	Endangered	Murree hills, Kaghan valley
16.	<i>Platanista minor</i> Indus Dolphin	Endangered	Taunsa Wildlife Sanctuary Indus River
17.	<i>Pseudois nayaur</i> Marcopolo Sheep	Endangered	Khunjerab National Park.
18.	<i>Ursus thibetanus</i> – Asiatic Black Bear or Himalayan Black Bear	Endangered	Balochistan, Shirani Tribal area and Danasarwad NWFP
19.	<i>Apodemus rusiges</i> (syn: <i>sylvaticus</i>) – Himalayan Wood Mouse or Field Mouse	Vulnerable	Dir, Chitral, Kaghan in NWFP.
20.	<i>Gerbillus cheesmani</i> – Cheesman's Gerbil	Vulnerable	Balochistan
21.	<i>Naemorhedus goral</i> – Himalayan Goral or Grey Goral	Vulnerable	Margalla National Park, Votala game reserve.
22.	<i>Ovis vignei cycloceros</i> – Afghan Urial	Vulnerable	Balochistan
23.	<i>Rhinolophus ferrumequinum</i> – Greater Horseshoe Bat	Vulnerable	Kalat and Nushki in Balochistan
24.	<i>Rhinolophus hipposideros</i> – Lesser Horseshoe Bat	Vulnerable	Gilgit, Malakand agency and Zhob district

Major Threats to Pakistan's Mammals

Most imminent threats to the mammalian species in Pakistan include habitat loss or total degradation of habitat in the case of a few species. Human interference has increased manifold and the species would be naturally becoming restricted to the core habitats zones. Some other threats include;

- Habitat fragmentation
- Habitat loss due to exotic animals
- Clearing and excavation of land
- Hunting for medicine
- Hunting for recreation
- Hunting for food
- Damming
- Hybridization
- Change in wild behavior
- Extensive pesticide use
- Poisoning
- Air and water pollution
- Interspecific competition from livestock
- Political unrest causing numerous land conflicts
- Trade of animal parts in the local markets
- Trade for market; overexploitation
- Disease
- Drought

Intrusion of man in the habitat and ecosystems of many species has caused catastrophic effects on the animal ecology and population dispersal. Species such as Barking Deer *Muntiacus muntjac* and Gray Goral (*Naemorhedus goral*) have almost disappeared from the wild following the rapid growth of cities such as Islamabad, which kept its beauty for a long time. However, recent development of roads and infrastructure and high demand for natural scenery near human settlements has made serious negative impacts on the wild populations. A few species such as Rhesus Monkey (*Macaca mullata mullata*) are finding less wild food and have adapted to come near the cities of Islamabad, Nathia Gali, Kala Bagh, and Murree to find food and, in fact, have become habituated to the food provided by the residents/ visitors.

In case of bats, felling of roost trees for widening of roads is a common threat to fruit bats. Deforestation for different reasons such as roads, housing, landslides, excessive tree-felling and lack of implementation of the forest plantations has also had a negative impact on various species. Bats that are living in caves which are tourists attractions such as ruins in Taxila, Wah Gardens and many places near Lahore, and all these species are prone to roost disturbance. Some species of bats such as fruit bats are considered pests and are persecuted as such (Molur *et al.*, 2002).

Many ungulate species face hunting pressure from the local communities as well as lack of watch and ward from authorities. Most of these species are hunted for recreation and meat. However, ongoing trophy-hunting and community-based conservation programs all over the country have restricted this threat; however, still there is a long way to go for the ungulate species found in the Sindh and Punjab provinces.

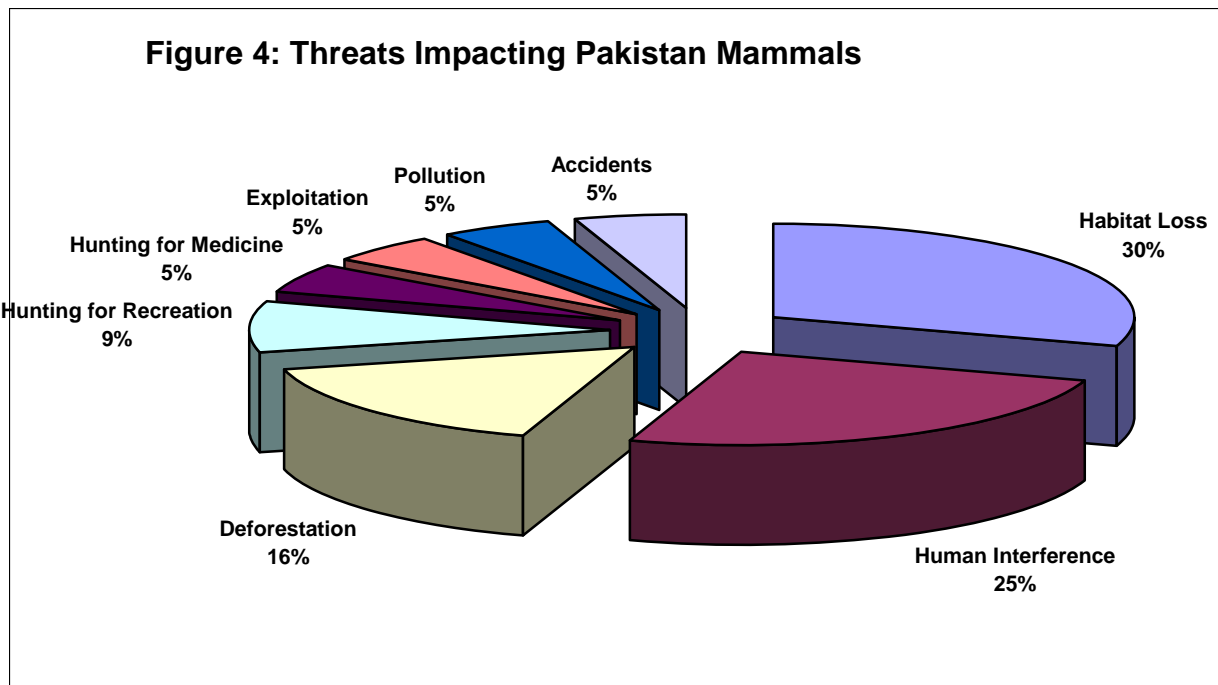
Rodents are affected by land clearing, roads development, extensive housing projects, waste of water into wild areas and eventual decrease in the burrowing sites.

Inconsistent conservation policies and lack of the implementation of action plans has also resulted in many negative impacts on the species. Pakistan's Biodiversity Action Plan have also prioritized species conservation but is also following a "slow track" of implementation due to lack of financial and

human resources. Forest conservation and development policies also have not been properly implemented. The loss caused by deforestation causes reduction in habitat quality.

Other indirect or direct threats are caused due to

- Lack of Scientific Research
- Poor Understanding of Ecosystem Approach
- Invasive or Alien species
- Pest Species
- Absence of Legislative Reforms
- Lack and/ or absence of direct benefits for communities in preserving biodiversity:
- Lack of Community-based Initiatives
- Weak Establishment and Infrastructure of Protected Areas



Conservation/ Management Recommendations:

Conservation measures and priorities are suggested in the section dealing with the species description; however, key conservation recommendations are suggested below as a next step for the conservation, management and sustainable use of mammalian species in Pakistan.

- Carry out detailed field research on species of mountains and wetlands especially those that have been categorized CR, EN and VU.
- Carry out inventory of all Protected Areas' biodiversity.
- Carry out detailed analysis of zoos, museums and other institutions having specimens, samples, skins and collection of various mammalian species for updated inventory.
- Organize field projects on migratory mammalian species especially in the bordering areas of Pakistan with Iran, India, Afghanistan and China.
- Train wildlife personnel for updated and improved wildlife management.
- Create incentive-based community-oriented conservation programmes all over the country.
- Develop special research projects to study the food web and food security of various species in the wild.
- Organize detailed field visits of students, researchers, scientists and interested individuals to remote areas of the country where many key species of mammals reside and breed or to which they migrate.
- Link research with action-oriented projects.
- Develop an environment of active collaboration among various institutions to develop suitable conservation projects for the protection of various species.
- Species such as Black Bear, Woolly Flying Squirrel, Indus Dolphin, Snow Leopard and Blackbuck require much research on their survival, behavior and breeding. Such data would immensely help the conservation of these endemic and critically endangered species.
- Train staff of captive facilities in handling of the wild animals.
- Develop training for captive breeding techniques and programmes and provide appropriate exposure of individuals and agencies involved with captive breeding to experts and to the most up-to-date facilities.
- Maintain information on all projects promoting conservation and sustainable use of biodiversity in Pakistan.
- Improve collaboration and information exchange among agencies that collect information relevant to the conservation of biodiversity.

Special Issues Working Groups:

An essential part of the CAMP workshop process is to highlight special issues, which materialize during the workshop for further discussion in participant's working groups following the filling of Taxon Data Sheets. In assessing and categorizing 195 species, a number of special issues come into view with respect to Pakistan's mammals and their conservation.

To address the same issues; three Special Issues Working Groups were formed i.e.

- 1. Education and Awareness**
- 2. Research**
- 3. Protected areas/ Habitats/ Legislation**

After detailed discussions, the working groups made recommendations, which were reported aloud in a plenary session of all participants who made further contributions. The recommendations were given in the form of a verbal report in the plenary session of all the participants with further contribution and clarification from the entire workshop. These were incorporated into the written version, which was handed in to the organizers. The draft recommendations were reviewed and then finalized below for this report.

The full text of these recommendations and personal commitments for action is given below.

Group I: Education and Awareness

Dr. Khalid Baig (Facilitator)

Dr. Muhammad Naeem Khan (Reporter)

Members: Muhammad Arshad, Dr. Muhammad Naeem Khan, M. Hamid Ali, Muhammad Asghar, Mohsin Farooq, Naeem A. Raja.

1. The subject of biodiversity / wildlife should be included as a chapter in science/biology for primary and secondary education.
2. Biodiversity should be upgraded to a level of independent subject in higher secondary and college degrees
3. At the university level, biodiversity should be identified as an independent specialization within the faculty of Life Sciences.
4. A center of excellence in wildlife may be established at any one university / center in Pakistan
5. Teacher training in wildlife and biodiversity should be included in the entire teacher training institutes.
6. Wildlife Department personnel should be given mandatory pre-in-service specialized training in wildlife / biodiversity, e.g. University of veterinary and animal sciences, Lahore.
7. Outdoor activities should be promoted for schools.
8. Zoo visits, protected area visits, etc. should be organized for general public and students
9. Bird watching and other awareness activities regarding conservation of animals should be arranged.
10. Nature clubs and societies should be established and promoted.
11. Printed and electronic media must propagate the importance of biodiversity conservation as a sustained campaign.
12. Rikshaw and other transport should be printed with wildlife pictures of Pakistan
13. Postage stamps and revenue stamps, matchboxes, consumer products and currency should depict Pakistan wildlife as much as possible.
14. Roadside signboards should promote wildlife conservation.
15. Islamic values of conservation of nature should be promoted
16. Ministry of Information's publicity programmes should focus on wildlife and biodiversity.
17. Animal Welfare and human treatment of wildlife should be promoted in wildlife week.

Group II: Title: Research
Abdul Munaf Qaimkhani (Facilitator)
Zulfiqar Ali (Reporter)

Members: Salman Ashraf, Ahmad Khan, Dr. Kashif Sheikh, Mohammad Iqbal, Iftikhar Ahmad, Irshad Arshad, Umeed Khalid, Zulfiqar Ali, Dr. Muhammad Naeem Khan.

Issues / Concerns:

1. There is dearth of taxonomists in Pakistan.
2. There is deficiency of a bibliographic database.
3. There is lack of trained field biologists.
4. There is a deficiency in map database or GIS base facilities to create mapping.
5. There are no well-structured course in wildlife management and research in universities.

Recommendations:

1. Produce wildlife graduates at university level to produce trained field biologists in the future.
2. Develop capacity of the existing field biologists through useful training workshops
3. Develop standardized mechanisms for data collection at Family level if not possible at species level.
4. Register taxonomists in academia to build capacity.
5. Develop a mammal GIS database within a suitable facility willing to provide resources and to host it (IUCN, ZSD, NCCW, WWF)
6. Collect data from various organizations (GOs, NGOs & academic institutions) and to make it available to organizations and individual researchers.
7. Develop a national level survey and monitoring team.
8. Develop monitoring mechanism for updating field data at periodic level
9. Mobilize organizations at various levels (Federal, Provincial, NGOs) to pool resources for establishing data collection mechanism and building capacity in it.
10. Provide financial assistance through scholarships (wildlife conservation) programme to encourage and motivate the segment for research on mammals and other wildlife.
11. Coordinate potential universities and academia to launch graduate degree level courses in wildlife related fields and conservation-related research.
12. Development of research units within Government organizations and custodian departments.

Group III –Title: Protected Areas / Habitats / Legislation
Masood Arshad (Facilitator & Reporter)

Members: Saeed–uz–Zaman, Abdul Qadeer Mehal, Dr. Rubina, Masood Arshad, Anwar Maan, Ayaz Khan, Dr. Kashif Sheikh, Dr. Masood Anwar and Ali Imran

I. Protected Areas

- 1.1 Protected Areas should support the existence and occurrence of the species through community based approaches and other coordinated efforts, where feasible
- 1.2 Management of the PAs should be made effective keeping in view
 - Strengthening law enforcement
 - Defining boundaries on maps and mark them on the field
 - Transfer the management authority of PAs to one single authority (Wildlife Depts.)
- 1.3 A Management Plan should be developed for each PA along with the species-specific management and recovery plans.
- 1.4 Recommendations prepared under the PA system review by wildlife experts should be implemented by wildlife departments

II. Habitats

- 2.1 Studies specific to changed habitats (linking developmental / structural / climatic conditions) should be carried out; their effect on flora and fauna should be noted with subsequent declaration of PAs
- 2.2 Habitat should also be classified and categorized or rated according to the apparent health/ degradation or suitability level.

III. Legislation

- 3.1 There is a need to develop legislation according to Environmental Protection Act of 1997
- 3.2 Legislation is currently limited to key species and needs to be expanded to include other critically important species.
- 3.3 Federal and provincial-level departments should have a clear policy regarding PA management network, keeping in view various conventions and treaties related to environment ratified by the Government of Pakistan

Personal Commitments to Conservation:

Another activity undertaken at CAMP workshops is to give participants an opportunity to make personal commitments to action after listening to recommendations of the special issues working groups. In the Pakistan's Mammals C.A.M.P. personal commitments included many commitments to conduct educational and awareness activities for all of level people, about all mammalian wildlife species and especially bats that are least studied. Other commitments included conducting surveys of the least studied groups of the mammals of Pakistan, filling information gaps about ungulates regarding their distribution status and life history studies, monitoring of the habitat of the Punjab Urial, and filling information gaps about mammals distribution in Pakistan through promotion of maps and GIS techniques.

Abdul Qadeer Mehal	I will try to create awareness about bats usefulness.
Naeem Ashraf Raja	I intend to start a group on least studied taxon of mammals, the bats.
Ahmed Khan	The first step of 100 miles journey is taken and I am committed to continue this journey. I will be working on Snow Leopard assessment and monitoring as my hobby that will contribute to Red Data Book. As part of my voluntary assignments with Hujara, a local NGO, I will take up mammal species-based resource unit management in the near future.
Rizwan Irshad	I am already committed for doing efforts and now I have strengthened my commitment for the same.
Rana Shahbaz Khan	I will help in developing the Red Lists of the other fauna of Pakistan. Perhaps this is the first time the IUCN authorities have invited wildlife field workers for this important task. I would love to work in field with NGO's like IUCN and Zoo Outreach Organization.
Dr. M. Arshad	Although I am a plant scientist, but I will study the biodiversity of mammals in Cholistan Desert, particularly the bats.
M. Iqbal	I would love wildlife as I love my family, of course, only some of them!!!
Zulfiqar Ali	I have learned a lot from this CAMP workshop and I will make all my efforts to contribute, share revised data about wildlife/ mammals.
Dr. M Naeem Khan	I will not kill wildlife, I will educate kids on the importance of wildlife, I will convince some M.P.A.s on the importance of biodiversity.
M Ayaz Khan	I will learn more about bats and conduct surveys in the country to get reliable information on bats in Pakistan.
M Anwar Maan	I will help to educate students at different levels about mammals of Pakistan
Salman Ashraf	I will be filling the information gaps about distribution about mammal in Pakistan through promotion of maps and GIS techniques
Masood Arshad	I'll be filling the required information gaps about the ungulates of Pakistan with respect to their distribution, status and life history studies.
Abdul Munaf	I'll encourage the university students to create special interest for mammals conservation and research.
Syed Ali Imran	I will try to make a small presentation about status of mammals in Pakistan and will go to a school and share it with the kids.
M. Hamid Ali	Have been educating the people about the benefits of flora and fauna. I am proud that I have at least been able to save 13,000 over 14 km long road and hope to save the wildlife as well in Balochistan.
Shafqat Ali	I will like try to convince the people of Muree Hills that the conservation of common leopard (<i>Panthera pardus</i>) is essential for natural balance and ecological system and for that they may sacrifice a little bit in the form of their cattles which graze in the reserve forest.
Saeed-uz-Zaman	I will coordinate in knowledge dissemination to the laymen regarding wild mammals.
M Niaz Khan	Special consideration to bats and to learn more about them. Social awareness about bats, Contact with the unaware people to make them aware about this.

- Rubina Akhtar** Prepare books/ guidebooks to familiarize the general public about plants important for habitat management and conservation essential for the survival of human species and planet earth.
- Maqsood Anwar** I would like to disseminate whatever data /information collected in the field to the general public, especially school children for their awareness about mammals of Pakistan.
- Ifikhar Ahmed** I will try my best to share all the species information (from today onward) to all those concerned so that they could plan/contribute to wildlife conservation in Pakistan.
- Mohammed Asghar** I will organize and launch wildlife awareness raising camping in teacher training institutions and general public.
- M. Irshad Arshad** Monitoring and habitat of Punjab Urial (*Ovis vignei punjabensis*) in the salt range areas of the Punjab Province of Pakistan.
- Khalid J. Baig** I shall try my best to establish or facilitate my other country organizations in the establishment of taxonomist specialist group, including mammals.
- Madeeha Shoaib** The workshop of CAMP from 18th – 22nd August 2003 was first exposure to the conservation activities. In this workshop I have learned a lot about bat species those are present in Pakistan. It is sad they are no studied so much. If I get the chance in future, I would like to work with such an organization to save “the bats of Pakistan” and to conserve bats. I am whole- heartedly interested in the bat study from the angle of conservation.
- Tooba Noor** Through the workshop of C.A.M.P I came to know a lot about mammals that are endangered. If any kind of help or assistance is required, I would be glad to be of help.
- Mahjabeen Niazi** This workshop was my first ever exposure to the diversity and great number of bats that exist in Pakistan. As my future commitments, if there is an effort for the conservation of bats in Pakistan, I would whole- heartedly be interested in their study from the angle of conservation.

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Selected Web Resources:

- www.iucn.org
- www.redlist.org
- www.iucnp.org
- www.biodiversity.iucnp.org
- www.cbsg.org
- www.zooreach.org
- <http://eelink.net/EndSpp/causes-lossofbiodiversity.html>
- <http://www.aces.250x.com/>
- <http://www.deh.gov.au/biodiversity/publications/series/paper1/index.html>
- <http://www.defenders.org/case01.html>
- <http://www.globalamphibians.org>
- <http://www.wwf.org.pk>
- <http://www.biodiv.org/convention/articles.asp>
- www.wildlife.org
- www.nwf.org
- <http://www.sdsc.edu/esa/>
- <http://www.wku.edu/~smithch/mamm/MAMMFAUN.htm>
- <http://www.wii.gov.in/envis/ungulates/pagebibliography.htm>
- <http://www.nwf.org/internationalwildlife/hoatzin.html>

Distribution Maps



Rhombomys opimus –
Great Gerbil or Giant Day Jird



Ellobius fuscocapillus –
Quetta or Afghan Mole Vol



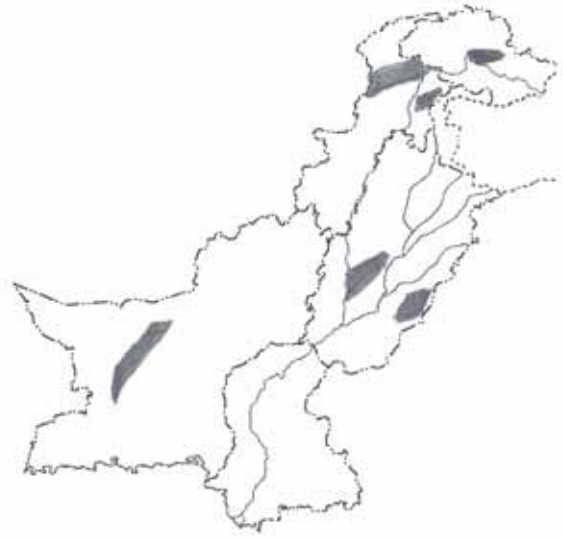
Alticola roylei (Syn: *argentatus*) –
Royle's High Mountain Vole
limital



Alticola stoliczkanus
Stoliczka's High Mountain Vole (extra limital)



Marmota himalayana –
Himalayan Marmot



Hystrix indica –
Indian Crested Porcupine



Sicista concolor –
Chinese Birch Mouse



Salpingotus michaelis –
Balochistan Pygmy Jerboa



Gerbillus nanus –
Balochistan Gerbil



Gerbillus gleadowi –
Indian Hairy-footed Gerbil



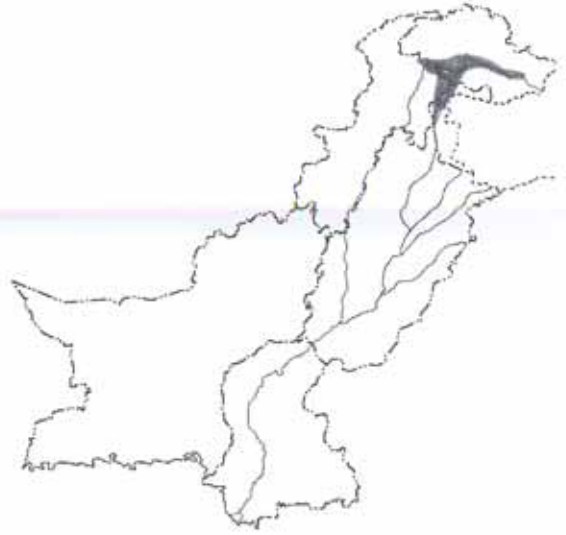
Tatera indica –
Indian Gerbil or Antelope Rat



Gerbillus cheesmani –
Cheesman's Gerbil



Hyperacrius wynnei –
Miurree Vole



Hyperacrius fertilis –
True's Vole or Burrowing Vole



Microtus juldaschi –
Pamir Vole or Juldaschi's Vole



Balaenoptera physalus –
Common Rorqual or Common Finback



Meriones persicus –
Persian Jird



Meriones hurrianae –
Indian Desert Jird or Desert Gerbil



Meriones libycus –
Liybyan Jird



Meriones crassus –
Sundevall's Jird



Hylopetes fimbriatus –
Small Kashmir Flying Squirrel



Eupetaurus cinereus –
Woolly Flying Squirrel



Funambulus pennantii –
Northern Palm Squirrel or
Five-striped Palm Squirrel



Marmota caudata –
Long-tailed Marmot or
Kashmir Marmot



Lepus capensis –
Cape Hare



Ochotona rufescens –
Afghan Pika or Collared Pika



Ochotona roylei –
Royle's Pika or Indian Pika



Petaurista petaurista –
Giant Red Flying Squirrel Or
Indian Giant Flying Squirrel



Ovis ammon polii –
Marco Polo Sheep



Lepus nigricollis –
Idian Hare or Black-naped Hare



Allactaga elater –
Small Five-toed Jerboa



Allactaga hotsoni –
Hotson's Five-toed Jerboa



Allactaga euphratica –
Long-eared Jerboa



Jaculus blanfordi –
Blanford's Jerboa or
Greater Three-toed Jerboa



Millardia meltada –
Soft-furred Field Rat or Metad



Ovis vignei punjabiensis –
Punjab Urial



Ovis vignei cycloceros –
Afghan Urial



Ovis Vignei Vignei –
Ladakh Urial



Capra falconeri falconeri –
Astore Markhor



Capra falconeri megaceros –
Straight horned Markhor



Capra aegagrus chialtanensis –
Chiltan Wild Goat



Pseudois nayaur –
Bharal or Blue Sheep



Antelope cervicapra –
Blackbuck



Gazella subgutturosa –
Goitred Gazelle or Persian Gazelle



Gazella bennettii –
Chinkara or India Gazelle



Naemorhedus goral
Himalayan Goral or Grey Goral



Axis porcinus –
Hog Deer or Para



Cervus duvauceli –
Swamp Deer or Barasingha



Cervus elaphus –
Red Deer or Kashmir Hangul



Boselaphus tragocamelus –
Nilgai or Blue Bull



Viverricula indica –
Small Indian Civet or Rasse



Paradoxurus hermaphroditus –
Toddy Cat or
Common Palm Civet



Paguma larvata –
Masked Palm Civet



Herpestes javanicus –
Small Indian or Small Asian Mongoose



Equus hemionus –
Indian Wild Ass or Onager



Sus scrofa –
Wild Pig or Indian Wild Boar



Moschus chrysogaster –
Himalayan Musk Deer



Muntiacus muntjak –
Indian Muntjac or Barking Deer



Ursus arctos isabellinus –
Brown Bear



Ursus thibetanus –
Asiatic Black Bear or Himalayan Black Bear



Ursus thibetanus gedrosianus –
Balochistan Black Bear



Prionailurus bengalensis –
Leopard Cat



Prionailurus viverrinus –
Fishing Cat



Panthera pardus –
Panther or Leopard T



Panthera tigris –
Tiger (extinct in Pakistan)



Panthera leo –
Lion (extinct in Pakistan)



Uncia uncia –
Snow Leopard or Ounce



Acinonyx jubatus –
Cheetah



Rhinoceros unicornis –
Great One-horned Rhinoceros or
Indian One-horned Rhinoceros (extinct
in Pakistan)



Martes foina –
Stone Marten



Martes flavigula
Yellow throated Marten



Mustela erminea –
Stoat or Ermine



Mustela altaica –
Alpine Weasel or Pale Weasel



Vormela peregusna –
Marbled Polecat



Mellivora capensis –
Ratel or Honey Badger



Lutra lutra –
Common Otter



Lutrogale perspicillata –
Smooth-coated Otter or Indian Otter



Vulpes bengalensis –
Indian or Bengal Fox



Vulpes rueppelli –
Rueppell's Fox or Sand Fox



Vulpes cana –
Blanford's Fox or King Fox



Vulpes Vulpes Montana –
Tibetan Red Fox



Felis margarita –
Sand Cat or Dune Cat



Otocolobus manul –
Pallas' Cat or Steppe Cat



Caracal caracal –
Caracal or Red Lynx



Herpestes edwardsi –
India Grey Mongoose or
Common India Mongoose



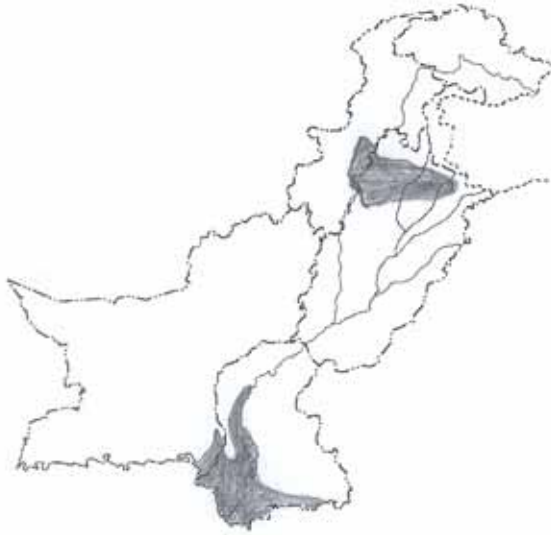
Hyaena hyaena –
Striped Hyaena



Felis silvestris ornata –
Indian Desert Wild Cat or
Asiatic Steppe Wild Cat



Felis chaus –
Jungle Cat



Manis crassicaudata –
Indian Pangolin or Scaly Anteater



Canis lupus –
Wolf



Canis aureus –
Asiatic Jackal



Vulpes vulpes –
Common Red Fox



Miniopterus schreibersii –
Schreiber's Long-fingered or
Bent-winged Bat



Murina tubinaris –
Gilgit Tube-nosed Bat



Macaca mulatta mulata –
Rhesus Macaque



Semnopithecus entellus –
Grey Langur or Hanuman Langur



Taphozous perforatus –
Naked Rumped Tomb Bat or
Kutch Sheath-tailed Bat



Taphozous nudiventris –
Tomb Bat or Egyptian Tomb Bat



Megaderma lyra –
Indian False Vampire bat



Rhinolophus macrotis –
Big-eared Horseshoe



Scotozous dormeri –
Dormer's Bat



Barbastella leucomelas –
Asian or Eastern Barbastelle



Scotoecus pallidus –
Yellow Desert Bat



Scotophilus kuhlii –
Temminck's House Bat or Lesser House Bat



Cynopterus sphinx –
Short-nosed Fruit Bat



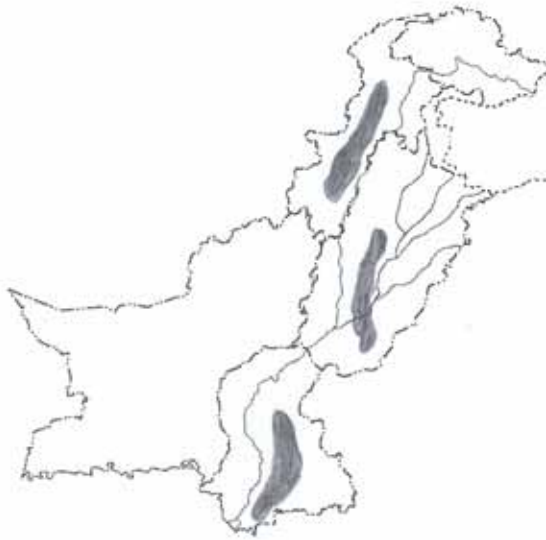
Rhinopoma microphyllum –
Larger Rat-railed Bat or Mouse-tailed Bat



Rhinopoma hardwickii –
Lesser Rate-tailed Bat or Small Mouse-tailed Bat



Rhinopoma muscatellum –
Least Mouse-tailed Bat



Scotophilus heathii –
Common Yellow-bellied Bat or
Desert Scotophil Bat



Otonycteris hemprichii –
Hemprich's Long-eared Bat or
Desert Long-eared Bat



Plecotus austriacus –
Grey Long-eared Bat



Plecotus auritus –
Brown Long-eared Bat



Pipistrellus coromandra –
Indian Pipistrelle



Pipistrellus tenuis mimus –
Least Pipistrelle



Pipistrellus kuhlii –
Kuhl's Pipistrelle



Pipistrellus savii –
Savi's Pipistrelle



Pipistrellus pipistrellus –
Common Pipistrelle



Pipistrellus ceylonicus –
Kelaart's Pipistrelle



Pipistrellus javanicus babu –
Himalayan Pipistrelle



Pipistrellus paterculus –
Thomas's Pipistrelle



Myotis blythii –
Lesser Mouse-eared Bat (extra-limital)



Myotis longipes –
Long-fingered Bat (extra-limital)



Eptesicus nasutus –
Sindh Bat, Sindh Serotine or Persian Serotine



Eptesicus bottae –
Botta's Serotine



Tadarida aegyptiaca
Egyptian Free-tailed Bat or Wrinkle-lipped Bat



Myotis muricola
Dark Whiskered Bat



Myotis mystacinus
Whiskered Bat (extra-limital)



Myotis emarginatus
Geoffroy's Bat or Notch-eared Bat (extra-limital)



Rhinolophus ferrumequinum –
Greater Horseshoe Bat



Rhinolophus hipposideros –
Lesser Horseshoe Bat



Rhinolophus blasii –
Blasius' or Peters' Horseshoe Bat



Rhinolophus lepidus –
Blyth's Horseshoe Bat



Hipposideros fulvus –
Fulvous Leaf-nosed Bat or
Bicolour Round-leaf Horseshoe Bat



Hipposideros cineraceus –
Least Leaf-nosed Bat Genus
TRIAENOPS Dobson, 1871



Triaenops persicus –
Persian Trident Bat



Nyctalus montanus –
Mountain Noctule



Eptesicus serotinus –
Common Serotine



Eptesicus nilssoni –
Northern Serotine



Nyctalus leisleri –
Leisler's Noctule or Hairy-armed Bat



Nyctalus noctula –
Common Noctule



Sorex thibetanus
Asiatic Pygmy Shrew



Suncus murinus
House Shrew or Musk Shrew



Suncus etruscus
Savi's Pygmy Shrew



Suncus stoliczkae
Anderson's Shrew or Yellow-throated Shrew



Hemiechinus collaris
Long-eared Desert Hedgehog



Hemiechinus auritus
Long-eared Steppe or Afghan hedgehog



Hemiechinus micropus –
Indian Hedgehog



Hemiechinus hypomelas –
Brandt's Hedgehog



Crocidura pullata
(Syn: *gueldenstaedtii*)
Asiatic White-toothed Shrew



Crocidura pergrisea –
Pale Grey Shrew



Crocidura zarudnyi –
Zarudny's Shrew



Crocidura gmelini –
Steppic Pygmy Shrew



Crocidura attenuata –
Grey Shrew



Rousettus egyptiacus arabicus–
Egyptian Fruit Bat



Rousettus leschenaultii –
Fulvous Fruit Bat



Pteropus giganteus –
Indian Flying Fox



Sousa chinensis –
Indian Humpback Dolphin



Tursiops truncatus –
Eastern Bottle-nosed Dolphin



Peponocephala electra –
Melon-headed Whale or
Electra Dolphin



Pseudorca crassidens –
False Killer Whales



Ziphius cavirostris –
Goosebeak Whale or
Cuvier's Beaked Whale



Dugong dugon –
Dugong (extra-limital)



Mus saxicola –
Grey Spiny Mouse



Golunda ellioti –
Indian Bush Rat



Acomys cahirinus –
Cairo Spiny Mouse



Bandicota bengalensis –
Lesser Bandicoot Rat or Sindh Rice Rat



Mus booduga –
Little Indian Field Mouse



Mus cervicolor –
Fawn-coloured Mouse (extra-limital)



Mus musculus –



Mus platythrix –
Indian Brown Spiny Mouse (extra-limital)



Kogia simus –
Dwarf Sperm Whale



Neophocaena phocaenoides –
Little Indian Porpoise or
Black Finless Porpoise



Delphinus delphis–
Long-beaked Dolphin



Steno bredanensis –
Rough-toothed Dolphin



Balaenoptera musculus –
Great Blue Whale or Sulphur-bottomed Whale



Balaenoptera edeni –
Bryde's Whale



Megaptera novaeangliae –
Humpback Whale



Platanista minor –
Indus Dolphin or Bhulan



Nesokia indica –
Short-tailed Mole Rat



Cremnomys cutchicus –
Cutch Rock Rat



Calomyscus bailwardi –
Mouse-like Hamster



Cricetulus migratorius –
Migratory Hamster or Grey Hamster



Hemitragus jemlahicus –
Himalayan Tahr (extra-limital)



Capra aegagrus –
Wild Goat or Persian Pasang



Capra ibex sibirica –
Himalayan Ibex



Rattus rattus –
Roof Rat or
House Rat



Rattus turkestanicus –
Turkestan Rat



Rattus nitidus –
Himalayan Rat (extra-limital)



Rattus norvegicus –
Norway or Brown Rat

Appendices

Appendix 1

Guidelines for Application of IUCN Red List Criteria at Regional Levels

Version 3.0 (June 2003)

Prepared by the IUCN Species Survival Commission

Acknowledgments:

IUCN gratefully acknowledges the dedication and efforts of the Regional Application Working Group (RAWG). The process for developing these guidelines included workshops in Montreal (1998) and in Washington, D.C. (2002), correspondence among members of the group, and discussions with a great many individual members of the Species Survival Commission (SSC) and others. The members of the RAWG were Resit Akçakaya (Turkey/USA), Leon Bennun (Kenya/UK), Tom DiBenedetto (USA), Ulf Gärdenfors (Sweden), Craig Hilton-Taylor (South Africa/UK), C. Hyslop (Canada), Georgina M. Mace (UK), Ana Virginia Mata (Costa Rica), S. Molur (India), Jon Paul Rodríguez (Venezuela), S. Poss (USA), Alison Stattersfield (UK), and Simon Stuart (Switzerland/ UK/ USA). Particular thanks must go to Dr Ulf Gärdenfors, who chaired the RAWG. Comments on this version and earlier drafts of the guidelines were received from A. Alanen, H.-G. Bauer, D. Callaghan, G. Carron, N. Collar, C. Dauphine, M. Gimenez Dixon, J. Golding, T. Hallingbäck, N. Hodgetts, V. Keller, O. Kindvall, A. Kreuzberg, I. McLean, S. Mainka, B. Makinson, D. P. Mallon, I. Mannerkoski, L. Master, G. Micali, L. Morse, M. Palmer, C. Pollock, W. Ponder, D. Procter, A. Punt, J. Rabinovich, K. Schmidt, M. Schnittler, L. A. K. Singh, P. Skoberne, A. T. Smith, M. Tjernberg, J. Y. Wang, J. West, R. H. Wickramasinghe, and B. Young. Furthermore many participants in national and regional Red List training workshops have contributed by testing the guidelines on local species and through subsequent discussions on the results. The work of the RAWG and the hosting of the meetings were made possible through generous financial support from the Canadian Wildlife Service, The Ocean Conservancy, and the Swedish Species Information Centre.

INTRODUCTION

The IUCN Red List Categories and Criteria (IUCN 2001; see also <http://www.iucn.org/themes/ssc/redlists/rlcategories2000.html>) were developed for classifying species at high risk of global extinction, i.e. for assessment at the global level. At regional, national and local levels (hereafter referred to as regional level) there are essentially two options: (1) To publish an unaltered subset of the global Red List encompassing those species that reproduce in the region or at any stage regularly visit the region. This may be a feasible option, particularly when the region has a high number of endemics or threatened near endemics, or when there currently is a pronounced overall deficiency of data pertaining to species status within the region. (2) To assess species' extinction risk and publish Red Lists within the specific region. For the purposes of regional conservation assessments there are important reasons to assess species' extinction risk and publish Red Lists within specific geographically defined areas.

While the first option is straightforward, the second involves a number of issues not encountered at the global level, including the assessment of populations across geopolitical borders, non-breeding phases of populations and non-indigenous taxa. When making assessments at regional levels it is also particularly important to recognize that while IUCN Red List Categories reflect the relative extinction risk of species, the process of setting priorities for conservation actions may require several additional considerations. As a consequence, the following guidelines were produced to assist in the application of the IUCN Red List Categories and Criteria at regional levels.

Recognizing the need for coherent guidelines for the application of Red List Categories at regional levels, the First World Conservation Congress held in Montreal in 1996, adopted a resolution (WCC Res. D. 1.25) that "Requests the SSC, within available resources, to complete the development of guidelines for using the IUCN Red List Categories at the regional level as soon as it is practicable...".

As part of the process to resolve these issues, the Regional Application Working Group (RAWG) was

formed under the auspices of the Species Survival Commission's (SSC) Red List Programme. The membership of RAWG included people with technical experience in the development of the IUCN Red List Criteria, as well as those with practical experience of producing Red Lists at regional levels. The group has consulted many different regional and national groups, participated in regional Red List assessment workshops, published draft versions of the guidelines (Gärdenfors *et al.* 1999, 2001) and undertaken a process of ongoing modification and improvement to the earlier drafts.

The final guidelines are presented here. Some issues have proved especially difficult to resolve to everyone's satisfaction. The users of these guidelines will deal with a wide diversity of natural systems and taxa, within different political and social contexts. We have encountered many of these during the drafting phases and have tried to take into account these diverse circumstances. Following much deliberation, the guidelines presented here are based on sound general principles and we recommend them to anyone who wishes to undertake Red List assessments at the regional level.

Preamble

Application of the guidelines

Any country, or other region, using the IUCN Red List Categories and Criteria for listing species must follow these guidelines if they wish to state that their assessment follows the IUCN system.

The regional concept

The word *regional* is used here to indicate any subglobal geographically defined area, such as a continent, country, state, or province.

Within any region there will be taxa with different distribution histories, ranging from those that are indigenous (native to the area), and have been there since pre-human settlement, to those introduced more recently. There may also be breeding and non-breeding taxa. The latter are those that do not reproduce in the region but may still be dependent upon its resources for their survival. There may also be formerly native taxa that are now extinct in the region, but which are still extant in other parts in the world.

IUCN Red List Criteria versus Regional Guidelines

All the rules and definitions in the IUCN Red List Categories and Criteria Version 3.1 (IUCN 2001) apply at regional levels, unless otherwise indicated here. Similarly, the 'Guidelines for using the IUCN Red List Categories and Criteria' (Standards and Petitions Subcommittee of the IUCN Red List Committee 2003) as well as the *IUCN Guidelines for Re-introductions* (IUCN 1998) also apply at regional levels. Consequently, a careful study of all these documents is highly recommended before application of the regional guidelines, and they should be constantly referred to when using this document. The guidelines for regional application are hereafter referred to as the Guidelines.

Scale applicability

Provided that the regional population to be assessed is isolated from conspecific populations outside the region, the IUCN Red List Criteria (IUCN 2001) can be used without modification within any geographically defined area. The extinction risk of such an isolated population is identical to that of an endemic taxon. However, when the criteria are applied to a population defined by a geopolitical border, or to a regional population where individuals move to or from other populations beyond the border, the threshold values listed under each criterion may be inappropriate, because the unit being assessed is not the same as the whole population or subpopulation. As a result, the estimate of extinction risk may be inaccurate. These guidelines present methods for adjusting the results from the first step in the assessment process to obtain a Red List Category that adequately reflects a taxon's risk of extinction within the region.

Although the Guidelines may in principle be applied at any geographical scale, application within very restricted geographical areas is strongly discouraged. The smaller the region, and the more wide-ranging the taxon under consideration, the more often the regional population will interchange individuals with neighbouring populations. Therefore the assessment of extinction risk becomes increasingly unreliable. It is not possible to provide any specific guidance on the precise lower limit for

sensible application as this depends on the nature of the region, and especially the barriers to dispersal that exist.

Regionally determined applications and modifications

Certain definitions and applications of the Guidelines are left to the discretion of regional Red List compilers. For example, the delimitation of natural range, time limits for regional extinction, and the nature of an initial filter for breeding and/or non-breeding taxa, are left open for the regional Red List authorities to decide. Such regional decisions must be clearly recorded and documented, for example as part of an introductory text to the listings.

Taxonomy

Regional Red List authorities are encouraged to follow the same taxonomic checklists as used by the global IUCN Red List (see http://www.redlist.org/info/info_sources_quality.html). For other taxonomic groups or any deviations from the recommended lists, the differences and the taxonomic authorities followed should be specified.

Scaling up assessments

Red List assessments from several smaller regions, such as countries on a continent, cannot be combined or scaled-up in any way to provide Red List Categories for the entire larger region. Assessments of extinction risk for the larger region require new evaluations using the pooled data from across the entire region. Data collected from individual smaller regions may be essential for the assessment of the larger region, and are often important for conservation planning.

Red List versus priority for conservation action

Assessment of extinction risk and setting conservation priorities are two related but different processes. Assessment of extinction risk, such as the assignment of IUCN Red List Categories, generally precedes the setting of priorities. The purpose of the Red List categorization is to produce a relative estimate of the likelihood of extinction of the taxon. Setting conservation priorities, on the other hand, which normally includes the assessment of extinction risk, also takes into account other factors such as ecological, phylogenetic, historical, or cultural preferences for some taxa over others, as well as the probability of success of conservation actions, availability of funds or personnel to carry out such actions, and legal frameworks for conservation of threatened taxa. In the context of regional risk assessments, a number of additional pieces of information are valuable for setting conservation priorities. For example, it is important to consider not only conditions within the region but also the status of the taxon from a global perspective and the proportion of the global population that occurs within the region. Consequently, it is recommended that any publication that results from a regional assessment process should include at least three measures: (1) the regional Red List Category, (2) the global Red List Category, and (3) an estimate of the proportion (%) of the global population occurring within the region (see section *V. Documentation and publication*).

Decisions on how these three variables, as well as other factors, are used for establishing conservation priorities is a matter for the regional authorities to determine. The authorities may also wish to consider other variables in setting priorities, which are to a large degree region-specific and therefore not covered by the Guidelines. However, one particular situation merits special attention. The application of the Red List Criteria, particularly criterion A, may under some circumstances result in a taxon qualifying for listing in a higher category at the global level than the regional level. This may be the case when the regional population is more or less stable but constitutes only a small percentage of the global population, which is experiencing a net decline. Such species should be given particular attention at the regional level because of their significance for global status.

Regional Red List authorities should be aware that the view that a Red List based on the IUCN criteria is not automatically a list of priorities for conservation actions, may conflict with current legislation in some regions.

Definitions:

Benign introduction

An attempt to establish a taxon, for the purpose of conservation, outside its recorded distribution but within an appropriate habitat and ecogeographical area; a feasible conservation tool only when there is no remaining area left within a taxon's historic range (IUCN 1998).

Breeding population

A (sub) population that reproduces within the region, whether this involves the entire reproductive cycle or any essential part of it.

Conspecific population

Populations of the same species; here applied to any taxonomic unit at or below the species level.

Downgrading and upgrading.

The process for adjusting the Red List Category of a regional population according to a decreased or increased risk of extinction; downgrading refers to a reduced extinction risk and upgrading to an increased extinction risk.

Endemic taxon

A taxon naturally found in any specific area and nowhere else; this is a relative term in that a taxon can be endemic to a small island, to a country, or to a continent.

Global population

Total number of individuals of a taxon. (See *population*.)

Metapopulation

A collection of subpopulations of a taxon, each occupying a suitable patch of habitat in a landscape of otherwise unsuitable habitat. The survival of the metapopulation is dependent on the rate of local extinctions of occupied patches and the rate of (re-) colonization of empty patches (Levins 1969, Hanski 1999).

Natural range

Range of a taxon, excluding any portion that is the result of an introduction to a region or neighbouring region. The delimitation between wild and introduced populations within a region may be based on a preset year or event, but this decision is left to the regional Red List authority.

Not Applicable (NA)

Category for a taxon deemed to be ineligible for assessment at a regional level. A taxon may be NA because it is not a wild population or not within its natural range in the region, or because it is a vagrant to the region. It may also be NA because it occurs at very low numbers in the region (i.e. when the regional Red List authority has decided to use a "filter" to exclude taxa before the assessment procedure) or the taxon may be classified at a lower taxonomic level (e.g., below the level of species or subspecies) than considered eligible by the regional Red List authority. In contrast to other Red List categories, it is not mandatory to use NA for all taxa to which it applies; but is recommended for taxa where its use is informative.

Population

This term is used in a specific sense in the IUCN Red List Criteria (IUCN 2001), different from its common biological usage. *Population* is defined as the total number of individuals of the taxon. Within the context of a regional assessment, it may be advisable to use the term *global population* for this. In the Guidelines the term population is used for convenience, when reference is made to a group of individuals of a given taxon that may or may not interchange propagules with other such entities. (See *regional population* and *subpopulation*.)

Propagule

A living entity capable of dispersal and of producing a new mature individual (e.g., a spore, seed, fruit, egg, larva, or part of or an entire individual). Gametes and pollen are not considered propagules in this context.

Region

A subglobal geographical area, such as a continent, country, state, or province.

Regional assessment

Process for determining the relative extinction risk of a regional population according to the Guidelines.

Regionally Extinct (RE)

Category for a taxon when there is no reasonable doubt that the last individual potentially capable of reproduction within the region has died or has disappeared from the wild in the region, or when, if it is a former visiting taxon, the last individual has died or disappeared in the wild from the region. The setting of any time limit for listing under RE is left to the discretion of the regional Red List authority, but should not normally pre-date 1500 AD.

Regional population

The portion of the global population within the area being studied; which may comprise one or more subpopulations.

Rescue effect

Process by which immigrating propagules result in a lower extinction risk for the target population.

Sink

An area where the local reproduction of a taxon is lower than local mortality. The term is normally used for a subpopulation experiencing immigration from a source where the local reproduction is higher than the local mortality (see Pulliam 1988).

Subpopulations

Geographically or otherwise distinct groups in the (global) population between which there is little demographic or genetic exchange (typically one successful migrant individual or gamete per year or less; IUCN 2001); a subpopulation may or may not be restricted to a region.

Taxon

A species or infraspecific entity whose extinction risk is being assessed.

Vagrant

A taxon that is currently found only occasionally within the boundaries of a region. (See *visitor*.)

Visitor (also, visiting taxon)

A taxon that does not reproduce within a region but regularly occurs within its boundaries either now or during some period of the last century. Regions have several options on how to decide the boundaries between visitors and vagrants, e.g., using a preset percentage of the global population found in the region or predictability of occurrence.

Wild population

A population within its natural range in which the individuals are the result of natural reproduction (i.e., not the result of human-mediated release or translocation); if a population is the result of a benign introduction that is now or has previously been successful (i.e., self-sustaining), the population is considered wild.

The Assessment

Taxa to be assessed

The categorization process should be applied only to wild populations inside their natural range and to populations resulting from benign introductions (IUCN 2001, 1998). Taxa only marginally within the region should also enter the assessment process (unless excluded by an optional filter, see below). But a taxon that occasionally breeds under favourable circumstances in the region but regularly becomes (regionally) extinct should not be considered. Similarly, a taxon that is currently expanding its distributional range outside the region and appears to be in a colonization phase within the region should not be considered for regional assessment until the taxon has reproduced within the region for several years (typically for at least 10 consecutive years).

Taxa formerly considered Regionally Extinct (RE) that naturally re-colonize the region may be assessed after the first year of reproduction. Re-introduced, formerly RE taxa may be assessed as soon as at least a part of the population successfully reproduces without direct support and the offspring are shown to be viable.

Visiting taxa may be assessed against the criteria, but vagrant taxa should NOT be assessed.

The regional Red List authority may decide to apply a filter, e.g., a preset threshold of global or continental population share, to the assessment of breeding and/or visiting taxa. For instance, a region may decide that they will not assess species that occur or have occurred within the last century in the region with less than 1% of the global population. All such filters applied must be clearly specified in the supporting documentation.

The categories

The IUCN Red List Categories (IUCN 2001) should be used unaltered at regional levels, with three exceptions or adjustments.

1. Taxa extinct within the region but extant in other parts of the world should be classified as *Regionally Extinct* (RE). A taxon is RE when there is no reasonable doubt that the last individual potentially capable of reproduction within the region has died or disappeared from the region or, in the case of a former visiting taxon, individuals no longer visit the region. It is not possible to set any general rules for a time period since the last observation before species are classified as RE. This will depend on how much effort has been devoted to searches for the taxon, which in turn will vary, both with organism and region. If the regional authority decides to adopt any time frames for RE assessments, these should be clearly specified.

Populations of long-lived individuals that have ceased to reproduce within the region (for example, as a result of a deteriorating environment) should be regarded as potentially capable of reproduction and consequently should not be classified as RE. On the other hand, vagrant individuals of a formerly regionally breeding taxon that reach the region should not be regarded as potentially capable of reproduction.

2. The category of *Extinct in the Wild* (EW) should be assigned only to taxa that are extinct in the wild across their entire natural range, including the region, but that are extant in cultivation, in captivity, or as a naturalized population (or populations) outside the past range. If a taxon is (globally) EW but extant as a naturalized population within the region, the regional population should be treated as being the result of a benign introduction and consequently should be assessed according to the Red List Criteria. The rationale for the latter exception is that if a taxon is extinct over its entire natural range the presence of the taxon within the region must be considered important to highlight and preserve even though the region is not part of the taxon's natural range.

3. Taxa not eligible for assessment at the regional level (mainly introduced taxa and vagrants) should be assigned the category *Not Applicable* (NA).

Extinct (EX)

Extinct in the Wild (EW)

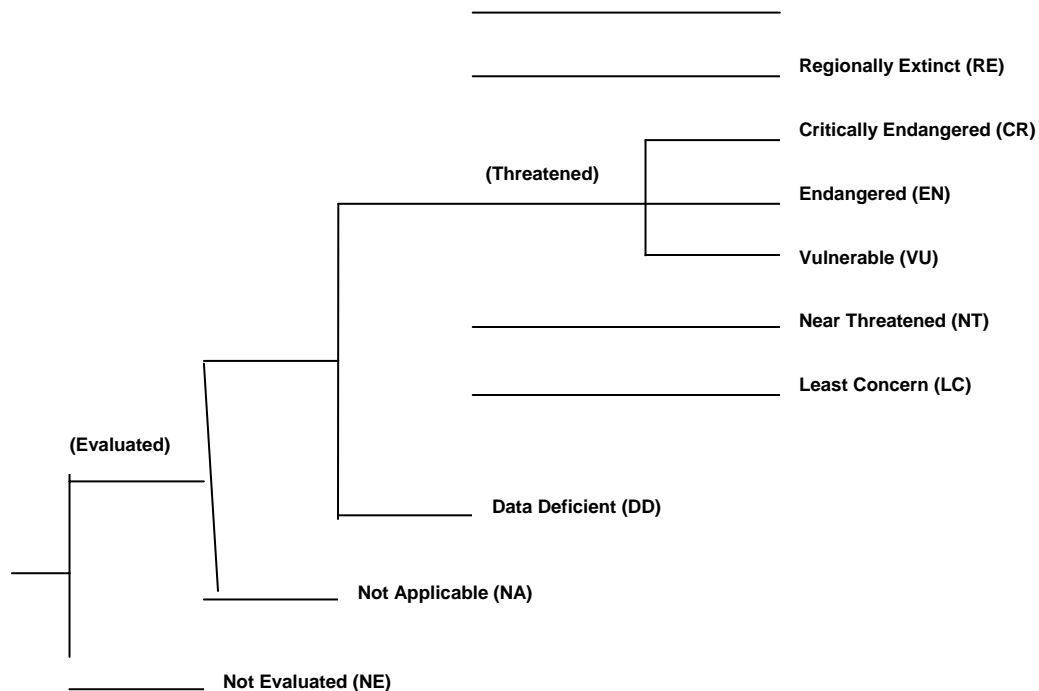


Figure: Structure of the categories on regional level

The Assessment Procedure

Regional assessments should be carried out in a two-step process that is slightly different for breeding and non-breeding populations (Table 1; Fig. 2).

Breeding populations

In step one, the IUCN Red List Criteria are applied to the regional population of the taxon (as specified by IUCN 2001), resulting in a preliminary categorization. All data used in this initial assessment – such as number of individuals and parameters relating to area, reduction, decline, fluctuations, subpopulations, locations, and fragmentation – should be from the regional population, NOT the global population. However, it must be noted that taxa migrating to other regions during part of the year may be affected by conditions there. It may be essential to take such conditions into account, particularly when applying criteria pertaining to decline and area (A, B and C).

In step two, the existence and status of any conspecific populations outside the region that may affect the risk of extinction within the region should be investigated. If the taxon is endemic to the region or the regional population is isolated, the Red List Category defined by the criteria should be adopted unaltered. If, on the other hand, conspecific populations outside the region are judged to affect the regional extinction risk, the regional Red List Category should be changed to a more appropriate level that reflects the extinction risk as defined by criterion E (IUCN 2001). In most cases, this will mean downgrading the category obtained in step one, because populations within the region may experience a 'rescue effect' from populations outside the region (Brown and Kodric-Brown 1977, Hanski and Gyllenberg 1993). In other words, immigration from outside the region will tend to decrease extinction risk within the region.

Normally, such a downgrading will involve a one-step change in category, such as changing the category from Endangered (EN) to Vulnerable (VU) or from VU to Near Threatened (NT). For expanding populations, whose global range barely touches the edge of the region, a downgrading of

the category by two or even more steps may be appropriate. Likewise, if the region is very small and not isolated by barriers from surrounding regions, downgrading by two or more steps may be necessary.

Conversely, if the population within the region is a demographic sink (Pulliam 1988) that is unable to sustain itself without immigration from populations outside the region, AND if the extra-regional source is expected to decrease, the extinction risk of the regional population may be underestimated by the criteria. In such exceptional cases, an upgrading of the category may be appropriate. If it is unknown whether or not extra-regional populations influence the extinction risk of the regional population, the category from step one should be kept unaltered.

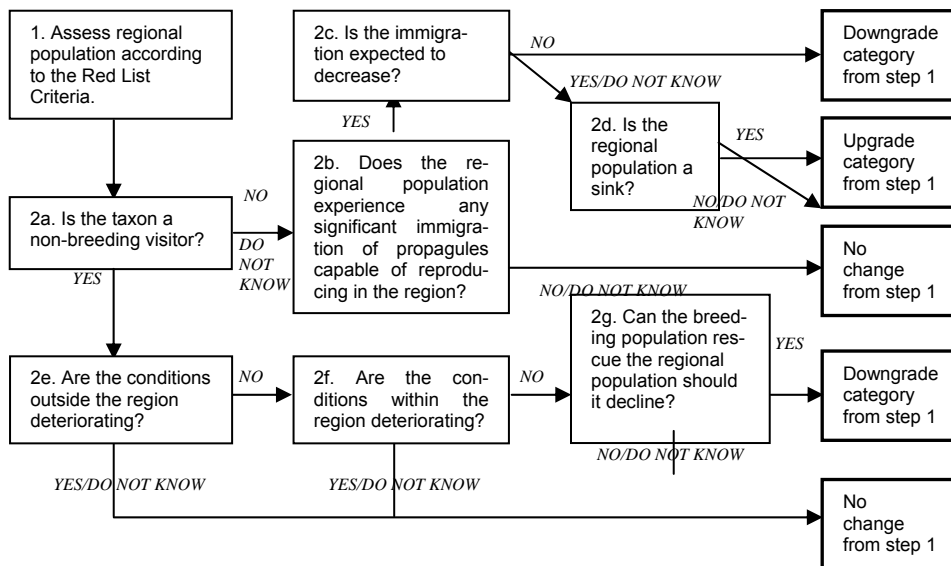


Figure: Conceptual scheme of the procedure for assigning an IUCN Red List Category at the regional level. In step 1 all data used should be from the regional population, not the global population. The exception is when evaluating a projected reduction or continued decline of a non-breeding population, in such cases conditions outside the region must be taken into account in step 1. Likewise, breeding populations may be affected by events in, e.g., wintering areas, which must be considered in step 1. See Table 1 for further details on the procedures to follow, especially for the second step.

Visiting populations

The distinction between a visitor and a vagrant should be noted because the latter cannot be assessed.

As with breeding populations, data used in the initial step (box 1, Fig 2) – such as number of individuals and parameters relating to area, reduction, decline, fluctuations, subpopulations, and locations – should be from the regional population, not the global population. To be able to correctly project a population reduction (criteria A3 and A4) or a continued decline (criteria B and C) it may, however, be necessary to examine the conditions outside the region, and particularly in the population’s breeding area. It is also essential to distinguish true population changes and fluctuations from transient changes, which may be due to unsuitable weather or other factors and may result in visitors temporarily favouring other regions. Observed population numbers will expectedly fluctuate more in non-breeding than in breeding populations. This must be carefully considered when evaluating the parameters of reduction, continuing decline and extreme fluctuations.

In the second step, the environmental conditions outside (box 2e, Fig. 2) and inside (box 2f) the region should be examined. Because past or projected population reductions outside the region, as

well as deteriorating environmental conditions inside the region, have already been accounted for in the first step, such changes will not lead to any adjustments in the second step. There may be reasons to downgrade the category met in step one only when environmental conditions are stable or improving. Note that taxa which are globally very rare, for example if Red Listed under criterion D, should not be downgraded because a very small global population would not be expected to produce any notable rescue effect within the region.

Adjustments to categories

Adjustments can be made to all the categories except for Extinct (EX), Extinct in the Wild (EW), Regionally Extinct (RE), Data Deficient (DD), Not Evaluated (NE), and Not Applicable (NA), which cannot logically be up- or downgraded.

Table I. Checklist for judging whether extra-regional populations may affect the extinction risk of the regional population (the question numbers refer to the boxes in Fig. 2).

<i>Questions</i>	<i>Comments</i>
<p>2a. Is the taxon a non-breeding visitor?</p> <p>Is the taxon reproducing within the region, or is it a visitor utilizing resources within the region?</p>	<p>If the answer to the headline question is both yes and no, then there are two distinct subpopulations, with one being a non-reproducing migrant and the other being a reproducing subpopulation. In such cases each subpopulation should be treated as different taxa and should be assessed separately.</p>
<p>2b. Likelihood of propagule migration</p> <p>Are there any conspecific populations outside the region within a distance from which propagules could reach the region? Is the regional population part of a larger metapopulation involving extra-regional patches? Are there any effective barriers preventing dispersal to and from neighbouring populations? Is the taxon capable of long-distance dispersal? Is it known to do so?</p>	<p>If there are no conspecific populations in neighbouring regions or if propagules are not able to disperse to the region, the regional population behaves as an endemic and the category should be left unchanged.</p>
<p>2b. Evidence for the existence of local adaptations</p> <p>Are there any known differences reflecting local adaptations between regional and extra-regional populations (i.e., is it probable that individuals from extra-regional populations are adapted to survive within the region)?</p>	<p>If it is unlikely that individuals from extra-regional populations would be able to survive and reproduce within the region, the category should be left unchanged.</p>
<p>2b. Availability of suitable habitat</p> <p>Are current conditions of habitats and/or other environmental (including climatological) requirements of the taxon in the region such that immigrating propagules</p>	<p>If there is not enough suitable habitat and if current conservation measures are not leading to an improvement in the habitat within the foreseeable future, immigration</p>

are able to establish themselves successfully (i.e., are there habitable areas?), or has the taxon disappeared from the region because conditions were not favourable?

2c. Status of extra-regional populations

How abundant is the taxon in neighbouring regions? Are the populations there stable, increasing, or decreasing? Is it Red Listed in any of those regions? Are there any important threats to those populations? Is it probable that they produce an appreciable amount of emigrants and will continue to do so for the foreseeable future?

2d. Degree of dependence on extra-regional sources

Are extant regional populations self-sustaining, showing a positive reproductive rate over the years, or are they dependent on immigration for long-term survival (i.e., are the regional populations sinks)?

2e. Environmental conditions outside the region

Are the habitat or other conditions of the taxon deteriorating, or projected to do so, in the breeding area or in other areas that the taxon utilizes resources?

2f. Environmental conditions inside the region

Is the habitat or other conditions for the taxon deteriorating, or projected to do so, within the region?

2g. Plausible rescue effect?

Is the taxon globally very sparse, e.g., classified as threatened according to criterion D; or Near Threatened because it almost meets VU D; or globally Not Evaluated but judged to meet criterion D?

from outside the region will not decrease extinction risk and the category should be left unchanged.

If the taxon is relatively common outside the region and there are no signs of population decline, and if the taxon is capable of dispersing to the region and there is (or soon will be) available habitat, downgrading the category is appropriate. If the taxon is currently decreasing in neighbouring regions, the “rescue effect” is less likely to occur, so downgrading the category may not be appropriate.

If there is evidence that a substantial number of propagules regularly reach the region and the population still has a poor chance of survival, the regional population may be a sink. If so, AND if there are indications that the immigration will soon cease, upgrading the category may be appropriate.

If yes, the taxon will experience a reduction or continuing decline, either current or projected, which will affect the classification in step one. Consequently, such conditions should not be accounted for once again in the second step, thus leaving the category unchanged.

If yes, the taxon will experience a reduction or continuing decline, either current or projected, which will affect the classification in step one. Consequently, such conditions should not be accounted for once again in the second step, thus leaving the category unchanged.

If the breeding population is very restricted, the regional population visiting the region cannot expect a rescue, thus leaving the category unchanged. If, on the other hand, the breeding population is quite substantial and the conditions are not deteriorating neither within nor outside the region, the probability of regional extinction is less likely than

suggested by the criteria in step one, consequently, a downgrading may be appropriate.

Documentation and publication:

1. IUCN Red List Criteria and guidelines must be followed in order to facilitate the exchange of information between assessors in different regions and between regional and taxonomic Red List Authorities, it is recommended that all regional (and global) assessment exercises should follow global documentation standards (IUCN 2001 Annexes 2-3). See Annex 1 for shortened examples.
2. The introductory sections should include a list of the taxonomic groups that have been evaluated against the Red List Criteria as well as what taxonomic standards have been followed. It should also clearly report any regionally determined settings, filters, etc.
3. Taxa that have been up- or downgraded in the regional Red List should be clearly indicated, for example by a dot after the category (VU[.]). The category of such a species should be interpreted as being equivalent to the same category that has not been changed (i.e., VU[.]=VU). The dot is comparable to a footnote and is merely to flag the special history of the categorization process. Any up- or downgrading must be fully accounted for in the documentation, where the number of steps up or down also must be stated.
4. A printed regional Red List should present at least the scientific name and the authorship of the taxon, the regional Red List Category (using the English abbreviated forms) and criteria met, the global IUCN Red List Category and Criteria, and the proportion (%) of the global population occurring within the region (Table 1). If the proportion of the global population is unknown, this should be noted with a question mark. The region may also wish to present the proportion (%) of other geographical scales (e.g., a continent), or any other additional data fields; this is up to the regional Red List authority to decide. It should be noted that the taxonomic classification level of a taxon, i.e., whether an entire species or a single subspecies with a more restricted distribution is under consideration, will influence the proportion occurring within a region. If possible, the vernacular name (in the national language) and a short summary of the supporting documentation for each taxon should also be included. Visiting taxa should preferably be listed in a separate section, but if they are included in a list of breeding taxa, it should be clearly indicated that they are visitors.
5. The global Red List Category should follow published IUCN Red Lists (for the current *IUCN Red List of Threatened Species* see <http://www.redlist.org>; and for plants also refer to Walter and Gillett 1998). If a globally Red Listed taxon is endemic to the region and the regional assessors have come to a different conclusion about the category than the global assessors, then the appropriate authority on the global Red List should be contacted and the status of the taxon re-examined (contact details are available from <http://www.iucn.org/themes/ssc/sgs/sgs.htm> or contact the Red List Programme Office at redlist@ssc-uk.org). If agreement is reached to change the global assessment, the new global category may be used in the regional Red List even if it will be published before the next update of the global IUCN Red List (updated annually from 2002). If no agreement is reached, the regional authority may submit an appeal based on the Red List Criteria (to redlist@ssc-uk.org) for judgment by the SSC Red List Programme Standards and Petitions Subcommittee (for further details see <http://www.iucn.org/themes/ssc/redlists/petitions.html>). If no conclusion is reached before the finalization of the regional Red List, the category determined by the regional assessment may be used as the regional category, and the IUCN global Red List category should be used as the global category. In all three cases, the issues must be documented under the listing for the taxon concerned.

6. The application of the Red List Criteria, particularly criterion A, may under some circumstances result in a taxon qualifying for listing at the global but not at the regional level (see Preamble, point 8). Such taxa should be included (in the main list or in an annex) in the regional Red List, and their regional category should be denoted as LC. The inclusion of globally Red Listed taxa is important, not the least, in the process of setting priorities for conservation action on the regional level.
7. In addition to a printed Red List, which is normally written in the national language(s), publication on the World Wide Web in English (and the national language) is recommended. The web version could include the full documentation (according to IUCN 2001, Annex 3 plus information about up- and downgrading), which could be difficult in the printed version unless it is published as a full Red Data Book. A web version may also include the extensive listing and documentation of taxa assessed as LC. A publication on the web may be a particularly important tool in the process of transferring information from the regional to the global scale (Rodríguez *et al.* 2000).

Taxon name	Breeder Visitor	Regional Red List Category	Global Red List Category	Proportion (%) of Global Population
<i>Aus australis</i> (Linnaeus, 1759) Eastern angel	B	CR D	VU D1	7
<i>Bus borealis</i> Smith, 1954 Northern boxer	V	NT	–	?
<i>Cus communis</i> (Alvarez, 1814) Common clipper	B	EN A3c; B1ab(iii)+2ab(iii))	NT	15
<i>Dus domesticus</i> Liu, 1888 Native delta	B	NT	–	2
<i>Dus domesticus</i> Liu, 1888 Native delta	V	VU A2bc	–	6

Table 2. Example of regional Red List, presenting fictive species. The region may wish to present additional information, like proportion at other geographical scales or conditions pertaining to legislation or international conventions. Visiting taxa should preferably be listed in a separate section; if – as in this example – they are included in the same list as the breeding taxa, it should be clearly indicated that they are visitors. The data and rationale behind each listing should be fully documented according to IUCN 2001, Annex 3. Such documentation can easily be presented for example on the World Wide Web.

Annex 1: Examples

***Sterna sandvicensis* – Sandwich Tern (Sweden)**

450 pairs in Sweden (1999). Generation time is roughly 8 years. 65% population reduction in Sweden during the last 3 generations. Meets the criteria A2ac and C1 under EN, but is downgraded to VU due to good immigration possibilities from the south. There is, a large and stable population in Germany and an increasing population in Holland.

VU A2ac; C1

***Sterna caspia* – Caspian Tern (Sweden)**

415 pairs in 9 colonies, and 80 solitary breeding pairs in Sweden (1999). Generation time 8-10 years. Continuous population decline in Sweden and a 65% reduction over the last 3 generations. A decrease in the entire Baltic Sea area (Sweden, Finland and Estonia) by 39% in 3 generations. In the event of extinction from Sweden and the Baltic area, the probability of re-colonization from the

nearest populations in the Black Sea is very low. Consequently, no change in the category met in step 1.

EN A2ae; C1+2a(i)

***Grus antigone* – Sarus Crane (Viet Nam)**

A migrant species that spends the winter months in Viet Nam. It occurs in 2 locations: In Tram Chin it remains for 3 months each year; there has been >90% population decline since 1990 (1990 - 128 individuals; 2003 - 2 individuals). Logo Samat is used as a stopover point for individuals heading towards Cambodia - they remain here for 1 week each year, though their occurrence is very irregular. However, there appears to be an overall decline (1992 - 7 individuals; 1998 - 48 individuals; 2003 - 0 individuals). Population sizes are recorded by direct observation and by satellite tracking. The total extent of occurrence is 700-900 km², and the total area of occupancy is estimated at 400 km². Main threats to the population are habitat loss and degradation in Tram Chin due to the construction of an irrigation channel, pollution, and fire; habitat loss and degradation in Logo Samat due to encroachment from farmland, human disturbance, and hunting. Meets the criteria for CR A2acd; C2a(ii). Conditions are deteriorating within Viet Nam but there is uncertainty about conditions outside the region (e.g. in Cambodia), therefore the category met in step 1 is unchanged.

CR A2acd; C2a(ii).

***Locustella fluviatilis* – River Warbler (Sweden)**

Estimated at 50 pairs in Sweden and 352,000–449,000 pairs in Europe outside of Russia. The Russian population is estimated at 100,000–1 million pairs. The species has recently begun to breed in Sweden and the population is still expanding. The Swedish population size meets EN D. Because the species is still obviously expanding its range the threat category is downgraded by two steps.
NT.

***Pipistrellus nathusii* – Nathusius' Pipistrelle (Sweden)**

Swedish population is believed to encompass less than 1,000 mature individuals. A migrating species. No observations of population decline and no immediate threat. Meets the criteria for VU D1. It is downgraded because possibilities for immigration are good.
NT.

***Paramesotriton deloustali* – Vietnamese Salamander (Viet Nam)**

This species was first recorded on Tam Dao mountain in 1934. It is now known from five severely fragmented locations in northern Viet Nam. Habitat is freshwater streams in hill evergreen forest above 300 m asl. It is also found in small natural and artificial impoundments. Area of occupancy is estimated at less than 2,000 km². It was common before the 1990s, but it is now believed to be declining due to over-exploitation; the species is used for domestic trade for medicinal purposes and is collected for the pet trade. During surveys carried out in 2001 and 2002, population densities in streams were observed to have reduced. There is continuing decline due to habitat loss and degradation through infrastructure development. No known immigration from neighbouring regions.

VU B2ab(iii,v).

***Amolops cremnobatus* – a frog (Viet Nam)**

Viet Nam has a breeding population of *A. cremnobatus*, known from only two locations (Ha Tinh and Quang Binh). Area of occupancy (estimated from maps based on survey information) is 1,400 km² and extent of occurrence is estimated as 4,000 km². Population size is unknown. There is continuing decline due to direct exploitation and habitat loss and degradation through water pollution, development and possibly logging activities. One subpopulation occurs inside a National Park area. Meets the criteria for EN B1ab(iii). There is no known immigration from neighbouring regions, therefore there is no change to the initial assessment.

EN B1ab(iii).

***Lampetra fluviatilis* – River Lamprey (Sweden)**

Occurs along most of the Swedish coasts but particularly in the Gulf of Bothnia. Spawns in running water. Generation length is 6-9 years. Has over all decreased by 80-90% in northern Sweden the past 25-30 years, but maybe not as much as 80% over the last 3 generations over the entire country. As an example, in county Västerbotten, it occurred in 40 water bodies during the 1960s, now it only remains in 2 or 3. Has also decreased strongly in the rest of Europe. Meets the criterion EN A2bcde. There could be a possibility of immigration from neighbouring countries but is not downgraded because the observed population reduction is probably due mainly to habitat degradation within the country. Furthermore, the species is also decreasing in the potential source areas.

EN A2bcde.

***Pangasianodon gigas* – Mekong Giant Catfish (Cambodia)**

P. gigas is a Mekong endemic, growing to a colossal size. It is known from two locations in Cambodia: Tonle Sap Great Lake and upstream in the Mekong River. It is believed that the species migrates from Tonle Sap Lake upstream to spawning grounds in the Mekong River. At least one spawning site is known in northern Thailand/Laos, with a further possible spawning area in northeast Cambodia. In Cambodia, the extent of occurrence is estimated as 3,000 km². Population size is unknown, although low catch rates in recent years suggests that there are fewer than 2,500 mature individuals left in the wild. In Cambodia, only 11 giant catfish were caught in 2000 and only 8 were caught in 2001. There is continuing decline due to exploitation (it is caught with seines and gill-nets and is marketed fresh). In an attempt to preserve the species, most giant catfish that were caught in Cambodia in 2000 and 2001 were bought, tagged and released alive. Actual distances travelled and destinations of individuals are unknown. However there is loss and degradation of spawning habitat upstream, outside of Cambodia, therefore there is no change from step 1.

EN B1ab(v); C1.

***Oreochromis esculentus* – a fish (East Africa)**

A shoreline and bottom-dwelling freshwater fish, originally endemic to Lakes Victoria and Kyoga and their satellite lakes. However, after the introduction of the Nile Perch, *Lates niloticus*, in 1959, the population declined and disappeared from Lakes Victoria and Kyoga in the late 1970s. In Uganda, it is still present in two satellite lakes. It is estimated that the population within the species natural range in Uganda, has declined by approx. 95% over the last three generations, mainly due to predation by the Nile Perch, eutrophication and exploitation. As the species is endemic to the region there is no need for an evaluation in a second step. The species has also been introduced into areas outside of its natural range into several lakes in Uganda and Tanzania for commercial purposes. According to the IUCN Red List Criteria, the categorization process should only be applied to wild populations inside their natural range, and to populations resulting from benign introductions, therefore only the wild stock is evaluated here. If on the other hand, the species became Extinct in the Wild (i.e. it disappeared from all of its former natural range), but still exists as a naturalized population within the region, the extant population should be viewed as a "benign introduction" even if the introduction was for commercial rather than conservation purposes. Then, the introduced population in East Africa should be evaluated against the Red List Criteria (this applies only to regional assessments not the global assessment). National lists may include separate assessments for both the wild population and the introduced stock.

CR A2acde (Ugandan wild stock).

***Somatochlora sahlbergi* – a dragonfly (Sweden)**

Known from only one Swedish location in the northern mountainous area, not far from Finland. There might be other unknown locations in Sweden. No observations of population decline. No evident immediate threat, but would probably be negatively affected by an increase in temperature. Meets the criteria for VU D2, but due to immigration possibilities from Finland, it is downgraded by one step.

NT.

***Botrychium simplex* – Small Grape Fern (Sweden)**

Currently known from 6–7 locations, of which all except one have been discovered during the past 5 years. AOO c. 30 km². 500–1000 individuals at most. Formerly known from a substantial number of locations. Has decreased

successively during the 1900s, and, despite the new finds, is judged to be in continuous decline. Numbers undergo extreme fluctuations and the population is severely fragmented. Even though the spores may be easily dispersed the possibility of any rescue from neighbouring countries is unknown.

EN B2ab(v)c(ii,iii,iv): C2b.

***Collema curtisporum* – a lichen (Sweden)**

Grows primarily on middle-aged aspens in semi-open mixed forest with high humidity in the boreal zone. A few thousand trees harbouring the lichen are known. The extent of suitable habitat has decreased greatly and is continuing to decline. The population has most probably, judging from habitat destruction, decreased by over 50% during the last three generations. Lack of fire-regenerated deciduous trees is a long-term threat, thus the reduction is likely to continue. The probability of immigration from neighbouring countries is judged to be extremely low.

EN A2c+3c+4c.

Appendix II

Species of Concern:

A short analysis was completed on the basis of the CAMP assessments, and it was concluded that few species need immediate and special efforts for their conservation. The appropriate species list is provided below;

Sr. No.	Scientific Name	Common Name
1.	<i>Antilope cervicapra</i>	Black Buck
2.	<i>Balaenoptera edeni</i>	Bryde's Whale
3.	<i>Balaenoptera musculus</i>	Great Blue Whale
4.	<i>Balaenoptera physalus</i>	Common Rorqual
5.	<i>Boselaphus tragocamelus</i>	Nilgai or Blue Bull
6.	<i>Capra aegagrus</i>	Wild Goat
7.	<i>Capra falconeri</i>	Markhor
8.	<i>Dryomys nitedula</i>	Forest Dormouse
9.	<i>Dugong dugon</i>	Dugong Sea Cow
10.	<i>Eupetaurus cinereus</i>	Woolly Flying Squirrel
11.	<i>Felis margarita</i>	Sand Cat
12.	<i>Gazella bennettii</i>	Chinkara
13.	<i>Gazella subgutturosa</i>	Goitred Gazelle
14.	<i>Hyaena hyaena</i>	Striped Hyaena
15.	<i>Lutra lutra</i>	Common Otter
16.	<i>Lutrogale perspicillata</i>	Smooth Coated Otter
17.	<i>Macaca mulatta</i>	Rhesus Macaque
18.	<i>Manis crassicaudata</i>	India Pangolin
19.	<i>Marmota caudata</i>	Long Tailed Marmot
20.	<i>Megaptera novaeangliae</i>	Humpback Whale
21.	<i>Moschus chrysogaster</i>	Himalayan Musk Deer
22.	<i>Naemorhedus goral</i>	Himalayan Goral
23.	<i>Neophocaena phocaenoides</i>	Black Finless Porpoise
24.	<i>Nyctalus montanus</i>	Mountain Noctule
25.	<i>Otocolobus manul</i>	Pallas, Cat
26.	<i>Ovis vignei punjabensis</i>	Punjab Urial
27.	<i>Ovis ammon</i>	Argali
28.	<i>Platanista minor</i>	Indus Dolphin
29.	<i>Prionailurus viverrinus</i>	Fishing Cat
30.	<i>Pseudois nayaur</i>	Blue Sheep
31.	<i>Rhinolophus blasii</i>	Blasius Horseshoe Bat
32.	<i>Rhinolophus ferrumequinum</i>	Greater Horse shoe Bat
33.	<i>Rhinolophus hipposideros</i>	Lesser Horse shoe Bat
34.	<i>Semnopithecus entellus</i>	Grey Langur
35.	<i>Sousa chinensis</i>	Indian Humpback Dolphin
36.	<i>Tursiops truncatus</i>	Bottle Nosed Dolphin
37.	<i>Uncia uncia</i>	Snow Leopard
38.	<i>Ursus thibetanus</i>	Asiatic Black Bear
39.	<i>Vulpes bengalensis</i>	Bengal Fox
40.	<i>Vulpes cana</i>	Blandford's fox

Note: The above list is prepared on the basis of a general viewpoint of CAMP exercise in Pakistan.

Appendix III

Taxonomic Data Sheets

The Taxon Data Sheets are incomplete and they should NOT BE INCLUDED in this format. It would be better for the Report not to have these sheets than have them this way. They have not been corrected or completed as I had requested many times.

Status and Red List of Pakistan's Mammals

TAXON DATA SHEETS

Species name *Crocidura attenuata* Milne-Edwards, 1872
Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia

Common name	Gray Shrew, Wood land Shrew
Scientific name :	<i>Crocidura attenuata</i> Milne-Edwards, 1872
Family	Soricidae
Habitat :	Extreme humid temperate forest
Habit/ Niche	Not known
Elevation :	500 – 2500 m
Distribution:	Data Deficient
Location	No. of individuals
1 Murree	Not Known
2	
3	
4	
5	
Extent of occurrence :	
Area of occupancy :	
No. subpopulations :	
No. of locations :	
Habitat status :	
Threats :	
Population number :	
Mature individuals :	
Population status :	
Global distribution	India, Kashmir, Nepal, China, Myanmar, Malaysia and Pakistan.
Recent field status	
IUCN Status :	
National Status :	Data Deficient
Comments :	Specimens collected by ZSD from Murree hills Ref- Siddique (1969), Ahmed and Ghalib (1979). (Z.Ali)
Contributors:	Dr Aleem A Khan, Dr Naeem Khan
Participants:	Dr Aleem A Khan, Dr Naeem Khan

¹Extent of occurrence is defined as the area contained in the shortest continuous imagery boundary encompassing known, inferred or projected sites of present occurrence of the taxon.

²Area of occupancy is defined as the area occupied by the taxon within the extent of occurrence.

Species name *Crocidura gmelini* Pallas, 1811
Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia

Common name	Steppic Pygmy Shrew
Scientific name :	<i>Crocidura gmelini</i> Pallas, 1811
Family	Soricidae
Habitat :	Open unforested areas with arid conditions
Habit/ Niche	Nocturnal, open unfrested habitats with arid conditions, semi desert or dry steppic mountains
Elevation :	500 – 2700 m
Distribution:	
Location	No. of individuals
1 Dera Ghazi Khan	<100
2 Ziarat	<100
3	
Presence in protected areas	Ziarat Juniper forest wildlife sanctuary (Balochistan)
Area of occupancy :	<10 km ²
No. subpopulations :	2
No. of locations :	2
Habitat status :	No change in habitat; decrease not predicted; no change in quality
Threats :	P, Pr, F: none
Population number :	≅ 150
Mature individuals :	150
Population status :	Stable population; no decline predicted
Global distribution	China, Iran, Afghanistan, Pakistan.
Recent field status	Woods & Kilpatrick. 1997. Biodiversity of small mammals of mountains of Pakistan Roberts, T.J. 1997. Mammals of Pakistan
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Dr Naeem, Dr Aleem
Participants:	Dr Naeem, Dr Aleem

Species name *Crocidura pergrisea* Miller, 1913
Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia**

Common name	Pale Gray Shrew
Scientific name :	<i>Crocidura pergrisea</i> Miller, 1913
Family	Soricidae
Habitat :	Warm humid climate till alpine deserts
Habit/ Niche	Not known
Elevation :	500-3600m
Distribution:	
Location	No. of individuals
1 Deosai Plains	<100
2 Karakoram National Park	<100
3 Turbat - Punjgar	<50
Presence in protected areas	Deosai national park, Central Karakoram national park (Northern areas)
Extent of occurrence :	101 – 5000 km ²
Area of occupancy :	<10 km ²
No. subpopulations :	3
No. of locations :	4
Habitat status :	No change in habitat status; no predicted change; no change in quality of habitat
Threats :	P, Pr, F: none
Population number :	<250
Mature individuals :	200
Population status :	Unknown; no predicted decline
Global distribution	India, Kashmir, Asia Minor.
Recent field status	Roberts, T.J. 1997. Mammals of Pakistan Woods & Kilpatrick Deosai National Park & CKNP 1997. Biodiversity of small mammals in mountains of Pakistan.
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Prof. Dr. M Naeem Khan, Dr Aleem A Khan

Participants:	Prof. Dr. M Naeem Khan, Dr Aleem A Khan
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Species name *Crocidura pullata* Miller, 1911
Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia

Common name	Asiatic White Toothed Shrew, South East Asia White Toothed Shrew Kashmir White Toothed Shrew (English)
Scientific name :	<i>Crocidura pullata</i> Miller, 1911
Family	Soricidae
Habitat :	Gardens and human inhabitations, moist temperate forest, restricted to outer Himalayan ranges
Habit/ Niche	Semi nocturnal, Forages on leaf mould & rotting logs
Elevation :	Not known
Distribution:	
Location	No. of individuals
1 Thandiani	>100
2 Murree Hills	<1000
Presence in protected areas	Ayubia national park (NWFP)
Extent of occurrence :	101 – 5000 km ²
Area of occupancy :	<10 km ²
No. subpopulations :	2
No. of locations :	2
Habitat status :	Increase in area; no decrease predicted; no change in quality of habitat
Threats :	P, Pr, F: none
Population number :	800
Mature individuals :	500
Population status :	Unknown; no decline predicted
Global distribution	Iran, India, Pakistan, Afghanistan, Kashmir, China, Thailand, Japan
Recent field status	Roberts, T.J. 1997. Mammals of Pakistan
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Dr Naeem, Dr Aleem
Participants:	Dr Naeem, Dr Aleem

Species name *Crocidura zarudnyi* Ognev, 1928
Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia

Common name	Sari's Pigmy Shrew, Mediterranean Pigmy Shrew
Scientific name :	<i>Crocidura zarudnyi</i> Ognev, 1928
Family	Soricidae
Habitat :	Deserts, plateau, denuded soils
Habit/ Niche	Nocturnal, solitary, have poisonous slivry glands
Elevation :	500 – 2700 m
Distribution:	
Location	No. of individuals
1 Ziarat	<1000
2 Mekran	≅ 1000
Presence in protected areas	Ziarat Juniper forest wildlife sanctuary, Zangi Nawar game reserve Hingol national park (Balochistan)
Area of occupancy :	<10 km ²

No. subpopulations :	2
No. of locations :	4 – 5
Habitat status :	No change in habitat; no predicted decline; no change in quality of habitat
Threats :	No threats
Population number :	≅ 2000
Mature individuals :	1500
Population status :	Stable population; no predicted decline
Global distribution	Iran, Afghanistan and Pakistan.
Recent field status	Woods & Kilpatrick. 1997. Biodiversity of small mammals of mountains of Pakistan Roberts, T.J. 1997. Mammals of Pakistan
IUCN Status :	
National Status :	Least Concern
Comments :	Dr Naeem, Dr Aleem
Contributors:	Dr Naeem, Dr Aleem
Participants:	

Species name *Hemiechinus auritus* (Gmelin, 1770)
Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia**

Common name	Steppe or Afghan Hedgehog
Scientific name :	<i>Hemiechinus auritus</i> (Gmelin, 1770)
Habitat :	Steppic mountainous regions, arid climate
Family	Erinaceidae
Habit/ Niche	Sluggish in habit, nocturnal, non gregarious, excavates burrows
Elevation :	
Distribution:	
Location	No. of individuals
1 Quetta	>1000
2 Kharan	>500
3 Kalat State(Z.Ali)	
4 Chiltan Hills(Z.Ali)	
Presence in protected areas	Ziarat Juniper forest wildlife sanctuary, Nag valley game reserve (Balochistan)
Extent of occurrence :	101 – 5000 km ²
Area of occupancy :	<10 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Increase in habitat area; no change in quality
Threats :	None
Population number :	16,000 – 22,000
Mature individuals :	13,000
Population status :	Increase in population; no changes predicted for the future
Global distribution	India & Pakistan, Libya, Mongolia, west and central Asia, Iran
Recent field status	Khan, A. A., 2001 Punjab/ Cholistan Vertebrates pest control survey Roberts, T.J. 1997. Mammals of Pakistan
IUCN Status :	VU B1+2c ver 2.3 (1994)
National Status :	Least Concern
Comments :	
Contributors:	Dr Naeem, Dr Aleem
Participants:	Dr Naeem, Dr Aleem

Species name *Hemiechinus collaris* (Gray, 1830)
Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia**

Common name	Long-eared Desert Hedgehog
Scientific name :	<i>Hemiechinus collaris</i> (Gray, 1830)

Family	Erinaceidae
Habitat :	Riverine and desert areas
Habit/ Niche	Beneficial to man being insectivorous, does not damage agriculture, active digger, strictly nocturnal
Elevation :	0 – 2000 m
Distribution:	
Location	No. of individuals
1 Riverine and Cholistan tracts	< 10,000
2 Riverine and Thar desert	<8000
3 Salt Range, Kohat (Z.Ali)	
4 Peshawar (Z.Ali)	
5 Thatta, Karachi(Z.Ali)	
6 Tausa (Z.Ali)	
Presence in protected areas	Kirthar National Park (Sindh), Lal Suhanra National Park (Punjab), Indus Game Reserve (Punjab/Sindh)
Extent of occurrence :	35,000 km ²
Area of occupancy :	<10 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Increase in area; no predicted decline; no change in quality
Threats :	None
Population number :	≅ 17,500
Mature individuals :	12,000
Population status :	Increase in population; no predicted decline
Global distribution	India & Pakistan
Recent field status	Khan, A. A., 2001 Punjab/ Cholistan Vertebrates pest control survey Roberts, T.J. 1997. Mammals of Pakistan
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Dr Naeem, Dr Aleem
Participants:	Dr Naeem, Dr Aleem

Species name *Hemiechinus hypomelas* (Brandt, 1836)
Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia**

Common name	Brandt's Hedgehog
Scientific name :	<i>Hemiechinus hypomelas</i> (Brandt, 1836)
Family	Erinaceidae
Habitat :	Desert, riverine and steppic mountains
Habit/ Niche	Nocturnal, generally creeps in between rocks or under overhanging ledge, not an active burrower
Elevation :	0 – 1500 m
Distribution:	
Location	No. of individuals
1 Chaghai and Quetta, South-West Balochistan	1800 – 2000
2 Upper and Lower Indus Basin	1800 – 2000
3 North West Punjab(Z.Ali)	
Presence in protected areas	Hazar- Ganji National Park (Balochistan)
Extent of occurrence :	101-5,000 km ²
Area of occupancy :	< 10 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Increase in area; no predicted decline in habitat; no change in quality of habitat
Threats :	None
Population number :	≅ 2000
Mature individuals :	1900
Population status :	Increase in population; no decline predicted for the future
Global distribution	Arabia , Russia, India & Pakistan
Recent field status	Roberts, T.J. 1997. Mammals of Pakistan

IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Dr Naeem, Dr Aleem, Ali Imran
Participants:	

Species name *Hemiechinus micropus* (Blyth, 1846)
Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia

Common name	Indian Hedgehog
Scientific name :	<i>Hemiechinus micropus</i> (Blyth, 1846)
Family	Erinaceidae
Habitat :	Arid and denuded soil with moist conditions
Habit/ Niche	Nocturnal, less inclined to excavate burrows
Elevation :	0 – 200 m
Distribution:	
Location	No. of individuals
1 Tharparkar, Badin	>400
2 Thatta District(Z.Ali)	
3 Hyderabad, South wards(Z.Ali)	
4 Lasbela (Z.Ali)	
Presence in protected areas	Runn of Kutch Wildlife Sanctuary (Sindh)
Extent of occurrence :	101 – 5000 km ²
Area of occupancy :	<10 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Increase in area of habitat; no decline predicted for the future; no change in quality
Threats :	None
Population number :	≅ 400
Mature individuals :	300
Population status :	Increase in population; no decline predicted for the future
Global distribution	India & Pakistan (endemic to the sub continent)
Recent field status	Roberts, T.J. 1997. Mammals of Pakistan
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Dr Naeem, Dr Aleem, A. Khan, Ali Imran
Participants:	Dr Naeem, Dr Aleem, A. Khan, Ali Imran

Species name *Sorex thibetanus* Kastschenko, 1905
Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia

Common name	Red Toothed Shrew
Scientific name :	<i>Sorex thibetanus</i> Kastschenko, 1905
Family	Soricidae
Habitat :	Alpine grasslands, high altitude rocks
Habit/ Niche	Species found in alpine rocky slopes and alpine grasslands at amazingly altitudes
Elevation :	2700 – 3970 m
Distribution:	
Location	No. of individuals
1 Deosai Plains	<100
2 Kaghan Valley	<50
3 Neelam & Gureiz Valley	<50
Presence in protected areas	Deosi national park (Northern areas) Machiara national park (Kashimir) Naran reserve forest (NWFP)
Extent of occurrence :	12,00 km ²

Area of occupancy :	<10 km ²
No. subpopulations :	3
No. of locations :	3
Habitat status :	Stable; no predicted decline; no change in habitat quality
Threats :	P: natural predators Pr: natural predators F: natural predators
Population number :	<200
Mature individuals :	140
Population status :	Unknown presently; no predicted decline
Global distribution	Pakistan & Kashmir
Recent field status	Woods et al, 1997. Biodiversity & conservation of Deosai Plateau N. A Pakistan. Khan, A.A & Rajput, 1998. Biodiversity & conservation of Deosai Plateau N. A Pakistan. Khan, A. A & Zakriya, V. 1995 Management plan for Deosai National Park. Roberts, T.J. 1997. Mammals of Pakistan
IUCN Status :	
National Status :	Vulnerable D2 ↓ Near Threatened
Comments :	The species because of over-specialization for an extreme grassland habitat of Deosai plains & Kashmir highland has narrowed its distribution and population growth. The species should be focused and investigated and recommended for red data book.
Contributors:	Prof. Dr. Muhammad Naeem Khan, Dr. Aleem A. Khan
Participants:	Prof. Dr. Muhammad Naeem Khan, Dr. Aleem A. Khan

Species name *Suncus etruscus* (Savi, 1822)
Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia

Common name	Sari's Pigmy Shrew, Mediterranean Pigmy Shrew
Scientific name :	<i>Suncus etruscus</i> (Savi, 1822)
Family	Soricidae
Habitat :	Gardens, hedges, residential areas
Habit/ Niche	Human settlements in humid areas
Elevation :	0 – 2000 m
Distribution:	
Location	No. of individuals
1 Coastal Sindh	<500
2 Eastern Punjab	<200
3 Charsadda	<200
4	
Presence in protected areas	Ayubia national park (NWFP) Keti Bunder north & south wildlife sanctuary (Sindh)
Extent of occurrence :	2000 km ²
Area of occupancy :	<10 km ²
No. subpopulations :	2
No. of locations :	2
Habitat status :	No change in habitat; no predicted change; no change in quality
Threats :	P: none Pr: none F: none
Population number :	800
Mature individuals :	≅ 500
Population status :	Stable population; no predicted decline
Global distribution	South India, Orissa, Bengal, Assam, India and Pakistan.
Recent field status	Roberts, T.J. 1997. Mammals of Pakistan
IUCN Status :	
National Status :	Least Concern
Comments :	Personal sighting (2003) near Jassar(River Ravi) at Indian Border (Z.Ali)
Contributors:	Dr. Aleem A Khan
Participants:	Prof. Dr. Naeem Khan

Species name *Suncus murinus* (Linnaeus, 1766)

Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia**

Common name	House shrew, Musk Shrew (English)
Scientific name :	<i>Suncus murinus</i> (Linnaeus, 1766)
Family	Soricidae
Habitat :	Outskirts of villages and towns, hedges and gardens
Habit/ Niche	More adapted to commercial existence with man and is redistricted to more humid regions of Pakistan.
Elevation :	0 – 2000 m
Distribution:	
Location	No. of individuals
1 Southern Sindh	>5000
2 Eastern Punjab	>3000
3 North Punjab	>5000
Presence in protected areas	Ayubia national park (NWFP) Chumbi Surla wildlife sanctuary (Punjab) Ketu Bunder north & south wildlife sanctuary (Sindh)
Extent of occurrence :	5,000 km ²
Area of occupancy :	<10 km ²
No. subpopulations :	2
No. of locations :	2
Habitat status :	No change in habitat status; no predicted change; no change in quality of habitat
Threats :	P: none Pr: none F: none
Population number :	13000
Mature individuals :	<10,000
Population status :	Increase in population; no predicted decline
Global distribution	India, Srilanka, Myanmar, Malaysia, south east china, Taiwan, Indonesia, Afghanistan & Pakistan.
Recent field status	Roberts, T.J. 1997. Mammals of Pakistan
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Dr. Aleem A Khan
Participants:	Prof. Dr. M Naeem Khan

Species name *Suncus stoliczkanus* (Anderson, 1877)

Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia**

Common name	Yellow Throated Shrew (English)
Scientific name :	<i>Suncus stoliczkanus</i> (Anderson, 1877)
Family	Soricidae
Habitat :	Gardens, grassy embankments, near watercourses and paddy fields
Habit/ Niche	Largely nocturnal, solitary lives away from human buildings.
Elevation :	0 – 500 m
Distribution:	
Location	No. of individuals
1 Lower Indus	2000 – 3000
2 Upper Indus	4000 – 6000
3	
Presence in protected areas	Kirthar national park (Sindh) Narra canal wildlife sanctuary (Sindh) Lal Suhanra national park (Punjab)
Extent of occurrence :	20,000 km ²
Area of occupancy :	<10 km ²

No. subpopulations :	2
No. of locations :	2
Habitat status :	No change in habitat; no predicted change; no change in quality
Threats :	None
Population number :	6000 – 9000
Mature individuals :	5000
Population status :	Population increasing; no decline predicted
Global distribution	Nepal, India and Pakistan.
Recent field status	Roberts, T.J. 1997. Mammals of Pakistan
IUCN Status :	
National Status :	Least Concern
Comments :	Personal sighting near Sukkur (2002). (Z.Ali)
Contributors:	Dr Naeem, Dr Aleem
Participants:	Dr Naeem, Dr Aleem

***Barbastella leucomelas* (Cretzschmar, 1830)**

Synonyms: *Vespertilio leucomelas* Cretzschmar, 1830/31

Barbastella blandfordi Bianchi, 1917

Plecotus darjelingensis Hodgson, in Horsfield, 1855

Common name: Eastern Barbastelle

Family: Vespertilionidae

Habit: Solitary, nocturnal

Habitat: Himalayan moist temperate forest and dry coniferous forest.

Niche: Caves, tunnels, crevices, tree hollows, bark. 1800m.

Distribution

Global: Afghanistan, India, Iran, Nepal, Pakistan

National:

Pakistan: NWFP, Northern Areas

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Trade:

Data source:

Population

Generation time: Not known

Mature individuals: Not known

Population trends: Not known

Red List 2001 Status derived in the workshop

National Status:

Pakistan:

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern
CITES: Not listed

Known presence in Protected Areas

Nepal: Annapurna Conservation Area, Makalu Barun National Park, Rara National Park

Recommendations

Research:

Management:

Captive breeding: Propagation techniques not known at all.

Comments

Sources

Compilers

Reviewers

Recent Field Studies

T.K. Shrestha in Western Nepal, 1997-1999, Mammals of Nepal.
S. Mistry in Sikkim, 1992, Survey.

Distribution based on literature

Distribution	Lat.	Long.	Notes/Sources
PAKISTAN			
Northern Areas			
Gilgit	35° 54	74° 20	Bates & Harrison, 1997
Naltar	36° 07	74° 14	Bates & Harrison, 1997
NWFP			
Dunga Gali	34° 03	77° 22	Bates & Harrison, 1997

***Cynopterus sphinx* (Vahl, 1797)**

Synonyms: *Vespertilio sphinx* Vahl, 1797

Cynopterus angulatus Miller, 1898

Cynopterus brachysoma Dobson, 1871

Cynopterus marginatus (var. *Pachysoma scherzeri*) Zelebor, 1869

Cynopterus marginatus var. *andamensis* Dobson, 1873

Cynopterus marginatus var. *elliotti* Gray, 1870

Cynopterus sphinx gangeticus Andersen, 1910

Pachysoma brevicaudatum Temminck, 1837

Pteropus marginatus Geoffroy, E. 1810

Pteropus pusillus Geoffroy, E., 1803

Vespertilio fibulatus Vahl, 1797

Common names: Bengali: *Bucha-nak Kola Badur*, English: Short-nosed (Indian) Fruit Bat

Family: Pteropodidae

Habit: Arboreal.

Habitat: Agricultural lands, orchards, forests, buildings.

Niche: Trees. Up to 2000m.

Distribution

Global: Bangladesh, Bhutan, India, Myanmar, Nepal, Pakistan, Sri Lanka

National:

Pakistan: Sindh

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status: Communal species.

Data source:

Threats

Threats to the taxon: Habitat loss, development, dams, deforestation, exploitation, hunting, hunting for medicine.

Data source: Field study; inferred.

Population

Generation time: 4-6 years

Mature individuals: > 10,000

Population trend: There is no decline in population and it is not predicted in the future.

Data source: Field study; inferred.

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Old World Fruit Bats Action Plan (Global): Not threatened

CITES: Not listed

Known presence in Protected Areas:

Recommendations

Research

Management:

Comments

One of the most abundant bats in South Asia. Recently it has been found that adult male bats roosting alone are also engaged in breeding activities. So it is extremely important that an adequate number of sites for male roosts are supplied near a harem. Commensal species, the abundance of which has probably increased due to man.

Sources

Compilers

Reviewers

Recent Field Studies

Distribution in South Asia and Myanmar from literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Sindh			
Karachi	24° 51	67° 02	Bates & Harrison, 1997
Malir	24° 59	67° 13	Bates & Harrison, 1997

***Eptesicus bottae* (Peters, 1869)**

Synonyms: *Vesperus botae* Peters, 1869
Eptesicus ognevi Bobrinskii, 1918

Common names: Botta's Serotine

Family: Vespertilionidae

Habit: Roost in buildings, arboreal, insectivore.

Habitat: Open desert, arid or semi arid regions, cultivated areas.

Niche: Building and rock crevices in Palearctic regions. Up to 3400m.

Distribution

Global: Turkey, Egypt, Yemen, Mongolia, Pakistan, Afghanistan

National :

Pakistan: Northern areas

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations: .

Habitat status: Not known.

Data source:

Threats

Threats to the taxon: Not known

Population

Generation time: Not known

Mature individuals: Not known

Population trend:

Red List 2001 Status derived in the workshop Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas:

Recommendations

Research:

Management:

Captive breeding: Techniques not known at all.

Comments

Sources

Compilers

Reviewers

Recent Field Studies

Distribution in South Asia and Afghanistan based on literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Northern areas			
Shenkagarh	35° 21	74° 52	Bates & Harrison, 1997

***Eptesicus nilssoni* (Keyserling and Blasius, 1839)**

Synonyms: *Eptesicus gobiensis* Bobrinskii, 1926
Eptesicus nilssonii Bobrinskii, 1926
Eptesicus nilssonii centralasiaticus Bobrinskii, 1926
Eptesicus nilssonii gobiensis Bobrinskii, 1926
Eptesicus nilssonii kashgaricus Bobrinskii, 1926

Common names: Bobrinskii's serotine

Family: Vespertilionidae

Habit: Arboreal, insectivore in open habitat.

Habitat: Desert areas of former USSR.

Niche: Rock crevices. 3200-3250m.

Distribution

Global: Pakistan, Afghanistan, Nepal, Tibet, China, Mongolia, Russia and other Central Asian countries.

National :

Pakistan: Northern areas

Afghanistan

Extent of Occurrence: 101

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats:

Population

Generation time: Not known

Mature individuals: Not known

Population trend: Not known

Red List 2001 Status derived in the workshop

National Status:

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

Distribution in South Asia and Afghanistan from literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
AFGHANISTAN			
Kabul	34° 30	69° 10	<i>As nilssonii kashgaricus</i> in Felten, 1971 Bates & Harrison, 1997
NEPAL			
No exact locality	-	-	Bates & Harrison, 1997
PAKISTAN			
Northern areas			
Gilgit	35° 54	74° 20	Possible record. Bates & Harrison, 1997

***Eptesicus nasutus* (Dobson, 1877)**

Synonyms: *Vesperugo (Vesperos) nasutus* Dobson, 1877

Common names: Sindh Serotine Bat

Family: Vespertilionidae

Habit: Walls of ruined buildings, caves.

Habitat: Semi desert terrain, river borders.

Distribution

Global: Arabia, Iraq, Iran, Afghanistan, Pakistan

National :

Pakistan: Baluchistan, Sindh

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats: Not known

Population

Generation time: Not known

Mature individuals: Not known

Population trend: Not known

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Vulnerable A2c

Microchiroptera Action Plan (Global): Vulnerable A2c

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments
Sources
Compilers

Reviewers
Recent Field Studies
Distribution from literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Baluchistan			
Kharan	28° 34	65° 26	Bates & Harrison, 1997
near Rajbar	-	-	Bates & Harrison, 1997
junction of Razhai & Sindh rivers in Baluchistan	-	-	Bates & Harrison, 1997
Sindh			
near Rohri	-	-	type loc. of <i>nasutus</i> , according to Blanford 1888-91. Bates & Harrison, 1997

***Eptesicus serotinus* (Schreber, 1774)**

Synonyms: *Vespertilio serotinus* Schreber, 1774
Eptesicus serotinus pashtonus Gaisler, 1970
Scotophilus pachyomus Tomes, 1857
Vespertilio turcomanus Eversmann, 1840

Common names: Serotine Thick-eared Bat

Family: Vespertilionidae

Habit: Solitary or in small numbers, insectivorous.

Habitat: Caves and cracks in rocks, rocky riverines, montane.

Niche: Tree hollows, caves and cracks in rocks. 462-2338m.

Distribution

Global: W Europe through S. Asiatic Russia to Himalayas, Thailand and China, north to Korea, Taiwan, S. England, N. Africa, most islands in Mediterranean; perhaps sub-Saharan Africa, India, Nepal, Pakistan, Tibet, Afghanistan (Himalayan tracts).

National :

Pakistan: NWFP

Migration regions: Known for its long distance migration.

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon:

Data source: Field study; observed, inferred.

Population

Generation time: Not known

Mature individuals: Not known

Population trend: Not known

Red List 2001 Status derived in the workshop

Ver. 3.1: NEAR THREATENED

Although widely distributed, habitat change and destruction could have an impact on the populations in the future. The species is not very common and due to its patchy distribution it is Near Threatened.

National Status:

India: Near Threatened
Nepal: Near Threatened
Pakistan: Data Deficient

Uncertainty

Assessed based on evidence and precaution and on the consensus of field biologists.

Other status

Red List of Threatened Species (2000): Not Evaluated
Microchiroptera Action Plan (Global): Lower Risk least concern
CITES: Not listed

Known presence in Protected Areas:

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

Distribution in South Asia and Afghanistan from literature and recent field studies

Distribution	Lat.	Long.	Notes/Sources
PAKISTAN			
NWFP			
Karakar Pass	34° 26'	72° 13'	Bates & Harrison, 1997

***Hipposideros cineraceus* Blyth, 1853**

Synonyms: *Phyllorhina micropus* Peters, 1872

Common name: Least Leaf-nosed Bat

Family: Hipposideridae

Habit: Insectivorous

Habitat: Montane forests.

Niche: Tree hollows. 62-1477m.

Distribution

Global: Vietnam and Borneo, adjacent small islands; probably the Philippines, India, Nepal, Myanmar

South Asia:

India: Arunachal Pradesh, Assam, Madhya Pradesh, Meghalaya, Uttaranchal, West Bengal

Nepal

Pakistan: Punjab

Myanmar (Northern)

Extent of Occurrence

Area of Occupancy/Locations/subpopulations: 16 / not known. Contiguous.

Habitat status:

Data source:

Threats

Threats to the taxon:

Data source:

Population

Generation time: Not known

Mature individuals: Not known

Population trend: Not known

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

Distribution in South Asia and Myanmar from literature and recent field studies

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Punjab			
Pind Dadan Khan	32° 36'	72° 57'	type loc. of <i>cineraceus</i> Bates & Harrison, 1997

***Hipposideros fulvus* Gray, 1838**

Synonyms: *Hipposideros murinus* Gray, 1838

Phyllorhina aurita Tomes, 1859

Phyllorhina atra Fitzinger, 1870

Rhinolophus fulgens Elliot, 1839

Hipposideros fulvus pallidus Andersen, 1918

Common names: Fulvous Leaf-nosed Bat

Family: Hipposideridae

Habit: Colonial (single and mixed roosts), insectivorous

Habitat: Subterranean caves, wells, ruins of houses, thorn scrub.

Niche: Caves/ wide range.

Distribution

Global: Pakistan to Vietnam, south to Sri Lanka, Afghanistan, India

South Asia:

India: Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, Andaman & Nicobar Islands

Nepal

Pakistan: Baluchistan, Punjab, Sindh

Sri Lanka: Matara, North Western Province, Sabaragamuwa Province, Southern Province

Afghanistan

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations: Many / not known.

Habitat status:

Data source:

Threats

Data source:

Population

Generation time:

Mature individuals

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

J. Vanitharani & S. Jayapraba in caves of Parapadi, Rodiyarpatti hills, 2000-2002 ongoing, survey of bats of Tirunelveli district and role in ecosystem T.R. Radhamani in Madurai, 1988-1996, behaviour

A. Madhavan in Cochin in Kerala, 1993, survey

H.R. Bhat and S. Srinivasan in Karnataka, 1990, ecological record

D. Joshi in Aurangabad caves, Ellora Caves, Ajantha Caves, Bhimashankar slope caves, Maharashtra, 2001

Distribution in South Asia and Afghanistan from literature and recent field studies

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Baluchistan			
Hoshab	26° 01	63° 55	Bates & Harrison, 1997
Panjgur	26° 56	64° 06	Bates & Harrison, 1997
Punjab			
Chaklala	33° 40	73° 08	Bates & Harrison, 1997
Rawalpindi	33° 36	73° 03	Bates & Harrison, 1997
Sindh			
Gharo	24° 44	67° 36	Bates & Harrison, 1997
Gholam	25° 06	67° 48	Bates & Harrison, 1997
Shujawal	24° 36	68° 05	Bates & Harrison, 1997
Sukkur	27° 42	68° 52	Bates & Harrison, 1997
Thatta	24° 45	67° 56	Bates & Harrison, 1997

***Megaderma Iyra* Geoffroy, 1810**

Synonyms:

Common names: Indian False Vampire

Family: Megadermatidae

Habit: Colonial (single and mixed roosts), insectivorous

Habitat: Subterranean caves, wells, ruins of houses, thorn scrub.

Niche: Caves/ wide range.

Distribution

Global: Pakistan to Vietnam, Afghanistan, through out India except in the Himalays, Burma, and Malaysia.

South Asia:

India: through out India except in the Himalays, Burma, Nepal

Pakistan: Peshawar, Mardan

Afghanistan: Nangahar

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations: not known.

Habitat status:

Data source:

Threats

Data source:

Population

Generation time:

Mature individuals

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

J. Vanitharani & S. Jayapraba in caves of Parapadi, Rodiyarpatti hills, 2000-2002 ongoing, survey of bats of Tirunelveli district and role in ecosystem T.R. Radhamani in Madurai, 1988-1996, behaviour

A. Madhavan in Cochin in Kerala, 1993, survey

H.R. Bhat and S. Srinivasan in Karnataka, 1990, ecological record

D. Joshi in Aurangabad caves, Ellora Caves, Ajantha Caves, Bhimashankar slope caves, Maharashtra, 2001 Distribution in South Asia and Afghanistan from literature and recent field studies

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Baluchistan			
Hoshab	26° 01	63° 55	Bates & Harrison, 1997
Panjour	26° 56	64° 06	Bates & Harrison, 1997
Punjab			
Chaklala	33° 40	73° 08	Bates & Harrison, 1997
Rawalpindi	33° 36	73° 03	Bates & Harrison, 1997
Sindh			
Gharo	24° 44	67° 36	Bates & Harrison, 1997
Gholam	25° 06	67° 48	Bates & Harrison, 1997
Shujawal	24° 36	68° 05	Bates & Harrison, 1997
Sukkur	27° 42	68° 52	Bates & Harrison, 1997
Thatta	24° 45	67° 56	Bates & Harrison, 1997

***Miniopterus schreibersii* (Kuhl, 1817)**

Synonyms: *Vespertilio scheidtzi* Kuhl, 1819
Vespertilio fuliginosa Hodgson, 1835

Common names: Sinhalese: *Schreibersge dik-angeli wawula*;
English: Schreiber's Long-fingered Bat

Family: Vespertilionidae

Habit: Large colonies.

Habitat: Hilly and forested country-side.

Niche: Caves, caverns and crevices in rocks. Up to 338-1230m.

Distribution

Global: Southern Europe and Morocco through the Caucasus and Iran to Japan, the Indian subcontinent and east to Australia; also sub-Saharan Africa.

South Asia:

India: Arunachal Pradesh, Maharashtra, Meghalaya, Sikkim, Tamil Nadu, Uttaranchal, West Bengal

Nepal

Sri Lanka: Central Province, North Western Province, Sabaragamuwa Province, Uva Province, Western Province

Afghanistan

Myanmar (Northern)

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Lower Risk near threatened

Microchiroptera Action Plan (Global): Lower Risk near threatened

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

***Murina tubinaris* (Scully, 1881)**

Synonym: *Harpiocephalus tubinaris* Scully, 1881

Common name: Scully's Tube-nosed Bat

Family: Vespertilionidae

Habit: Insectivorous

Habitat: Mountain slopes, hills

Niche: Roosts in trees.

Distribution

Global: India, Pakistan, Myanmar, Thailand, Vietnam

South Asia:

India: Arunachal Pradesh, Jammu & Kashmir, Meghalaya, Mizoram, Sikkim, West Bengal
Pakistan

Myanmar (Northern)

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status: .

Data source: Literature

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend: <

Data source

Recent Field Studies

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Distribution in South Asia and Myanmar based on literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Gilgit	35° 54	74° 20	Type locality of <i>M. tubinaris</i> Bates & Harrison, 1997
Nathia Gali	34° 04	73° 24	Bates & Harrison, 1997

***Myotis blythii* (Tomes, 1857)**

Synonyms: *Vespertilio blythii* Tomes, 1857

Myotis africanus Dobson, 1875

Vespertilio murinoides Dobson, 1837

Common name: Lesser Mouse-eared Bat

Family: Vespertilionidae

Habit: Colonial / clusters, insectivorous.

Habitat: Scrub forest and low foothills with low rainfall, tropical semi evergreen forests.

Niche: Caves, buildings (unused), trees, crevices. 170-1754m.

Distribution

Global: India, Pakistan, Nepal, Afghanistan, Mediterranean zone of Europe and north-west Africa to the Crimea, Asia Minor, Israel, Arabia, China, Mongolia.

South Asia:

India: Jammu & Kashmir, Himachal Pradesh, Meghalaya, Rajasthan

Nepal

Pakistan

Afghanistan

Extent of Occurrence: >

Area of Occupancy: >

Locations/subpopulations:

Habitat status:

Data source:

Threats

Data source:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Sources

Compilers

Reviewers:

Recent Field Studies

Distribution based on literature and recent field sightings

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Karakar Pass	34° 26	72° 13	Bates & Harrison, 1997

***Myotis emarginatus* (Geoffroy, 1806)**

Synonyms:

Myotis lanceus Oldfield Thomas, 1920

Common name: Geoffroy's Bat or Notch-eared Bat

Family: Vespertilionidae

Habit: Colonial / clusters, insectivorous.

Habitat: Scrub forest and low foothills with low rainfall

Niche:

Distribution

Global: USSR

South Asia:

Jammu & Kashmir, Himachal Pradesh, Pakistan

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Data source:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Sources

Compilers

Reviewers:

Recent Field Studies

Distribution based on literature and recent field sightings

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Chagi Desert	26° 56	64° 06	T.J. Roberts 1997

***Myotis longipes* (Dobson, 1873)**

Synonyms: *Vespertilio longipes* Dobson, 1873

Myotis theobaldi Blyth, 1856

Vespertilio megalopus Dobson, 1875

Vespertilio macropus Dobson, 1872

Common names: Kashmir Cave Bat

Family: Vespertilionidae

Habitat: Caves and ruins.

Niche: Cracks and crevices, unused buildings/low lying areas. 1754m.

Distribution

Global: India, Myanmar, Nepal, and Afghanistan

South Asia:

India: Jammu & Kashmir, Meghalaya, Maharashtra

Nepal

Afghanistan
Myanmar (Northern)

Extent of Occurrence: >

Area of Occupancy: >

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon:

Data source:

Population

Generation time:

Mature individuals:

Population trend: > .

Data source:

Red List 2001 Status derived in the workshop

Ver. 3.1: NEAR THREATENED

National Status:

India: Near Threatened

Nepal: Near Threatened

Uncertainty

Assessed based on evidence and on the consensus of field biologists.

Other status

Red List of Threatened Species (2000): Vulnerable B1+2c; D2

Microchiroptera Action Plan (Global): Vulnerable B1+2c; D2

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Captive breeding: Techniques not known at all.

Sources

Compilers

Reviewers

Recent Field Studies

***Myotis muricola* (Gray, 1846)**

Synonyms: *Vespertilio muricola* Gray, 1846

Vespertilio blanfordi Dobson, 1871,

Vespertilio caliginosus Tomes, 1859,

Common names: Nepalese Whiskered Bat

Family: Vespertilionidae

Habit: Insectivorous, colonial

Habitat: Montane forests, hilly forests

Niche: Caves, tightly rolled banana leaves. 1230 - 2700m.

Distribution

Global: Afghanistan, India, Nepal, Myanmar, and Pakistan

South Asia:

India: Assam, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Maharashtra, Meghalaya, Sikkim, Uttaranchal, West Bengal
Nepal

Pakistan: NWFP, Punjab

Sri Lanka

Afghanistan

Myanmar (Northern)

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

.

Data source

Threats

Data source:

Population

Generation time:

Mature individuals:

Population trend:

.

Data source

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Pakistan: Murree National Park; Nepal: Langtung National Park

Recommendations

Research:

Management

Sources

Compilers

Reviewers

Recent Field Studies

Distribution in South Asia, Afghanistan and Myanmar based on literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
NWFP			
Karakar Pass	34° 26	72° 13	Bates & Harrison, 1997
Shogran	34° 37	73° 28	Bates & Harrison, 1997
Punjab			
Dunga Gali	34° 03	77° 22	Bates & Harrison, 1997
Gharial	33° 55	73° 27	Bates & Harrison, 1997
Murree	33° 55	73° 26	Bates & Harrison, 1997

***Myotis mystacinus* (Kuhl, 1819)**

Synonyms: *Vespertilio mystacinus* Gray, 1846
Vespertilio pallidiventris Hodgson, 1871,
Vespertilio nipalensis Dobson, 1871
Myotis meinertzhageni Tomas, 1926

Common names: Whiskered Bat

Family: Vespertilionidae

Habit: Insectivorous (mainly Lepidoptera)

Habitat: Desert, semi desert, warm tropical lowland, montane forest.

Niche: 20-3015m.

Distribution

Global: Afghanistan, India, Pakistan and most of paleoactic region

South Asia:

India: Assam, Himachal Pradesh, Jammu & Kashmir, Nepal, West Bengal

Nepal

Pakistan: NWFP, Punjab

Afghanistan

Extent of Occurrence: >20,000 sq km

Area of Occupancy: >20,000 sq km. Estimated based on 10 km foraging radius and > 20 locations

Locations/subpopulations: > 20/ not known fragmented

Habitat status:

.

Data source

Threats

Data source:

Population

Generation time:

Mature individuals:

Population trend:

.

Data source

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated
Microchiroptera Action Plan (Global): Lower Risk least concern
CITES: Not listed

Known presence in Protected Areas

Pakistan: Murree National Park; Nepal: Langtung National Park

Recommendations

Research:

Management

Sources

Compilers**Reviewers****Recent Field Studies****Distribution in South Asia, Afghanistan and Myanmar based on literature**

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Kashmir			T.J Roberts 1997

***Nyctalus leisleri* (Kuhl, 1817)**

Synonym: *Vespertilio leisleri* Kuhl, 1819

Common names: Hairy-armed Bat, Leisler's Bat

Family: Vespertilionidae

Habit: Insectivorous, piscivore (?), riverine.

Habitat: Montane forests, riparian.

Niche: Hollow trees/1380-2370m.

Distribution

Global: Afghanistan, India, Pakistan, Palearctic east to about 80 degrees

South Asia:

India: Himachal Pradesh, Jammu & Kashmir, Uttaranchal

Pakistan: NWFP, Punjab

Afghanistan

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source: .

Threats

Data source:

Population

Generation time: 4-6 years

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

National Status

Uncertainty**Other status**

Red List of Threatened Species (2000): Lower Risk near threatened

Microchiroptera Action Plan (Global): Lower Risk near threatened
CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Rest of the participants

Recent Field Studies

None

Distribution in South Asia and Afghanistan based on literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
NWFP			
Kululai	35° 18	72° 35	Bates & Harrison, 1997
Yakh Tangai	34° 34	71° 57	Bates & Harrison, 1997
Punjab			
Gharial	33° 55	73° 27	Bates & Harrison, 1997

***Nyctalus noctula* (Schreber, 1774)**

LEAST CONCERN in South Asia

Synonyms: *Vespertilio noctula* Schreber, 1774

? *Vesperugo* (N.) *plancyi* Gerbe, 1880

Vespertilio labiata Hodgson, 1835

Common names: Noctule

Family: Vespertilionidae

Habit: Insectivorous, colonial, migratory

Habitat: Buildings, temples, montane forests, oak forests

Niche: Hollow trees, cellars, old ruins, rock crevices, haunted houses, feeds over wetlands, woodlands and pastures in Europe. 577-1231m.

Distribution

Global: India, Nepal, Myanmar

South Asia:

India, Himachal Pradesh, Jammu & Kashmir, Nagaland, Sikkim, Uttaranchal, West Bengal Nepal

Pakistan: NWFP Myanmar (Northern)

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source: .

Threats

Threats to the taxon:

Data source:

Population

Generation time:

Mature individuals:

Population trend:

Data source: .

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas**Recommendations**

Research:

Management:

Sources**Compilers****Reviewers****Recent Field Studies****Distribution on literature**

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
NWFP			
Kohat	33° 34'	71° 26'	Bates & Harrison, 1997

Nyctalus montanus* (Barrett Hamilton, 1906)*LEAST CONCERN in South Asia**

Synonyms: *Pterygister montanus*

Common names: Mountain Noctule

Family: Vespertilionidae

Habit: Insectivorous, colonial, migratory

Habitat: Buildings, temples, montane forests, oak forests

Niche: Hollow trees, cellars, old ruins, rock crevices, haunted houses, feeds over wetlands, woodlands and pastures in Europe. 577-1231m.

Distribution

Global: India, Nepal, and Myanmar

South Asia:

Myanmar (Northern), India, Afghanistan, Jammu & Kashmir, West Bengal Nepal

Pakistan: NWFP

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon:

Data source:

Population

Generation time:

Mature individuals:
Population trend:
Data source: .

Red List 2001 Status derived in the workshop
Uncertainty

Other status
Red List of Threatened Species (2000): Not Evaluated
Microchiroptera Action Plan (Global): Lower Risk least concern
CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Sources

Compilers

Reviewers

Recent Field Studies

Distribution on literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
NWFP			
Kohat	33° 34	71° 26	Bates & Harrison, 1997
Chitral	35° 50	71° 47	

***Otonycteris hemprichii* Peters, 1859**

Synonyms: *Otonycteris cinereus* Satunin, 1919

Common name: Hemprich's Long-eared Bat
Family: Vespertilionidae
Habitat: Steppe Mountain, Upland desert, dry, deciduous woodland
Niche: Rock crevices. Upto 2700m.

Distribution

Global: India, Pakistan, Afghanistan

South Asia:

India: Jammu & Kashmir, Himachal Pradesh

Pakistan

Afghanistan

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Not Evaluated

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research

Management:

Sources

Compilers

Reviewers

Recent Field Studies

Distribution based on literature

Distribution	Lat.	Long.	Notes/Sources
PAKISTAN			
Chitral (9.6km south of)	-	-	Bates & Harrison, 1997
Gilgit	35° 54	74° 20	Bates & Harrison, 1997
Gupis Valley	36° 13	73° 27	Bates & Harrison, 1997

***Pipistrellus ceylonicus* (Kelaart, 1852)**

LEAST CONCERN in South Asia

Synonyms: *Scotophilus ceylonicus* Kelaart, 1852

Pipistrellus ceylonicus subcanus Thomas, 1915

Pipistrellus chrysothrix Wroughton, 1899

Vesperugo indicus Dobson, 1878

Common names: Bengali: *Kelaarter Chamchika*; English: Kelaart's Pipistrelle

Family: Vespertilionidae

Habitat: Tropical thorn to highlands

Niche: Tree holes, cracks in walls, wells, temples, roller blinds. 2153m.

Distribution

Global: Bangladesh, China, India, Myanmar, Pakistan, Sri Lanka, Vietnam, northern Borneo

South Asia:

Bangladesh

India: Andhra Pradesh, Bihar, Goa, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu, West Bengal

Pakistan

Sri Lanka: Central Province, Eastern Province, Uva Province, Western Province

Myanmar (Northern)

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Sources

Reviewers

Recent Field Studies

Distribution from literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Karachi	24° 51	67° 02	Bates & Harrison, 1997
Khanewal	30° 18	76° 51	Bates & Harrison, 1997
Landhi	24° 51	67° 16	Bates & Harrison, 1997
Lyallpur	31° 25	73° 07	Bates & Harrison, 1997
Malir	24° 59	67° 13	Bates & Harrison, 1997
Thatta	24° 45	67° 56	Bates & Harrison, 1997

***Pipistrellus coromandra* (Gray, 1838)**

Synonyms: *Scotophilus coromandra* Gray, 1838

Myotis parvipes Blyth, 1853

Scotophilus coromandelianus Blyth, 1863

Vespertilio coromandelicus Blyth, 1851

? *Vesperugo blythii* Wagner, 1855

? *Vesperugo micropus* Peters, 1872

Common names: Bengali: *Khudey Chamchika*; English: Coromandel Pipistrelle, Indian Pipistrelle

Family: Vespertilionidae

Habitat: Widely distributed in moist habitats

Niche: Crevices, ceilings, chimneys, tree-holes, under barks, behind signboards, among tiles of huts; 185-2769m.

Distribution

Global: Afghanistan, China, India, Bangladesh, Pakistan, Sri Lanka, Thailand, Vietnam

South Asia:

Bangladesh: Throughout

India: Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Goa, Gujarat, Jammu & Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Meghalaya, Nagaland, Nicobar Islands, Orissa, Sikkim, Tamil Nadu, Tripura, Uttaranchal, Uttar Pradesh, West Bengal

Nepal

Sri Lanka: Central Province, North Central Province, North Western Province, Northern Province, Southern Province, Uva Province

Afghanistan

Extent of Occurrence

Area of Occupancy

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Sources

Compilers

Reviewers

Rest of the participants

Recent Field Studies

***Pipistrellus javanicus* (Gray, 1838)**

Synonyms: *Scotophilus javanicus* Gray, 1838

Pipistrellus babu Thomas, 1915

Pipistrellus camortae Miller, 1902

Pipistrellus peguensis Sinha, 1969

Common names: Javan Pipistrelle

Family: Vespertilionidae

Habit: In old buildings, small colonies

Habitat: Tropical zone, pine forest

Niche: Old buildings in urban areas. Upto 2400m.

Distribution

Global: Afghanistan, Bangladesh, India, Indonesia, Japan, Korea, Myanmar, Nepal, New Guinea, Pakistan, Philippines, perhaps Australia

South Asia:

Bangladesh

India: Andaman & Nicobar Islands, Assam, Himachal Pradesh, Madhya Pradesh, Maharashtra, Manipur, Nagaland, Sikkim, Uttaranchal, West Bengal

Nepal

Pakistan: NWFP, Punjab

Afghanistan

Myanmar

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status: .

Data source:

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management: .

Sources

Compilers

Reviewers

Distribution from literature

Distribution	Lat.	Long.	Notes/Sources
PAKISTAN			
NWFP			
Karakar Pass	34° 26	72° 13	Bates & Harrison, 1997
Punjab			
Gharial	33° 55	73° 27	Bates & Harrison, 1997
Murree	33° 55	73° 26	Type locality of <i>babu</i> Bates & Harrison, 1997

***Pipistrellus kuhlii* (Kuhl, 1817)**

Synonyms: *Vespertilio kuhli* Kuhl, 1819

Pipistrellus lepidus Blyth, 1845

Vespertilio (Pipistrellus) leucotis Dobson, 1872

Common names: Kuhl's Pipistrelle

Family: Vespertilionidae

Habit: Open desert

Habitat: Open forests, human dwellings

Niche: Thatched roof of houses. 615-769m.

Distribution

Global: Afghanistan, India, Pakistan

South Asia:

India: Assam, Maharashtra, Meghalaya, West Bengal

Pakistan: Baluchistan, Punjab, Sindh

Afghanistan

Extent of Occurrence

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Generation time:

Population

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Captive breeding: Techniques not known at all.

Comments

Sources

Compilers

Reviewers

Distribution from literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Balochistan			
Darzi Chach	29° 41	65° 37	Bates & Harrison, 1997
Panjgur	26° 56	64° 06	Bates & Harrison, 1997
Punjab			
Lyallpur	31° 25	73° 07	Bates & Harrison, 1997
Multan	30° 11	71° 26	Bates & Harrison, 1997
Muzaffargarh	30° 04	71° 12	Bates & Harrison, 1997
Rajanpur	29° 06	70° 17	Type locality of leucotis Bates & Harrison, 1997
Sindh			
Chak	27° 44	68° 52	Bates & Harrison, 1997
Gambat	27° 19	68° 32	Bates & Harrison, 1997
Hyderabad	25° 24	68° 22	Bates & Harrison, 1997
Kashmor	28° 25	69° 35	Bates & Harrison, 1997
Mirpur	28° 12	68° 48	Bates & Harrison, 1997
Mirpur Sakro	24° 32	67° 38	Bates & Harrison, 1997
Pithoro	25° 32	68° 21	Bates & Harrison, 1997
Sukkur	27° 42	68° 52	Bates & Harrison, 1997

***Pipistrellus paterculus* Thomas, 1915**

Common names: Mount Popa Pipistrelle, Paternal Pipistrelle

Family: Vespertilionidae

Habit: Colonial

Habitat: Bamboo forests, agricultural land

Niche: Tree holes, thatched roofs, banana plantations. 308-615m in Myanmar

Distribution

Global: India, Myanmar to southwest China, Thailand

South Asia:

India: Assam, Bihar, Jammu & Kashmir, Manipur, Nagaland

Myanmar

Extent of Occurrence: Not known

Area of Occupancy: Not known

Locations/subpopulations:

Habitat status:

Data source:

Threats

Generation time:

Mature individuals

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Other status

Red List of Threatened Species (2000): Lower Risk near threatened

Microchiroptera Action Plan (Global): Lower Risk near threatened

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

***Pipistrellus pipistrellus* (Schreber, 1774)**

Synonyms: *Vespertilio pipistrellus* Schreber, 1774

Pipistrellus aladdin Thomas, 1905

Pipistrellus bactrianus Satunin, 1905

Common names: Common Pipistrelle

Family: Vespertilionidae

Habitat: Buildings, near human settlements

Niche: Wall crevices, clefts or rocks or any dry protected hole, caves. 461-2462m.

Distribution

Global: India, Pakistan, Afghanistan, Myanmar, Japan, Taiwan

South Asia:

India: Assam, Jammu & Kashmir, Maharashtra, Tamil Nadu

Pakistan

Afghanistan

Myanmar

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management

Sources

Compilers

Reviewers

Distribution from literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Dir	35° 12	71° 52	Bates & Harrison, 1997
Gilgit	35° 54	74° 20	Bates & Harrison, 1997
Kululai	35° 18	72° 35	Bates & Harrison, 1997
Chitral	35° 50	71° 47	Bates & Harrison, 1997

***Pipistrellus savii* (Bonaparte, 1837)**

Synonyms: *Vespertilio savii* Bonaparte, 1837

?*Pipistrellus austenianus* Dobson, 1871

Common names: Bengali: *Savir Chamchika*; English: Savi's Pipistrelle

Family: Vespertilionidae

Habit: Insectivorous

Habitat: Mountain deciduous forest.

Niche: Caves, hollow trees, building crevices. 403-2585m.

Distribution

Global: Afghanistan, Africa, Arabia, India, Bangladesh, Iran, Japan, Korea, Myanmar, Pakistan.

South Asia:

Bangladesh: Northeastern

India: Maharashtra, Meghalaya

Afghanistan

Myanmar

Extent of Occurrence:

Area of Occupancy

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Known presence in Protected Areas

Recommendations

Research:

Management:

Captive breeding:

Sources

Compilers

Reviewers

***Pipistrellus tenuis* (Temminck, 1840)**

Synonyms: *Vespertilio tenuis* Temminck, 1840

Pipistrellus mimus Wroughton, 1899

Pipistrellus mimus glaucillus Wroughton, 1912

Pipistrellus principulus Thomas, 1915

Common names: Indian Pygmy Bat, Least Pipistrelle

Habit: Solitary, colonial

Habitat: Crevices in buildings and rocks, wooden structures.

Niche: Crevices. 108-769m in India

Distribution

Global: Afghanistan, India, Pakistan, Bangladesh, Nepal, Sri Lanka to Vietnam, Thailand

South Asia:

Bangladesh

India: Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Rajasthan, Tamil Nadu, Tripura, Uttaranchal, Uttar Pradesh, West Bengal

Pakistan: NWFP, Punjab, Sind

Nepal

Sri Lanka: Central Province, North Western Province, Sabartagamuwa Province, Southern Province, Uva Province, Western Province

Afghanistan

Myanmar

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Population

Generation time:

Mature individuals:

Population trend:

Data source: .

IUCN (2001) Status

Uncertainty

Known presence in Protected Areas

Recommendations

Research:

Management:

Sources

Compilers

Reviewers

Recent Field Studies

Distribution in South Asia, Afghanistan and Myanmar from literature and recent field studies

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
NWFP			
Chitral	35° 50	71° 47	Bates & Harrison, 1997
Malakand	34° 34	71° 57	Bates & Harrison, 1997
Punjab			
Bhattu Hissar	-	-	Bates & Harrison, 1997
Chaklala	33° 40	73° 08	Bates & Harrison, 1997
Chakri	32° 47	73° 28	Bates & Harrison, 1997
Khanewal	30° 18	76° 51	Bates & Harrison, 1997
Multan	30° 11	71° 26	type loc. of <i>glaucillus</i> Bates & Harrison, 1997
Sheikhupura	31° 43	73° 59	Bates & Harrison, 1997
Sind			
Gambat	27° 19	68° 32	Bates & Harrison, 1997
Karachi	24° 51	67° 02	Bates & Harrison, 1997
Malir	24° 59	67° 13	Bates & Harrison, 1997
Sukkur	27° 42	68° 52	Bates & Harrison, 1997
Central Province			
Kandy	07° 17	80° 40	Bates & Harrison, 1997
Peradeniya	07° 15	80° 40	Bates & Harrison, 1997
Rattota	07° 31	80° 41	Bates & Harrison, 1997
North Western Province			
Kurenegala	07° 28	80° 23	Bates & Harrison, 1997
Sabaragamuwa Province			
Labugama	06° 55	80° 11	Bates & Harrison, 1997
Southern Province			
Hambantota	06° 07	81° 07	Bates & Harrison, 1997
Ranna	06° 05	80° 52	Bates & Harrison, 1997
Uva Province			
Namunukula	06° 55	81° 07	Bates & Harrison, 1997
Western Province			
Anasigalla	06° 29	80° 03	Bates & Harrison, 1997
Colombo	06° 55	79° 52	Bates & Harrison, 1997
Kalutara	06° 35	79° 59	Bates & Harrison, 1997

***Plecotus auritus* (Linnaeus, 1758)**

Synonyms: *Vespertilio auritus* Linnaeus, 1758

?*Plecotus homochrous* Hodgson, 1847

?*Plecotus puck* Barrett-Hamilton, 1907

Common names: Brown long-eared Bat

Family: Vespertilionidae

Habit: Insectivorous

Habitat: Alpine forests

Niche: Deserted huts, hollow tree trunks, caves. 2308-3540m.

Distribution

Global: India, Ireland, Nepal, Norway, Japan, Pakistan, Spain to Russia.

South Asia:

India: Himachal Pradesh, Jammu & Kashmir, Sikkim, Uttaranchal, West Bengal

Nepal

Pakistan: Northern Areas, Punjab

Extent of Occurrence:

Area of Occupancy: .

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Captive breeding:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

Distribution in South Asia from literature and recent field studies

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Northern Areas			
Gilgit	35° 54	74° 20	Bates & Harrison, 1997
Punjab			
Murree	33° 55	73° 26	Type locality of <i>puck</i> Bates & Harrison, 1997

***Plecotus austriacus* (J. Fischer, 1829)**

Synonyms: *Vespertilio auritus austriacus* Fischer, 1829
Plecotus wardi Thomas, 1911,

Common names: Common Long-eared Bat, Grey Long-eared Bat

Family: Vespertilionidae

Habit: Insectivorous, colonial

Habitat: Montane moist mixed coniferous and deciduous forest

Niche: Crevices of tunnels, forts, dilapidated buildings, caves. 1450-3600m.

Distribution

Global: Afghanistan, Austria, England, India, Nepal, Pakistan, Senegal to Mongolia to West China

South Asia:

India: Jammu & Kashmir

Nepal

Pakistan: Northern Areas, NWFP

Afghanistan

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

Distribution in literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Northern areas			
Rattoo	35° 55	74° 20	Bates & Harrison, 1997
NWFP			
Battakundi	34° 56	73° 46	B & H, 1997
Sharan	34° 43	73° 28	Bates & Harrison, 1997
Shogran	34° 37	73° 28	Bates & Harrison, 1997

Rhinolophus blasii Peters, 1866

NEAR THREATENED in South Asia

Synonyms: *Rhinolophus blasii meyeri* Felten, 1977
Rhinolophus clivosus Blasius, 1857

Common names: Blasius' Horseshoe Bat

Family: Rhinolophidae

Habit: Insectivorous

Habitat: Caves, old buildings, gardens.

Niche: Caves, crevices

Distribution

Global: South, East and North Africa, Arabia, Southern Europe, Transcaucasia, Afghanistan, Pakistan

South Asia:

Pakistan: Punjab

Afghanistan

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon: Accidental mortality, roost disturbance. The influence on the population well understood, not reversible and have not ceased to be a threat.

Population

Generation time: 4-6 years

Mature individuals: < 10,000

Population trend: Not known

Data source: Literature; suspected, inferred.

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Lower Risk near threatened

Microchiroptera Action Plan (Global): Lower Risk near threatened

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

None

Distribution from literature

Distribution	Lat.	Long.	Notes/Sources
PAKISTAN			
Punjab			
Lahore	31° 34	74° 22	Bates & Harrison, 1997

***Rhinolophus ferrumequinum* (Schreber, 1774)**

Synonyms: *Vespertilio ferrum-equinum* Shreber, 1774
Rhinolophus tragatus Hodgson, 1835
Rhinolophus brevitarus Blyth, 1863
Rhinolophus ferrum-equinum proximus Andersen, 1905
Rhinolophus ferrum-equinum regulus Andersen, 1905

Common name: Greater Horseshoe Bat

Family: Rhinolophidae

Habitat: Montane forests, Terai regions

Niche: Cave, ruins

Distribution

Global: Endemic to South Asia

South Asia:

India: Uttar Pradesh

Nepal

Pakistan

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon: Habitat loss, roost disturbance. The influence on the population not understood threats not reversible and has not ceased to be a threat.

Population

Generation time: 4-6 years

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop
1997 C.A.M.P. (Ver. 2.3): Vulnerable B1+2c; D2

Uncertainty

Other status

Red List of Threatened Species (2000): Lower Risk near threatened

Microchiroptera Action Plan (Global): Lower Risk near threatened

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

None

Distribution from literature

Distribution	Lat.	Long.	Notes/Sources
PAKISTAN			
Baluchistan			
Kalat			Bates & Harrison, 1997
Nushki			Bates & Harrison, 1997
Quetta			Bates & Harrison, 1997
Northern areas			
Gilgit			Bates & Harrison, 1997
NWFP			
Abbotabad			Bates & Harrison, 1997
Karakar Pass			Bates & Harrison, 1997
Kululai			Bates & Harrison, 1997

Rhinolophus hipposideros (Bechstein, 1800)

VULNERABLE in South Asia

Synonyms: *Vespertilio hipposideros* Bechstein, 1800
Rhinolophus midas Andersen, 1905

Common names: Lesser Horseshoe bat

Family: Rhinolophidae

Habit: Colonial

Habitat: Warm valleys

Niche: Caves, ruined buildings, outhouses / 1230-1850m.

Distribution

Global: Afghanistan, Africa, India, Morocco, North Arabia, Pakistan, Western Europe

South Asia:

India: Jammu & Kashmir

Pakistan

Afghanistan

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Vulnerable A2c

Microchiroptera Action Plan (Global): Vulnerable A2c
CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

Distribution from literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
AFGHANISTAN			
Jalabad	34° 26	70° 25	Bates & Harrison, 1997
Qalat	32° 05	66° 53	Bates & Harrison, 1997
INDIA			
Jammu & Kashmir			
Bumzov cave	-	-	Bates & Harrison, 1997
PAKISTAN			
Gilgit	35° 54	74° 20	Bates & Harrison, 1997

***Rhinolophus lepidus* Blyth, 1844**

Synonyms: *Rhinolophus monticola* Andersen, 1905

Common names: Bengali: *Chhoto Ghorakhuri Chamchika*; English: Blyth's Horseshoe Bat

Family: Rhinolophidae

Habit: Solitary, colonial

Habitat: Forests

Niche: Caves, ruins, dungeons, tunnels, subterranean soils, old houses, ruined temples. Up to 2388m.

Distribution

Global: Afghanistan, Bangladesh, India, Nepal, northern Myanmar, Pakistan, Southeast Asia

South Asia:

Bangladesh

India: Andhra Pradesh, Assam, Bihar, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Nagaland, New Delhi, Orissa, Rajasthan, Tamil Nadu, Uttaranchal, Uttar Pradesh, West Bengal

Nepal

Pakistan

Afghanistan

Myanmar (Northern)

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

Distribution from literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Abbotabad	34° 08	73° 12	Bates & Harrison, 1997

***Rhinolophus macrotis* Blyth, 1844**

NEAR THREATENED in South Asia

Synonyms: *Rhinolophus episcopus* Allen, 1923
Rhinolophus macrotis topali Csorba & Bates, 1995

Common names: Big-eared Horse-shoe Bat

Family: Rhinolophidae

Habit: Insectivorous, flies out during early twilight hours

Habitat: Caves, mines, forests

Niche: Caves. 1692m

Distribution

Global: India, Laos, Malaysia, Nepal, Pakistan, Philippines, southern China, Vietnam, West Sumatra

South Asia:

India: Arunachal Pradesh, Meghalaya, Uttaranchal, West Bengal

Pakistan: Punjab

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations: .

Habitat status:

Data source:

Threats

Threats to the taxon:

Trade:

Population

Generation time: 4-6 years

Mature individuals: < 10,000

Population trend: > 10% decline in the population in the past 10 years.

Data source: Indirect information; informal sightings; literature; inferred.

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

Distribution from literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Punjab			
near Abbotabad	-	-	Bates & Harrison, 1997

***Rhinopoma hardwickei* Gray, 1831**

Common names: Bengali: *Chhoto Indur-lenji Badur*,
English: Lesser Mouse-tailed Bat

Family: Rhinopomatidae

Habit: Colonial

Habitat: Wide crevices, temple

Niche: Old ruins, tunnels, buildings, dark sites in crevices. Up to 108m.

Distribution

Global: Afghanistan, Arabia, Bangladesh, India, Iran Myanmar, Morocco, Mauritania to East Africa, Niger, Pakistan

South Asia:

Bangladesh: Southwestern

India: Andhra Pradesh, Bihar, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, New Delhi, Orissa, Rajasthan, Tamil Nadu,

Uttar Pradesh, West Bengal

Pakistan: NWFP, Punjab, Sindh

Afghanistan

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

Distribution from literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
NWFP			
Amb	34° 18	72° 51	Bates & Harrison, 1997
Punjab			
Ara	-	-	Bates & Harrison, 1997
Chitti Dil	-	-	Bates & Harrison, 1997
Rohtas	32° 58	73° 36	Bates & Harrison, 1997
Sakesar	32° 33	71° 57	Bates & Harrison, 1997
Sindh			
Karachi	24° 51	67° 02	Bates & Harrison, 1997
Karchat Hills	25° 46	67° 44	Bates & Harrison, 1997
Landhi	24° 51	67° 16	Bates & Harrison, 1997

***Rhinopoma microphyllum* (Brünnich, 1782)**

LEAST CONCERN in South Asia

Synonyms: *Vespertilio microphyllus* Brünnich, 1782

Rhinopoma microphyllum kinneari Wroughton, 1912

Common names: Bengali: *Indur-lenji Chamchika*; English: Greater Mouse-tailed Bat

Family: Rhinopomatidae

Habit: Colonial.

Habitat: Desert regions.

Niche: Old ruins, buildings, tunnels, cave; up to 100m.

Distribution

Global: Afghanistan, Arabia, Bangladesh, India, Iran, North Africa, Pakistan, Sumatra, Thailand

South Asia:

Bangladesh: Northern, eastern and southeastern

India: Andhra Pradesh, Bihar, Gujarat, Madhya Pradesh, Maharashtra, New Delhi, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh

Pakistan: Baluchistan, NWFP, Punjab, Sind

Afghanistan

Extent of Occurrence: .

Area of Occupancy: .

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon:

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern
 CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

Sinha, Rajasthan, 1972-74, Gujarat, 1976

Senacha, Rajasthan, 2001 till date.

Distribution in South Asia and Afghanistan from literature and recent field studies

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Baluchistan			
Las Bela	-	-	Bates & Harrison, 1997
Sadikabad	28° 18	70° 02	Bates & Harrison, 1997
Qutabpur	29° 54	71° 47	Bates & Harrison, 1997
NWFP			
Amb	34° 18	72° 51	Bates & Harrison, 1997
Malakand Hills	34° 34	71° 57	Bates & Harrison, 1997
Punjab			
Ara	-	-	Bates & Harrison, 1997
Gujrat	32° 34	74° 04	Bates & Harrison, 1997
Jhelum	32° 57	73° 44	Bates & Harrison, 1997
Mailsi	29° 42	72° 12	Bates & Harrison, 1997
Multan	30° 11	71° 26	Bates & Harrison, 1997
Rohtas	32° 58	73° 36	Bates & Harrison, 1997
Sakesar	32° 33	71° 57	Bates & Harrison, 1997
Sind			
Gambat	27° 19	68° 32	Bates & Harrison, 1997
Hyderabad	25° 24	68° 22	Bates & Harrison, 1997
Karachi	24° 51	67° 02	Bates & Harrison, 1997
Karchat Hills	25° 46	67° 44	Bates & Harrison, 1997
Sukkur	27° 42	68° 52	Bates & Harrison, 1997

***Rhinopoma muscatellum* Thomas, 1903**

Synonyms: *Rhinopoma muscatellum seianum* Thomas, 1913

Common names: Small mouse-tailed Bat

Family: Rhinopomatidae

Habit: Insectivorous, small colonies, deserted buildings

Habitat: Dry deserts

Niche: Underground caverns, deserted buildings. 700-1100 m.

Distribution

Global: Afghanistan, India, Iran, Pakistan, Oman, UAE

South Asia:

India: Rajasthan

Pakistan

Afghanistan

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations

Habitat status:

Data source:

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend:

Data source: Literature; inferred.

**Red List 2001 Status derived in the workshop
Uncertainty**

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

Distribution in South Asia and Afghanistan from literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Baluchistan			
Sibi	29° 33	67° 54	Bates & Harrison, 1997
Uzhda Ridge	-	-	AMNH: Van Cackenberge & de Vree, 1994 Bates & Harrison, 1997

***Rousettus egyptiacus* (E. Geoffroy, 1810)**

Synonyms: *Pteropus egypticus* E. Geoffroy, 1810

Rousettus arabicus Anderson & de Winton, 1902

Common names: Egyptian Fruit Bat

Family: Pteropodidae

Habit: Frugivorous, gregarious

Habitat: Desert / semi arid tracts

Niche: Natural caves, underground irrigation tunnels, open wells, mosques, underside ceilings of tombs. 985m.

Distribution

Global: Africa, Arabia, Iran, Middle East, Pakistan, Turkey

South Asia:

Pakistan: Baluchistan, Sindh, Personal sighting at Jiwani Village (2001-2002) Survey.

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source

Threats

Threats to the taxon:

Population

Generation time: 4-6 years

Mature individuals:

Population trend:

Data source:

**Red List 2001 Status derived in the workshop
Uncertainty**

Other status

Red List of Threatened Species (2000): Not Evaluated

Old World Fruit Bats Action Plan: Not Threatened

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Taxonomic relationship of *R. aegyptiacus* and *R. leschenaulti* deserves further review. Actual population estimate 240 based on limited distribution and small colony size (approximately 40 individuals) compared to *Rousettus leschenaulti*.

Sources

Compilers

Reviewers

Recent Field Studies

Distribution in Pakistan from literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Baluchistan			
Lak Bidok	25° 12	66° 45	Bates & Harrison, 1997
Panjgor	26° 56	64° 06	Bates & Harrison, 1997
Sindh			
Karachi	24° 51	67° 02	Bates & Harrison, 1997
Kiotatta	-	-	Bates & Harrison, 1997
Makli hills	24° 46	67° 57	Bates & Harrison, 1997
Malir	24° 59	67° 13	Bates & Harrison, 1997

***Rousettus leschenaulti* (Desmarest, 1820)**

Synonyms: *Pteropus leschenaulti* Desmarest, 1820

Cynonycteris infuscata Peters, 1873

Cynopterus marginatus, Gray, 1843

Cynopterus affinis Gray, 1843

Eleutherura fusca Gray, 1870

Pteropus pyrivorus Hodgson, 1835

Pteropus seminudus Kelaart, 1850

Common names: Bengali: *Kola Badur*, English: Fulvous Fruit Bat

Family: Pteropodidae

Habit: Colonial

Habitat: Arid area to hot humid forests.

Niche: Caves, wells, man made constructions. Up to 1600m.

Distribution

Global: Bhutan, India, Myanmar, Nepal, Pakistan, Southeast Asia, southern China, Sri Lanka, Vietnam

South Asia:

Bangladesh

Bhutan

India: Andhra Pradesh, Arunachal Pradesh, Bihar, Chhattisgarh, Goa, Gujarat, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttaranchal, Uttar Pradesh, West Bengal

Nepal

Pakistan: NWFP, Punjab, Sindh

Sri Lanka: Central Province, North Central Province, North Western Province, Sabaragamuwa Province, Southern Province, Uva Province, Western Province

Myanmar (Northern)

Extent of Occurrence

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source: .

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

**Red List 2001 Status derived in the workshop
Uncertainty**

Other status

Red List of Threatened Species (2000): Not Evaluated

Old World Fruit Bats Action Plan: Not Threatened

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

Distribution in South Asia and Myanmar from literature and recent field studies

Distribution in South Asia	Lat.	Long.	Notes/Sources
NWFP			
Malakand	34° 34	71° 57	Bates & Harrison, 1997
Punjab			
Lahore	31° 34	74° 22	Bates & Harrison, 1997
Muzaffarabad	34° 22	73° 28	Bates & Harrison, 1997
Sialkot	32° 30	74° 32	Bates & Harrison, 1997
Sindh			
Karachi	24° 51	67° 02	Bates & Harrison, 1997
Malir	24° 59	67° 13	Bates & Harrison, 1997

***Scotoecus pallidus* (Dobson, 1876)**

Synonyms: *Scotophilus pallidus* Dobson, 1876
? *Vespertilio noctulinus* l. Geoffroy, 1831

Common names: Desert Yellow Bat

Family: Vespertilionidae

Habit: Crevices of buildings, tree holes, insectivorous

Habitat: Dry tropical woods, urban areas, buildings, scrub vegetation

Niche: Crevices of deserted buildings, tree holes. Up to 2500m.

Distribution

Global: Endemic to South Asia (India, Bangladesh, Pakistan)

South Asia:

India: Bihar, Himachal Pradesh, Jharkhand, Maharashtra, Uttar Pradesh, West Bengal

Pakistan: Punjab, Sind

Extent of Occurrence: > 20,000 sq km.

Area of Occupancy: > 2,000 sq km.

Locations/subpopulations: > 20. Fragmented.

Habitat status: Loss of habitat, change in quality of habitat.

Data source: Field study, literature; Observed, inferred

Threats

Threats to the taxon: Human interference, alien invasive species, habitat loss. The influence on the population well understood, not reversible and have not ceased to be a threat.

Population

Generation time: 4-6 years

Mature individuals: > 10,000

Population trend: Not known

Data source: Indirect information; inferred; hypothetical

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Red List of Threatened Species (2000): Not Evaluated

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Distribution in South Asia from literature and recent field studies

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Punjab			
Mian Mir	31° 34'	74° 22'	type loc. of <i>pallidus</i>
Muzaffargarh	30° 04'	71° 12'	
Sialkot	32° 30'	74° 32'	
Sind			
Kashmor	28° 25'	69° 35'	
Khaipur Nathan	27° 06'	68° 44'	

Distribution in South Asia	Lat.	Long.	Notes/Sources
Shah			
Mirpur	28° 12	68° 48	
Naundero	27° 40	68° 21	
near Shikarpur	-	-	

Scotophilus kuhlii Leach, 1821

Synonyms: *Scotophilus fulvus* Gray, 1843,
Scotophilus wroughtoni Thomas, 1897
Vespertilio temminckii Horsfield, 1824

Common names: Bengali: *Chhoto Holdi Chamchika*; English: Asiatic Lesser Yellow House Bat

Family: Vespertilionidae

Habit: Solitary and colonial, arboreal

Habitat: Open and dry plains

Niche: Houses, caves, trees, buildings

Distribution

Global: Afganistan, Bangladesh, India, Indonesia, Northern Myanmar, Pakistan, Philippines, Sri Lanka, Taiwan, Western Malaysia

South Asia:

Bangladesh

India: Andaman & Nicobar Islands, Andhra Pradesh, Bihar, Gujarat, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Rajasthan, Tamil Nadu, Tripura, Uttaranchal, Uttar Pradesh, West Bengal

Nepal

Pakistan: Punjab, Sind

Sri Lanka: Central Province, Eastern Province, North Central Province, Uva Province

Afghanistan

Myanmar (Northern)

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon: .

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments

Sources

Compilers

Reviewers

Distribution in South Asia, Afghanistan and Myanmar from literature and recent field studies

***Tadarida aegyptiaca* (E. Geoffroy, 1818)**

Synonyms: *Nyctinomus aegyptiacus* E. Geoffroy, 1818

Dysopes geoffroyi Temminck, 1826

Nyctinomus tragata Dobson, 1874

Tadarida gossei Wroughton, 1919

Tadarida sindica Wroughton, 1919

Tadarida thomasi Wroughton, 1919

Common names: Bengali: *Lomba-leji Chamchika*; English: Egyptian Free-tailed Bat

Family: Molossidae

Habit: Colonial

Habitat: Open dry habitats

Niche: Crevices, cracks, narrow spaces, plains

Distribution

Global: Afganistan, Egypt, Bangladesh, India, Oman, Pakistan, Saudi Arabia, Sri Lanka, West Africa, Yemen

South Asia:

Bangladesh

India: Andhra Pradesh, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, West Bengal

Pakistan: Punjab, Sindh

Sri Lanka: Central Province, Uva Province

Afghanistan

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Sources

Compilers

Reviewers

Recent Field Studies

Distribution in South Asia and Afghanistan from literature and recent field studies

***Taphozous nudiventris* Cretzschmer, 1830**

Synonyms: *Taphozous kachhensis* Dobson, 1872

Common names: Naked-rumped Tomb Bat

Family: Emballonuridae

Habitat: Temperate, tropical and arid regions.

Niche: Crevices of rocks, houses, tunnels, forts

Distribution

Global: Afghanistan, India, Pakistan

South Asia:

India: Bihar, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, New Delhi, Rajasthan, Sikkim, Uttar Pradesh, Tamil Nadu, West Bengal

Pakistan: Punjab, Sind

Afghanistan

Myanmar (Northern)

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status: Not known

Data source: Literature, indirect information; Inferred

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

India: Kanha National Park, Madhya Pradesh.

Recommendations

Research: Survey

Management: Monitoring

Comments

Habitat loss due to urbanization and ignorance of government with regard to maintenance of historical buildings like forts.

Sources

Bates & Harrison, 1997; Cretzschmer, 1830-31, Dobson, 1872, Harshey & Chandra, 2001; Hutson *et al.*, 2001

Compilers**Reviewers****Field Studies****Distribution from literature**

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Punjab			
Jhelum	32° 57	73° 44	Bates & Harrison, 1997
Rohtas	32° 58	73° 36	Bates & Harrison, 1997
Sindh			
Kashmor	28° 25	69° 35	Bates & Harrison, 1997
Kot Diji	27° 21	68° 42	Bates & Harrison, 1997
Tori	28° 09	69° 05	Bates & Harrison, 1997
Sadikabad	28° 18	70° 02	Bates & Harrison, 1997

***Taphozous perforatus* E. Geoffroy, 1818**

Common names: Egyptian Tomb Bat

Family: Emballonuridae

Habit: Colonial.

Niche: Caves, old ruins, buildings, wells, tunnels. 200m.

Distribution

Global: India, Pakistan

South Asia:

India: Gujarat, Madhya Pradesh, Rajasthan

Pakistan: Sindh

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations

Habitat status: change in quality of habitat.

Threats

Threats to the taxon.

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas**Recommendations**

Research:

Management:

Comments

Sources

Compilers

Reviewers

Recent Field Studies

Distribution in from literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Sindh			
Jatti	24° 22	68° 17	Bates & Harrison, 1997

***Triaenops persicus* Dobson, 1871**

Common names: Persian Trident Bat

Family: Hipposideridae

Habit: Insectivorous

Niche: Loose bark of Date Palm and space between palm trees, underground channels, crevices and cliffs.

Distribution

Global: Africa, Iran, Pakistan, South Arabia

South Asia:

Pakistan: Sindh

Extent of Occurrence:

Area of Occupancy:

Locations/subpopulations:

Habitat status:

Data source:

Threats

Threats to the taxon:

Population

Generation time:

Mature individuals:

Population trend:

Data source:

Red List 2001 Status derived in the workshop

Uncertainty

Other status

Microchiroptera Action Plan (Global): Lower Risk least concern

CITES: Not listed

Known presence in Protected Areas

Recommendations

Research:

Management:

Comments
Sources
Compilers

Reviewers
Recent Field Studies
Distribution in South Asia from literature

Distribution in South Asia	Lat.	Long.	Notes/Sources
PAKISTAN			
Sindh			
Gharo	24° 44	67° 36	Bates & Harrison, 1997

Species name *Macaca mulatta mulatta* (Zimmermann, 1780)
Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia**

Common name	Bandur (Urdu), Baojha (Hindko), Shado (Pashto)
Scientific name :	<i>Macaca mulatta mulatta</i> (Zimmermann, 1780)
Family	Cercopithecidae
Habitat :	Moist temperate forest, subtropical scrub forest (near to human population)
Habit/ Niche	Omnivorous, Social, Diurnal
Elevation :	500-4,000 m
Distribution:	
Location	No. of individuals
1 Ayubia N P	1)40-45 2) 30-35
2 Khanpur town	10
3 Pirsohawa road	5
4 Dewan nullah	5
5 Kundla shahi	30-40
6 Machiara NP	Approx 500
7 Kohistan	50-80
8 Margallah hills	Approx 8
Presence in protected areas	Ayubia national park (NWFP), Margalla hill national park, Machiara national park
Extent of occurrence :	40,000 sq km
Area of occupancy :	> 2,000 sq km
No. Subpopulations :	Many
No. of locations :	Many
Habitat status :	< 10 % decrease in area in last 10 years and < 10% is predicted in the next 10 year due to habitat degradation
Threats :	1.4.3: tourism, 1.4.4 transport land, 3.11: subsistence use of food, 3.1.2: sub-national and national trade for food, 4.1.2.1: trapping/ snaring /netting 10.1: recreation/tourism
Population number :	4,000-5000
Mature individuals :	<2500
Population status :	Increasing
Global distribution	South India, Orissa, Bengal, Assam, India and Pakistan.
Recent field status	Dr. Mumtaz Malik. 2002. Mammals of Ayubia National Park Iftikhar Ahmad Dr Maqsood Anwar. Field survey of Machiara National Park
IUCN Status :	Least Concern globally (2003 South Asian Primate CAMP Report; 2004 Red List of Threatened Species)
National Status :	Near Threatened in Pakistan
Comments :	Kafir Valley of Chitral, Dir Kohistan, Hazara Distt, Kagan Valley, Paras, Shogran, Neelam Valley, Murree Hills (Z.Ali)
Contributors:	
Participants:	Mohsin Farooq & M.Ayaz, Rizwan Irshad, Kashif M. Sheikh, Dr. Maqsood Anwar

Species name *Semnopithecus entellus* (Dufresne, 1797)
Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
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Common name	Gray Langur (English), Langur (Urdu)
Scientific name :	<i>Semnopithecus entellus</i> (Dufresne, 1797)
Family	Cercopithecidae
Habitat :	1.4: temperate forest, 3.4: temperate shrub land. Moist temperate, mixed coniferous forests.
Habit/ Niche	Gregarious, Arboreal, Diurnal
Elevation :	7,000-11,000 meters
Distribution:	

Location	No. of individuals
1 Shogran	>50
2 Siri	>70
3 Malkandi	
4 Malkandi Bunja	
5 Dirkot	~ 40
Extent of occurrence :	3,000-3,500km ²
Area of occupancy :	11-500km ²
No. subpopulations :	~ 4
No. of locations :	4
Habitat status :	Decrease in area <10%. Prediction <10% in the habitat is due to deforestation, pollution and tourism.
Threats :	Cutting of the fruit trees, destruction and fragmentation of habitats, deforestation. Trade for medicine.
Population number :	150-200
Mature individuals :	<250
Population status :	Declining by <10% in last 5 years. future decline in the population by<10% in the next 5 years is predicted.
Global distribution	India and Pakistan.
Recent field status	
IUCN Status :	Near Threatened globally (2003 South Asian Primate CAMP Report; 2004 Red List of Threatened Species)
National Status :	Near Threatened in Pakistan
Comments :	Kaghan valley harbors the largest population of Grey langur and can be divided into four separate populations or localities i.e Shogran, Malakindi, Sharan and Kohistan. Azad Kashmir, Pallas Valley, Indus Kohistan. (Z.Ali)
Contributors:	
Participants:	Rizwan Irshad, Saeed-uz-Zaman, Ayaz Khan.

Species name *Manis crassicaudata* Gray, 1827

Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia**

Common name	Scaly anteater, Pangolin (English)
Scientific name :	<i>Manis crassicaudata</i> Gray, 1827
Habitat :	6:rocky areas, 7.2: other non-aquatic subterranean habitats, 11.1: arable land (artificial - terrestrial)
Elevation :	0 – 1000 m
Distribution:	
Location	No. of individuals
1 Khatta Quaidabad	
2 Kalabagh	
3 Margalla Hills	
4 Turnol Ratwal	
5 Lasbela, Makran	
6 Sialkot	
7 Jhelum	
8 Gujrat	
9 Kohat	
10 Attock	
11 Salt Range	
12 Dadu	
13 Larkana	
14 Kirthar Range	
15 Hyderababd	
Extent of occurrence :	>20,000km ²
Area of occupancy :	11 – 500 km ²
No. subpopulations :	18
No. of locations :	18
Habitat status :	Decrease of >10% in the last 10 years; predicted decline of >10% for next 10 years; decrease in quality due to decline in insect population and urbanization in habitat.
Threats :	P, Pr, F: 1.1:agriculture, 1.3:extraction, 1.4.1: industry infrastructure, , 1.4.2:human settlement infrastructure development, 1.4.4:transport – land/air, 3.2.1:subsistence

	use/local trade medicine, 4.2.2:vehicle collision, 5.1:pest control, 8.5:pathogens/pesticides
Population number :	Don't know
Mature individuals :	<2500
Population status :	Decline in population of <10% in the last 10 years; predicted decline of >10% in the next 10 years
Global distribution	India, Pakistan, Srilanka, Bangladesh, Russia.
Recent field status	Zulfiqar ali 1991-2003. Various survey for wildlife population monitoring, but not special for this species. Khalid Baig, Khalid Rafique, Anwar Mann. Informal studies in Punjab
IUCN Status (Globally):	Vulnerable A4c
National Status	Endangered ↓ Vulnerable B2ab(ii,iii)
Comments :	
Contributors:	Zulfiqar Ali, Dr. Khalid Baig
Participants:	Zulfiqar Ali, Muhammad Arshad, Dr Khalid Baig, Syed Zafar-ul-Hassan, M Anwar Maan, Dr Irshad Arhad, Dr M Naeem Khan, Dr Aleem A Khan, Hamid Iqbal, Khalid Rafiq

Species name: *Acinonyx jubatus* (Schreber, 1775)

Group name / # _____

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Common name	Cheetah
Scientific name :	<i>Acinonyx jubatus</i> (Schreber, 1775)
Family	Felidae
Habitat :	-
Habit/ Niche	-
Elevation :	-
Distribution:	-
Location	No. of individuals
1 Mashkeel	1
2	
3	
4	
5	
Extent of occurrence :	-
Area of occupancy :	-
No. subpopulations :	-
No. of locations :	-
Habitat status :	-
Threats :	-
Population number :	-
Mature individuals :	-
Population status :	-
Global distribution	-
Recent field status	
IUCN Status :	
National Status :	Extinct
Comments :	Extinct Since 1912 (Zulfiqar Ali)
Contributors:	Ahmad Khan.
Participants:	

Species name *Canis aureus* (Linnaeus, 1758)

Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
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Common name	Asiatic Jackal, Golden Jackal (English), Gidar (Urdu), Tolag (Baluchi)
Scientific name :	<i>Canis aureus</i> (Linnaeus, 1758)
Family	Canidae
Habitat :	All types of habitat
Habit/ Niche	Carnivore, Nocturnal

Elevation :	0-7000m
Distribution:	Widely distributed through out the country
Location	No. of individuals
1	
2	
3	
4	
5	
Extent of occurrence :	>20,000km ²
Area of occupancy :	
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Stable
Threats :	P: 3.5.1: hunting and gathering for subsistence use/ local trade, 3.5.2: sub national/ national trade, 4.2.2: accidental mortality due to vehicle collision, 6.2.1: land pollution due to agriculture (indirect) Pr: 3.5.1: hunting and gathering for subsistence use/ local trade, 3.5.2: sub national/ national trade, 4.2.2: accidental mortality due to vehicle collision, 6.2.1: land pollution due to agriculture (indirect) F: 3.5.1: hunting and gathering for subsistence use/ local trade, 3.5.2: sub national/ national trade, 4.2.2: accidental mortality due to vehicle collision, 6.2.1: land pollution due to agriculture (indirect) Commercial trade for fur, tail through out the range of occurrence
Population number :	20,000-25,000
Mature individuals :	<10,000
Population status :	Stable
Global distribution	South east Europe, south west Asia.
Recent field status	Rizwan Irshad 2003. Ecology of Canids in the salt range A. Munaf 2003. EIA of survey of Mubark Block district Ghotki. A. Munaf 2003. EIA of Chung concession area Sindh/ Balochistan
IUCN Status :	
National Status :	Near Threatened
Comments :	Canis aureus is widely distributed in Pakistan (Nuzhat Sial)
Contributors:	Salman Ashraf.
Participants:	Saeed-uz-Zaman, Rizwan Irshad, Qadeer Mehal.

Species name *Canis lupus pallipes* (Sykes, 1831)

Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
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Common name	Indian Wolf (English), Bagyar (Punjabi), Baghar (Sindhi), Sharmak (Pashto)
Family	Canidae
Scientific name :	<i>Canis lupus pallipes</i> (Sykes, 1831)
Habitat :	3.5: subtropical shrubland/ tropical dry shrubland, 8.1: hot desert, open areas, tropical thorn forests.
Habit/ Niche	Carnivore, Wandering animal, Varied and wide, Broad valleys, Desert areas
Elevation :	0-10,000 ft
Distribution:	
Location	No. of individuals
1 Drat	2
2 Hazar Ganji Chiltan National Park	3
3 Cholistan	1
4 Tora Wala Toba, Janu wali Jesa and Malkana	3
5 Sinaywari	1
6 Bahloor	
Presence in protected areas	Kirthar National Park, Chsumbi Surla Wildlife Sanctuary, Hazar Ghanji National Park, Hingol National Park, Dureji Game Reserve, Lal Sohanra National Park
Extent of occurrence :	>20,000 km ²
Area of occupancy :	>2,000 km ²
No. subpopulations :	4

No. of locations :	Many
Habitat status :	Decrease in area >30% in the last 30 years. Decline in habitat is going to be <10% in the next 10 years due to land use pattern, development activities, grazing pressure. Decrease in the quality of the habitat due to forest clearing, habitat loss, and human settlements.
Threats :	P: Hunting, cubs capturing, conflict with man because of depredation on livestock. Pr: Hunting, cubs capturing, conflict with man because of depredation on livestock. F: Hunting, cubs capturing, conflict with man because of depredation on livestock.
Population number :	300 approx.
Mature individuals :	< 250
Population status :	Declining <10% in last 20 years. Predicted to decline >10%.
Global distribution	Indian, Pakistan, Iran, China, Afghanistan, North America, Europe,
Recent field status	Rizwan Irshad 2003. Ecology of Canids in the salt range A. Munaf 2003. EIA of survey of Mubark Block district Ghotki. A. Munaf 2003. EIA of Chung concession area Sindh/ Balochistan
IUCN Status :	
National Status :	Endangered C2a(i); D
Comments :	<i>Canis lupus</i> is widely distributed in Pakistan, though it's estimated number in different localities is small. People generally have negative attitude towards this animal. Reason perhaps being the conflict with the local people due to its habit of occasional depredation on livestock. Such feelings are also reported in western societies. Instances of livestock depredation are not evaluated specially in areas where livestock grazing is common. In this situation a study that aims at evaluating the public attitudes and also that develops some public knowledge about the ecological role-played by this animal is proposed. Though the animal is rare but widely distributed it is perhaps the potential of species that it covers the large area for it's living. In the presence of this fact, caution must be taken to consider it as critically endangered. Rather, in my opinion it must be categorized as endangered. (Rizwan Irshad)
Contributors:	
Participants:	Abdul Munaf, Tahir Rasheed, Rana Shahbaz Khan, Sadiq Ibrahim Khan, A Qadeer Mehal, Nuzhat Sial, Ahmad Khan, Iqbal, Salman.

Species name *Cuon alpinus* (Pallas, 1811)
Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
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Common name	Indian Wild Dog or Red Dog
Scientific name :	<i>Cuon alpinus</i> (Pallas, 1811)
Family	Canidae
Habitat :	Temperate sub-alpine and alpine areas.
Habit/ Niche	Not Known
Elevation :	
Distribution:	
Location	No. of individuals
1	
2	
3	
4	
5	
Extent of occurrence :	
Area of occupancy :	
No. subpopulations :	
No. of locations :	
Habitat status :	
Threats :	
Population number :	
Mature individuals :	
Population status :	
Global distribution	Indian, China, Uzbekistan, Turkmenistan
Recent field status	
IUCN Status :	

National Status :	Data Deficient
Comments :	
Contributors:	
Participants:	Rizwan Irshad, Ahmad Khan, Mohammad Iqbal, Abdul Munaf Qaim Khani., Tahir Rashid, Qadeer Mehal, Saeed-uz-Aman, Salman Ashraf, Nuzhat Sial.

Species name *Caracal caracal* (Schreber, 1776)

Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
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Common name	Caracal or Red Lynx
Scientific name :	<i>Caracal caracal</i> (Schreber, 1776)
Family	Felidae
Habitat :	8.1: hot desert, 3.5: subtropical shrubland/ tropical dry shrubland, deserts, and tropical thorn forests. Arid sub tropical thorn forest(low hilly, sand dune desert, scrubby and gravelly plains, Runn of Kutch salted plain, coastal plains and savanna plains.
Habit/ Niche	Carnivore, nocturnal, solitary, hunts fawns, rodents, lizards in large sandy desert areas and arid foothill tracks
Elevation :	0-900m (in Kirthar), 0-7000ft in Waziristan.
Distribution:	
Location	No. of individuals
1 Baha-ud-din Zakaria University (new campus)	
2 Karon Jhar	
3 Sumbal Pani	
4 Salam Sar	10-15
5 Near Killran Wala Darbar	
7 Makran coastal belt	
Presence in protected areas	Kithar National Park (Sindh), Lal Suhanra National Park (Punjab), Runn of Kutch wild life sanctuary.
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2,000km ²
No. subpopulations :	3 Many (Maqsood Anwar)
No. of locations :	Many
Habitat status :	Stable but fragmented. Human population rise and developing activities are predicted to decrease the quality of the habitat.
Threats :	P: 1.1.1.1: shifting agriculture, 1.1.4.1: nomadic livestock, 7.1: drought, 10.1: recreation/ tourism, 10.4: transport, hunting for recreation/ fun, loss of habitat, habitat fragmentation, over exploitation, climate(global warming), human intrudance in the habitat., Pr: shifting agriculture, 1.1.4.1: nomadic livestock, 7.1: drought, 10.1: recreation/ tourism, 10.4: transport. F: shifting agriculture, 1.1.4.1: nomadic livestock, 7.1: drought, 10.1: recreation/ tourism, 10.4: transport, hunting for recreation/ fun, loss of habitat, habitat fragmentation, over exploitation, climate (global warming), human intrudance in the habitat, Local trade for fur and skin.
Population number :	100-150(estimated)
Mature individuals :	<50
Population status :	Declining <10% in the last 10 years. Future decline is predicted due to habitat loss.
Global distribution	North Africa, Afghanistan, India, Pakistan, Iran, Russia, Arabia
Recent field status	University of Melbourne. 2000. Baseline study of Kirthar National Park Halcrow, 2002. Baseline study of Nara Game Reserve
IUCN Status :	
National Status :	Critically Endangered C2a(i); D
Comments :	Rafeeq Ahmad Rajput observed decrease in >50% area as well as population in the last 30 years due to the urbanization, extension in agriculture and live stocking, road construction in Kirthar National Park and Runn of Kutch wild life sanctuary, Sindh. He also reported that the cubs are captured for zoo, mini zoos and circus and are kept as pet animals. In the past they have also been trained for Antelope and hare hunting.
Contributors:	Salman Ashraf.
Participants:	Abdul Munaf, Tahir Rasheed Rana, Shahbaz Khan, Sadiq I Khan, A Qadeer Mehal, Nuzhat Sial, Ahmad Khan, Iqbal, Salman.
Source :	Rafeeq Ahmad Rajput, B.I.S 2003.

Species name *Felis chaus* Schreber, 1777
 Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
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Common name	Jungle Cat
Scientific name :	<i>Felis chaus</i> Schreber, 1777
Family	Felidae
Habitat :	1.4: temperate forest, 1.6: sub tropical/ tropical moist low land forest, 3.4: temperate shrub land, 3.5: subtropical/ tropical shrubland, 6: rocky areas, 8.1: hot desert, 8.2: temperate desert, wild open valleys, deserts.
Habit/ Niche	Nocturnal, solitary in forest areas
Elevation :	0-6000 ft.
Distribution:	
Location	No. of individuals
1 Kall	
2 Bhal	
3 Palugram	
4 Daphar plantation	
5 Jals Park	
6 Jals	
7 Dhaphar	
8 Qaderabad	
9 Chunian	
10 Pirawol plantation	
Presence in protected areas	Kithar National Park (Sindh), Lal Suhanra National Park (Punjab), Changa Manga Wildlife Sanctuary, Margalla National Park
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2,000km ²
No. subpopulations :	
No. of locations :	Many
Habitat status :	Decrease in area <10%.in the last 10 Years. A prediction in the decline in the habitat <10% during 10 years due to the change of land use.
Threats :	P: habitat destruction Pr: habitat destruction F: habitat destruction
Population number :	5000-6000
Mature individuals :	Not known
Global distribution	Afghanistan, Russia, Nepal, Malaysia, Korea
Recent field status	
Population status :	Declining <10%. Future decline is predicted by <10% in 10 Years.
Global distribution	Africa, Central Asia
Recent field status	Not Known
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Rizwan Irshad, Rana Shahbaz, Tahir Rasheed, Ayaz Khan.
Participants:	Rizwan Irshad, Rana Shahbaz, Tahir Rasheed, Ayaz Khan.

Species name *Felis margarita* Loche, 1858
 Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
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 IUCN Pakistan & ZOO/CBSG, South Asia**

Common name	Sand Cat or Dune Cat
Scientific name :	<i>Felis margarita</i> Loche, 1858
Family	Felidae
Habitat :	8.1: hot desert. Arid hot desert.
Habit/ Niche	Desert Carnivore, Nocturnal, Adapted for hunting by stealth

Elevation :	900m
Distribution:	
Location	No. of individuals
1 Nushki	<300
2	
Presence in protected areas	Zangi Naver Ramser Site.
Extent of occurrence :	101-5000km ²
Area of occupancy :	11-500km ²
No. subpopulations :	1
No. of locations :	1
Habitat status :	No significant change but the future decline in habitat is predicted due to bird trappers and Arab dignitaries.
Threats :	P: - Pr: persecution by Hubara hunters, fast mobilization F: persecution by Hubara hunters, fast mobilization Local and domestic trade for fur and for Hubara protection.
Population number :	200-300
Mature individuals :	<250
Population status :	Declining by <10%. Future decline is predicted >10% due to threats from hunters.
Global distribution	Russia, Arabia, Pakistan, Sahara (Africa), Iran
Recent field status	T.J, Roberts. 1997 Mammals of Pakistan
IUCN Status :	
National Status :	Critical Endangered C2a(i)
Comments :	
Contributors:	
Participants:	Rizwan Irshad, Ahmad Khan, Mohammad Iqbal, Abdul Munaf Qaim Khani, Tahir Rashid, Qadeer Mehal, Saeed-uz-Zaman, Salman Ashraf, Nuzhat Sial, Ayaz Khan.

Species name *Felis silvestris* Schreber, 1775
Group name / # _____

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Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
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Common name	Asiatic Steppe Wild Cat or Indian Desert Wild Cat
Scientific name :	<i>Felis silvestris</i> Schreber, 1775
Family	Felidae
Habitat :	1.7: subtropical/ tropical mangrove forest, 1.5: subtropical/ tropical dry shrubland, 3.6: subtropical/ tropical moist shrubland. Tropical thorn forest, tropical dry deciduous forest and riverine forests.
Habit/ Niche	Nocturnal, Bold, Alluvial Plains
Elevation :	0-300m
Distribution:	
Location	No. of individuals
1	
2	
Extent of occurrence :	5001-20,000km ²
Area of occupancy :	501-2000km ²
No. subpopulations :	2
No. of locations :	Unknown
Habitat status :	Change in habitat unknown. Primary cause of change is land use and settlements.
Threats :	Unknown
Population number :	Unknown
Mature individuals :	Unknown
Population status :	Unknown
Global distribution	Afghanistan, Russia, Africa, Arabia, Iraq, Lebanon
Recent field status	
IUCN Status :	
National Status :	Data Deficient
Comments :	Tharparker, Thatta, Dadu, Larkana, Cholistan, Fortabbas, D I Khan, Thal, Salt Range, Waziristan, Kalat, Balloki(Ravi), Jehlum (Z.Ali)
Contributors:	
Participants:	Rizwan Irshad, Qadeer Mehal, Saeed-uz-Zaman, Abdul Munaf, Ahmad Khan, Tahir Rasheed, Nuzhat Sial.

Species name *Lynx lynx isabellina* Blyth, 1847

Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
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Common name	Himalayan Lynx
Scientific name :	<i>Lynx lynx isabellina</i> Blyth, 1847
Family	Felidae
Habitat :	Temperate, Sub alpine above the tree line, low rain fall.
Habit/ Niche	Carnivorous, nocturnal, solitary
Elevation :	8000-14000ft.
Distribution:	
Location	No. of individuals
1 Ghanchi	
2 Rondu (Gilgit)	
3 Tirich	
4 Arkari (Chitral)	
5 Upper valleys of Kashmir	
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2,000km ²
No. subpopulations :	3
No. of locations :	Many
Habitat status :	Not a significant decrease but the stable habitat. Future decline in habitat unknown.
Threats :	
Population number :	80-120 (estimated)
Mature individuals :	Data deficient
Population status :	Unknown
Global distribution	Pakistan, China, Magnolia
Recent field status	Not Known
IUCN Status :	
National Status :	Least Concern
Comments :	Murree Hills, Neelam valley, Kaghan, Margall Hills, Swat, Dir, Chitral, Gilgit. (Z.Ali)
Contributors:	Salman Ashraf
Participants:	

Species name *Herpestes edwardsii* (E. Geoffroy Saint-Hilaire, 1818)

Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
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Common name	Indian Gray Mongoose
Scientific name :	<i>Herpestes edwardsii</i> (E. Geoffroy Saint-Hilaire, 1818)
Family	Herpestidae
Habitat :	1.5: subtropical/ tropical forests, 1.7: subtropical/ tropical mangrove forests, 3.6: subtropical/ tropical shrubland, 3.5: subtropical/ tropical dry shrubland.
Habit/ Niche	Shy, Gregarious, Diurnal, Nocturnal.
Elevation :	500-4,000ft.
Distribution:	
Location	No. of individuals
1 Salt range	8-10
2 Nara Game Reserve	
3 Baghdad Campus	1-2
4 Islamabad	3-5
Presence in protected areas	All protected areas in its range.
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2000km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	No change

Threats :	P: 3.5.1: hunting and gathering for subsistence use/ local trade, 4.2.2: accidental mortality due to vehicle collision, 5.1: pest control (persecution). Pr: 3.5.1: hunting and gathering for subsistence use/ local trade, 4.2.2: accidental mortality due to vehicle collision, 5.1: pest control (persecution). F: 3.5.1: hunting and gathering for subsistence use/ local trade, 4.2.2: accidental mortality due to vehicle collision, 5.1: pest control (persecution).
Population number :	20,000-25,000
Mature individuals :	>10,000
Population status :	Stable
Global distribution	India, Srilanka, Nepal, Paksitan
Recent field status	Not Known
IUCN Status :	
National Status :	Least Concern
Comments :	Personal Sighting at Cjashma, Salt Range, Central Indus Wetland Complex. (Z.Ali)
Contributors:	
Participants:	Rizwan Irshad, Ahmad Khan, Abdul Munaf Qaim Khani., Tahir Rashid, Saeed-uz-Zaman, Salman Ashraf, Nuzhat Sial.

Species name *Herpestes javanicus* (E. Geoffroy Saint-Hilaire, 1818)

Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia**

Common name	Small ibdian or Asian Mongoose
Scientific name :	<i>Herpestes javanicus</i> (E. Geoffroy Saint-Hilaire, 1818)
Family	Herpestidae
Habitat :	1.5: subtropical dry/ tropical dry forest, 3.5: subtropical/ tropical dry shrub lands, 8.1: hot deserts, 11: artificial- terrestrial, 12: artificial – aquatic habitat, uses a wide variety of habitats.
Habit/ Niche	Carnivorous, social, diurnal, moderately shy, borrower, prefer dense vegetation in agricultural fields, banks of streams in areas along settlements.
Elevation :	0-3000ft
Distribution:	
Location	No. of individuals
1 Mulatan	
2 Khushab	
3 Jehlum	
4	
5	
Presence in protected areas	Margalla National Park, Manglot National Park
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2,000km ²
No. subpopulations :	
No. of locations :	Many
Habitat status :	Decrease in habitat <10% in the last 20 years and predicted decline in future <10% due to change in land use pattern and cropping pattern.
Threats :	P: 4.2.2 Vehicle collision 5.1 Pest Control 3.5.1 Subsistence use Local Trade 6.2.1 Agriculture Pr: As above F: As above
Population number :	25,000-30,000
Mature individuals :	>10,000
Population status :	
Global distribution	Afghanistan, Iran, Nepal, Malaysia, Bhutan, Iraq
Recent field status	Zulfiqar Ali 2001. Various field studies and field studies in Punjab
IUCN Status :	
National Status :	Least Concern
Comments :	Tharparker, Thatta, Dadu, Bahawalnagar, Khanewal, Lahore, Kasur, Sialkot, Jhelum, Gujranwala, Salt Range, Turbat, Mekran (Z.Ali)
Contributors:	
Participants:	Ahmad Khan, Tahir Rashid, Qadeer Mehal, Saeed-uz-Zaman.

Species name *Hyaena hyaena* (Linnaeus, 1758)
 Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia

Common name	Stripped Hyaena
Scientific name :	<i>Hyaena hyaena</i> (Linnaeus, 1758)
Family	Hyaenidae
Habitat :	3.5: subtropical shrub land/ tropical dry shrub land, 8.1: hot desert, gorges with shrubs, sub mountainous, dry subtropical semi evergreen scrub forest in Punjab, desert in Thar, broken ravines in Kirthar range. Arid subtropical thorn forests, low hilly areas of Baluchistan, Sindh, Punjab and N.W.F.P, Karunjhar hills.
Habit/ Niche	Carnivorous, found in groups, nocturnal
Elevation :	0-5,000 ft, it is reported at 11,000 ft as well
Distribution:	
Location	No. of individuals
1 Dhok tali area	
2 Khushkak and koh- I-Haider	
3 Kirthar range	30
4 Rahim ki Bazar	
5 Frash	
6 Ustarzai	
7 Chitral Town	
8 Karunjhar hills in Run of Kutch	
Presence in protected areas	Kithar National Park (Sindh), Hingol National Park (Balochistan), Cholistan Wildlife Sanctuary, Changa Manga Wildlife Sanctuary, Margalla National Park, Kalla chitta
Extent of occurrence :	>20,000 km ²
Area of occupancy :	>2,000 km ²
No. subpopulations :	1
No. of locations :	Many
Habitat status :	Decrease in area >10 in the last 30 years and decline in habitat is <10% over 10 years is predicted due to land use practice. Decrease in quality of the habitat due to the loss of prey, urbanization, extension in agricultural land, road construction and other activities like tourism and degradation of habitat.
Threats :	P: 1.1.1.1: shifting agriculture, 1.3.1: non-timber plantation, 1.4.1: industry, 1.4.2: human settlement, change in the land use practice, human population pressure, developmental activities, hunting for medicine/ for fun, loss of habitat, habitat fragmentation, poisoning, stoning, trade for market or medicine, climate global warming, inter specific competition, drought. Pr: 1.1.1.1: shifting agriculture, 1.3.1: non-timber plantation, 1.4.1: industry, 1.4.2: human settlement, change in the land use practice, human population pressure, developmental activities. F: 1.1.1.1: shifting agriculture, 1.3.1: non-timber plantation, 1.4.1: industry, 1.4.2: human settlement, change in the land use practice, human population pressure, developmental activities, hunting for medicine/ for fun, loss of habitat, habitat fragmentation, poisoning, stoning, trade for market or medicine, climate global warming, inter specific competition, drought. Local trade for fur, hair, fat, teeth tongue.
Population number :	<500(estimated)
Mature individuals :	<250
Population status :	Declined <10% in the last 10 years and is predicted to decline <10% in next years.
Global distribution	Pakistan, India, south western Asia, Northern Africa
Recent field status	Tasmania University 2001. Study of stripped Hyaena in Kirthar National Park.
IUCN Status :	
National Status :	Critically Endangered C2a(i)
Comments :	Mr. Munaf has seen an individual in Runn of Kutch in January 1998 where the vegetation type is <i>Prosopis juliflora</i> . Mr. Rafeeq Ahmad Rajput has observed a decline in habitat >50% in the last 30 years in the Kirthar range and Karunjhar hills of Sindh.
Contributors:	Salman Ashraf.
Participants:	Tahir Rasheed, Rana Shahbaz, Rizwan Irhsad, Qadeer Mehal, Iqmail Shah, Iqbal Mohammad, Abdul Munaf, Nuzhat Sial, Salman Ashraf,
Source :	Rafeeq Ahmad Rajput, B.I.S 2003

Species name *Lutra lutra* (Linnaeus, 1758)
 Group name / # _____

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Common name	Common otter
Scientific name :	<i>Lutra lutra</i> (Linnaeus, 1758)
Family	Mustelidae
Habitat :	5.1: permanent rivers/ streams/ creeks (includes water falls)
Habit/ Niche	Sociable and gregarious
Elevation :	700-2000 m.
Distribution:	
Location	No. of individuals
1 Kohistan	
2	
3	
4	
5	
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2,000km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Decrease in area primarily due to the diversion of water for irrigation.
Threats :	P: 3.4.2: hunting and gathering for sub national/national trade, 6.3.1: water pollution from agriculture, 6.3.2: water pollution from domestic uses, 6.3.3: water pollution from commercial/ industrial uses. Pr: 3.4.2: hunting and gathering for sub national/national trade, 6.3.1: water pollution from agriculture, 6.3.2: water pollution from domestic uses, 6.3.3: water pollution from commercial/ industrial uses. F: 3.4.2: hunting and gathering for sub national/national trade, 6.3.1: water pollution from agriculture, 6.3.2: water pollution from domestic uses, 6.3.3: water pollution from commercial/ industrial uses. Local trade in Swat for hide and ornamental purposes.
Population number :	-
Mature individuals :	-
Population status :	-
Recent field status	
IUCN Status :	
IUCN Status :	
National Status :	Near Threatened
Comments :	Kagan, Swat, Lower Chitral River Valley, Gilgit, Baltistan, Ghizer River, Azad Kashmir, Hazara Distt.(Z.Ali)
Contributors:	Salman Ashraf
Participants:	Carnivore Group

Species name *Lutrogale perspicillata* (I. Geoffroy Saint-Hilaire, 1826)
 Group name / # _____

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Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
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Common name	Smooth Coated Otter (English)
Scientific name :	<i>Lutrogale perspicillata</i> (I. Geoffroy Saint-Hilaire, 1826)
Family	Mustelidae
Habitat :	5.1: permanent rivers/streams/creeks (includes water falls). Banks of rivers.
Habit/ Niche	Carnivorous, eating fish, frogs, insects etc, diurnal, gregarious.
Elevation :	0-700m
Distribution:	
Location	No. of individuals

1Nara cannal	4-5 (seen)
2	
3	
4	
5	
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2,000km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Change in habitat. Decline in habitat is predicted because of the diversion of water for irrigation.
Threats :	P: 3.4.2: hunting and gathering for sub national / national trade, 6.3.1: habitat affected due to water pollution from agriculture, 6.3.2: pollution from domestic uses, 6.3.9: solid wastes, 7.1: drought. Pr: 3.4.2: hunting and gathering for sub national / national trade, 6.3.1: habitat affected due to water pollution from agriculture, 6.3.2: pollution from domestic uses, 6.3.9: solid wastes, 7.1: drought. F: 3.4.2: hunting and gathering for sub national / national trade, 6.3.1: habitat affected due to water pollution from agriculture, 6.3.2: pollution from domestic uses, 6.3.9: solid wastes, 7.1: drought. Local trade in Sindh due to the animal's hide and for medicinal purposes.
Population number :	No data
Mature individuals :	-
Population status :	Declining .
Global distribution	Arabian Peninsula , India, Malaysia, Iran
Recent field status	
IUCN Status :	
National Status :	Near Threatened
Comments :	Sukkur, East Nara Canal, Chenab River(Marala), Ravi (Sidhnai), Lal Suhanara. (Z.Ali)
Contributors:	Salman Ashraf.
Participants:	Carnivore Group

Species name *Martes flavigula* (Boddaert, 1785)

Group name / # _____

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Common name	White Cheeked Marten, Yellow throated Marten
Scientific name :	<i>Martes flavigula</i> (Boddaert, 1785)
Family	Mustelidae
Habitat :	1.4: temperate forest, 3.5: sub tropical/ tropical dry shrub land, 1.5: subtropical/ tropical dry forest, 1.6: subtropical/ tropical mangrove forest, 6: rocky areas. Subtropical scrub forest, moist and dry temperate forests.
Habit/ Niche	Diurnal, social, hide in caves, broken hilly terrain and hollow tree trunks
Elevation :	500-3000m
Distribution:	
Location	No. of individuals
1 Ali Malik Pass	
2 Choi Bangla	
3 Miran	
4 Minkial (Serai)	
5 Dungagali pipeline	
6 Sohawa	
7 Khanpur hills, Astora area.	
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2,000km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Decrease in area >20% in the last 20 years. Decline in habitat >20% is predicted in the next 20 years. Due to the deforestation, agricultural rise, poaching.
Threats :	P: 1.1.1.2: habitat loss due to smallholder farming, 1.1.4.1: nomadic livestock, 1.3.3.2: selective lodging for wood, 3.4.1: hunting/gathering for subsistence use/ local trade, 3.4.2: sub-national/national use.

	Pr: 1.1.1.2: habitat loss due to smallholder farming, 1.1.4.1: nomadic livestock, 1.3.3.2: selective logging for wood, 3.4.1: hunting/gathering for subsistence use/ local trade, 3.4.2: sub-national/national use. F: 1.1.1.2: habitat loss due to smallholder farming, 1.1.4.1: nomadic livestock, 1.3.3.2: selective logging for wood, 3.4.1: hunting/gathering for subsistence use/ local trade, 3.4.2: sub-national/national use. Local and domestic trade for fur and ornamental purposes
Population number :	700-900(estimated)
Mature individuals :	<250
Population status :	Unknown
Global distribution	Afghanistan, Russia, Nepal, Malaysia, Korea
Recent field status	
IUCN Status :	
National Status :	Data Deficient
Comments :	Azad Kashmir, Hazara Distts, Chitral, Dir, Swat Kohistan, Indus Kohistan, Shilas, Giliogit, Murree Hills , Salt Range, Rohtas.(Z.Ali)
Contributors:	Ahmad Khan, Salman Ashraf.
Participants:	

Species name *Martes foina* (Erxleben, 1777)
Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
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Common name	Stone Marten
Scientific name :	<i>Martes foina</i> (Erxleben, 1777)
Family	Mustelidae
Habitat :	1.4: temperate forest, 3.4: temperate shrubland, 6: rocky areas, 7.1: non-aquatic caves, 8.2: temperate desert.
Habit/ Niche	Nocturnal, Solitary
Elevation :	
Distribution:	
Location	No. of individuals
1 Mastunj (Quetta)	
2	
3	
4	
5	
Presence in protected areas	Hazar Ghanji National Park, Ayubia national park
Extent of occurrence :	>20,000km ²
Area of occupancy :	-
No. subpopulations :	-
No. of locations :	-
Habitat status :	Decrease in area <10%. <10% decline in habitat is predicted due to deforestation and over grazing in 10 years.(Maqsood Anwar)
Threats :	Habitat loss
Population number :	>1000
Mature individuals :	
Population status :	Un known. A future decline by <10% is predicted.
Global distribution	Not known
Recent field status	
IUCN Status :	
National Status :	Data Deficient
Comments :	Kalat, Kharan, Chitral, Indus Cholistan, Baltistan, Gilgit (Z.Ali)
Contributors:	
Participants:	Tahir Rasheed, Mohammad Ayaz Khan, Abdul Munaf, Rizwan Irshad, Rana Shahbaz.

Species name *Mellivora capensis* (Schreber, 1776)
 Group name / # _____

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Common name	Ratel or Honey Badger (English), Bijo (Urdu)
Scientific name :	<i>Mellivora capensis</i> (Schreber, 1776)
Family	Mustelidae
Habitat :	4.7: Subtropical/ Tropical high Altitude Grassland, 7.1: Caves,7.2: other subterranean habitat, 8.1: Hot Desert
Elevation :	Sea level to 2000 m
Distribution:	
Location	No. of individuals
1 Kirthar NP	25
2 Aminpur	1
3 Saidu sharif	5
4	
Presence in protected areas	Kithar National Park (Sindh), Lal Suhanra National Park (Punjab), Nara Game Reserve, Pirawall Wildlife Sanctuary, Hingol Natioanl Park, Dureji Game Reserve.
Extent of occurrence :	8,0000 sq km
Area of occupancy :	15,0000 sq km
No. subpopulations :	4
No. of locations :	Many
Habitat status :	Decline in area, due to new settlements, new roads, mining, exploration and agricultural extension etc Difficult to say in %
Threats :	Past 4.1.2.2: Terrestrial shooting Pre1: 3.1: Mining, 1.4.2 human settlements, 4.1.2.2: shooting terrestrial, 4.2.2: vehicle collision, 8.3: prey (changes in native sp dynamics) Fu:1: 3.1: Mining, 1.4.2 human settlements, 4.1.2.2: shooting terrestrial, 4.2.2: vehicle collision, 8.3: prey (changes in native sp dynamics)
Population number :	200
Mature individuals :	80
Population status :	30% Decline in 30 years. 15% decline predicted in next 20 years
Global distribution	India, Nepal, Afghanistan, Turkey, Syria, Egypt, Turkmenistan
Recent field status	Earth and Environment (Canada) 2001. EIA Study for seismic survey (Ratel Taken as one of the Indicator spp)
IUCN Status :	
National Status :	Critically Endangered C2a(i)
Comments :	Mekran, Lasbela, Kohat, Chagai,Sind Kohistan, Thatta, Tharparker, Cholistan.(Z.Ali)
Contributors:	
Participants:	All carnivore group

Species name *Mustela altaica* Pallas, 1811
 Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia

Common name	Alpine weasel or Pale weasel
Scientific name :	<i>Mustela altaica</i> Pallas, 1811
Family	Mustelidae
Habitat :	Temperate region.
Habit/ Niche	Alpine Regions of the High Mountains. Carnivorous, Diurnal, Bold
Elevation :	1,500-5,000m
Distribution:	
Location	No. of individuals
1 Pallas	
2 Gilgit	

3	
4	
5	
Presence in protected areas	Khunjarab National Park
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2000km ²
No. subpopulations :	Unknown
No. of locations :	Unknown
Habitat status :	Unknown
Threats :	P: 1.1.4: habitat lost due to agriculture/livestock. Pr: - Same as Above(Maqsood Anwar) F: - Same as Above
Population number :	Unknown
Mature individuals :	Unknown
Population status :	Unknown
Global distribution	Afghanistan, India, China, Afghanistan, Turkistan
Recent field status	
IUCN Status :	
National Status :	Data Deficient
Comments :	Baltistan, Gilgit, Kagan Valley, Indus Kohistan (Z.Ali)
Contributors:	
Participants:	Rizwan Irshad, Ahmad Khan, Mohammad Iqbal, Abdul Munaf Qaim Khani., Tahir Rashid, Qadeer Mehal, Saeed-uz-Aman, Salman Ashraf, Nuzhat Sial Ayaz Khan.

Species name *Mustela erminea* Linnaeus, 1758

Group name / # _____

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Common name	Stoat or Ermine (English)
Scientific name :	<i>Mustela erminea</i> Linnaeus, 1758
Family	Mustelidae
Habitat :	Alpine meadows, alpine and sub alpine scrub zones.
Habit/ Niche	Carnivorous, living on rodents and birds, solitary, diurnal
Elevation :	3000-4000m
Distribution:	
Location	No. of individuals
1 Mansehra	
2	
3	
4	
Presence in protected areas	
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2000km ²
No. subpopulations :	Unknown
No. of locations :	Many
Habitat status :	Unknown
Threats :	P: 1.1.4.1: habitat loss due to nomadic livestock. Pr: 1.1.4.1: habitat loss due to nomadic livestock. F: 1.1.4.1: habitat loss due to nomadic livestock.
Population number :	Unknown
Mature individuals :	Unknown
Population status :	Unknown
Global distribution	
Recent field status	
IUCN Status :	
National Status :	Data Deficient
Comments :	Azad Kashmir, Chitral Valley, Safed Koh, Kaghan, Yarkhun Valleys (Z.Ali)
Contributors:	Salman Ashraf
Participants:	

Species name *Octolobus manul* (Pallas, 1776)

Group name / # _____

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Common name	Pallas Cat
Scientific name :	<i>Octolobus manul</i> (Pallas, 1776)
Family	Felidae
Habitat :	1.4: temperate forests, 1.5: subtropical/tropical dry forest. Temperate, alpine and sub alpine valleys of the mountainous areas in Pakistan.
Habit/ Niche	Carnivore , nocturnal, solitary in alpine and sub alpine valleys
Elevation :	
Distribution:	
Location	No. of individuals
1	
2	
3	
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2,000km ²
No. subpopulations :	3
No. of locations :	4
Habitat status :	Change in habitat unknown.
Threats :	P: 1.1: habitat loss due to agriculture, 1.1.4: habitat loss due to livestock, 1.4.2: hunting and gathering due to human settlement, 1.4.4: transport-m land/ air. Pr: 1.1: habitat loss due to agriculture, 1.1.4: habitat loss due to livestock, 1.4.2: hunting and gathering due to human settlement, 1.4.4: transport-m land/ air. F: 1.1: habitat loss due to agriculture, 1.1.4: habitat loss due to livestock, 1.4.2: hunting and gathering due to human settlement, 1.4.4: transport-m land/ air.
Population number :	Unknown
Mature individuals :	Unknown
Population status :	Unknown
Global distribution	Afghanistan, Russia, Iraq, Iran
Recent field status	Not Known
IUCN Status :	
National Status :	Near Threatened
Comments :	Ziarat, Wazirisatn, Baltistan, Chitral(Z.Ali)
Contributors:	
Participants:	Rizwan Irshad, Ahmad Khan, Mohammad Iqbal, Abdul Munaf Qaim Khani, Tahir Rashid, Qadeer Mehal, Saeed-uz-Aman, Salman Ashraf, Nuzhat Sial, Ayaz Khan.

Species name *Paguma larvata grayi* Bennett, 1835

Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
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Common name	Kashmir Masked Palm Civet
Scientific name :	<i>Paguma larvata grayi</i> Bennett, 1835
Family	Viverridae
Habitat :	1.4: Temperate forest, Himalayan moist temperate forest
Habit/ Niche	Carnivorous.
Elevation :	3000-800 feet
Distribution:	
Location	No. of individuals
1 Muree Hills	
2	
Presence in protected areas	
Extent of occurrence :	10,000 sq km
Area of occupancy :	Don't know

No. subpopulations :	Don't know
No. of locations :	
Habitat status :	Decrease in area due to deforestation but don't know the %
Threats :	1.3.3.2: selective logging of wood, 1.3.3.3: clear-cutting of wood 1.4.2: human settlement infrastructure development
Population number :	Don't know
Mature individuals :	Don't know
Population status :	Don't know
Global distribution	Himalayas, Assam Hills Myanmar, Malaysia, Indo China
Recent field status	
IUCN Status :	
National Status :	Data Deficient
Comments :	Swat, Neelam Valley, Murree Hills, Nuristan, (Z.Ali)
Contributors:	
Participants:	Rizwan Irshad, Ahmad Khan, Mohammad Iqbal, Abdul Munaf Qaim Khani., Tahir Rashid, Qadeer Mehal, Saeed-uz-Aman, Salman Ashraf, Nuzhat Sial.

Species name *Panthera pardus* Linnaeus, 1758
Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
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Common name	Panther or Leopard
Scientific name :	<i>Panthera pardus</i> Linnaeus, 1758
Family	Felidae
Habitat :	1.4: temperate forest, 1.5: subtropical/ tropical dry forest, 1.6: subtropical/ tropical moist land low land forest, 3.4: temperate shrub land, 3.6: subtropical/ tropical moist shrub land. Moist temperate, dry scrub, evergreen forest, dry sub tropical shrub land with rugged mountainous areas.
Habit/ Niche	Carnivore, Diurnal, solitary
Elevation :	6,00-35,00 m
Distribution:	
Location	No. of individuals
1 Dareen	
2 Toreshore	
3 Zazri	
4 Khalifat range	
5 Penchar	
6 Dhurun	
Presence in protected areas	Margalla hill National Park, Ayubia National Park
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2,000km ²
No. subpopulations :	4
No. of locations :	Many
Habitat status :	Decrease in area <10% in last 20 years. Decline in habitat <10% is predicted in the next 10 years due to change in land use pattern.
Threats :	P: 1.3.1: extraction, 1.4.1: infrastructure development due to industry, 1.4.2: human settlement due to infrastructure development, 1.4.3: tourism/recreation, 1.4.4: transport-land/ air, 3.1.2: hunting and gathering due to sub-national/national trade. Pr:1.3.1: extraction due to mining, 1.4.1: infrastructure development due to industry, 1.4.2: human settlement due to infrastructure development, 1.4.3: tourism/recreation, 1.4.4: transport-land/ air, 3.1.2: hunting and gathering due to sub-national/national trade. F:1.3.1: extraction due to mining, 1.4.1: infrastructure development due to industry, 1.4.2: human settlement due to infrastructure development, 1.4.3: tourism/recreation, 1.4.4: transport-land/ air, 3.1.2: hunting and gathering due to sub-national/national trade.
Population number :	<100(estimated)
Mature individuals :	<50
Population status :	Pr: unknown F: decline <10% is predicted except in Galiat subpopulations.
Global distribution	Afghanistan, Iran, India, Srilanka, Myanmar, Nepal, Malaysia, Korea, Thailand, Indonesia, China
Recent field status	

IUCN Status :	
National Status :	Critically Endangered C2a(i); D
Comments :	There have been incidents of killing this animal by the herders when trapped in livestock corrals. At least two were reported in recent years in Murree Hills(Maqsood Anwar). Waziristan, Sindh, Kohistan, Salt Range, Kala Chitta Hills,Pab Hills,Kirthar Ranges,Mekran, Ziarat, .Kalat,Murree Hills, Margalla Hills,Chitral, Chilas, Gilgit, Swat,Hazara (Z.Ali)
Contributors:	Salman Ashraf.Hamid Ali
Participants:	

Species name *Paradoxurus hermaphroditus* (Pallas, 1777)

Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia**

Common name	Palm Civit (English)
Scientific name :	<i>Paradoxurus hermaphroditus</i> (Pallas, 1777)
Family	Viverridae
Habitat :	Hilly areas and foothills, moist temperate forests.
Habit/ Niche	Carnivorous, Nocturnal, Omnivorous, hilly areas.
Elevation :	1000-1200 m
Distribution:	
Location	No. of individuals
1 Quaid-i-Azam University Islamabad	
2 Neeli (Jehlum)	
3 Margallah Hills	
4 Serub	
5	
Presence in protected areas	Margalla National Park
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2,000km ²
No. subpopulations :	Not known
No. of locations :	Many
Habitat status :	Cannot be stated specifically for this species but the decrease in area is observed. Future prediction cannot be quantified.
Threats :	No specific threats could be assigned due to the lack of data.
Population number :	Cannot be estimated
Mature individuals :	-
Population status :	Cannot be predicted
Global distribution	Burma, India, Nepal, Pakistan
Recent field status	
IUCN Status :	
National Status :	Least Concern
Comments :	Rawalpindi, Lahore. Sargodha, Multan, Sahiwal, Bahawalpur, D.G Khan, Hazara Distts, Margalla Hills.(Z.Ali)
Contributors:	
Participants:	Rizwan Irshad, Ahmad Khan, Mohammad Iqbal, Abdul Munaf Qaim Khani., Tahir Rashid, Qadeer Mehal, Saeed-uz-Aman, Salman Ashraf, Nuzhat Sial.

Species name *Uncia uncia* Schreber, 1775

Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
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IUCN Pakistan & ZOO/CBSG, South Asia**

Common name	Snow Leopard
Scientific name :	<i>Uncia uncia</i> Schreber, 1775
Family	Felidae
Habitat :	4.4: temperate grassland, 7.1: non- aquatic caves, 8.3: cold desert. The species occurs in the high altitude range of the northern mountains where habitat features are dominated by the broken, narrow, rocky terrain and high cliffs and promontories that sparse vegetation.
Habit/ Niche	Nocturnal, solitary except in breeding season, terrestrial

Elevation :	4000-14,000 ft.
Distribution:	
Location	No. of individuals
1 Kohistan, Naran	10-15
2 Mahodand, Gabral Utror	2-3
3 Sakardu	40-50
4 Ghanchi	20-25
5 Gilgit	20-25
6 Ghizar	20-25
Presence in protected areas	Chitral Gol National Park, Karakoram National Park
Extent of occurrence :	> 20,000km ²
Area of occupancy :	>2,000km ²
No. subpopulations :	
No. of locations :	7 (based on provinces and regions)
Habitat status :	Decrease in area <10% in the last 10 years. 10% decline in habitat is predicted in the next 10 years due to changes in the land use pattern which is adversely affecting prey base
Threats :	<p>P: 1.1.4.1: nomadic livestock, 1.3.1: mining, 1.4.2: human settlement due to infra structure development, 1.4.3: tourism/ recreation, 3.1.3: hunting and gathering due to regional/ international trade, 4.1.2.1: accidental mortality due to terrestrial by catch trapping/ snaring/ netting, 10.1: recreation/ tourism. Negative attitude of local community trade as by product of pet, killing.</p> <p>Pr: 1.1.4.1: nomadic livestock, 1.3.1: mining, 1.4.2: human settlement due to infra structure development, 1.4.3: tourism/ recreation, 3.1.2: harvesting and hunting due to sub-national/ national trade, 4.1.2: accidental mortality due to terrestrial by catch, 10.1: recreation/ tourism. Habitat loss, pet killing, decline of prey species, weak enforcement of laws.</p> <p>F: 1.1.4.1: nomadic livestock, 1.3.1: mining, 1.4.2: human settlement due to infra structure development, 1.4.3: tourism/ recreation, 3.1.2: harvesting and hunting due to sub-national/ national trade, 4.1.2: accidental mortality due to terrestrial by catch, 10.1: recreation/ tourism.</p> <p>Domestic trade for fur, novelties and gifts.</p>
Population number :	250-400
Mature individuals :	<50
Population status :	Declining <10% in last ten years future decline is predicted > 10% because of killing, poaching, prey species loss, habitat degradation.
Global distribution	Pakistan, India, Bhutan, Nepal, Russia, Afghanistan, Uzbekistan, China, Tajikistan, Kyrgyzstan, Kazakhstan, Mongolia
Recent field status	<p>Ahmad Khan 1998. Snow Leopard Abundance Survey In Chitral Goal National Park</p> <p>Ahmad Khan 1999. Snow Leopard Abundance Survey In Chitral Goal National Park</p> <p>Ahmad Khan 1999. SLIMS Training Workshop and Snow Leopard occurrence Survey. (Khunjerab National Park)</p> <p>Iftikahr Ahmad 1994. A Snow leopard and prey spp survey in Khunjerab National Park</p> <p>Ahmad Khan 2003. Snow Leopard Survey in Chitral Goal National Park</p> <p>Ahmad Khan 2003. Snow Leopard Survey in Mankial Valley Swat</p>
IUCN Status :	
National Status :	Critically Endangered C2a(i)
Comments :	<p>In some cases in the northern areas the snow leopard enter the live stock corrals, where they are trapped. Although the some have been released, yet others have been reported to be killed.</p> <p>In 1998 two cubs died in the Khunjarab National Park because of the unknown reasons.</p> <p>Herders kill snow leopards (in some cases they get trapped in the livestock corrals and trade in their hides. This is a by-product trade.</p> <p>Hunting of its prey species (Markhor, Ibex and other Ungulates) indirectly affects its population by forcing it to migrate it to other areas and to attack the livestock that results in its retaliating killing.</p> <p>Several human interventions and interference results in the degradation of its habitat. These include the population growth and loss degradation of its habitat due to settlements and agriculture, livestock grazing in high pastures that may result competition with Ungulates for food and cover, increased tourism (inappropriate) recreation activities.</p>
Contributors:	Syed Iqmail Shah, Ahmad Khan, Mohanmmad Iqbal, Nuzhat Sial, Abdul Munaf Qaim Khani., Dr M. Arshad, Tahir Rashid.
Participants:	Syed Iqmail Shah, Ahmad Khan, Mohanmmad Iqbal, Nuzhat Sial, Abdul Munaf Qaim Khani, Dr M. Arshad, Tahir Rashid, Rizwan Irshad.
Reviewers :	Syed Iqmail Shah, (M.A.C.P)

Species name *Prionailurus bengalensis* (Kerr, 1792)
 Group name / # _____

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Common name	Leopard Cat
Scientific name :	<i>Prionailurus bengalensis</i> (Kerr, 1792)
Family	Felidae
Habitat :	Temperate forest
Habit/ Niche	Predator, nocturnal
Elevation :	3000 feet
Distribution:	
Location	No. of individuals
1. Murree Hills	
2. Neelum valley (Azad Kashmir).	
Extent of occurrence :	Unknown
Area of occupancy :	Unknown
No. subpopulations :	Unknown
No. of locations :	Unknown
Habitat status :	Unknown
Threats :	Habitat loss due to shifting agriculture, mining, hunting gathering for subsistence use /local trade, local and domestic trade for fur
Population number :	Unknown
Mature individuals :	Unknown
Population status :	Unknown
Global distribution	India, South Eastern Asia, China, Korea
Recent field status	Not Known
IUCN Status :	
National Status :	Data Deficient
Comments :	
Contributors / Source:	T.J Roberts 1997
Participants:	Rizwan Irshad, Qadeer Mehal, Saeed-uz-Zaman, Abdul Munaf, Ahmad Khan, Tahir Rasheed, Nuzhat Sial.

Species name *Prionailurus viverrinus* (Bennett, 1833)
 Group name / # _____

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Common name	Fishing Cat
Scientific name :	<i>Prionailurus viverrinus</i> (Bennett, 1833)
Family	Felidae
Habitat :	River swamps and tall grasses
Habit/ Niche	Riverine swamps , tall grasses
Elevation :	Up to 1000ft.
Distribution:	
Location	No. of individuals
1 Haligi Lake	
2 Katchery (Hamal Lake)	
3	
4	
5	
Presence in protected areas	
Extent of occurrence :	>20,000km ²
Area of occupancy :	Unknown
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Decrease in area by <10% in the last 10 years. primary cause of change is the loss of

	wet land in the development activities.
Threats :	P: 1.3.2: fisheries (extraction), 1.4.6: dams, 6.3.8: sewage pollution, 7.1: drought, 4.1.1.5: accidental mortality by poisoning. Pr: 1.3.2: fisheries (extraction), 1.4.6: dams, 6.3.8: sewage pollution, 7.1: drought, 4.1.1.5: accidental mortality by poisoning. F: 1.3.2: fisheries (extraction), 1.4.6: dams, 6.3.8: sewage pollution, 7.1: drought, 4.1.1.5: accidental mortality by poisoning. No organized trade.
Population number :	Unknown
Mature individuals :	Unknown
Population status :	Declining. Future decline could not be predicted.
Global distribution	Burma, Malaysia, Nepal, India, Sri Lanka, Indonesia
Recent field status	Not Known
IUCN Status :	
National Status :	Near Threatened
Comments :	North East of Ravi-Sutluji, Haleji, Kalri lakes, Thatta, Lahore.(Z.Ali)
Contributors:	Rizwan Irshad
Participants:	Rizwan Irshad, Ahmad Khan, Mohammad Iqbal, Abdul Munaf Qaim Khani, Tahir Rashid, Qadeer Mehal, Saeed-uz-Zaman, Salman Ashraf, Nuzhat Sial, Ayaz Khan.

Species name *Ursus arctos isabellinus* (Horsfield, 1826)
Group name / # _____

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Common name	Brown Bear (English) Bhora Reech (Urdu)
Scientific name :	<i>Ursus arctos isabellinus</i> (Horsfield, 1826)
Family	Ursidae
Habitat :	4.4: temperate grassland, 7.1: non aquatic caves, alpine meadows, marshy tundras, above tree lines.
Habit/ Niche	Diurnal, Aggressive, Terrestrial, Hibernating over winter months, gregarious
Elevation :	8000-17,000 ft.
Distribution:	
Location	No. of individuals
1 Deosai National Park	26
2 Lalazar, Babusar	40
3 Kabkot	30
4 Deosai, Sadpara	27
5 Khunjarab	8
6 Askoli(K-2)	5
7 Ghamot	
Presence in protected areas	Deosai National Park.
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2,000km ²
No. subpopulations :	Not known
No. of locations :	67
Habitat status :	Decrease in area <10% in the last 10 years. a decline in habitat <10% in the next 10 years is predicted due to overgrazing and land use change.
Threats :	P: 1.1.4.1: nomadic livestock, 1.4.4: infrastructure development as transport in land/air, 3.2.3: hunting/ gathering due to regional/international trade for medicine, 8.3: changes in native food dynamics due to prey/food base, 9.9:intrinsic factors such as restricted rains, 10.1: recreation/ tourism, 10.4: transport, opening of its habitat to the outer world. Pr: 1.1.4.1: nomadic livestock, 1.4.4: infrastructure development as transport in land/air, 3.2.3: hunting/ gathering due to regional/international trade for medicine, 8.3: changes in native food dynamics due to prey/food base, 9.9:intrinsic factors such as restricted rains, 10.1: recreation/ tourism, 10.4: transport, opening of its habitat to the outer world. F: 1.1.4.1: nomadic livestock, 1.4.4: infrastructure development as transport in land/air, 3.2.3: hunting/ gathering due to regional/international trade for medicine, 8.3: changes in native food dynamics due to prey/food base, 9.9:intrinsic factors such as restricted rains, 10.1: recreation/ tourism, 10.4: transport, opening of its habitat to the outer world. Local trade due to fur, claws, fat, gall bladder and medicinal use.
Population number :	60-70

Mature individuals :	<50
Population status :	Decline in <10% in past 10 years. predicted to decline in future <10% due to land use change in development, tourism.
Global distribution	Indian, Pakistan, China, Afghanistan, Russia, Magnolia
Recent field status	Rizwan Irshad 2003. Ecology of Canids in the salt range A. Munaf 2003. EIA of survey of Mubark Block district Ghotki. A. Munaf 2003. EIA of Chung concession area Sindh/ Balochistan
IUCN Status :	
National Status :	Critically Endangered C2a(i); D
Comments :	Previous distribution was in Hazara Distts, Waziristan (NWFP). (Z.Ali)
Contributors:	Syed Iqmail Shah, Ahmad Khan, Mohanmmad Iqbal, Nuzhat Sial, Abdul Munaf Qaim Khani.
Participants:	Syed Iqmail Shah, Ahmad Khan, Mohanmmad Iqbal, Nuzhat Sial, Abdul Munaf Qaim Khani.

Species name *Ursus thibetanus thibetanus* G. [Baron] Cuvier, 1823
Group name / # _____

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Common name	Himalayan Black Bear (English), Kala Reech, Bahloo (Urdu).
Scientific name :	<i>Ursus thibetanus thibetanus</i> G. [Baron] Cuvier, 1823
Family	Ursidae
Habitat :	1.4: temperate forest, 1.5: subtropical/ tropical dry forest, 1.6: subtropical/tropical moist low land. Mixed temperate (moist/ dry), subtropical pine.
Habit/ Niche	Omnivorous , diurnal (mostly nocturnal), hibernating , social, usually in small groups
Elevation :	3000-10,000ft.
Distribution:	
Location	No. of individuals
1 Kohistan	
2 Mankial, Mahodand	
3 Dir	
4 Kaghan	
5 Darel/ Tangir	
6 Neelum valley, Leepa	
7 Shishikoh, Darosh, Arandu	
8 Upper Shigar valley	10-15
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2,000km ²
No. subpopulations :	6
No. of locations :	Many
Habitat status :	Decrease in area >30% in last 20 years. Decline in habitat is predicted >10% due to land use changes, human population explosion, development, activities, and deforestation.
Threats :	P: 1.1.4.1: nomadic livestock, 1.3.3.2: selective lodging for wood, 1.3.4: non woody vegetation collection, 1.4.4: infra structure development for transport-land/air, 3.5.1: subsistence use/ local trade, 4.1.2: accidental mortality by terrestrial by catch Pr: 1.1.4.1: nomadic livestock, 1.3.3.2: selective lodging for wood, 1.3.4: non-woody vegetation collection, 1.4.4: infra structure development for transport-land/air, 3.5.1: subsistence use/ local trade, 4.1.2: accidental mortality by terrestrial by catch. 9.9:intrinsic factors such as restricted range. F: 1.1.4.1: nomadic livestock, 1.3.3.2: selective lodging for wood, 1.3.4: non-woody vegetation collection, 1.4.4: infra structure development for transport-land/air, 3.5.1: subsistence use/ local trade, 4.1.2: accidental mortality by terrestrial by catch, 9.9:intrinsic factors such as restricted range. Domestic and commercial trade for whole animal, fur, fats, gallbladder, medicine and road shows, through out its range of occurrence.
Population number :	800-2000
Mature individuals :	<2500
Population status :	Declining <20% in the last 30 years. future decline is predicted due to habitat loss.
Global distribution	Indian, Nepal, Pakistan, Bhutan, Russia
Recent field status	Abdul Ghafoor 2000. Population Survey NWFP wildlife department 1997. Population survey (Periodic) Masood Arshad & Anyatullah 1996. Bear Baring in Pakistan

IUCN Status :	
National Status :	Endangered ↓ Vulnerable C1
Comments :	
Contributors:	Rizwan Irshad, Ahmad Khan, Mohanmmad Iqbal, Abdul Munaf Qaim Khani., Tahir Rashid, Qadeer Mehal, Saeed-uz-Aman, Salman Ashraf.
Participants:	Rizwan Irshad, Ahmad Khan, Mohanmmad Iqbal, Abdul Munaf Qaim Khani., Tahir Rashid, Qadeer Mehal, Saeed-uz-Aman, Salman Ashraf.

Species name *Ursus thibetanus gedrosianus* Blanford, 1877
Group name / # _____

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Common name	Balochistan Black Bear (English)
Scientific name :	<i>Ursus thibetanus gedrosianus</i> Blanford, 1877
Family	Ursidae
Habitat :	1.4: temperate forest, 3.5: subtropical/tropical dry shrubland, dry temperate, rugged arid mountains with sparse shrub vegetation.
Habit/ Niche	Omnivorous, feed on grass, honey and dwarf palm
Elevation :	2000-6000ft.
Distribution:	
Location	No. of individuals
1 Dansar Wad, Frash	3-6
2 Shirani tribal area	1-3
3 Dhurun	
4	
5	
Extent of occurrence :	101-5,000 km ²
Area of occupancy :	501- 2,000km ²
No. subpopulations :	2
No. of locations :	2
Habitat status :	Decrease in area <10% in last 10 years. Decline in habitat predicted <10% in next 10 years due to deforestation.
Threats :	P: 1.3.1: extraction due to mining(in Pub range), 11: other reasons, killing poaching, hunting, habitat destruction. Pr: 1.3.1: extraction due to mining(in Pub range), 11: other reasons, killing poaching, hunting, habitat destruction. F: 1.3.1: extraction due to mining(in Pub range), 11: other reasons, killing poaching, hunting, habitat destruction.
Population number :	6-9
Mature individuals :	<50
Population status :	Unknown
Global distribution	Pakistan
Recent field status	A. Munaf, 1996. Field survey of Black bear N, Khurhseed, 1993. Field survey of Balochistan Black bear T, Rashed, 1998. Field survey of Suleiman range N, Asharaf, 2001. Field survey of Black Bear
IUCN Status :	
National Status :	Critically Endangered C2a(i); D
Comments :	Azad Kashmir, Balochistan, NWFP, Northern Areas.(Z.Ali)
Contributors:	Salman Ashraf.Hamid Ali
Participants:	Tahir Rasheed, Abdul Munaf, Abdul Qadeer Mehal, Hamid Ali

Species name *Viverricula indica* (Desmarest, 1804)
 Group name / # _____

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Common name	Small Indian Civet
Scientific name :	<i>Viverricula indica</i> (Desmarest, 1804)
Family	Viverridae
Habitat :	3.5: subtropical/tropical dry, 8.1: hot deserts. Plain and sandy deserts in sub mountainous tracts.
Habit/ Niche	Carnivorous, nocturnal, solitary, Sandy deserts and irrigated plantations
Elevation :	0-1000m
Distribution:	
Location	No. of individuals
1 Talagang	
2 Sohawa	
5 Choi Bangla	
6 Muzzafargad	
7 Taunsa	
Presence in protected areas	Kithar National Park (Sindh), Lal Suhanra National Park (Punjab), Chumbi Surla Game Reserve, Changa Manga Wildlife Sanctuary, Margalla National Park
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2,000km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	A change in habitat that cannot be quantified. Primary causes of change may be the land use pattern and road killings.
Threats :	P: 1.1.1: habitat loss due to crops, 1.3.3.3: clear cutting of wood, 1.4.1: industry, 1.4.2: human settlement. Pr: 1.1.1: habitat loss due to crops, 1.3.3.3: clear cutting of wood, 1.4.1: industry, 1.4.2: human settlement. F: 1.1.1: habitat loss due to crops, 1.3.3.3: clear cutting of wood, 1.4.1: industry, 1.4.2: human settlement.
Population number :	Cannot be quantified
Mature individuals :	Cannot be quantified
Population status :	Cannot be stated with certainty
Global distribution	India, Pakistan, Srilanka, Myanmar, Indonesia, southern china
Recent field status	
IUCN Status :	
National Status :	Near Threatened
Comments :	River Ravi, Bahawalnagar, Okara, Jhang, Sargodha, Thal, Salt Range, Margalla Hills, Attock, Thatta, Karachi, Sukkur, Tharparker (Z.Ali)
Contributors:	
Participants:	Syed Iqmail Shah, Ahmad Khan, Mohanmmad Iqbal, Nuzhat Sial, Abdul Munaf Qaim Khani, Dr M. Arshad, Tahir Rashid, Rizwan Irshad.

Species name *Vormela peregusna* (Güldenstädt, 1770)
 Group name / # _____

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Common name	Marbeled Pole Cat (English)
Scientific name :	<i>Vormela peregusna</i> (Güldenstädt, 1770)
Family	Mustelidae
Habitat :	3.5: Subtropical / tropical; shrubland, semi arid rocky areas
Habit/ Niche	Semi arid rocky areas, feeds mostly on rodents, arid subtropical forest
Elevation :	Not known
Distribution:	
Location	No. of individuals
1 Quetta	
2 Pishin	
3 North Waziristan	

4 Kurram Valley	
5 Mekran	
Presence in protected areas	
Extent of occurrence :	250000-300000sq km
Area of occupancy :	Can't be quantified
No. subpopulations :	1 Many Maqsood Anwar
No. of locations :	Many
Habitat status :	There is general decrease in quality and spread of habitat in the area but specifically for this sp it is difficult to predict and habitat changes as its prey is quite abundant in wilderness
Threats :	Not known. Occasional killing for fur and skin
Population number :	Not known
Mature individuals :	Not known
Population status :	Stable, cant be predicted
Global distribution	Yugoslavia, turkey, Syria, Lebanon Afghanistan, Russia, Nepal, Malaysia, Armenia
Recent field status	
IUCN Status :	
National Status :	Least Concern
Comments :	Mekran, Quetta, Pishin, Chaman, North Waziristan, Bannu, Kurrum Valley, Hangu, Kohat (Z.Ali)
Contributors:	
Participants:	Carnivore Group

Species name *Vulpes bengalensis* (Shaw, 1800)
Group name / # _____

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Common name	Indian or Bengal Fox
Scientific name :	<i>Vulpes bengalensis</i> (Shaw, 1800)
Family	Canidae
Habitat :	3.5: subtropical/tropical dry shrub land, 8.1: hot desert, near cultivated areas, shrubby, inter dunal sandy areas, covered by sparse vegetation, valleys in Kirthar, waste land, cultivated areas, rocky areas.
Habit/ Niche	Carnivore, Wandering animal, Varied and wide, Broad valleys, Desert areas
Elevation :	0-500m
Distribution:	
Location	No. of individuals
1 Nara Canal area	
2 Cholistan desert	3-5
3	
4	
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2,000km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Decrease in area <10% in last 10 years. A decline in habitat <10% is predicted in the next 10-20 years due to encroachment, overgrazing, drought, development activities.
Threats :	Increased human settlement increased colonized areas, cultivation, overgrazing and drought. Local trade for tail.
Population number :	Can not be quantified
Mature individuals :	Can not be quantified
Population status :	Declining <10%. Future decline <10% is predicted.
Global distribution	Indian, Pakistan, Iran, China, Afghanistan, North America, Europe,
Recent field status	Rizwan Irshad 2003. Ecology of Canids in the salt range A. Munaf 2003. EIA of survey of Mubark Block district Ghotki. A. Munaf 2003. EIA of Chung concession area Sindh/ Balochistan
IUCN Status :	
National Status :	Near Threatened
Comments :	
Contributors:	
Participants:	Tahir Rasheed, Rana Shahbaz, Rizwan Irhsad, Qadeer Mehal, Iqmail Shah, Iqbal Mohammad, Abdul Munaf, Nuzhat Sial, Salman Ashraf.

Species name *Vulpes cana* Blanford, 1877
 Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
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 IUCN Pakistan & ZOO/CBSG, South Asia**

Common name	King's Fox
Scientific name :	<i>Vulpes cana</i> Blanford, 1877
Family	Canidae
Habitat :	8: deserts, tropical thorn forests, dry temperate forests.
Habit/ Niche	Shy, Solitary, Nocturnal, Gorges, sand dunes
Elevation :	
Distribution:	
Location	No. of individuals
1	
2	
3	
Extent of occurrence :	>20,000km ²
Area of occupancy :	>2,000km ²
No. subpopulations :	1
No. of locations :	Many
Habitat status :	Decrease in an area <10% in the last 20 years. Future prediction in the decline in habitat is <10% in the next 30 years is due to deforestation over grazing and development.
Threats :	P: killing by man. Pr: killing by man, habitat shrinkage and lack of awareness. F: killing by man, habitat shrinkage, lack of awareness and developmental activities. Domestic and commercial trade for fur and tail.
Population number :	Not quantified.
Mature individuals :	Not known.
Population status :	Not known.
Global distribution	Indian, Pakistan, Iran, Afghanistan, Central Asia, Arabian Peninsula, Uzbekistan.
Recent field status	T.J Roberts 1997 Mammals of Pakistan
IUCN Status :	
National Status :	Near Threatened
Comments :	North western Balochistan, Mekran, Kalat, Kharan, Gadawar, Turbat, Chagai, Kurram, Khyberagencies (Z.Ali)
Contributors:	
Participants:	Rizwan Irshad, Tahir Rashid, Ayaz Khan, Nuzhat Sial.

Species name *Vulpes rueppellii* (Schinz, 1825)
 Group name / # _____

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 IUCN Pakistan & ZOO/CBSG, South Asia**

Common name	Rueppell's Sand Fox
Scientific name :	<i>Vulpes rueppellii</i> (Schinz, 1825)
Family	Canidae
Habitat :	8: desert, rolling sand dunes.
Habit/ Niche	More insectivorous than other foxes, Carnivore, burrows in sand.
Elevation :	0-100 m
Distribution:	
Location	No. of individuals
1 Tharparker	<400
2 Chaghi	<200
3 Cholistan/Thar	<500
4 D.G.Khan	
Presence in protected areas	Cholistan Game reserve, Runn of Kuch wildlife santurary, Lal Sohanra National Park
Extent of occurrence :	>20,000km ²
Area of occupancy :	501-2000km ²
No. subpopulations :	4
No. of locations :	4

Habitat status :	Change in habitat unknown. No future decline in habitat is predicted.
Threats :	P: 1.1.1.1: habitat lost due to shifting agriculture, 1.4.1: industry, 1.4.4: transport-land/air. Pr: 1.1.1.1: habitat lost due to shifting agriculture, 1.4.1: industry, 1.4.4: transport-land/air. F: 1.1.1.1: habitat lost due to shifting agriculture, 1.4.1: industry, 1.4.4: transport-land/air. Local and international trade of the entire animal to keep as pets or for the road shows. Internationally it is sold to Arab Sheikhs.
Population number :	700-1200
Mature individuals :	<2500
Population status :	Declining <10% in the last 10 years. The future decline is predicted in the next 10 years by < 10%.
Global distribution	Arabia, Algeria, Libya, Egypt, Iran, Afganistan, Iran, Pakistan.
Recent field status	
IUCN Status :	
National Status :	Vulnerable B2ab(ii,iii); C1; D
Comments :	
Contributors:	
Participants:	Dr. Naeem, Qadeer Mehal, Saeed-uz-Zaman, Tahir Rasheed.

Species name *Vulpes vulpes* (Linnaeus 1758)

Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
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Common name	Common Red Fox (English)
Family	Canidae
Scientific name :	<i>Vulpes vulpes</i> (Linnaeus 1758)
Habitat :	1.5: subtropical/tropical dry forest, 1.4: temperate forest, 3.4: temperate shrubland, 3.5: subtropical/tropical dry shrubland. 3.8: Mediterranean type shrubby vegetation, 5.1: permanent rivers/streams/creeks (includes waterfalls), 5.2: seasonal intermittent/irregular rivers/streams/creeks, 5.3: shrub dominated wetlands, 7.1: non-aquatic caves, 8.1: hot desert, 8.2: temperate desert, 10.2: sand, shingle, pebble shores..
Habit/ Niche	Nocturnal, Solitary, feed on rodents & small birds, shy
Elevation :	0-16,000 ft
Distribution:	
Location	No. of individuals
1 Birmoghlasht	1
2 Shahgram	1
3 Drat	1
4 Islamgarh	1-2
5 Gharial	1
Presence in protected areas	Hazar Ghanji National Park, Hingol National Park, Lal Sohanra National Park
Extent of occurrence :	>20,000 km ²
Area of occupancy :	>2,000 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Decrease in area <10%. Decline in the habitat <10% due to the developmental activities, drought. decrease in the quality due to the loss of the prey species, disturbance of human being/ encroachment.
Threats :	P: Hunting or fur, drought, exports. Pr: Hunting or fur, drought, exports. F: Hunting or fur, drought, exports. Developmental activity. Taxon is trade for commercial use, fur and tail.
Population number :	>5000
Mature individuals :	<2,500
Population status :	Increasing, future decline <10%.
Global distribution	North America, Europe, North Africa
Recent field status	Rizwan Irshad 2003. Ecology of Canids in the salt range Asghar Mohammad 2000. Ecologica studies of Tobatti mountain ecosystem Kalat Ch. Shafique 1998, survey of fauna of Hazarghangi national Park
IUCN Status :	
National Status :	Near Threatened

Comments :	
Contributors:	Tahir Rasheed, Rana Shahbaz, Rizwan Irhsad, Mohammad Ayaz,
Participants:	Tahir Rasheed, Rana Shahbaz, Rizwan Irhsad, Mohammad Ayaz, Nuzhat Sial,

Species name *Vulpes vulpes montana* (Linnaeus 1758)

Group name / # _____

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Common name	Tibetan Red Fox (English)
Family	Canidae
Scientific name :	<i>Vulpes vulpes montana</i> (Linnaeus 1758)
Habitat :	1.4: temperate forest, 8.2: temperate desert, Dry alpine
Habit/ Niche	Carnivorous, solitary
Elevation :	3500-500 m
Distribution:	
Location	No. of individuals
1 Ghizer	1-10
2 Chitral	3
3	
4	
5	
Presence in protected areas	Chitral Goal National Park, Deosai Protected area, Khynerab National Park
Extent of occurrence :	>20,000 km ²
Area of occupancy :	>2,000 km ²
No. subpopulations :	Un known
No. of locations :	Many
Habitat status :	Changes in area and quality of habitat cannot be assessed specifically for this subspecies. Changes in habitat of this subspecies cannot be precisely written.
Threats :	P: Hunting or fur, drought Pr: Hunting or fur, drought F: Hunting or fur, drought.
Population number :	Unknown
Mature individuals :	Unknown
Population status :	Unknown
Global distribution	Northern hemisphere
Recent field status	Unknown
IUCN Status :	
National Status :	Data Deficient
Comments :	
Contributors:	Tahir Rasheed, Rana Shahbaz, Rizwan Irhsad, Mohammad Ayaz,
Participants:	Tahir Rasheed, Rana Shahbaz, Rizwan Irhsad, Mohammad Ayaz, Nuzhat Sial,

Species name *Equus hemionus* Pallas , 1775

Group name / # _____

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Common name	Indian Wild Ass
Scientific name :	<i>Equus hemionus</i> Pallas , 1775
Family	Equidae
Habitat :	8.1:hot desert, low rain fall, poor vegetative cover
Habit/ Niche	Gregarious, nocturnal desert grazer
Elevation :	Sea level-100 meters
Distribution:	
Location	No. of individuals
1 Nagar parker	14 (Hamid Iqbal) 1998
2	8 (Iftikhar Ahmaed 2000
3	15-20 (Munaf Qamkani)2002
4	1 Dr Aleem 2003
5 Tharparkar	20-25
Presence in protected areas	Run of Kuch wildlife sanctuary

Extent of occurrence :	< 100sq km
Area of occupancy :	50-100 sq km
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Sable in area >50 % decline by habitat loss in next 10 years. Decrease in quality due to road construction
Threats :	Past: 1.4.4: transport- land/air (infrastructure development), 7.1: drought Present: 1.4.4: transport- land/air (infrastructure development), 7.1: drought Future: 1.4.4: transport- land/air (infrastructure development), 7.1: drought
Population number :	50-100
Mature individuals :	<50 Decline in past and likely to decline in future too.
Population status :	> 10% Declining and >10% is predicted for next years due to habitat degradation
Global distribution	India, Afganistan
Recent field status	H. Iqbal 1998. Survey of Wild Ass in Nagar Parkar H. Iqbal 2000. Survey of Wild Ass in Nagar Parkar A. M. Qaimkhani, R. A. Rajput., 1998. Survey of Nilgai & Wild Ass in Tharparkar A.M. Qaimkhani, R. A. Rajput., 2003. Observation of Wild Ass during Mid winter water fowl survey of Nagarparkar area.
IUCN Status :	
National Status :	Critically Endangered C2a(i)
Comments :	Only feral population may be found . Extinct (Anwar Maan)
Contributors:	
Participants:	Dr Maqsood Anwar, Dr Rubina Akhtar , Maj(R) Aman- u- llah Niazi, Maqsood Arshad, Iftikhar Ahmed, Mohsin Farooq ,Naeem Ashraf Raja.

Species name *Antelope cervicapra* (Linnaeus, 1758)
Group name / # _____

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Common name	Black Buck
Scientific name :	<i>Antelope cervicapra</i> (Linnaeus, 1758)
Family	Bovidae
Habitat :	1.5:Subtropical/tropical dry, 8.1: hot desert
Habit/ Niche	Gregarious
Elevation :	100-200m
Distribution:	
Location	No. of individuals
1 Sehjraen clave	10
2 bannachowki	03
3	
4	
5	
Presence in protected areas (In captivity)	Lal Sohanra National Park, Kirthar National Park.
Area of occupancy :	Extinct
No. subpopulations :	
No. of locations :	
Habitat status :	>20% Decrease in the area and quality of the habitat in last 20 years and predicted to decrease >10% with in 10 years due to agriculture extension
Threats :	Past hunting, agricultural extension Present: extinct Future: extinct Trade hunted for subsistence
Population number :	N/A
Mature individuals :	N/A
Population status :	N/A
Global distribution	Pakistan, India, Nepal
Recent field status	
IUCN Status :	
National Status :	Extinct in the Wild
Comments :	Only found in captivity not in wild habitat (Maqsood Anwar)
Contributors:	
Participants:	Umeed Khalid, Dr Maqsood Anwar, Major Amanullah, Qadeer Mehal, Masood Arshad

Species name *Axis porcinus* (Zimmermann, 1780)
 Group name / # _____

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Common name	Hog Deer
Scientific name :	<i>Axis porcinus</i> (Zimmermann, 1780)
Family	Cervidae
Habitat :	5.3: shrub dominated wetlands 11.3: artificial- terrestrial plantations like Changa Manga, Riverine area.
Habit/ Niche	Nocturnal, solitary in forest areas
Elevation :	100-300m
Distribution:	
Location	No. of individuals
1.Daffer plantation	2
2 Head Qadirabad	1
3.Head Marala	20-25approx
4. Shikarghar Narowal	1
5 Ferozwalla	2
6 gandasingh, kasoorsingh (border area)	1
7 Changamanga plantation	10-15
8 head sulminkie	Approx 50
9 Daber sakargargh	Approx 10
10 Ravi river belt	10
11 both sides of narra canal	50-60
12 Mahrano reserve	10-15
13 Batbakt ali (etc)	Approx 50
Presence in protected areas	Changa Manga Wildlife Sanctuary, Tonsa Wildlife Sanctuary, Nara Cannal Game Reserve.
Extent of occurrence :	30-40,000sq km
Area of occupancy :	10-1500sq km
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	>20% decrease in the last 10 years and > 10% decline is predicted in the next 10 years due to agricultural extensions, grazing & cutting.
Threats :	Past, present , future. (1.1.1.1:shifting agriculture crops 1.3.3.1:small-scale subsistence of wood.3.3.1:subsistence use of food, 4.1.3:other bycatch. 7.1:drought,9.9:restricted range .10.1:human disturbance through recreation/tourism.) Trade: hunted for subsistence living at many locations.
Population number :	+/-1500-2000
Mature individuals :	+/-700-1000
Population status :	>20% decline in last 10 years and > 10% decline in the next 10 years is predicted.
Global distribution	India, Nepal, Burma, Thailand, Srilanka
Recent field status	Rana Sahbaz Khan 2002. Field office file record of Punjab
IUCN Status :	
National Status :	Vulnerable C1+2a(i); D
Comments :	
Contributors:	
Participants:	Major Ammanullah. Dr Maqsood Anwar, Rana shahbaz khan, Umeed Khalid, Iftikhar Ahmad, Naeem Raja, Masood Arshad.

Species name *Boselaphus tragocamelus* (Pallas, 1766)
 Group name / # _____

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Common name	Nilgai or Blue Bull
Scientific name :	<i>Boselaphus tragocamelus</i> (Pallas, 1766)
Family	Bovidae
Habitat :	3.5: Subtropical Scrubland 1.6: Subtropical/Tropical Moist Lowland Forest, 1.6: Subtropical/Tropical Dry Forest, 8.1: Hot Desert, 5.2 Seasonal/Intermittent/Irregular

	Rivers/Streams/Creeks, subtropical thorn forest, Thar desert of indo-pak
Habit/ Niche	Gregarious, Diurnal Browser, Social
Elevation :	100-1200m
Distribution:	
Location	No. of individuals
1 Dodlan	5
2 Bajwat	2
3 Changa Manga	2
4 Kasur	1
5 lalal Sohanra	2
6 Ravi	1
Presence in protected areas	Changa Manga Wildlife Sanctuary
Extent of occurrence :	101-5,000 sq km
Area of occupancy :	11-500 sq km
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	>10% decrease in the last 10 years and > 10% decline is predicted in the next 10 years due to change in land use patterns
Threats :	Past, present, future. 1.1.1.1:shifting agriculture crops 1.1.4.1: nomadic livestock 1.1.4.2: small holder livestock, 1.3.4 non woody vegetation collection, 3.1.1: subsistence use for food, 7.1 drought, 9.9: restricted range Trade: hunted for subsistence living
Population number :	Approa 500
Mature individuals :	<250
Population status :	>10% decline in last 10 years and > 10% decline in the next 10 years is predicted.
Global distribution	India
Recent field status	Abdul Qadeer Mehal 1999 Rana Shahbaz Khan 1990 Masood Arshad 1996
IUCN Status :	
National Status :	Endangered B1ab(ii,iii)+2ab(ii,iii); C2a(i); D
Comments :	
Contributors:	
Participants:	Major ammanullah. Dr Maqsood Anwar, Abdul Qadeer Mehal, Rana shahbaz khan, Umeed Khalid, Iftikhar Ahmad.

Species name *Capra aegagrus blythi*
Group name / # _____

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Scientific name :	<i>Capra aegagrus blythi</i> , Hume 1875
Habitat :	1.5: subtropical/tropical dry forest, 4.5: subtropical/tropical dry low land grassland, 6: rocky areas
Elevation :	400-3,000 m
Distribution:	
Location	No. of individuals
1 Raskoh	12-20
2 Ghatzehri	15-20
5 Tobati	20-30
7 Rodnikacho	250-370
8 Kirthar NP	1)10-20 2) 5,000-6000
9 Dhureji	300-400
10 Dhurun	
Extent of occurrence :	>2,000 sq km
Area of occupancy :	501-2000sq km
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Decreases in area <10% in last 10 years. A decline <10 % is predicted in 10 years due to change in land use
Threats :	Ps: 1.1.1.4: Nomadic livestock, 1.3.3.1: small scale subsistence of wood, 3.1.1: subsistence use of food, 7.1:drought10.1: recreation/ tourism (human disturbance)

	Pr: 1.1.1.4: Nomadic livestock, 1.3.3.1: small scale subsistence of wood, 3.1.1: subsistence use of food, 7.1:drought10.1: recreation/ tourism (human disturbance F: 1.1.1.4: Nomadic livestock, 1.3.3.1: small scale subsistence of wood, 3.1.1: subsistence use of food, 7.1:drought10.1: recreation/ tourism (human disturbance Trade: Trophy hunting for conservation initiatives
Population number :	>15,000
Mature individuals :	14,000
Population status :	Population is declining <10% in last 10 years in future Poaching and habitat loss will cause population decline in future < 10% in the next 10 years
IUCN Status :	
National Status :	Near Threatened
Comments :	
Contributors:	Hamid Ali
Participants:	Ali Imran, Hamid Ali, M. Asghar, M.Sharif, M . Iqbal, M Niaz , Abdul Munaf.

Species name *Capra aegagrus chialtanensis* Erxleben 1777
Group name / # _____

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Common name	Chiltan Wild Goat
Scientific name :	<i>Capra aegagrus chialtanensis</i> Erxleben 1777
Family	Bovidae
Habitat :	1.4: Temperate Forest, 3.4: Temperate Shrubland, 6: Rocky areas, Dry temperate, rugged precipitating slopes, ravines
Habit/ Niche	Gregarious, diurnal
Elevation :	2,000-3,000 meters
Distribution:	
Location	No. of individuals
1 Anari	45
2 Zirat nallah	7
3 Chiltan	60
Presence in protected areas	Hazar-Ganji Chiltan National Park
Extent of occurrence :	200 sq km
Area of occupancy :	270 sq km
No. subpopulations :	1
No. of locations :	Many
Habitat status:	No change in the habitat. Increase in quality of the habitat of the taxon. The change was due to the improvement in the vegetation its primary cause is better protection.
Threats:	Nomadic livestock, Small Scale Subsistence of wood, Fires, subsistence use/ local trade of food, Subsistence use of fuel, drought, other human disturbances
Population number :	Appro 800
Mature individuals :	< 2,500
Population status :	Increasing. No future decline in population predicted.
Global distribution	Pakistan, Iran
Recent field status	
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	
Participants:	M. Arif, M. Naiz, Iftikhar Ahmed, M. Hamid Ali, M. Asghar, M. Sharif, Umeed khalid, Kashif m Sheikh, Dr Maqsood Anwar, Ghulam Ali, Irshad, M Ayaz, Ali Imran.

Species name *Capra falconeri falconeri* Wagner, 1839
Group name / # _____

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Common name	Flare-horned Markhor
Scientific name :	<i>Capra falconeri falconeri</i> Wagner, 1839
Habitat:	3.4: temperate shrubland, 4.4: temperate grassland, 6: rocky area. Steep precipitation

	slopes with Oak conifers forest and also open areas particularly Northern Area.
Elevation :	1,500-4,000 meters
Distribution:	
Location	No. of individuals
1 Skardu	150
2 Bunji	145
3 Gilgit	45
4 Tangiz	20
5 Kohistan	180
6 Chitral	200 – 250
Presence in protected areas	Chitral Gol National Park, Astore nullah game reserve, Baltistan wildlife santurary, Kargha Wildlife santurary, Naltar wildlife santurary, Sherqilla Game Reserve, Danyore game reserve, Baltistan wildlife santurary, Manshi Wildlife Sanctuary, Machiara National Park, Qazi Nag Game reserve, Tangir game reserve, Toosi Game Reserve, Hillan Game reserve.
Extent of occurrence :	<30,000 sq km
Area of occupancy :	>3,000 sq km
No. subpopulations :	5
No. of locations :	5
Habitat status :	Decrease in area of <10% in the last 10 years; predicted decline of <10% in the next 10 years; decrease in quality of habitat due to logging.
Threats :	P, Pr, F: 1.1.4.1: nomadic livestock. 1.3.1: mining (extraction), 1.3.3.1: small scale subsistence of wood, 1.3.4: non woody vegetation collection. 1.4.2: human settlement in infrastructure development. 4.1.2: terrestrial shooting. Whole animal is used internationally for trade
Population number :	400 – 600
Mature individuals :	< 100
Population status :	population decline of <10% in the last 10 years; predicted decline of >10%
IUCN Status :	
National Status :	Endangered C2a(i)
Comments :	Astore Markhor has been recently discovered in Kargah Valley of Kohistan, NWFP, which confirms the assumption regarding its occurrence in 3 more valleys.
Contributors:	Major Amaanullah Khan

Species name *Capra falconeri megaceros* Hume, 1875
Group name / # _____

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Common name	Straight horned Markhor
Scientific name :	<i>Capra falconeri megaceros</i> Hume, 1875
Family	Bovidae
Habitat :	1.4: temperate forest, 3.4: temperate shrub land, 6: rocky areas, dry temperate, rocky cliffs, rugged slopes
Habit/ Niche	Diurnal, Gregarious, Crepuscular
Elevation :	≅ 1500 – 5000 m
Distribution:	
Location	No. of individuals
1 Koh – e – Safed	1
2 Takatu	8
3 Zargham, Quetta	2
4 Suleman Range	35
5 Tanishpa, Torghar	Approx 45
6 Dhurun	
7	
Presence in protected areas	Manshi Wildlife Sanctuary, Machiara National Park, Qazi Nag Game reserve
Extent of occurrence :	>20,000 km ²
Area of occupancy :	+ 5000 km ²
No. subpopulations :	7 – 10
No. of locations :	Many
Habitat status :	Decrease in area of >20% in the last 10 years; predicted decline of >10% in the last 10 years; decrease in quality of habitat since bad economic conditions have increased the reliance of the locals on grazing lands
Threats :	P: 1.1.1.2: small-holder farming, 1.1.4.1: nomadic livestock, 1.3.3.1: small-scale

	<p>subsistence wood extraction, 1.3.1: mining 1.3.4: non-woody vegetation collection, 1.4.2: human settlement infrastructure development, 3.1.1: subsistence use/local trade hunting for food, 3.3.1: subsistence use/local trade as fuel, 10.3: war/civil unrest Pr: 1.1.1.2: small-holder farming, 1.1.4.1: nomadic livestock, 1.3.3.1: small-scale subsistence wood extraction, 1.3.1: mining 1.3.4: non-woody vegetation collection, 1.4.2: human settlement infrastructure development, 3.3.1: subsistence use/local trade as fuel, 10.3: war/civil unrest, 7.1: drought F: 1.1.1.2: small-holder farming, 1.1.4.1: nomadic livestock, 1.3.3.1: small-scale subsistence wood extraction, 1.3.1: mining 1.3.4: non-woody vegetation collection, 1.4.2: human settlement infrastructure development, 3.3.1: subsistence use/local trade as fuel, 10.3: war/civil unrest, 7.1: drought Trade: hunted for community-based trophy hunting program</p>
Population number :	<2500
Mature individuals :	800 – 1000
Population status :	Decline in population of <10% in the last 5 years; predicted decline of <10% in the next 10 years
Global distribution	Pakistan, Afghanistan.
Recent field status	<p>Masood Arshad & Iftikhar Ahmad. 2001. Conservation of Chilghoza forest in Suleiman Range M. Arif 1986. Status of big Game spp in upper Kurram Maqssod Anwar 1990. Feasibility study of Chigoza forest and Suleiman Markhor Saeed-uz-Zaman 1990. Survey of straight Horned Markhor.</p>
IUCN Status :	
National Status :	Vulnerable VU C1a; D
Comments :	<p>The biggest population exists in Torghar and it is increasing. Populations in other areas are decreasing because of increased human interference and this needs attention from the management. Sheikh Badin National Park has not been properly developed due to lack of budget. The area could become a secure habitat for Kabul Markhor after proper management.</p>
Contributors:	Ghulam Ali Awan, Dr Masood Anwar, Iftikhar, M Hamid Ali, Ahmad, Masood Arshad, Muhammad Ayaz, M Asghar, Umeed Khalid, Muhamamad Arif, Muhammad Niaz
Participants:	Ghulam Ali Awan, Dr Masood Anwar, Iftikhar, M Hamid Ali, Ahmad, Masood Arshad, Muhammad Ayaz, M Asghar, Umeed Khalid, Muhamamad Arif, Muhammad Niaz

Species name *Capra ibex sibirica* Pallas 1776

Group name / # _____

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Common name	Siberian or Himalayan Ibex
Family	Bovidae
Scientific name :	<i>Capra ibex sibirica</i> Pallas 1776
Habitat :	1.4: Temperate forest, 3.7: subtropical/tropical high altitude of shrubland, 6: rocky areas, sub alpine, dry temperate forest
Habit/ Niche	Active at Dawn and dusk (crepuscular), prefers snow meadows along snow line
Elevation :	2500-5000 m
Distribution:	
Location	No. of individuals
3 Naltar Balla	50
4 Hushe Valley	250
5 Skayo Valley Top	300
7 Khunjerab Top (below)	17-20
8 Bar valley	1) Approx 400-500 2) Approx 200-250
9 Naltar bala	5-16
10 Hush Valley	70-90
11 skoyo valley top	120-130
12 Khyber community area	21
13 Khunjerab village organization	40-45
14 Machiara NP	10
15 Mahodand Lake	1

16 Nori top	5
Presence in protected areas	Agram Basti wildlife sanctuary, Giddar Baik wildlife Sanctuary, Machiara National Park, Mahu Dand game reserve, Astore Wildlife Sanctuary, Baltistan Wildlife Sanctuary, Kargah Wildlife Sanctuary, Khunjerab National Park, Manshi Wildlife Sanctuary, Machiara National Park, Qazi Nag Game Reserve
Extent of occurrence :	40,000 sq km
Area of occupancy :	5000-6000sq km
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Decreases in area >10% in last 5 years. A decline > 10 % is predicted in 10 years due to change in land use
Threats :	Ps: 1.1.1.4: Nomadic livestock, 1.3.3: wood extraction, 1.1.4.2: small holder livestock, 1.3.4: non woody vegetation collection, 1.4.3: Tourism, 3.1.1: subsistence use of food, 3.3.1: subsistence use of fuel, 10.1: recreation/ tourism (human disturbance) 10.6: others Poaching. Pr: 1.1.1.4: Nomadic livestock, 1.3.3: wood extraction, 1.1.4.2: small holder livestock, 1.3.4: non woody vegetation collection, 1.4.3: Tourism, 3.1.1: subsistence use of food, 3.3.1: subsistence use of fuel, 10.1: recreation/ tourism (human disturbance) 10.6: others Poaching. F: 1.1.1.4: Nomadic livestock, 1.3.3: wood extraction, 1.1.4.2: smallholder livestock, 1.3.4: non-woody vegetation collection, 1.4.3: Tourism, 3.1.1: subsistence use of food, 3.3.1: subsistence use of fuel, 10.1: recreation/ tourism (human disturbance) 10.6: others Poaching. Trade: International Trophy hunting
Population number :	> or = 20,000
Mature individuals :	80000-10000
Population status :	Population is increasing
Global distribution	Central Asian mountain ranges, Afghanistan, India, China
Recent field status	Masood Arshad 1996,1998,2000,2001. Survey of Himalayan Ibex in Bar, Naltar, Skoyo, Khunjerab Iftikhar Ahmad 1992, 1993,1994,1996,1998. Survey of Himalayan Ibex in Bar, Khunjerab, Passu, NWFP Umeed Khalid 2000. Survey of Himalayan Ibex in Khunjerab Akmad Khan 1999. SLIM training workshop and snow leopard survey at Khunjerab National Park
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	
Participants:	Iftikhar Ahmed, Kashif M Sheikh, Umeed khalid, Dr Maqsood Anwar, Masood Arshad

Species name *Cervus duvaucelii* G. Cuvier, 1823

Group name / # _____

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Common name	Swamp Deer
Scientific name :	<i>Cervus duvaucelii</i> G. Cuvier, 1823
Family	Cervidae
Habitat :	5.4: bogs, marshes, swamps, fens, peat lands (wetlands) Riparian grassland
Habit/ Niche	Gregarious
Elevation :	Not known
Distribution:	
Location	No. of individuals
Not known	
Extent of occurrence :	Not known
Area of occupancy :	Not known
No. subpopulations :	1-2
No. of locations :	1-2
Habitat status :	Decrease in habitat area and quality(Maqsood Anwar)
Threats :	Not applicable
Population number :	Semi wild population
Mature individuals :	< 50

Population status :	Not known
Global distribution	India, Pakistan
Recent field status	
IUCN Status :	
National Status :	Extinct in the Wild
Comments :	
Contributors:	
Participants:	Major ® Amanullah, Iftikhar Ahmed, Masood Arshad

Species name *Cervus elaphus* Linnaeus, 1758
Group name / # _____

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Scientific name :	<i>Cervus elaphus</i> Linnaeus, 1758
Habitat :	N/A
Elevation :	N/A
Distribution:	Not known
Location	No. of individuals
1	
2	
3	
4	
5	
Extent of occurrence :	Extinct
Area of occupancy :	Extinct
No. subpopulations :	N/A
No. of locations :	N/A
Habitat status :	N/A
Threats :	N/A
Population number :	N/A
Mature individuals :	N/A
Population status :	
IUCN Status :	
National Status :	Locally Extinct
Comments :	
Contributors:	
Participants:	Masood Arshad, Dr Aleem chaudhary Major Amanullah Khan

Species name *Gazella bennettii* (Sykes, 1831)
Group name / # _____

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Common name	Chinkara
Scientific name :	<i>Gazella bennettii</i> (Sykes, 1831)
Family	Bovidae
Habitat :	8.1: hot desert, 3.5: subtropical/tropical Shrub land, 1.4: tropical thorn forest, ravines, semi desert and foot hills
Habit/ Niche	Gregarious, crepuscular
Elevation :	0-1500m
Distribution:	
Location	No. of individuals
1 Dhrun	Appox 40-50
2 Manglot park	25
3 Hingol	10-12
4 Chilostan	15
5 kolwahkap	20-30
6 Kachoo	20-30
7	

Presence in protected areas	Hingol National Park
Extent of occurrence :	35- 40,000 sq km
Area of occupancy :	6,000 sq km
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	<10% Decrease in area in last 10 years, <10% decline is predicted in the next 10 years due to agriculture extension, overgrazing and mining
Threats :	Pre: 1.1.1.1: shifting agriculture (crops) 1.1.4.1: nomadic livestock, 1.1.4.2. small holder livestock, 1.3.1: mining (extraction), 1.3.3.1 small scale subsistence of wood, 1.3.4: non woody vegetation collection, 1.4.2: human settlement, 1.4.3: infrastructure development tourism/ recreation, 1.4.4: transport- land/air, 3.1.1: subsistence use of food, 7.1 drought, 9.5: low densities, 10.1: human disturbance through recreation/ tourism 10.4: human disturbance through transport Pas: 1.1.1.1: shifting agriculture (crops) 1.1.4.1: naomdi livestock, 1.1.4.2. small holder livestock, 1.3.1: mining (extraction), 1.3.3.1 small scale subsistence of wood, 1.3.4: non woody vegetation collection, 1.4.2: human settlement, 1.4.3: infrastructure development tourism/ recreation, 1.4.4: transport- land/air, 3.1.1: subsistence use of food, 7.1 drought, 9.5: low densities, 10.1: human disturbance through recreation/ tourism 10.4: human disturbance through transport F: 1.1.1.1: shifting agriculture (crops) 1.1.4.1: naomdi livestock, 1.1.4.2. small holder livestock, 1.3.1: mining (extraction), 1.3.3.1 small scale subsistence of wood, 1.3.4: non woody vegetation collection, 1.4.2: human settlement, 1.4.3: infrastructure development tourism/ recreation, 1.4.4: transport- land/air, 3.1.1: subsistence use of food, 7.1 drought, 9.5: low densities, 10.1: human disturbance through recreation/ tourism 10.4: human disturbance through transport Trade: local trade for commercial use for food and fur
Population number :	8,000-10,000
Mature individuals :	<10,000
Population status :	>20% Decline in the last 20 years and > 20% decline is predicted in the next 20 years due to poaching, habitat loss, fencing along borders
Global distribution	India
Recent field status	Naeem Asharaf Raja. 1997-2002. Observations/sightings of Chinkara in Nara, Cholistan, Kirthar and Thar Umeed Khalid 1991. Observations/sightings of Chinkara in Soan Valley, Nara desert, Larkana, Cholistan Iftikhar Ahmad 2000. sightings at Run of Kuch Rana Shahbaz Khan 1991 sightings at Rasool sir, Cholistan, Choori, Dodlan Qadeer Mehal 186-2003. sightings at Cholistan, Dodlan Munaf Qaimkhani 1998-2003. Sightings at Dureji, Kithar, Tharparkar, Nara, Larkana
IUCN Status :	
National Status :	Vulnerable C1 2a(i); D
Comments :	
Contributors:	
Participants:	Maj Retired Amanullah, Masood arshad, Dr Rubeena akhtar, Dr Maqsood Anwar, Iftikhar Ahmad , Umeed Khalid, Sharif-ud din, M. Asghar, Hamid Ali.

Species name *Gazella subgutturosa* (Güldenstaedt, 1780)
Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
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Common name	Goitored Gazelle
Scientific name :	<i>Gazella subgutturosa</i> (Güldenstaedt, 1780)
Family	Bovidae
Habitat :	1.5: Sub Tropical: 8.1 Hot desert
Habit/ Niche	Diurnal, gregarious
Elevation :	500-1500 m
Distribution:	
Location	No. of individuals
1 Jahlwar	5
2	
3	
4	
5	
Extent of occurrence :	101-5,000 sq km
Area of occupancy :	501-2,000 sq km
No. subpopulations :	2
No. of locations :	Many
Habitat status :	<10% Decrease in the area in the last 10 years and < 10 % decrease in habitat is predicted in next 10 years due to change in land use pattern.
Threats :	Past: 1.1.4.1: Nomadic livestock, 1.3.4 Non woody vegetation collection due to extraction, 1.3.1: Mining (extraction), 4.1.2.2: terrestrial shooting, 7.6: Avalanches/land slides, 8.1: competitors, 8.2: predators Present: 1.1.4.1: Nomadic livestock, 1.3.4 Non woody vegetation collection due to extraction, 1.3.1: Mining (extraction), 4.1.2.2: terrestrial shooting, 7.6: Avalanches/land slides, 8.1: competitors, 8.2: predators. Sport Hunting of the taxon Future: 1.1.4.1: Nomadic livestock, 1.3.4 Non woody vegetation collection due to extraction, 1.3.1: Mining (extraction), 4.1.2.2: terrestrial shooting, 7.6: Avalanches/land slides, 8.1: competitors, 8.2: predators Sport Hunting of the taxon
Population number :	<50
Mature individuals :	<50
Population status :	
Global distribution	Iran, Pakistan, Afghanistan.
Recent field status	
IUCN Status :	
National Status :	Critically Endangered C2a(i); D
Comments :	
Contributors:	
Participants:	M. Hamid Ali, M Asghar, M. Sharif , Kashif Sheikh, M. Niaz, Ali Imran.

Species name *Hemitragus jemlahicus* (H. Smith, 1826)

Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
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Common name	Himalayan Tahr
Scientific name :	<i>Hemitragus jemlahicus</i> (H. Smith, 1826)
Family	Bovidae
Habitat :	N/A
Elevation :	
Distribution:	Absent in Pakistan
Location	No. of individuals
1	
2	
3	
4	

5	
Extent of occurrence :	
Area of occupancy :	
No. subpopulations :	
No. of locations :	
Habitat status :	
Threats :	
Population number :	Occasional sightings in Kashmir
Mature individuals :	N/A
Population status :	
IUCN Status :	
National Status :	Locally Extinct
Comments :	Extinct in the wild (Maqsood Anwar)
Contributors:	
Participants:	Masood Arshad, Dr Rubina Akhtar, Dr Abdul Aleem Chaudhary,

Species name *Moschus chrysogaster* (Hodgson,1839)
Group name / # _____

**TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
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Common name	Himalayan Musk Deer
Scientific name :	<i>Moschus chrysogaster</i> (Hodgson, 1839)
Family	Moschidae
Habitat :	1.4: Temperate Forest, 3.7: Subtropical/tropical high altitude shrubland, 4.7: Subtropical/tropical high altitude grassland.
Habit/ Niche	Shy, solitary animal, active throughout the day
Elevation :	2400-4570m
Distribution:	
Location	No. of individuals
1 Bar Palas	30-50
2 Kilgol,Pologah, Barten.	10-15
3 Jabba,Serai	20
4 Gumrat Valley	50-60
5 Gilgit (Astore, Deosai, Darel range, Fairy Meadows)	
6 Chitral	
7 Palas Valley	40
Presence in protected areas	Machiara National Park
Extent of occurrence :	3,000Sq km
Area of occupancy :	501-2,000sq km
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	>30% Decrease in the area and quality of the habitat in last 25 years and predicted to decrease 20% with in 20 years due to habitat degradation, agriculture extension, encroachments, Military Built-up
Threats :	Past 1.3.3.1: small scale subsistence wood extraction, 1.3.3.2: selective logging of wood extraction, 1.3.4: Non woody vegetation collection Extraction, 3.2.1: subsistence use/local trade of medicine, 3.5.1: subsistence use/local trade for cultural/scientific/leisure activities, 9.9:restricted range due to intrinsic factors 9.6:Skwed sex ration due to intrinsic factors, 10:human disturbances Present 3.1.1: 1.3.3.1: small scale subsistence wood extraction, 1.3.3.2: selective logging of wood extraction, 1.3.4: Non woody vegetation collection Extraction, 3.2.1: subsistence use/local trade of medicine, 3.5.1: subsistence use/local trade for cultural/scientific/leisure activities, 9.9:restricted range due to intrinsic factors 9.6:Skwed sex ration due to intrinsic factors, 10:human disturbances Future 1.3.3.1: small scale subsistence wood extraction, 1.3.3.2: selective logging of wood extraction, 1.3.4: Non woody vegetation collection Extraction, 3.2.1: subsistence use/local trade of medicine, 3.5.1: subsistence use/local trade for cultural/scientific/leisure activities, 9.9:restricted range due to intrinsic factors 9.6:Skwed sex ration due to intrinsic factors, 10:human disturbances
Population number :	Approx 1,000-1,500
Mature individuals :	<250

Population status :	Population is >30% declining in last 30 years and > 30% decline due to habitat loss and trade in the next 30 years is predicted
Global distribution	China, India, Afghanistan, Nepal, Bhutan, Mongolia
Recent field status	Umeed Khalid, 1997. Preliminary Survey of Musk Deer in Pallas Valley, Kohistan, NWFP. Naeem Ashraf Raja 2002. An Assessment of Musk Deer Population in the Palas Valley Ahmad Khan Iftikhar Ahmad 2003. Musk Deer Survey in Swat , NWFP Iftikahr Ahmad 1998. Management Plan of Machiara National Park
IUCN Status :	
National Status :	Endangered B1ab(ii,iii); C2a(i)
Comments :	
Contributors:	
Participants:	Masood Arshad, Iftikhar Ahmad, Naeem Ashraf Raja, Dr Maqsood Anwar, Major Amanullah. Ahmad Khan.

Species name *Muntiacus muntjak* (Zimmermann, 1780)
Group name / # _____

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Common name	Barking Deer
Scientific name :	<i>Muntiacus muntjak</i> (Zimmermann, 1780)
Habitat :	1.5 Sub Tropical Scrub Forest
Family	Cervidae
Elevation :	600-1200m
Distribution:	
Location	No. of individuals
2 khan pur range	50
3 lehrar	150
4 Kahuta	
Presence in protected areas	Margalla hills National Park
Extent of occurrence :	250 sq km
Area of occupancy :	Approx 200sq km
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	>10% Decrease in the area of the habitat in last 10 years and predicted to decrease >10% with in next 10 years due to habitat degradation and change in land use pattern
Threats :	Past: 1.1.4.2: small holder livestock, 1.33.1:small scale subsistence of wood,1.3.4: non woody vegetation collection,1.4.4: transport-land /air (infrastructure development), 3.1.1: Subsistence use of food Present: 1.1.4.2: small holder livestock, 1.33.1:small scale subsistence of wood,1.3.4: non woody vegetation collection,1.4.4: transport-land /air (infrastructure development), 3.1.1: Subsistence use of food Future: 1.1.4.2: small holder livestock, 1.33.1:small scale subsistence of wood,1.3.4: non woody vegetation collection,1.4.4: transport-land /air (infrastructure development), 3.1.1: Subsistence use of food Trade : taxon is hunted for subsistence living
Population number :	Approx 300-400
Mature individuals :	Approx 150
Population status :	Population is >10% declining in last 10 years and > 10% decline in the next 10 years is predicted
Global distribution	India, Nepal, China, Burma
Recent field status	Maqsood Anwar 1995. Status of Barking Deer in Margalla Hill National Park Maqsood Anwar 1994. Status of Barking Deer in Reserve forest of district Haripur Maqsood Anwar 1995. Status of Barking Deer in Scrub forest of District Rawalpindi
IUCN Status :	
National Status :	Endangered B1ab(ii,iii); C2a(i)
Comments :	
Contributors:	
Participants:	Masood Arshad, Iftikhar Ahmad, Naeem Ashraf Raja, Dr Maqsood Anwer,Umeed Khalid

Species name *Naemorhedus goral* (Hardwicke, 1825)
Group name / # _____

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Common name	Gray Goral
Scientific name :	<i>Naemorhedus goral</i> (Hardwicke, 1825)
Family	Bovidae
Habitat :	1.4: Temperate forest, 3.7: subtropical/tropical high altitude of shrubland, moist temperate forest
Habit/ Niche	Crepuscular, small groups
Elevation :	800-2000 m
Distribution:	
Location	No. of individuals
3 margalla hills NP	Approx 35
4 kuz palas	1
5 Kot	2
7 Mardan mountains	12
Presence in protected areas	Manshi Wildlife Sanctuary, Machiara National Park, Qazi Nag Game reserve
Extent of occurrence :	5,000-8,000 sq km
Area of occupancy :	1,000sq km
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Decreases in area >10% in last 10 years. A decline > 10 % is predicted in 10 years due to agricultur land use and othe change in land use
Threats :	Ps: 1.1.4.1: Nomadic livestock, 1.1.4.2: small holder livestock 1.7 fires, 3.3.1: subsistence use of fuel, 3.6: poaching. Pr: 1.1.4.1: Nomadic livestock, 1.1.4.2: small holder livestock 1.7 fires, 3.3.1: subsistence use of fuel, 3.6: poaching. F: 1.1.4.1: Nomadic livestock, 1.1.4.2: small holder livestock 1.7 fires, 3.3.1: subsistence use of fuel, 3.6: poaching. Trade: hunting by locals for food
Population number :	<5,000
Mature individuals :	1500
Population status :	Population is declining > 20% in last ten years and < 10% decline is predicted in next 10 years
Global distribution	India, Nepal, Bhutan
Recent field status	Dr. Maqsood Anwar 1989. Management Plan Of gray Goral in Machira National Park Masood Arshad 2002. Status survey of large mammals with reference to ungulates in Palas valley Kohistan
IUCN Status :	
National Status :	Vulnerable C1+C2a(i)
Comments :	Goral population in Margalla Hills in National Park has increased over the past years due to protecton but in other areas of habitat is still on decline due to habitat loss/degradation and poaching because of a non trophy animal not much alteration has been given to it in the past
Contributors:	
Participants:	Iftikhar Ahmed, Dr Maqsood Anwar, Kashif M Sheikh, Masood Arshad

Species name *Ovis ammon polii* Linnaeus, 1758
Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
IUCN Pakistan & ZOO/CBSG, South Asia

Common name	Marcopolo Sheep
Scientific name :	<i>Ovis ammon polii</i> Linnaeus, 1758
Family	Bovidae
Habitat :	1.2: subarctic forest, 4.2: subarctic grassland, 6: Rocky areas. alpine areas near snow

	fields near high mountains with steep cliffs
Habit/ Niche	Gregarious, feed in Dawn and Dusk, Female stay on lower altitude while male prefer to be high altitude
Elevation :	4,500-6,100 meters
Distribution:	
Location	No. of individuals
1 Karchani nalla	Approx 45
2 larchani nalla	86
3 Gilgit	46
Presence in protected areas	Khunjerab National Park, Kilik mintika game reserve.
4	
5	
Extent of occurrence :	< 100 sq km
Area of occupancy :	11-500sq km
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Decreases in area >10% in last 10 years. A decline > 10 % is predicted in 10 years due to habitat degradation disturbance of livestock
Threats :	P: 1.1.1.4: Nomadic livestock, 3.1.1: subsistence use of food, 9.9 restricted range due to intrinsic factors, 10.7: unknown human disturbances.
Population number :	80-120
Mature individuals :	<250
Population status :	Population in declining due to habitat loss and will decline in future @ > 20% in the next 10 years
Global distribution	China, Afghanistan, Tajikistan
Recent field status	Iftikhar Ahmed 1994. Survey of Marco Polo sheep in Karchanai nullah M. Iqbal 2001. Survey of Marco Polo sheep in Karchanai nullah Amjad Virik 1997. Survey of Marco Polo sheep Kilik Mintika
IUCN Status :	
National Status :	Critically Endangered B1ab(ii,iii)
Comments :	Hunza (Z. Ali)
Contributors:	
Participants:	M. Arif, Kashif M Sheikh, M. Naiz, Iftikhar Ahmed, M. Hamid Ali, M. Asghar, M. Sharif, Umeed Khalid, Dr Maqsood Anwar, Ghulam Ali, Irshad, M Ayaz, Ali Imran.

Species name *Ovis vignei cycloceros*
Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
Mammals of Pakistan – C.A.M.P. – 18 – 22 August 03
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Common name	Afghan Urial
Scientific name :	<i>Ovis vignei cycloceros</i>
Family	Bovidae
Habitat :	1.4:Infrastructure Development, 3.4:Materials, 3.5:Cultural/Scientific/Leisure Activities, 1.5:Invasive Alien species, 6:Pollution,
Habit/ Niche	Gregarious, Diurnal, prefers gentle slopes
Elevation :	1500-2500m
Distribution:	
Location	No. of individuals
1 Torghar	1500-9000
2 Takatu	7-20
3 Wakhan	3-12
4 Noritan-Arandu	12-20
5 Zarghoon	18-30
Presence in protected areas	Ziarat Juniper Wildlife Sanctuary.
Extent of occurrence :	>20,000 sq km
Area of occupancy :	>2,000sq km
No. subpopulations :	5-6
No. of locations :	Many
Habitat status :	>20% Decrease in the area and quality of the habitat in last 10 years and predicted to decrease 20% with in 10 years due to change in land use pattern
Threats :	Past 3.1.1: Subsistence use of food , 7.1:Drought,10: Human Disturbance,

	Present 3.1.1: Subsistence use of food , 7.1:Drought,10: Human Disturbance, Future 3.1.1: Subsistence use of food , 7.1:Drought,10: Human Disturbance,
Population number :	<10,000
Mature individuals :	2000-3000
Population status :	Population is declining >20% due to Poaching habitat loss and will decline in future > 10% in the next 10 years
Global distribution	Pakistan, Afghanistan
Recent field status	
IUCN Status :	
National Status :	Vulnerable C1
Comments :	
Contributors:	
Participants:	M Sharif,M Asghar, Dr A.T Virk, Ali Imran, M Iqbal, Saeed uz Zaman.

Species name *Ovis vignei punjabensis*
Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
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Common name	Punjab Urial
Scientific name :	<i>Ovis vignei punjabensis</i> Lydekker, 1913
Family	Bovidae
Habitat :	3.5 subtropical/tropical dry shrubland, scrub forest tropical thorn forest, low hill range, Rolling stones
Habit/ Niche	Gregarious, active at dawn and dusk
Elevation :	250-1400m
Distribution:	
Location	No. of individuals
1 Salt range	200-50
2 Jhanger	80-100
3 Nursing phuar	20-40
4 Massan jaba	500-550
5 Mahura, Akhori jabb	150—200
Presence in protected areas	Chumbi Surla, Sodi, Diljabba Domeli, Kalla Chitta and Kalabagh Game Reserve.
Extent of occurrence :	Approx 5,000 sq km
Area of occupancy :	Approx 4,000 sq km
No. subpopulations :	16
No. of locations :	Many
Habitat status :	> 50% decrease in area in the last 50 years, >10% decline in the next 20 years is predicted due to encroachment , habitat loss, domestic stock grazing and competition, human activity
Threats :	(Pre, Pas, F) 1.1.4: Livestock (Agriculture) 1.3.1: Mining, 1.3.3 extraction of wood, 1.3.4: non woody vegetation collection, 2.3: Invasive alien sp hybridizers, 3.1.2: sub national/national trade, 3.3.1: subsistence use of fuel. Trade: hunted for local, commercial use for fur, meat, whole animal, food and pet.
Population number :	Approx 1,000
Mature individuals :	500-600
Population status :	> 50% declining in last 70 years and > 10 % decline is predicted in next 10 years due to habitat loss, poaching
Global distribution	Pakistan
Recent field status	Ghulam Ali Awan 1998. Ecology of Punjab Urial in Salt Range Ghulam Ali Awan 2002. Analysis of critical factors affecting Punjab Urial population persistence in Salt Range WWF 1996. Punjab Urial in Jhangar Valley (Population survey)
IUCN Status :	
National Status :	Endangered C 2a (i)
Comments :	
Contributors:	
Participants:	Ghulam Ali Awan, Kashif M Sheikh, Dr.Maqsood Anwar, Arif, Ayaz, Khan, Iftikhar Ahmad, Masood Arshad, Ali Imran.

Species name *Ovis vignei vignei*, Blyth, 1841
 Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
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Common name	Ladakh Urial
Scientific name :	<i>Ovis vignei vignei</i> Blyth, 1841
Family	Bovidae
Habitat :	3.4: Temperate shrubland, 6: rocky area, Dry temperate to sub-alpine
Habit/ Niche	Gregarious, diurnal, shy, prefers lower to mid slopes
Elevation :	1300-3000 meters
Distribution:	
Location	No. of individuals
1 Kharphocho	18
2 Nargora sarfarnago	50
3 Shigar	100
4 Bunji	85
5 Danyor	22
6 Konodas	15
Presence in protected areas	Astore nullah game reserve, Danyore game reserve, Kharfocho (Proposed Wildlife Sanctuary)
Extent of occurrence :	101-5000 sq km
Area of occupancy :	11-500sq km
No. subpopulations :	7-9
No. of locations :	Many
Habitat status :	Decrease in habitat < 40% in last 20 year and in future it will decline > 20% within 10 years due to habitat encroachment.
Threats :	Past: 1.1.4: Nomadic livestock, 1.3.4 Non woody vegetation collection 1.3.1: Mining 4.1.2.2: Shooting, 7.6: Avalanches/land slides, 8.1: competitors, 8.2: predators Present: 1.1.4: Nomadic livestock, 1.3.4 Non woody vegetation collection, 1.3.1: Mining 4.1.2.2: terrestrial shooting, 7.6: Avalanches/land slides, 8.1: competitors, 8.2: predators Future: 1.1.4: Nomadic livestock, 1.3.4 Non woody vegetation collection, 1.3.1: Mining 4.1.2.2: shooting, 7.6: Avalanches/land slides, 8.1: competitors, 8.2: predators Sport Hunting of the taxon
Population number :	300-600
Mature individuals :	(300-500)
Population status :	> 10 % decling in the last 25 years and < 10 % decline in the next 10 years due to habitat loss is predicted
Global distribution	India and Pakistan
Recent field status	
IUCN Status :	
National Status :	Endangered B1ab (iii)+2ab(iiii), C2a (i);
Comments :	
Contributors:	
Participants:	M. Naiz, M. Hamid Ali, M. Asghar, M. Sharif, Dr Maqsood Anwar, Ghulam Ali, Irshad, M Ayaz, Ali Imran. Dr Amjad Tahir Virk, M. Iqbal,

Species name *Pseudois nayaur* (Hodgson, 1833)
 Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
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Common name	Bharal or Blue Sheep
Scientific name :	<i>Pseudois nayaur</i> (Hodgson, 1833)
Family	Bovidae
Habitat :	1.2: sub arctic forest, 3.1suarctic shrubland, 4.2: sub arctic grassland, 6: Rocky areas. alpine areas near snow fields, near high mountains with steep cliffs
Habit/ Niche	Gregarious, Female stay on lower altitude while male prefer to be high altitude
Elevation :	4,500-6,500 meters
Distribution:	
Location	No. of individuals

1 Shamshal valley	Approx 1000
2 Sakhtarabad nullah	67
3 Gojal	60
Presence in protected areas	Khunjerab National Park
Extent of occurrence :	100-200 sq km
Area of occupancy :	<50 sq km
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Stable in area
Threats :	Past: 1.1.4.1: Nomadic livestock, 1.1.4.2: small livestock holders 3.1.1: subsistence use of food, 7.7: disease. Present: 1.1.4.1: Nomadic livestock, 1.1.4.2: small livestock holders, subsistence use for food. Future: 1.1.4.1: Nomadic livestock, 1.1.4.2: small livestock holders 3.1.1: subsistence use of food, 7.7: disease. olders 3.1.1: subsistence use of food, 7.7: disease.
Population number :	1000-1500
Mature individuals :	<250
Population status :	Unknown
Global distribution	Pakistan, China, Nepal, Tibet, Mongolia
Recent field status	Iftikhar Ahmed 1994. Survey of Marcopolo sheep in Karchanai nullah M. Iqbal 2001. Survey of Marcopolo sheep in Karchanai nullah Amjad Virik 1997. Survey of Marcopolo sheep Kilik Mintika
IUCN Status :	
National Status :	EN B1 ab (iii)+2ab (iiii), C2a (i); D
Comments :	
Contributors:	
Participants:	Iftikhar Ahmed, Umeed khalid, Dr Maqsood Anwar, Maj ® amnullah, Rana Shahbaz khan, Masood arshad

Species name *Sus scrofa* Linnaeus, 1758
Group name / # _____

TAXON DATA SHEET – End of CAMP Review Version
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IUCN Pakistan & ZOO/CBSG, South Asia

Common name	Wild Boar
Scientific name:	<i>Sus scrofa</i> Linnaeus, 1758
Family	Suidae
Habitat :	1.5: subtropical/tropical dry forest, .16: subtropical/tropical moist lowland forest, 11.3: plantations artificial-terrestrial, 11.4 rural gardens artificial- terrestrial, 11.5:urban areas artificial-terrestrial, agricultural fields, irrigated plantation, riverine tracks
Habit/ Niche	Gregarious, nocturnal. Prefers irrigated fields
Elevation :	200 – 1000 m
Distribution:	
Location	No. of individuals
Widely distributed	
Presence in protected areas	
Extent of occurrence :	>20,000 km2
Area of occupancy :	>2000 km2
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Increase in area. Habitat is improving through agriculture development
Threats :	None (Pa, Pr, F)
Population number :	50,000-100,000
Mature individuals :	>10,000
Population status :	>30% Decline in population in the last 5 years; predicted decline of <30% in the next 10 years due to persecution by farmers
Global distribution	Afghanistan, Iran, India, Pakistan
Recent field status	
IUCN Status :	
National Status :	Least Concern
Comments :	Considered as agriculture pest, population is declining in some areas while increasing in previously un occupied areas.
Contributors:	
Participants:	Rana Shahbaz Khan, M. Asghar, Dr A.T Virk, Ali Imran

Species name *Lepus capensis* Linnaeus, 1758
 Group name / # _____

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Common name	Cape Hare
Scientific name :	<i>Lepus capensis</i> Linnaeus, 1758
Family	Leporidae
Habitat :	Arid, semi-arid, temperate tropical pine forest, alpine meadows
Habit/ Niche	Nocturnal, crepuscular, solitary
Elevation :	100 – 5000 m
Distribution:	
Location	No. of individuals
1 Soon Valley, Salt Range	500 – 1000
2 Khewra, Salt range	500 – 1000
3	
Presence in Protected areas	Hazar –Ghangi Chiltan National Park, Hingol National Park, Dureji Game Reserve.
Extent of occurrence :	>20,000 km ²
Area of occupancy :	>2000 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Decrease in area of >10% in the last 10 years; predicted decline of >10% in the next 10 years: decrease in quality of habitat due to increase in land use
Threats :	P, Pr, F: hunting and habitat destruction
Population number :	3000 – 5000
Mature individuals :	4000
Population status :	Decline in population of >10% in the last 10 years; predicted decline of >10% in the next 10 years
Global distribution	Pakistan, Iran, Afghanistan
Recent field status	T.J. Roberts 1997. Mammals of Pakistan
IUCN Status :	
National Status :	Vulnerable C1
Comments :	
Contributors:	Rana Shahbaz, Ali Imran, M. Asghar, M. Sharif, Zulfiqar Ali
Participants:	Rana Shahbaz, Ali Imran, M. Asghar, M. Sharif, Zulfiqar Ali

Species name *Lepus nigricollis* F. Cuvier, 1823
 Group name / # _____

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Common name	Black napped Hare
Scientific name :	<i>Lepus nigricollis</i> F. Cuvier, 1823
Family	Leporidae
Habitat :	Riverine areas, hilly areas, deserts, barren lands and agricultural lands.
Habit/ Niche	Nocturnal, territorial
Elevation :	100 – 2000 m
Distribution:	
Location	No. of individuals
1 Mandi Bahaudin	100 – 150
2 Gujrat/ Sialkot	200 – 300
3 Jehlum	
4 Loralai	80 – 100
5	
Presence in Protected areas	Chumbi Surla and Rasool Barrage Wildlife Sanctuary, Head Qadirabad Game Reserve.
Extent of occurrence :	50,000 km ²

Area of occupancy :	40,000 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Decrease in area of <10% in the last 10 years; predicted decline of <10% in the next 10 years; decrease in quality due to agricultural expansion
Threats :	P: 3.1.1: subsistence use/local trade hunting for food, 5.2: persecution by hunting Pr: 3.1.1: subsistence use/local trade hunting for food, 5.2: persecution by hunting using spotlights, 5.1: persecution for pest control F: 3.1.1: subsistence use/local trade hunting for food, 5.2: persecution by hunting using spotlights, 5.1: persecution for pest control
Population number :	>100,000
Mature individuals :	>10,000
Population status :	Decline in population of <10% in the last 10 years; predicted decline of >10% in the next 10 years
Global distribution	Through out sub continent
Recent field status	T.J Roberts 1997 Mammal of Pakistan
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	M Hamid Ali, Ali Imran, Muhammad Iqbal, Muhammad Asghar, Muhammad Sharif, Rana Shahbaz Khan
Participants:	M Hamid Ali, Ali Imran, Muhammad Iqbal, Muhammad Asghar, Muhammad Sharif, Rana Shahbaz Khan

Species name *Ochotona roylei* (Ogilby, 1839)

Group name / # _____

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Common name	Royle's Pika
Scientific name :	<i>Ochotona roylei</i> (Ogilby, 1839)
Habitat :	1.4: temperate forest, 3.4: temperate shrub land, 4.4: temperate grassland, 5.11: alpine wetlands (including temporary water from snowmelt), rocky temperate to sub-alpine areas along or near sources of fresh water
Habit/ Niche	Diurnal, colonial
Elevation :	2000 – 3500 m
Distribution:	
Location	No. of individuals
1 Lahu-Sar Lake, Kaghan	10 – 15
2 Dudipat Sar Lake	10 – 15
3 Mingora	15 – 20
4	
Presence in Protected areas	Saiful Malook National Park.
Extent of occurrence :	> 20,000 km ²
Area of occupancy :	>2000 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Decrease of <10% in the last 10 years; predicted decline of <10% in the next 10 years; decrease in quality of habitat due to habitat disturbance caused by recreation activities
Threats :	None
Population number :	2000 – 2500
Mature individuals :	<2500
Population status :	Stable population; no decline predicted
Global distribution	India, Pakistan, Nepal
Recent field status	T.J. Roberts 1997. Mammals of Pakistan
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Muhammad Arif, Muhammad Ayaz Khan, Hamid Ali, Muhammad Asghar, Shareef – Ud – Din, Ali Imran, Muhammad Niaz Khan
Participants:	Muhammad Arif, Muhammad Ayaz Khan, Hamid Ali, Muhammad Asghar, Shareef – Ud – Din, Ali Imran, Muhammad Niaz Khan

Species name *Ochotona rufescens* (Gray, 1842)
 Group name / # _____

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Common name	Afghan Pika or Collared Pika
Scientific name :	<i>Ochotona rufescens</i> (Gray, 1842)
Habitat :	1.4: temperate forest, 3.4: temperate shrub land, 4.4: temperate grassland, 5.11: alpine wetlands (includes temporary waters from snowmelt),6: rocky areas, 7.1: non-aquatic caves
Habit/ Niche	Diurnal, gregarious, colonial
Elevation :	1200 – 3600 m
Distribution:	
Location	No. of individuals
1 Ziarat	
2 Zarghoon Valley	
3 Tanishpa	
4	
Presence in Protected areas	Hazar-Ghanji Chiltan National Park, Ziarat Wildlife Sanctuary, Chumbi Surla Wildlife Sanctuary
Extent of occurrence :	101 – 5000 km ²
Area of occupancy :	1200 – 3500 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	No change in habitat area; predicted decline of <10% in the next 30 years; no change in quality of habitat
Threats :	P: predation Pr: pesticides and depredation F: pesticides and depredation
Population number :	15,000 – 20,000
Mature individuals :	<10,000
Population status :	Increase in population; no decline predicted for the future
Global distribution	Pakistan, Afghanistan
Recent field status	T.J. Roberts 1997. Mammals of Pakistan
IUCN Status :	
National Status :	Least Concern
Comments :	Chiltan, Bolan, Kalat, Ziarat, Zhob, Waziristan, Kurram Valley (Z. Ali)
Contributors:	Hamid Ali, Muhammad Asghar, Shareef-ud-din, Niaz Khan, Ali Imran, Muhammad Arif, Muhammad Ayaz
Participants:	Hamid Ali, Muhammad Asghar, Shareef-ud-din, Niaz Khan, Ali Imran, Muhammad Arif, Muhammad Ayaz

Species name *Acomys cahirinus* (Desmarest, 1819)
 Group name / # _____

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Common name	Cairo Spiny Mouse
Scientific name :	<i>Acomys cahirinus</i> (Desmarest, 1819)
Family	Muridae
Habitat :	1.5: subtropical/tropical dry forest, 3.5: subtropical/tropical dry shrub land, hilly areas
Habit/ Niche	Diurnal, gregarious, fossorial granivorous
Elevation :	300 – 1200 m
Distribution:	
Location	No. of individuals
1 Kirthar Range	
2 Lasbela Range	
3	
4	
Presence in Protected areas	Kirthar National Park, Dureji Game Reserve, Mahal.

Extent of occurrence :	4000 km ²
Area of occupancy :	11 – 500 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	No change in habitat area; no change predicted for the future; no change in habitat quality
Threats :	P, Pr, F: 5.1: persecution for pest control
Population number :	Rare
Mature individuals :	100
Population status :	Stable population; predicted decline of <10% in the next 10 years
Global distribution	Cyprus, Egypt, Saudi Arabia, Sudan, Israel
Recent field status	Not Known
IUCN Status :	
National Status :	Near Threatened
Comments :	
Contributors:	Syed Zafar-ul-Hassan
Participants:	M Anwar Maan, Syed Zafar-ul-Hassan, Dr Irshad Arshad, Hamid Iqbal

Species name *Allactaga elater* (Lichtenstein, 1828)
Group name / # _____

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Common name	Small Five Toad Jerboa
Scientific name :	<i>Allactaga elater</i> (Lichtenstein, 1828)
Family	Dipodidae
Habitat :	8.3:Cold desert, 11.3:plantations (artificial – terrestrial), 8.1:hot desert, upland cooled desert regions, stony alluvial soil, gravel flats, rocky mountains slopes, sand dunes, cultivated fields
Habit/ Niche	Nocturnal, fossorial, herbivore , gregarious
Elevation :	200 – 1500 m
Distribution:	
Location	No. of individuals
1 Gulistan, Chaman	
2 Pishin	
3 Sorab	
4 Loralai	
5 Chiltan hills, Quetta	
6 Mach, Bolan	
Presence in Protected areas	Hazar Ghangi Chiltan National Park
Extent of occurrence :	90,000 km ²
Area of occupancy :	>2000 km ²
No. subpopulations :	6
No. of locations :	6
Habitat status :	Unknown
Threats :	P, Pr, F: natural predators reported in literature
Population number :	Unknown
Mature individuals :	Unknown
Population status :	Unknown
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem
Participants:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr Khalid Baig, Dr Irshad Arshad, Syed Zafar-ul-Hassan, M Anwar Maan, Khalid Rafiq, Hamid Ali

Species name *Allactaga euphratica* Thomas, 1881
 Group name / # _____

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Common name	Long Eared Jerboa
Scientific name :	<i>Allactaga euphratica</i> Thomas, 1881
Family	Dipodidae
Habitat :	
Habit/ Niche	Nocturnal, solitary in forest areas
Elevation :	
Distribution:	
Location	No. of individuals
1	
Extent of occurrence :	
Area of occupancy :	
No. subpopulations :	
No. of locations :	
Habitat status :	
Threats :	
Population number :	
Mature individuals :	
Population status :	
Global distribution	Not Known
Recent field status	Not Known
IUCN Status :	
National Status :	Not Evaluated
Comments :	This species has not been recorded in Pakistan territory (Robert, 1997). Possibility of its occurrence within the desert area of Pishin District in Balochistan is not to be ruled out since this Jerboa is found in Iran and Afghanistan
Contributors:	Zulfiqar Ali, Muhammad Arshad
Participants:	Zulfiqar Ali, Muhammad Arshad, Dr Naeem, Dr Aleem, Dr Khalid Baig, Dr Irshad Arshad, Khalid Rafiq, M Anwar Maan, Syed Zafar-ul-Hassan, Hamid Iqbal

Species name *Allactaga hotsoni* Thomas, 1920
 Group name / # _____

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Common name	Hotson's Five toed Jerboa
Scientific name :	<i>Allactaga hotsoni</i> Thomas, 1920
Family	Dipodidae
Habitat :	Hot and cold deserts, rocky areas, gravel plains, stony regions, barren desert areas
Elevation :	200 – 1500 m
Distribution:	
Location	No. of individuals
1 Noakundi, Chaghi	
2 Darzi, Chaghi	
3 Anam Bostan, Chaghi	
4 Kont, Sibi	
5 East Kharan	
6 North Makran	
7 Panjgoor	
Extent of occurrence :	50,000 km ²
Area of occupancy :	>2000 km ²
No. subpopulations :	7
No. of locations :	7
Habitat status :	Unknown
Threats :	Unknown

Population number :	Unknown
Mature individuals :	Unknown
Population status :	Unknown
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Muhammad Arshad, Amjad Virk, Zulfiqar Ali
Participants:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr Khalid Baig, Dr Irshad Arshad, Syed Zafar-ul-Hassan, M Anwar Maan, Khalid Rafiq, Hamid Ali

Species name *Alticola roylei* (Gray, 1842)
Group name / # _____

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Common name	High Mountain Vole
Scientific name :	<i>Alticola roylei</i> (Gray, 1842)
Family	Muridae
Habitat :	Sub-alpine meadows
Habit/ Niche	diurnal, colonial herbivore
Elevation :	2500 – 4300 m
Distribution:	
Location	No. of individuals
1 Gilgit	
2 Naran	
Presence in Protected areas	Khynjerab National Park, Deosai National Park.
Extent of occurrence :	12,000 – 15,000 km ²
Area of occupancy :	800 – 1200 km ²
No. subpopulations :	4 – 5
No. of locations :	≅ 15 – 20
Habitat status :	No change in habitat; decrease in quality of habitat due to loss of feeding grounds
Threats :	P: none Pr: none F: predation and natural disaster
Population number :	Many
Mature individuals :	<10,000
Population status :	Stable population no decline predicted
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr Khalid Baig, Dr Irshad Arshad, Syed Zafar-ul-Hassan, M Anwar Maan, Khalid Rafiq, Hamid Ali
Participants:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr Khalid Baig, Dr Irshad Arshad, Syed Zafar-ul-Hassan, M Anwar Maan, Khalid Rafiq, Hamid Ali

Species name *Alticola stoliczkanus* (Blanford, 1875)
Group name / # _____

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Common name	Stoliczka's High Mountain Vole
Scientific name :	<i>Alticola stoliczkanus</i> (Blanford, 1875)
Family	Muridae
Habitat :	Alpine grassland, alpine forest
Habit/ Niche	Not known
Elevation :	0 – 3600 m
Distribution:	
Location	No. of individuals

1 Koh – e - Safed	
2 Gilgit	
3 Baltistan	
Presence in protected areas	Chitral Gol National Park, Deosai National Park, Central Karakoram National Park.
Extent of occurrence :	Unknown
Area of occupancy :	Unknown
No. subpopulations :	Unknown
No. of locations :	Unknown
Habitat status :	Unknown
Threats :	Unknown
Population number :	Unknown
Mature individuals :	Unknown
Population status :	Unknown
IUCN Status :	
National Status :	Data Deficient
Comments :	
Contributors:	Dr Naeem, Dr Aleem
Participants:	Dr Naeem, Dr Aleem

Species name *Apodemus flavicollis* (Melchior, 1834)
Group name / # _____

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Common name	Yellow necked field mouse
Scientific name :	<i>Apodemus flavicollis</i> (Melchior, 1834)
Family	Muridae
Habitat :	Unknown
Elevation :	Unknown
Distribution:	
Location	No. of individuals
1	
2	
Extent of occurrence :	Unknown
Area of occupancy :	Unknown
No. subpopulations :	Unknown
No. of locations :	Unknown
Habitat status :	Unknown
Threats :	Unknown
Population number :	Unknown
Mature individuals :	Unknown
Population status :	Unknown
IUCN Status :	
National Status :	Data Deficient
Comments :	Kashmir (Z.Ali)
Contributors:	M Anwar Maan, Hamid Iqbal, Syed Zafar-ul-Hassan, Dr Irshad Arshad
Participants:	M Anwar Maan, Hamid Iqbal, Syed Zafar-ul-Hassan, Dr Irshad Arshad

Species name *Apodemus rusiges* Miller, 1913
Group name / # _____

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Common name	Himalayan Wood Mouse
Scientific name :	<i>Apodemus rusiges</i> Miller, 1913
Family	Muridae
Habitat :	1.4: temperate forest, hilly area, arid rocky mountains, sub-alpine shrub, dry temperate coniferous forests
Habit/ Niche	Nocturnal, herbivore, terrestrial, climber
Elevation :	2000 – 3500 m

Distribution:	
Location	No. of individuals
1 Himalayan Range	
2 Higher Mountain Slopes, Balochistan	
3 Dir	
4 Chitral	
5 Kaghan	
Presence in Protected areas	Chitral Gol National Park, Khynerab National Park
Extent of occurrence :	8000 km ²
Area of occupancy :	<10 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	No change in habitat area; no predicted decline, habitat quality stable
Threats :	P, Pr, F: 11: landslides
Population number :	Unknown
Mature individuals :	Unknown
Population status :	Unknown
Global distribution	Afganistan, Russia, Iranm Caspian sea, Costal Plains, Nepal
Recent field status	Not Known
IUCN Status :	
National Status :	VU D2
Comments :	
Contributors:	M Anwar Maan, Syed Zafar-ul-Hassan, Hamid Iqbal, Dr Irshad Arshad, Khalid Rafiq
Participants:	M Anwar Maan, Syed Zafar-ul-Hassan, Hamid Iqbal, Dr Irshad Arshad, Khalid Rafiq

Species name *Bandicota bengalensis* (Gray and Hardwicke, 1833)
Group name / # _____

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Common name	Lesser Bandicoot Rat
Scientific name :	<i>Bandicota bengalensis</i> (Gray and Hardwicke, 1833)
Family	Muridae
Habitat :	1.5:subtropical/tropical dry forest, 12.7:irrigated land (includes irrigation canals)
Habit/ Niche	Diurnal, gregarious, fossorial, granivorous
Elevation :	0 – 2000 m
Distribution:	
Location	No. of individuals
1 Faisalabad	
2 Gujranwala	
3 Thatta	
4 Ummar Kot	
Presence in protected areas	Lal Suhanra National Park, Gatwla Game Reserve, Khanawal Plantation, Haliji Lake Wildlife Sanctuary
Extent of occurrence :	
Area of occupancy :	>20,000 km ²
No. subpopulations :	501- 2000 km ²
No. of locations :	Many
Habitat status :	Many
Threats :	No change in habitat status; no predicted change; no change in habitat quality
Population number :	P: pest control Pr: pest control F: pest control
Mature individuals :	Many
Population status :	Many
Global distribution	India, Srilanka, Indonesia, Mayanmar, Malaysia, Indonesia
Recent field status	Not Known
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	The species is found in abundance all over the country and is considered a pest in agricultural areas specifically in rice, wheat, and sugarcane crops. Pesticides are used

	to control its numbers
Participants:	M. Anwar Maan
	Hamid Iqbal Javed, Syed Zafar-ul-Hassan, M. Anwar Maan, Dr. Muhammad Irshad Arshad, Dr. Khalid Baig, Khalid Rafiq

Species name *Calomyscus bailwardi* Thomas, 1905
Group name / # _____

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Common name	Mouse-like Hamster
Scientific name :	<i>Calomyscus bailwardi</i> Thomas, 1905
Family	Muridae
Habitat :	6: rocky areas, 8.1: hot desert, hilly areas, desert area
Habit/ Niche	Nocturnal, gregarious, fossorial, herbivore
Elevation :	600 – 3400 m
Distribution:	
Location	No. of individuals
1 Suleman Range	
2 Makran	
3 Panjgur	
4 Chiltan Hill, Quetta	
5 Harboi, Kalat	
6 Sandeman Tangi, Ziarat	
7 Parachinar	
8 Dera Ghazi Khan	
9 Lakhi Hills	
10 Dadu	
11 Rani Kot	
Presence in protected areas	Kithar National Park, Hazar Ganji Chiltan National Park.
Extent of occurrence :	31,000 km ²
Area of occupancy :	11 – 500 km ²
No. subpopulations :	12
No. of locations :	12
Habitat status :	No change in habitat status; no predicted decline; habitat stable in quality
Threats :	None
Population number :	Many
Mature individuals :	Many
Population status :	Stable population; no change predicted
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Zulfiqar Ali, Muhammad Arshad
Participants:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr Irshad Arshad, Hamid Iqbal, M Anwar Maan, Syed Zafar-ul-Hassan, Khalid Rafiq

Species name *Cremnomys cutchicus* Wroughton, 1912
Group name / # _____

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Common name	Rock Rat
Scientific name :	<i>Cremnomys cutchicus</i> Wroughton, 1912
Family	Muridae
Habitat :	8.1: hot desert, 6: rocky areas, hilly and desert areas
Habit/ Niche	Lives in rocky crevices
Elevation :	
Distribution:	
Location	No. of individuals

1	
2	
3	
4	
5	
Extent of occurrence :	
Area of occupancy :	
No. subpopulations :	
No. of locations :	
Habitat status :	
Threats :	
Population number :	
Mature individuals :	
Population status :	
Global distribution	Pakistan, India
Recent field status	Not Known
IUCN Status :	
National Status :	Data Deficient
Comments :	Tharparkar (Z.Ali)
Contributors:	Zulfiqar Ali, Hamid Iqbal
Participants:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr Irshad Arshad, Syed Zafar-ul-Hassan, M Anwar Maan, Khalid Rafiq, Hamid Iqbal

Species name *Cricetulus migratorius* (Pallas, 1773)
Group name / # _____

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Common name	Migratory Hamster or Grey Hamster
Scientific name :	<i>Cricetulus migratorius</i> (Pallas, 1773)
Family	Muridae
Habitat :	6: rocky areas, 8.2: temperate deserts, mountain steppe, high altitude, mountain valley bottoms, terraced cultivation
Habit/ Niche	
Elevation :	1350 – 3200 m
Distribution:	
Location	No. of individuals
1 Kargah, Gilgit	
2 Baltistan	
3 Karakoram Mountains	
4 Phandar Lake	
5 Kalat	
6 Chamman, Quetta	
7 Pishin	
8 Ziarat	
9 Kurram valley	
Extent of occurrence :	330,000 km ²
Area of occupancy :	>2000 km ²
No. subpopulations :	10
No. of locations :	10
Habitat status :	No change in habitat area; no change predicted for the future; no change in quality of habitat
Threats :	None
Population number :	Many
Mature individuals :	>10,000
Population status :	Population stable; no change predicted for the future
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Zulfiqar Ali, Muhammad Arshad
Participants:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr Irshad Arshad, Khalid Tahir, M Anwar Maan, Hamid Iqbal, Syed Zafar-ul-Hassan

Species name *Dryomys nitedula* (Pallas, 1778)
Group name / # _____

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Common name	Forest Dormouse
Scientific name :	<i>Dryomys nitedula</i> (Pallas, 1778)
Family	Gliridae
Habitat :	Riverine and lower mountain slopes, juniper forest of Balochistan
Habit/ Niche	Nocturnal, arboreal, herbivore and Insectivore
Elevation :	2600 – 3850 m
Distribution:	
Location	No. of individuals
1 Kharwaki Baba	1000 – 2000
2 Shirani State Forest	600 – 900
3 Kurram Valley	200 – 500
4 Kingergali Game Reserve	600 – 900
5 Pallas	1600 – 2000
6 Harboi	900 – 1500
Presence in Protected areas	Ziarat Junipre Wildlife Sanctuary, Shirani State Forest.
Extent of occurrence :	≅ 4000 km ²
Area of occupancy :	400 km ²
No. subpopulations :	Many
No. of locations :	8
Habitat status :	Decrease in area of >10% in the last 10 years; decrease in quality of habitat caused due to cutting down of juniper forest and disease.
Threats :	P: nocturnal predators Pr: deforestation, predators, disease F: deforestation, predators, disease
Population number :	3000 – 6000
Mature individuals :	<10,000
Population status :	Stable and no predicted decline
Global distribution	China, Europe, Russia, Pakistan
Recent field status	T.J Roberts, 1997. Mammals of Pakistan Charles Woods 1997. Biodiversity of small mammals in mountains of Pakistan
IUCN Status :	
National Status :	Endangered ↓ Vulnerable B1ab(iii)+2ab(iii)
Comments :	- should be included in provincial wildlife acts as threatened species - taxonomic status of Balochistan and Himalayan population should be adequately evaluated for future references - T. J. Roberts, 1997 describes <i>d. nitedula</i> and <i>d. niethammeri</i> as synonyms. However, Woods and Killpatrick, 1997 deals with them as separate species
Contributors:	Dr. Aleem A Khan, Dr. Muhammad Naeem Khan
Participants:	Dr. Aleem A Khan, Dr. Muhammad Naeem Khan

Species name *Ellobius fuscocapillus* Blyth, 1843
Group name / # _____

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Common name	Quetta or Afghan Mole Vole
Scientific name :	<i>Ellobius fuscocapillus</i> Blyth, 1843
Family	Muridae
Habitat :	Arid mountain steppe country
Habit/ Niche	Nocturnal, gregarious, fossorial, herbivore
Elevation :	≅ 3000 m
Distribution:	
Location	No. of individuals

1 Toba Kakar Range	100 – 200
2	
Extent of occurrence :	2500 km ²
Area of occupancy :	100 km ²
No. subpopulations :	3
No. of locations :	3 – 4
Habitat status :	No change in habitat status; no predicted decline; decrease in quality of habitat since a drought as reduced feeding grounds
Threats :	P: 7.1: drought Pr: none F: 7.1: drought, 7.4: wildfire, 7.6: avalanches/landslides
Population number :	≅ 2000
Mature individuals :	600
Population status :	Stable population; no predicted decline
IUCN Status :	
National Status :	Near Threatened VU D ↓ NT
Comments :	
Contributors:	Dr. Khalid Baig
Participants:	Dr Khalid J Biag, Khalid Rafiq, Dr Irshad, Dr Arshad, Zafar-ul-Hassan, Anwar Maan, hamid Iqbal, Dr Aleem, Dr Naeem

Species name *Eupetaurus cinereus* Thomas, 1888
Group name / # _____

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Common name	Wolly Flying Squirrel
Scientific name :	<i>Eupetaurus cinereus</i> Thomas, 1888
Family	Sciuridae
Habitat :	1.4: temperate forest, 6: rocky area, 7.1: caves (non-aquatic)
Habit/ Niche	Cave dweller, nocturnal, solitary, omnivorous, and arboreal.
Elevation :	≅ 3000 m
Distribution:	
Location	No. of individuals
Northern Areas (Gilgit)	
1 Jaglot	50 – 60
2 Khanbari	50 – 60
3 Naran	50 – 60
4 Gah	50 – 60
5 Karimabad	50 – 60
Presence in Protected areas	Khunjerab National Park, Tangir Game Reserve.
Extent of occurrence :	10,000 km ²
Area of occupancy :	25 km ²
No. subpopulations :	5 – 6
No. of locations :	5 – 6
Habitat status :	Decrease in area of <10% in the last 10 years; predicted decline of >10% in the next 10 years; decrease in quality of habitat as feeding grounds are used for commercial purposes
Threats :	1: habitat loss/ degradation (human induced), 1.1.2.1: small scale wood plantations, 1.3.3.2: selective logging, 8.2: predators (change in native species dynamics)
Population number :	500 – 600
Mature individuals :	>300
Population status :	Decline in population of <10%; predicted decline of <10%
Global distribution	Pakistan
Recent field status	Zulfiqar Ali, 1994. rediscovery, population estimation and habitat analysis Peter Zahlar, 1994. Rediscovery Z.B. Mirza 1993. Occurrence Ghullam Rasool. 2002. Conservation
IUCN Status :	
National Status :	Endangered B2ab(ii,iii); C2a (i)
Comments :	The species is largely herbivorous therefore largely depends on the existence of temperate forests. Forest cutting for commercial purposes resulting in the shrinkage of feeding grounds for the species. People of the area believe that the animal feeds on the milk of their livestock. It is

	contrary to the facts therefore require public awareness to avoid unnecessary killing of the species.
Contributors:	Dr. M Arshad, Zafar Ul Hassan, M Anwar Maan, Hamid Iqbal, Khalid Rafique, Dr Khalid J Baig, M Arshad, Zulfiqar Ali, Dr Aleem A Khan, Dr M Naeem Khan
Participants:	Zulfiqar Ali

Species name *Funambulus pennantii* Wroughton, 1905
Group name / # _____

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Common name	Northern Palm Squirrel
Scientific name :	<i>Funambulus pennantii</i> Wroughton, 1905
Family	Sciuridae
Habitat :	Cosmopolitan
Habit/ Niche	Arboreal, Omnivorous
Elevation :	0 – 2500 m
Distribution:	Throughout Pakistan
Location	No. of individuals
1	
2	
Extent of occurrence :	400,000 km ²
Area of occupancy :	>2000 km ²
No. subpopulations :	Not known
No. of locations :	Many
Habitat status :	No change in habitat status; no predicted decline; decrease in quality
Threats :	P: none Pr: none F: none
Population number :	Many
Mature individuals :	>10,000
Population status :	Stable population; no predicted decline
Global distribution	Afghanistan, Iran, India, Bangladesh, Myanmar, Srilanka
Recent field status	
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Muhammad Anwar Maan, Syed Zafar-ul-Hassan, Dr. Muhammad Irshad Arshad, Zulfiqar Ali, Mohummad Arshad, Dr. Muhammad Khalid Baig, Dr. Naeem Khan, Dr. Aleem Khan, Khalid Rafiq, Dr. Naeem Khan
Participants:	Muhammad Anwar Maan, Syed Zafar-ul-Hassan, Dr. Muhammad Irshad Arshad, Zulfiqar Ali, Mohummad Arshad, Dr. Muhammad Khalid Baig, Dr. Naeem Khan, Dr. Aleem Khan, Khalid Rafiq, Dr. Naeem Khan

Species name *Gerbillus cheesmani* Thomas, 1919
Group name / # _____

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Common name	Cheesman's Gerbil
Scientific name :	<i>Gerbillus cheesmani</i> Thomas, 1919
Family	Muridae
Habitat :	Desert sub-tropics
Habit/ Niche	Nocturnal, gregarious
Elevation :	
Distribution:	
Location	No. of individuals
1 Southern Balochistan	>2000
2	
3	

4	
Presence in protected areas	Hazar-Ganji Chiltan National Park.
5	
Extent of occurrence :	101 – 5000 km ²
Area of occupancy :	<10 km ²
No. subpopulations :	1
No. of locations :	3 – 4
Habitat status :	No change in habitat status; no predicted change in status; no change in quality of habitat
Threats :	None
Population number :	2000
Mature individuals :	<250
Population status :	Stable population; no predicted changes the future
IUCN Status :	
National Status :	Vulnerable VU D; D2
Comments :	
Contributors:	Dr Naeem, Dr Aleem
Participants:	Dr Naeem, Dr Aleem

Species name *Gerbillus gleadowi* Murray, 1886

Group name / # _____

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Common name	Indian Hairy-footed Gerbil
Scientific name :	<i>Gerbillus gleadowi</i> Murray, 1886
Family	Muridae
Habitat :	Desert, sand dunes
Elevation :	0 – 600 m
Habit/ Niche	Nocturnal, Omnivorous, confine to sand dune deserts
Distribution:	
Location	No. of individuals
1 Thar desert	2000
2 Thal/Cholisthan	1000
3	
4	
5	
Extent of occurrence :	101 – 5000 km ²
Area of occupancy :	<10 km ²
No. subpopulations :	4
No. of locations :	Many
Habitat status :	Decrease in habitat area of <10% in the last 10 years; predicted decline of <10%; decrease in habitat quality as a result of desert loss due to better irrigation techniques
Threats :	P, Pr, F: Habitat encroachment by humans for agriculture
Population number :	3000
Mature individuals :	<2500
Population status :	Decline in population of <10%; predicted decline of <10%
IUCN Status :	
National Status :	Near Threatened
Comments :	Tharparker, D.G Khan (Z.Ali)
Contributors:	Dr Aleem, Dr Naeem
Participants:	Dr Aleem, Dr Naeem

Species name *Gerbillus nanus* Blanford, 1875

Group name / # _____

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Common name	Balochistan Gerbil
Scientific name :	<i>Gerbillus nanus</i> Blanford, 1875
Family	Muridae
Habitat :	Rocky and stony mountains, edges of cultivated lands, tropical thorn forests
Habit/ Niche	Avoids sand dunes and prefers rocky stony regions
Elevation :	0 – 500 m
Distribution:	
Location	No. of individuals
1 Riverine Sindh	<1000
2 Upper Indus Basin	<800
3 Southern Balochistan	≅ 2000
4	
5	
Extent of occurrence :	101 – 5000 km ²
Area of occupancy :	<10 km ²
No. subpopulations :	3
No. of locations :	Many
Habitat status :	Decrease in area of >10% in the last 10 years; predicted decline of >10% in the next 10 years; decrease in quality of habitat due to enhanced irrigation techniques
Threats :	P, Pr, F: enhanced irrigation techniques have reduced habitat
Population number :	3500
Mature individuals :	<2500
Population status :	Decline in population of <10% in the last 10 years; predicted decline of <10% in the next 10 years
IUCN Status :	
National Status :	Near Threatened VU C1a+2a(j) ↓ NT
Comments :	Sahiwal, D,G khan, D I Khan, Bahawalpur, Faisaladab, Dadu,Larkana, Makran, Panjgur, Lasbela,Cholistann, Salt Range (Z.Ali)
Contributors:	Dr Naeem, Dr Aleem
Participants:	Dr Naeem, Dr Aleem

Species name *Golunda ellioti* Gray, 1837

Group name / # _____

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Common name	Indian Bush Rat
Scientific name :	<i>Golunda ellioti</i> Gray, 1837
Family	Muridae
Habitat :	1.5: subtropical/tropical dry forest, 3.5: subtropical/tropical dry shrub land, tropical thorn forest, grassy clumps
Habit/ Niche	Fossorial, not particularly gregarious, partly diurnal, herbivorous
Elevation :	
Distribution:	
Location	No. of individuals
1 Thatta	
2 Salt Range	
3	
4	
Presence in Protected areas	Chumbi Surla Wildlife Sanctuary, Daljaba Game Reserve.
Extent of occurrence :	>20,000 km ²
Area of occupancy :	>2000 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	No change in habitat area; no change predicted for the future; no change in quality of habitat

Threats :	P, Pr, F: Persecution for pest control
Population number :	Many
Mature individuals :	Many
Population status :	Stable population; no change predicted for the future
Global distribution	India, Srilanka
Recent field status	
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Dr Irshad Arshad
Participants:	Dr Irshad Arshad, Khalid Rafiq, M Anwar Maan, Syed Zafar-ul-Hassan

Species name *Hylopetes fimbriatus* (Gray, 1837)
Group name / # _____

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Common name	Small Kashmir Flying Squirrel
Scientific name :	<i>Hylopetes fimbriatus</i> (Gray, 1837)
Family	Sciuridae
Habitat :	1.4: temperate forest, 3.3: boreal shrubland,6: rocky areas
Habit/ Niche	Sympatric, nocturnal, arboreal
Elevation :	500 – 3500 m
Distribution:	
Location	No. of individuals
1 Murree Hills	200 – 300
2 Gilgit/Nanga parbat	200 – 300
3 Kaghan	50 – 100
4 Kashmir	200 – 300
5 Kohistan	200 – 300
6 Hazara	200 – 300
7 Swat	150 – 200
8 Nathiagali	150 – 200
Presence in Protected areas	Ayubia National Park
Extent of occurrence :	40,000 km ²
Area of occupancy :	>2000 km ²
No. subpopulations :	3
No. of locations :	3
Habitat status :	Decrease in area of <10% in the last 10 years; predicted decline of >10% in the next 10 years; decrease in quality of habitat due to deforestation resulting in loss of fruiting trees
Threats :	P, Pr, F: 1.3.3.1:small-scale subsistence logging, 1.3.3.2:selective logging, 1.3.3.3: clear-cutting
Population number :	1500 – 2000
Mature individuals :	1000
Population status :	Decline in population by <10%; predicted decline of >10%
Global distribution	Pakistan, India, Afghanistan.
Recent field status	T.J Roberts, 1997. Mammals of Pakistan
IUCN Status :	
National Status :	Vulnerable EN ↓ Vu C2a(i)
Comments :	
Contributors:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr irshad Arshad, Dr Khalid Baig, M Anwar Maan, Hamid Iqbal, Syed Zafar-ul-Hassan
Participants:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr irshad Arshad, Dr Khalid Baig, M Anwar Maan, Hamid Iqbal, Syed Zafar-ul-Hassan

Species name *Hyperacrius fertilis* (True, 1894)
 Group name / # _____

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Common name	True's Vole or Burrowing Vole
Scientific name :	<i>Hyperacrius fertilis</i> (True, 1894)
Family	Muridae
Habitat :	1.4: temperate forest, moist temperate forest, sub – alpine scrub zone
Elevation :	2500 – 3600 m
Distribution:	
Location	No. of individuals
1 Himalayan Range	Many
2	
Presence in protected areas	Khunjerab National Park, Deosai National Park
Extent of occurrence :	2000 km ²
Area of occupancy :	11 – 500 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	No change in habitat area; no change predicted for the future; no change in habitat quality
Threats :	P, Pr, F: other
Population number :	Many
Mature individuals :	Many
Population status :	Population stable; no change predicted for the future
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	M Anwar Maan
Participants:	M Anwar Maan, Syed Zafar-ul-Hassan, Dr Irshad Arshad, Hamid Iqbal

Species name *Hyperacrius wynnei* (Blanford, 1881)
 Group name / # _____

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Common name	Murree Vole
Scientific name :	<i>Hyperacrius wynnei</i> (Blanford, 1881)
Family	Muridae
Habitat :	1.4: temperate forest, 4.4: temperate grassland, temperate forest and meadows
Habit/ Niche	Gregarious, fossorial, exclusively herbivore, pest on crops, orchids
Elevation :	1800 – 3000 m
Distribution:	
Location	No. of individuals
1 Muskhpuri	
2 Masote	
3 Shogran	
Presence in protected areas	Ayubia National Park.
Extent of occurrence :	≅ 8000 km ²
Area of occupancy :	600 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	No change in habitat; predicted decline of >20% in the next 10 years
Threats :	P: Nil Pr: Nil F: urbanization, habitat shrinkage
Population number :	Don't know
Mature individuals :	>10,000
Population status :	Stable population presently, predicted decline of <10% in the next 10 years
IUCN Status :	

National Status :	Least Concern
Comments :	The species is endemic to Pakistan but otherwise fairly widespread in the moist temperate forest region in Northern Pakistan.
Contributors:	Dr. Khalid Baig
Participants:	Dr Khalid Baig, Syed Zafar-ul-Hassan, M Anwar Maan, Dr. Irshad Arshad, Dr. M Naeem Khan, Dr Abdul Aleem Khan, Mr Zulfiqar Ali, Hamid Iqbal, Khalid Rafiq, Mr. Muhammad Arshad

Species name *Hystrix indica* Kerr, 1792
Group name / # _____

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Common name	Indian Crested Porcupine
Family	Hystricidae
Scientific name :	<i>Hystrix indica</i> Kerr, 1792
Habitat :	1.4: Temperate fores, 1.5: Sub-tropical/tropical dry forest, 3.5: Subtropical/tropical dry shrubland, 4.4: temperate grassland, 6: rocky areas, 7.2: subterranean habitats 8.1: hot desert, 8.2: temperate desert, 12.7: irrigated land, 13: introduced vegetation, steppe mountains, moist temperate deciduous forests, broken rocky hillsides
Habit/ Niche	Herbivore Shy, nocturnal, solitary
Elevation :	0-2700 m
Distribution:	
Location	No. of individuals
1 Shakar Parian	
2 Chak Shahzad	
3 Margalla Hills	
4 Bella	
Presence in Protected areas	Kithar National Park, Hazar-Ganji Chiltan National Park, Lal Suhanra National Park, Chumbi Surla Game Reserve, Changa Manga Wildlife Sanctuary, Khanewal Plantation Wildlife Sanctuaries
Extent of occurrence :	>20,000 km ²
Area of occupancy :	>2000 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Decreasing in area of <10% over last 10 years due to urbanization and poisoning; decrease in quality of habitat due to shrinkage of feeding grounds
Threats :	P: none Pr: 1.4: infrastructure development, 4.1.2: terrestrial accidental mortality, 4.1.3: accidental mortality 5.1: pest control, 10.4: human disturbance due to transport F 1.4: infrastructure development, 4.1.2: terrestrial accidental mortality, 4.1.3: accidental mortality 5.1: pest control, 10.4: human disturbance due to transport
Population number :	Many
Mature individuals :	< 10,000
Population status :	Stable but predicted decline of <10% in the next ten years
Global distribution	Pakistan, India, Afghanistan, Iran
Recent field status	T.J Roberts, 1997. Mammals of Pakistan Abdul Aziz, 1990. Vertebrate pest control Sajid et al, 1996-2001 Houbara Survey in Cholistan desert and Sindh
IUCN Status :	
National Status :	Near Threatened
Comments :	The animal is widely distributed all over Pakistan and at several places it poses significant damage to agricultural crops
Contributors:	Dr. Khalid J Baig
Participants:	Dr. Khalid J Baig, Khalid Rafiq, Dr. M Arshad, M Anwar Maan, Zulfiqar Ali, Dr Aleem, Dr Nadeem, Hamid Iqbal, M Arshad

Species name *Jaculus blanfordi* (Murray, 1884)
Group name / # _____

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Common name	Blanford's Jerboa
Scientific name :	<i>Jaculus blanfordi</i> (Murray, 1884)
Family	Dipodidae
Habitat :	Hot and cold deserts, barren arid regions, sand dunes, gravel plains
Elevation :	700 – 1250 m
Distribution:	
Location	No. of individuals
1 Kharan	
2 Darzi Cha, Chaghi	
3 Zangi Nawar, Chaghi	
4 Nuchki, Chaghi	
5 Pishin	
Extent of occurrence :	40,000 km ²
Area of occupancy :	>2000 km ²
No. subpopulations :	5
No. of locations :	5
Habitat status :	Unknown
Threats :	Unknown
Population number :	Unknown
Mature individuals :	Unknown
Population status :	Unknown
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr Khalid Baig, Dr Irshad Arshad, Syed Zafar-ul-Hassan, M Anwar Maan, Khalid Rafiq, Hamid Ali
Participants:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr Khalid Baig, Dr Irshad Arshad, Syed Zafar-ul-Hassan, M Anwar Maan, Khalid Rafiq, Hamid Ali

Species name *Marmota caudata* (Geoffroy, 1844)

Group name / # _____

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Common name	Long Tailed Marmot
Scientific name :	<i>Marmota caudata</i> (Geoffroy, 1844)
Family	Sciuridae
Habit/ Niche	Gregarious, herbivorous, diurnal
Habitat :	1.2:subartic forest, 4.2: sub artic grassland, 4.4: temperate grassland
Elevation :	3200 – 4200 m
Distribution:	
Location	No. of individuals
1 Gilgit	200 – 300
2 Lake Saif-ul-Maluk	
3 Pallas Valley	10-30
4Kaghan	2-10
Presence in Protected areas	Khynerab National Park, Deosai National Park
Extent of occurrence :	101 – 5000 km ²
Area of occupancy :	501 – 2000 km ²
No. subpopulations :	??
No. of locations :	6 – 8
Habitat status :	No change in habitat status; no predicted change; no change in habitat quality
Threats :	P: none Pr: 8.1:competitors (change in native species dynamics), 8.2:predators (change in native species dynamics), 8.5: pathogens/parasites (change in native species dynamics) F: 8.1:competitors (change in native species dynamics), 8.2:predators (change in

	native species dynamics), 8.5: pathogens/parasites (change in native species dynamics), 3.2.1: subsistence use/local trade (medicine)
Population number :	Not known
Mature individuals :	<10,000
Population status :	Stable population, predicted decline of <10% in the next 10 years
Global distribution	Afghanistan, Russia, China, Pakistan
Recent field status	Ali Nawaz et al, 1993. General survey of Deosai Dr, Baigh 2000. survey of Khynerab national Park and Deosai
IUCN Status :	
National Status :	Least Concern
Comments :	The species is subject to predation of variety of animals like snow leopard, wolf, red fox, golden eagle and also shepherd dogs. At high altitudes in an appropriate habitats, the species is otherwise fairly common.
Contributors:	Dr. Khalid Baig
Participants:	Dr. Khalid Baig, Khalid Rafiq, S. Zafar-ul-Hasssan, Anwar Maan, Dr. Irshad, Dr. M Naeem Khan, Dr. Abdul Aleem, Zulfiqar Ali, Hamid Iqbal

Species name *Marmota himalayana* (Hodgson, 1841)
Group name / # _____

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Scientific name :	<i>Marmota himalayana</i> (Hodgson, 1841)
Habitat :	1.4: temperate forest, 4.4: temperate grassland, 6: rocky areas. Arid cold mountains, temperate rocky mountains
Elevation :	3600 – 5200 m
Distribution:	
Location	No. of individuals
1 Karokoram	50 – 70
2 Skardu	10 – 20
3	
4	
Presence in Protected areas	Khynerab National Park, Deosai National Park
Extent of occurrence :	<100 km ²
Area of occupancy :	<10 km ²
No. subpopulations :	2
No. of locations :	2
Habitat status :	Unknown
Threats :	P: Natural predators, grazing Pr: Natural predators, grazing F: Natural predators, grazing, limited gene pool
Population number :	<100
Mature individuals :	<50
Population status :	Population declining at a rate of >50 in the last 10 years, predicted decline of >50% in the next 10 years
IUCN Status :	
National Status :	Critically Endangered B1ab(iii)+2ab(iii); C2a(i); D
Comments :	
Contributors:	Dr. Aleem A Khan
Participants:	Prof. Dr. M. Naeem Khan

Species name *Meriones crassus* Sundevall, 1842
 Group name / # _____

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Common name	Sundevall's Jird
Scientific name :	<i>Meriones crassus</i> Sundevall, 1842
Family	Muridae
Habit/ Niche	Nocturnal, colonial, mainly herbivore
Habitat :	Barren stony or sandy clay plains
Elevation :	
Distribution:	
Location	No. of individuals
1	
2	
3	
4	
5	
Extent of occurrence :	120,000 km ²
Area of occupancy :	5000 – 7000 km ²
No. subpopulations :	5 – 7
No. of locations :	Many
Habitat status :	Decrease in habitat area of <10% in the last 10 years; decline of >10% predicted for next 10 years; decrease in habitat quality due to loss of feeding ground as a result of civil unrest in Afghanistan
Threats :	P: drought, war Pr: war F: war, drought and other climatic hazards
Population number :	≅ 1000 – 3000
Mature individuals :	<2500
Population status :	Decline in population of <10% in the next 10 years; predicted decline of <10% in the next 10 years
IUCN Status :	
National Status :	Near Threatened
Comments :	Waziristan, Mekran, Lorlai, Chiltan, Nushki, Kharan, Khuzdar, Dalbadin,, Panjgur (Z. Ali)
Contributors:	Zulfiqar Ali, Muhammad Arshad
Participants:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr Khalid Baig, Dr Irshad Arshad, Syed Zafar-ul-Hassan, M Anwar Maan, Hamid Iqbal

Species name *Meriones hurrianae* Jerdon, 1867
 Group name / # _____

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 IUCN Pakistan & ZOO/CBSG, South Asia**

Common name	Indian Desert Jird or Desert Gerbil
Scientific name :	<i>Meriones hurrianae</i> Jerdon, 1867
Family	Muridae
Habitat :	Alluvial plains and uncultivated clay flats
Habit/ Niche	diurnal, gregarious, omnivorous
Elevation :	
Distribution:	
Location	No. of individuals
1 Cholistan	
2 Bahawalpur	
3	
Extent of occurrence :	300,000 km ²
Area of occupancy :	>2000 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	No change in habitat area; no decline predicted for the future; no change in habitat quality

Threats :	None
Population number :	Many
Mature individuals :	<10,000
Population status :	Population stable; no change predicted for the future
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Dr Khalid Baig
Participants:	Dr Khalid Baig, Zulfiqar Ali, Khalid Rafiq, Dr Aleem, Dr Naeem, Dr Irshad Arshad, Muhammad Arshad, Syed Zafar-ul-Hassan, M Anwar Maan

Species name *Meriones libycus* Lichtenstein, 1823
Group name / # _____

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Common name	Liybyan Jird
Scientific name :	<i>Meriones libycus</i> Lichtenstein, 1823
Family	Muridae
Habitat :	Valleys and low lying areas in mountains
Habit/ Niche	diurnal, gregarious, not aggressive
Elevation :	0 – 1700 m
Distribution:	
Location	No. of individuals
1 Kalat	
2 Kuram Valley	
Presence in protected areas	Hazar-Ganji Chiltan National Park.
Extent of occurrence :	100,000 – 150,000 km ²
Area of occupancy :	8000 – 12,000 km ²
No. subpopulations :	3 – 5
No. of locations :	Many
Habitat status :	No change in habitat status; no predicted decline; decrease in quality of habitat due to loss of feeding ground as a result of drought
Threats :	P: drought Pr: none F: drought
Population number :	Many
Mature individuals :	4000
Population status :	Stable population; no predicted decline
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Zulfiqar Ali, Muhammad Arshad, Dr Khalid Baig
Participants:	Zulfiqar Ali, Dr Irshad Arshad, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr Khalid Baig, M Anwar Maan, Syed Zafar-ul-Hassan, Hamid Iqbal

Species name *Meriones persicus* (Blanford, 1875)
Group name / # _____

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Common name	Persian Jird
Scientific name :	<i>Meriones persicus</i> (Blanford, 1875)
Family	Muridae
Habitat :	6: rocky areas, mountainous regions
Habit/ Niche	Nocturnal, gregarious, cannibalism is observed in captivity, aggressive
Elevation :	1850 – 3250 m
Distribution:	
Location	No. of individuals

1Quetta	
Presence in protected areas	Hazar Ganji National Park.
Extent of occurrence :	>50,000 km ²
Area of occupancy :	1800 km ²
No. subpopulations :	>10
No. of locations :	>10
Habitat status :	No change in habitat area; no change predicted for the future; decrease in quality of habitat due to drought which resulted in loss of feeding grounds
Threats :	P: drought Pr: none F: natural disaster (like drought, landslides, earthquakes), predation
Population number :	Many
Mature individuals :	4000
Population status :	No information about present population status available; decline of >10% predicted in the next 10 years
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Dr Khalid Baig
Participants:	Dr Khalid Baig, Khalid Rafiq, Dr Irshad Arshad, M Anwar Maan, Zulfiqar Ali, Dr Aleem, Dr Naeem, Zafar – Ul- Hassan

Species name *Microtus juldaschi* (Severtzov, 1879)
Group name / # _____

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Common name	Pamir Vole or Juldaschi's Vole
Scientific name :	<i>Microtus juldaschi</i> (Severtzov, 1879)
Habitat :	1.4: temperate forest, moist temperate forest
Family	Muridae
Elevation :	3000 – 3500 m
Distribution:	
Location	No. of individuals
1 Himalayan Range	
2	
Presence in protected areas	Khunjerab National Park, Deosai National Park.
3	
Extent of occurrence :	2000 km ²
Area of occupancy :	11 – 500 km ²
No. subpopulations :	Unknown
No. of locations :	Unknown
Habitat status :	Unknown
Threats :	P, Pr, F: 11: landslides
Population number :	Many
Mature individuals :	Many
Population status :	Unknown
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	M Anwar Maan
Participants:	M Anwar Maan, Syed Zafar-ul-Hassan, Dr Irshad Arshad, Hamid Iqbal

Species name *Millardia gleadowi* (Murray, 1886)
Group name / # _____

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Common name	Sand Colored Rat
Scientific name :	<i>Millardia gleadowi</i> (Murray, 1886)
Family	Muridae
Habitat :	Hot desert

Habit/ Niche	Nocturnal, not colonial, gregarious, fossorial, least dependent on water
Elevation :	0 – 500 m
Distribution:	
Location	No. of individuals
1 Thar Desert	
2 Thal	
3 Lasbela	
Extent of occurrence :	15,000 – 20,000 km ²
Area of occupancy :	>2000 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	No change in habitat status: no change predicted for the future; habitat stable in quality
Threats :	P, Pr, F: Persecution for pest control
Population number :	Many
Mature individuals :	Many
Population status :	Stable population; no change predicted for the future
Global distribution	Endemic to sub continent
Recent field status	Hamid Iqbal Javed 2002. General observation at Nagarparkar
IUCN Status :	Least Concern
National Status :	
Comments :	
Contributors:	Hamid Iqbal
Participants:	Hamid Iqbal, M Anwar Maan, Syed Zafar-ul-Hassan, Dr Irshad Arshad

Species name *Millardia meltada* (Gray, 1837)
Group name / # _____

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Common name	Soft Furred Field Rat
Scientific name :	<i>Millardia meltada</i> (Gray, 1837)
Family	Muridae
Habitat :	Irrigated land (includes irrigation canals (artificial – aquatic), agricultural land, watercourses, embankments, halophyte vegetation)
Habit/ Niche	Nocturnal, fossorial, herbivore, solitary
Elevation :	0 – 2000 m
Distribution:	
Location	No. of individuals
1 All Punjab	
2 Malir, Karachi	
3 Tharparkar	
4 Thatta	
Presence in Protected areas	All protected areas in its range
5	
Extent of occurrence :	5001 – 20,000 km ²
Area of occupancy :	500 – 700 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	No change in habitat; no predicted decline; no change in quality of habitat
Threats :	P, Pr, F: persecution by pest control
Population number :	Many
Mature individuals :	Many
Population status :	Increase in population; no future decline predicted
Global distribution	India, Srilanka
Recent field status	M. Anwar Maan 1990. Small Mammals study through trapping
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	M Anwar Maan
Participants:	M Anwar Maan, Hamid Iqbal, Dr Irshad Arshad, Syed Zafar-ul-Hassan

Species name: *Mus booduga* (Gray, 1837)
 Group name / # _____

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Common name	Field Mouse
Scientific name :	<i>Mus booduga</i> (Gray, 1837)
Family	Muridae
Habitat :	1.5: subtropical/tropical dry forest, 3.5:subtropical/tropical dry shrub land, 11.1: arable land, agricultural land and human dwellings
Habit/ Niche	Nocturnal, gregarious and granivorous
Elevation :	0 – 2000 m
Distribution:	Found throughout Pakistan
Location	No. of individuals
1	
2	
Presence in Protected areas	All protected areas in Punjab
Extent of occurrence :	> 20,000 km ²
Area of occupancy :	> 2000 km ²
No. subpopulations :	many
No. of locations :	Many
Habitat status :	No change in habitat area; no predicted change; no change in quality of habitat
Threats :	P, Pr, F: pest control
Population number :	Many
Mature individuals :	many
Population status :	Increase in population; no predicted decline
Global distribution	Iran, India, Srilanka, Afghanistan, Myanmar
Recent field status	
IUCN Status :	
National Status :	Least Concern
Comments :	Along with Murids this species is considered a pest and pesticides are used to control damage
Contributors:	M Anwar Maan
Participants:	M Anwar Maan, Hamid Iqbal, Syed Zafar-ul-Hassan, Dr Irshad Arshad, Dr Khalid Baig, Khalid Rafiq

Species name *Mus cervicolor* Hodgson, 1845
 Group name / # _____

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Common name	Fawn Colored Mouse
Scientific name :	<i>Mus cervicolor</i> Hodgson, 1845
Habitat :	Unknown
Elevation :	Unknown
Distribution:	Unknown
Location	No. of individuals
1	
2	
Extent of occurrence :	Unknown
Area of occupancy :	Unknown
No. subpopulations :	Unknown
No. of locations :	Unknown
Habitat status :	Unknown
Threats :	Unknown
Population number :	Unknown
Mature individuals :	Unknown
Population status :	Unknown
IUCN Status :	
National Status :	Data Deficient

Comments :	
Contributors:	M Anwar Maan
Participants:	Ahmad Khan, Syed Zafar-ul-Hassan, M Anwar Maan, Dr Irshad Arshad, Hamid Iqbal

Species name *Mus musculus* Linnaeus, 1758
Group name / # _____

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Common name	House Mouse
Scientific name :	<i>Mus musculus</i> Linnaeus, 1758
Family	Muridae
Habitat :	1.4: temperate forest, 1.5: subtropical/tropical forest, 3.4: temperate shrub land, 3.5: subtropical/tropical dry shrub land, 3.6: subtropical/tropical moist shrub land, 3.7: subtropical/tropical high altitude, 3.8: Mediterranean – type shrubby vegetation, 4.4: temperate grassland, 4.5: subtropical/tropical dry lowland grassland, 4.6: subtropical/tropical seasonally wet/flooded lowland grassland, 4.7: subtropical/tropical high altitude grassland 8: deserts, 11: artificial terrestrial (arable land, pasture land, plantations, rural gardens, urban areas, subtropical/tropical heavily degraded former forest, 12.7: irrigated land (includes irrigation channels), 12.9: canals and drainage channels, ditches
Habit/ Niche	Nocturnal, gregarious, omnivorous, climber
Elevation :	0 – 2200 m
Distribution:	Found all over Pakistan
Location	No. of individuals
1	
2	
Presence in Protected areas	All protected areas.
Extent of occurrence :	> 20,000 km ²
Area of occupancy :	>2000 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	No change in habitat; no predicted change, no change in quality of habitat
Threats :	P, Pr, F: pest control
Population number :	Many
Mature individuals :	many
Population status :	Increase in population; no predicted change
Global distribution	Iran, Middle east, Europe
Recent field status	
IUCN Status :	
National Status :	Least Concern
Comments :	This species is a pest for agricultural crops and domestic households. Pesticides are used to minimize damages
Contributors:	M Anwar Maan
Participants:	M Anwar Maan, Hamid Iqbal, Syed Zafar-ul-Hassan, Dr Irshad Arshad, Dr Khalid Baig, Khalid Rafiq

Species name *Mus platythrix* Bennett, 1832
Group name / # _____

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Common name	Indian Brown Spiny Mouse
Scientific name :	<i>Mus platythrix</i> Bennett, 1832
Family	Muridae
Habitat :	Unknown
Habit/ Niche	Unknown
Elevation :	Unknown

Distribution:	Unknown
Location	No. of individuals
1	
2	
3	
4	
5	
Extent of occurrence :	Unknown
Area of occupancy :	Unknown
No. subpopulations :	Unknown
No. of locations :	Unknown
Habitat status :	Unknown
Threats :	Unknown
Population number :	Unknown
Mature individuals :	Unknown
Population status :	Unknown
IUCN Status :	
National Status :	Data Deficient
Comments :	
Contributors:	M Anwar Maan, Syed Zafar-ul-Hassan, Dr Irshad Arshad, Hamid Iqbal
Participants:	M Anwar Maan

Species name *Mus saxicola* Elliot, 1839
Group name / # _____

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Common name	Grey Spiny Mouse
Scientific name :	<i>Mus saxicola</i> Elliot, 1839
Habitat :	1.5: Subtropical/tropical dry forest, 3.5: subtropical/tropical dry shrub land, 6: rocky areas, hilly tracts, subtropical dry areas
Family	Muridae
Elevation :	0 – 500 m
Distribution:	Unknown
Location	No. of individuals
1	
2	
3	
4	
5	
Extent of occurrence :	Unknown
Area of occupancy :	Unknown
No. subpopulations :	Unknown
No. of locations :	Unknown
Habitat status :	Unknown
Threats :	Unknown
Population number :	Unknown
Mature individuals :	Unknown
Population status :	Unknown
Global distribution	Sindh and India
Recent field status	Not Known
IUCN Status :	
National Status :	Data Deficient
Comments :	Lasbela, Thatta, Kirthar Range, Dadu, Rani Kot Fort (Z.Ali)
Contributors:	M Anwar Maan
Participants:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr Khalid Baig, Dr Irshad Arshad, Syed Zafar-ul-Hassan, M Anwar Maan, Hamid Iqbal

Species name *Nesokia indica* (Gray and Hardwicke, 1830)
Group name / # _____

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Common name	Mole Rat
Scientific name :	<i>Nesokia indica</i> (Gray and Hardwicke, 1830)
Family	Muridae
Habitat :	1.4: temperate forest, 1.6: subtropical/tropical moist lowland, 12.9: canals and drainage channels, ditches, watercourses, barren areas with desmostachya and saccharum. Rarely invades in agricultural areas
Habit/ Niche	Nocturnal, gregarious, fossorial, herbivore
Elevation :	0 – 2000 m
Distribution:	All over Pakistan
Location	No. of individuals
1	
2	
3	
4	
Presence in protected areas	Kithar National Park (Sindh), Lal Suhanra National Park (Punjab), Chichawatni Plantation Wildlife Sanctuary, Khanewal Plantation Wildlife Sanctuary, Kamalia Plantation Wildlife Sanctuary.
Extent of occurrence :	> 20,000 km ²
Area of occupancy :	> 2000km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	No change in habitat; no predicted decline, no change in habitat quality
Threats :	P: pest control Pr: pest control F: none
Population number :	Many
Mature individuals :	Many
Population status :	Population increasing; no predicted decline in the future
Global distribution	India, Middle east, Afghanistan
Recent field status	Not Known
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Dr. Muhammad Irshad Arshad
Participants:	Dr. Muhammad Irshad Arshad, Syed Zafar-ul-Hassan, Muhammad Anwar Maan, Khalid Rafiq, Dr Khalid Baig, Hamid Iqbal

Species name *Petaurista petaurista* (Pallas, 1766)
Group name / # _____

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Common name	Giant Red or Indian Giant Flying Squirrel
Scientific name :	<i>Petaurista petaurista</i> (Pallas, 1766)
Family	Sciuridae
Habitat :	1.4: temperate forest, 3.3: boreal shrub land, 6: rocky areas, moist temperate forest in the Himalayas
Habit/ Niche	Arboreal, forest dwellers, shy, and nocturnal
Elevation :	500 – 3100 m
Distribution:	
Location	No. of individuals
1 Dunga gali	200
2 Neelam valley	200
3 Shogran and Naran	300
4 Siran nullah	100

5 Chitral	100
6 Dir	100
Presence in Protected areas	Chitral Gol National Park
Extent of occurrence :	25,000 km ²
Area of occupancy :	>2000km ²
No. subpopulations :	3
No. of locations :	3
Habitat status :	Decrease in area of >10% in the last 10 years; predicted decline of >10% in the next 10 years; decrease in quality due to loss of fruiting trees caused by deforestation
Threats :	P, Pr, F: 1.3.3.1: small-scale subsistence logging, 1.3.3.2: selective logging, 1.3.3.3: clear-cutting
Population number :	1000
Mature individuals :	700
Population status :	Decline in population of <10% in the last 10 years; predicted decline of >10%
Global distribution	India, Nepal, Barma, Malaysia, Afghanistan, China, Russia, Pakistan
Recent field status	T.J Roberts, 1997. Mammals of Pakistan
IUCN Status :	
National Status :	Vulnerable EN ↓ Vu C2a (i)
Comments :	
Contributors:	Saeed-uz-Zaman, Muhammad Anwar Maan, Syed Zafar-ul-Hassan, Dr. Muhammad Irshad Arshad, Zulfiqar Ali, Mohummad Arshad, Dr. Muhammad Khalid Baig, Dr. Naeem Khan, Dr. Aleem Khan, Hamid Iqbal
Participants:	Muhammad Anwar Maan, Syed Zafar-ul-Hassan, Dr. Muhammad Irshad Arshad, Zulfiqar Ali, Mohummad Arshad, Dr. Muhammad Khalid Baig, Dr. Naeem Khan, Dr. Aleem Khan, Hamid Iqbal

Species name *Rattus nitidus* (Hodgson, 1845)
Group name / # _____

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Common name	Himalayan Rat
Scientific name :	<i>Rattus nitidus</i> (Hodgson, 1845)
Family	Muridae
Habitat :	Unknown
Elevation :	Unknown
Distribution:	Unknown
Location	No. of individuals
1	
2	
Extent of occurrence :	Unknown
Area of occupancy :	Unknown
No. subpopulations :	Unknown
No. of locations :	Unknown
Habitat status :	Unknown
Threats :	Unknown
Population number :	Unknown
Mature individuals :	Unknown
Population status :	Unknown
Global distribution	India, China, Vietnam, Pakistan
Recent field status	Not Known
IUCN Status :	
National Status :	Data Deficient
Comments :	Murree Hills (Z.Ali)
Contributors:	Zulfiqar Ali, Muhammad Arshad
Participants:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr Khalid Baig, Dr Irshad Arshad, Syed Zafar-ul-Hassan, M Anwar Maan, Hamid Iqbal

Species name *Rattus norvegicus* (Berkenhout, 1769)
Group name / # _____

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Common name	Norway rat
Scientific name :	<i>Rattus norvegicus</i> (Berkenhout, 1769)
Family	Muridae
Habitat :	10.1: rocky shores (includes rocky offshore islands and sea cliffs), 10.2: sand, single or pebble shores (includes sand bars, spits sandy islets, dune systems), limited distribution in shipyards, warehouses and railway stations
Habit/ Niche	Nocturnal, gregarious and granivorous
Elevation :	Sea level
Distribution:	
Location	No. of individuals
1 Port Bin Qasim, Karachi	12,000
2 Gowadar	4000
3	
4	
5	
Extent of occurrence :	60 km ²
Area of occupancy :	<10 km ²
No. subpopulations :	3
No. of locations :	3
Habitat status :	Decrease in area of habitat of <10% in last 10 years; predicted decrease of <10% in next 10 years; decrease in quality of habitat due to better management of warehouses and refinement in sanitation
Threats :	P, Pr, F: 1.2: land management of agricultural areas, 2: invasive alien species (directly affecting the species), 5.1: pest control
Population number :	Not known
Mature individuals :	< 10,000
Population status :	Population stable; predicted future decline of <10% in the next 10 years
Global distribution	Bangladesh, India
Recent field status	Not Known
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Syed Zafar-ul-Hassan
Participants:	Dr Muhammad Arshad, M Anwar Maan, Syed Zafar-ul-Hassan, Hamid Iqbal, Khalid Rafiq, Dr Khalid Baig

Species name *Rattus rattus* (Linnaeus, 1758)
Group name / # _____

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Common name	Roof rat
Scientific name :	<i>Rattus rattus</i> (Linnaeus, 1758)
Family	Muridae
Habitat :	Human habitation; the species have adapted to commercial settlement and are distributed throughout areas where humans live
Habit/ Niche	Nocturnal, gregarious and granivorous
Elevation :	0 – 600 m
Distribution:	Throughout Pakistan
Location	No. of individuals
1	
2	
Extent of occurrence :	>20,000 km ²
Area of occupancy :	>2000 km ²
No. subpopulations :	Many

No. of locations :	Many
Habitat status :	No change in habitat; no predicted decline, no change in quality of habitat
Threats :	P: none Pr: baiting, pesticides F: baiting, pesticides
Population number :	Many
Mature individuals :	Many
Population status :	Stable population; no predicted decline
Global distribution	India, Afghanistan, Iran, Nepal
Recent field status	
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Dr. Muhammad Irshad Arshad, Dr. Khalid Baig, Hamid Iqbal
Participants:	Muhammad Anwar Maan, Syed Zafar-ul-Hassan, Dr. Muhammad Irshad Arshad, Zulfiqar Ali, Mohummad Arshad, Dr. Muhammad Khalid Baig, Dr. Naeem Khan, Dr. Aleem Khan, Khalid Rafiq

Species name *Rattus turkestanicus* (Satunin, 1903)
Group name / # _____

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Common name	Turkestan Rat
Scientific name :	<i>Rattus turkestanicus</i> (Satunin, 1903)
Family	Muridae
Habitat :	1.4: temperate forests, barren rocky mountain regions
Habit/ Niche	Omnivorous, Nocturnal, gregarious and climber
Elevation :	2300 – 3100 m
Distribution:	
Location	No. of individuals
1 Himalayan Range	
2 Murree Hills	
3	
Extent of occurrence :	5000 km ²
Area of occupancy :	11 – 500 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	Unknown
Threats :	P, Pr, F: 11: landslides
Population number :	Many
Mature individuals :	Many
Population status :	Unknown
Global distribution	India, Bangladesh
Recent field status	
IUCN Status :	
National Status :	Least Concern
Comments :	Chitral, Dir, Swat, Kohistan, Gilgit, Baltistan(Z.Ali)
Contributors:	M Anwar Maan
Participants:	M Anwar Maan, Syed Zafar-ul-Hassan, Dr Irshad Arshad, Hamid Iqbal

Species name *Rhombomys opimus* (Lichtenstein, 1823)
Group name / # _____

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Common name	Great Gerbil or Giant Day Jird
Scientific name :	<i>Rhombomys opimus</i> (Lichtenstein, 1823)
Family	Muridae
Habitat :	Steppic mountains, upland deserts, sand dunes
Habit/ Niche	Diurnal, Burrows in sand dunes and apple orchids

Elevation :	0 – 915 m
Distribution:	
Location	No. of individuals
1 Chaghai Desert	200
2	
Presence in protected areas	Hazar Ganji National Park.
Extent of occurrence :	101 – 5000 km ²
Area of occupancy :	<10 km ²
No. subpopulations :	1
No. of locations :	2
Habitat status :	No change in habitat; no change predicted for the future; no change in quality of habitat
Threats :	None
Population number :	≈ 200
Mature individuals :	<250
Population status :	Stable population; no change predicted for the future
IUCN Status :	
National Status :	Near Threatened
Comments :	
Contributors:	Zulfiqar Ali, Muhammad Arshad
Participants:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr Irshad Arshad, Syed Zafar-ul-Hassan, M Anwar Maan, Dr Khalid Baig, Khalid Tahir

Species name *Sicista concolor* (Büchner, 1892)

Group name / # _____

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Common name	Chinese Birch Mouse
Scientific name :	<i>Sicista concolor</i> (Büchner, 1892)
Family	Zapodidae
Habitat :	1.4: temperate forest, 3.4: temperate shrub land, 6: rocky areas, Himalayas, steppe & grassy slopes of moist mountain regions, terraced cultivation of valleys in Gilgit
Habit/ Niche	Sympatric, prefers moist mountain regions
Elevation :	2000 – 4000 m
Distribution:	
Location	No. of individuals
1 Gitidas, Mansehra	10,000 – 15,000
2 Lalu sar, Mansehra	10,000 – 15,000
3 Chitral	5000 – 10,000
4 Gilgit	10,000 – 15,000
5 Chillas	5000 – 10,000
Presence in Protected areas	Khunjerab National Park, Tangir Game Reserve.
Extent of occurrence :	45,000 km ²
Area of occupancy :	> 2000km ²
No. subpopulations :	5
No. of locations :	5
Habitat status :	No change in habitat area; no predicted change in the future; no change in quality of habitat
Threats :	None
Population number :	40,000 – 55,000
Mature individuals :	30,000
Population status :	Stable population; no predicted decline
Global distribution	Pakistan, India, Russia, China,
Recent field status	Informal sitting by all the participants in the area of occupancy T.J. Roberts 1997. Mammals of Pakistan
IUCN Status :	
National Status :	Least Concern
Comments :	
Contributors:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr Khalid Baig, Khalid Rafiq, Syed Zafar-ul-Hassan, M Anwar Maan, Dr Irshad Arshad, Hamid Ali
Participants:	Zulfiqar Ali, Muhammad Arshad, Dr Aleem, Dr Naeem, Dr Khalid Baig, Khalid Rafiq, Syed Zafar-ul-Hassan, M Anwar Maan, Dr Irshad Arshad, Hamid Ali

Species name *Tatera indica* (Hardwicke, 1807)
Group name / # _____

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Common name	Indian Gerbil or Antelope Rat
Scientific name :	<i>Tatera indica</i> (Hardwicke, 1807)
Family	Muridae
Habit/ Niche	Nocturnal, gregarious, Omnivorous
Habitat :	1.5: subtropical/tropical dry forest, 3.5: subtropical/tropical dry shrub land, 4.5: subtropical/tropical dry lowland grassland, 6: rocky areas, 8.1: hot desert, 12.9: canals and drainage channels, ditches
Family	Muridae
Elevation :	0 – 2000 m
Distribution:	Found all over Pakistan
Location	No. of individuals
1	
2	
3	
4	
Presence in protected areas	Kithar National Park, Lal Suhanra National Park, Khanawal Plantation Wildlife Sanctuary, Chechawatni Wildlife Sanctuary, Gatwala Game Reserve.
Extent of occurrence :	> 20,000 km ²
Area of occupancy :	> 2000 km ²
No. subpopulations :	Many
No. of locations :	Many
Habitat status :	No change in habitat area; increase in quality of habitat
Threats :	P, Pr, F: pest control
Population number :	Many
Mature individuals :	Many
Population status :	Increase in population; no predicted change
IUCN Status :	
National Status :	Least Concern
Comments :	Irrigation system has encouraged wide distribution of the species. With construction of Thal canal and Kachi canal, habitat will further increase. The status of species will improve further and will cause a pest problem
Contributors:	M Anwar Maan
Participants:	M Anwar Maan, Syed Zafar-ul-Hassan, Dr Muhammad Irshad Arshad, Dr Khalid Baig, Khalid Rafiq, Hamid Iqbal

Species name *Balaenoptera edeni* (Anderson, 1879)
Group name / # Cetacea

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Common name	Bryde's Whale
Scientific name :	<i>Balaenoptera edeni</i> (Anderson, 1879)
Family	Balaenopteridae
Habitat :	Marine Waters
Elevation :	N.A.
Distribution:	Throughout Pakistan Waters.
Location	No. of individuals
1 Karachi (Sindh coast).	Several sightings.
2	
3	
4	
5	
Extent of occurrence ¹ :	
Area of occupancy ² :	Tropical and sub-tropical Waters of the World.
No. subpopulations :	5
No. of locations :	5 (1) south Pacific (2) North Pacific (3) Indian Ocean (4) Bay of Bengal.

Habitat status :	Still good.
Threats :	No serious threats to this species in Waters of Pakistan except accidental entangling in nets.
Population number :	Not known.
Mature individuals :	Not known.
Population status :	Less common.
IUCN Status :	
National Status :	Data Deficient
Comments :	Comprehensive study is required.
Contributors:	
Participants:	

Species name *Balaenoptera musculus* (Linnaeus, 1758)
Group name / # Cetacea

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Common name	Great Blue Whale or Sulphur-bottomed Whale
Scientific name :	<i>Balaenoptera musculus</i> (Linnaeus, 1758)
Family	Balaenopteridae
Habitat :	Marine Waters
Elevation :	N.A.
Distribution:	Makran coast, particularly off Istola Island and Gawadar
Location	No. of individuals
1 Gunz (Makran coast).	One stranded specimen 1991.
2 Pasni (Makran coast).	One stranded specimen 1967.
3 Karachi (Sindh coast).	One stranded specimen 1965.
4	
5	
Extent of occurrence ¹ :	
Area of occupancy ² :	Sub Arctic to temperate latitudes in the northern hemisphere and Antarctic Waters.
No. subpopulations :	
No. of locations :	
Habitat status :	Still good particularly coastal waters of Balochistan.
Threats :	No serious threat in Pakistan except accidental entangling in fish net.
Population number :	Not known.
Mature individuals :	Not known.
Population status :	Rare
IUCN Status :	
National Status :	Data Deficient
Comments :	A comprehensive study is required in waters of Pakistan.
Contributors:	
Participants:	

Species name *Balaenoptera physalus* (Linnaeus, 1758)
Group name / # Cetacea

**TAXON DATA SHEET – End of CAMP Review Version
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Common name	Common Rorqual or Common Finback
Scientific name :	<i>Balaenoptera physalus</i> (Linnaeus, 1758)
Habitat :	Marine Waters
Family	Balaenopteridae
Elevation :	N.A.
Distribution:	Makran coast, particularly off Astola Island and Sindh
Location	No. of individuals
1 Astola Island	Continuous sightings upto early 1970's
2 Astola Island	One Fin Whale calf in 1969 accidentally caught in the fishing net.
3 Karachi Coast	Stranded Adult specimen 2002.

4	
5	
Extent of occurrence ¹ :	
Area of occupancy ² :	Sub Arctic to temperate latitudes in the northern hemispheres Anarctic waters.
No. subpopulations :	
No. of locations :	
Habitat status :	Still good, particularly Balochistan Coast
Threats :	No serious threat in Waters of Pakistan except accidental entangling in fishing nets.
Population number :	Not known
Mature individuals :	Not known
Population status :	Rare
IUCN Status :	
National Status :	Data Deficient
Comments :	A comprehensive study is required.
Contributors:	
Participants:	

Species name *Delphinus delphis* Linnaeus, 1758
Group name / # Cetacea

**TAXON DATA SHEET – End of CAMP Review Version
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Common name	Long-beaked Dolphin
Scientific name :	<i>Delphinus delphis</i> Linnaeus, 1758
Family	Delphinidae
Habitat :	Marine Waters.
Elevation :	N.A.
Distribution:	All along the Pakistan coast.
Location	No. of individuals
1 Buleji (Sindh Coast)	One stranded specimen (1981).
2 Cape Monze (Sindh Coast).	Sightings of 5 specimens in the coastal waters (1971).
3	
4	
5	
Extent of occurrence ¹ :	
Area of occupancy ² :	Coasts of India and Pakistan.
No. subpopulations :	
No. of locations :	
Habitat status :	Still excellent, especially Balochistan coast.
Threats :	Pollution, over fishing and habitat deterioration.
Population number :	Not known.
Mature individuals :	Not known.
Population status :	No reliable data is available to settle the status.
IUCN Status :	
National Status :	Data Deficient
Comments :	A comprehensive study is required.
Contributors:	
Participants:	

Species name *Dugong dugon* –
Group name:

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Common name	Dwarf Sperm Whale
Scientific name :	<i>Kogia simus</i> (Owen, 1866)
Family	Physeteridae
Habitat :	Marine Waters.
Elevation :	N.A.
Distribution:	Coastal Waters of Sindh.
Location	No. of individuals
1 Indus Delta (Sindh)	Occasional sightings.
2	
3	
4	
5	
Extent of occurrence ¹ :	
Area of occupancy ² :	Widely distributed in the entire major ocean.
No. subpopulations :	
No. of locations :	
Habitat status :	Not favorable.
Threats :	Pollution, over fishing and habitat deterioration.
Population number :	Not known.
Mature individuals :	Not known.
Population status :	Rare.
IUCN Status :	
National Status :	Data Deficient
Comments :	A comprehensive study is required.
Contributors:	
Participants:	

Species name *Kogia simus* (Owen, 1866)
Group name / # Cetacea

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Common name	Dwarf Sperm Whale
Scientific name :	<i>Kogia simus</i> (Owen, 1866)
Family	Physeteridae
Habitat :	Marine Waters.
Elevation :	N.A.
Distribution:	Coastal Waters of Sindh.
Location	No. of individuals
1 Indus Delta (Sindh)	Occasional sightings.
2	
3	
4	
5	
Extent of occurrence ¹ :	
Area of occupancy ² :	Widely distributed in the entire major ocean.
No. subpopulations :	
No. of locations :	
Habitat status :	Not favorable.
Threats :	Pollution, over fishing and habitat deterioration.
Population number :	Not known.

Mature individuals :	Not known.
Population status :	Rare.
IUCN Status :	
National Status :	Data Deficient
Comments :	A comprehensive study is required.
Contributors:	
Participants:	

Species name *Megaptera novaeangliae* (Borowski, 1781)
Group name / # Cetacea

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Common name	Humpback Whale
Scientific name :	<i>Megaptera novaeangliae</i> (Borowski, 1781)
Family	Balaenopteridae
Habitat :	Marine Waters.
Elevation :	N.A.
Distribution:	Off Pakistan coast.
Location	No. of individuals
1 Karachi coast.	1984.
2	
3	
4	
5	
Extent of occurrence ¹ :	
Area of occupancy ² :	Tropical and sub-tropical Waters.
No. subpopulations :	
No. of locations :	
Habitat status :	Still good.
Threats :	No serious threat except accidental entangling in fishing nets.
Population number :	Not known.
Mature individuals :	Not known.
Population status :	Rare
IUCN Status :	
National Status :	Data Deficient
Comments :	A comprehensive study is required.
Contributors:	
Participants:	

Species name *Neophocaena phocaenoides* (G. Cuvier, 1829)
Group name / # Cetacea

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Common name	Little Indian Porpoise or Black Finless Porpoise
Scientific name :	<i>Neophocaena phocaenoides</i> (G. Cuvier, 1829)
Family	Phocoenidae
Habitat :	Marine Waters.
Elevation :	N.A.
Distribution:	Throughout coastal waters of Pakistan.
Location	No. of individuals
1 Gawadar (Balochistan coast).	2 Nos. stranded specimen (1997).
2 Indus Delta (Sindh coast)	1 No. stranded specimen (1998).
3 Gawadar (Balochistan coast).	2 Nos. Stranded specimen (2002).
Extent of occurrence ¹ :	

Area of occupancy ² :	Arabian Sea.
No. subpopulations :	
No. of locations :	
Habitat status :	Still good, particularly coastal waters of Balochistan.
Threats :	Pollution, over fishing habitat deterioration.
Population number :	Not known.
Mature individuals :	Not known.
Population status :	Common.
IUCN Status :	
National Status :	Data Deficient
Comments :	A comprehensive study is required.700-1000 (Z.Ali 2002)
Contributors:	
Participants:	

Species name *Peponocephala electra* (Gray, 1846)
Group name / # Cetacea

**TAXON DATA SHEET – End of CAMP Review Version
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Common name	Melon-headed Whale or Electra Dolphin
Scientific name :	<i>Peponocephala electra</i> (Gray, 1846)
Family	Delphinidae
Habitat :	Marine Waters.
Elevation :	N.A.
Distribution:	Off Balochistan and Sindh coast.
Location	No. of individuals
1 Rehri (Sindh coast)	One stranded specimen 1985.
2 Cape Monze (Sindh coast)	One stranded specimen 1981.
3 Rahri creeks (Sindh coast).	One stranded specimen 1982.
4 Off makran coast.	Several sightings.
5	
Extent of occurrence ¹ :	
Area of occupancy ² :	Wide spread in tropical and sub-tropical waters. It occurs in the southwest pacific from Australia to Hawaii and Indian ocean.
No. subpopulations :	
No. of locations :	
Habitat status :	Still good
Threats :	Pollution, habitat deterioration and over fishing.
Population number :	Not known.
Mature individuals :	Not known.
Population status :	Rare
IUCN Status :	
National Status :	Data Deficient
Comments :	A comprehensive study is required.
Contributors:	
Participants:	

Species name *Platanista minor* Owen, 1853
Group name / # Cetacea

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Common name	Indus Dolphin or Bhulan
Scientific name :	<i>Platanista minor</i> Owen, 1853
Family	Platanistidae
Habitat :	Fresh Water.
Elevation :	N.A.
Distribution:	Silt-Laden Indus river system.
Location	No. of individuals
1 Between the Sukkur and	300 individuals.

Guddu barrages.	
2 Between the Sukkur and Guddu barrages.	20 individuals.
3 Down Kotri.	2 – 3 individuals.
4 Between Chashma and Guddu barrages.	175 individuals.
5	
Extent of occurrence ¹ :	
Area of occupancy ² :	Chashma barrages down stream to Kotri.
No. subpopulations :	
No. of locations :	
Habitat status :	Ecology of river has drastically changed.
Threats :	Construction of dams and barrages, poaching for oil, river turbidity scarcity of water etc.
Population number :	± 500
Mature individuals :	Not known.
Population status :	Endangered.
IUCN Status :	
National Status :	Endangered C2a(i)
Comments :	Real management efforts are required to save this valuable species. (900-1000) Z.Ali 2003.
Contributors:	
Participants:	

Species name *Pseudorca crassidens* (Owen, 1846)
Group name / # Cetacea

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Common name	False Killer Whales
Scientific name :	<i>Pseudorca crassidens</i> (Owen, 1846)
Family	Delphinidae
Habitat :	Marine Waters.
Elevation :	N.A.
Distribution:	Off Sindh coast.
Location	No. of individuals
1 Phitti Creek (Sindh coast).	One stranded specimen (1981).
2 Karachi (Sindh coast).	One stranded specimen (1976).
3	
4	
5	
Extent of occurrence ¹ :	
Area of occupancy ² :	Wide spread throughout all the temperate and tropical oceans
No. subpopulations :	
No. of locations :	
Habitat status :	Still good.
Threats :	Pollution, habitat deterioration and over fishing.
Population number :	Not known.
Mature individuals :	Not known.
Population status :	Rare.
IUCN Status :	
National Status :	Data Deficient
Comments :	A comprehensive study is required.
Contributors:	
Participants:	

Species name *Sousa chinensis* (Osbeck, 1765)
Group name / # Cetacea

**TAXON DATA SHEET – End of CAMP Review Version
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Common name	Indian Humpback Dolphin
Scientific name:	<i>Sousa chinensis</i> (Osbeck, 1765)
Family	Delphinidae
Habitat :	Marine Waters.
Elevation :	N.A.
Distribution:	Throughout coastal waters of Pakistan.
Location	No. of individuals
1 Pasni	Direct sighting of 2 specimens. (1997).
2 Jiwani	Direct sighting of 27 specimens (2002).
3 Sonmani	Direct sighting of 2 specimens (2002).
4 Paccha (Karachi coast)	Stranded specimen 1 No.
Extent of occurrence ¹ :	
Area of occupancy ² :	East Africa and Indo-Malayan Seas (2003).
No. subpopulations :	
No. of locations :	
Habitat status :	Still good.
Threats :	Pollution, over fishing and habitat deterioration.
Population number :	Not known.
Mature individuals :	Not known.
Population status :	Common.
IUCN Status :	
National Status :	Data Deficient
Comments :	A study is required to know the population. 1000-1200 Population number (Z.Ali 2001-2002)
Contributors:	
Participants:	

Species name *Steno bredanensis* Lesson, 1828
Group name / # Cetacea

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Common name	Rough-toothed Dolphin
Scientific name :	<i>Steno bredanensis</i> Lesson, 1828 (Rough-toothed Dolphin)
Family	Delphinidae
Habitat:	Marine Waters.
Elevation:	N.A.
Distribution:	Throughout coastal Waters of Pakistan.
Location	No. of individuals
1 Off Karachi coast.	Sightings of several specimens (1982).
2	
3	
4	
5	
Extent of occurrence ¹ :	
Area of occupancy ² :	Widely distributed dolphin in tropical and sub-tropical waters throughout both hemispheres.
No. subpopulations :	
No. of locations :	
Habitat status:	Still good, particularly coastal waters of Balochistan.
Threats:	Pollution, over fishing, and habitat deterioration.
Population number:	Not known.
Mature individuals:	Not known.
Population status:	Rare.
IUCN Status :	
National Status :	Data Deficient
Comments:	A comprehensive study is required.
Contributors:	
Participants:	

Species name *Tursiops truncatus* (Montagu, 1821)
Group name / # Cetacea

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Common name	Eastern Bottle-nosed Dolphin
Scientific Name:	<i>Tursiops truncatus</i> (Montagu, 1821)
Family	Delphinidae
Habitat:	Marine Waters.
Elevation:	N.A.
Distribution:	Throughout coastal waters of Pakistan.
Location	No. of individuals
1 Off Mekran coast.	Several sightings upto 10 individuals.
2 Off Karachi coast.	Several sightings of large schools.
3 Sandspit, Karachi coast.	Stranded specimen (1981).
4	
Extent of occurrence ¹ :	
Area of occupancy ² :	Arabian Sea, Indian Ocean, and Waters around Indonesia and Australia.
No. subpopulations:	
No. of locations:	
Habitat status:	Still good, particularly coastal waters of Balochistan.
Threats:	Pollution, over fishing and habitat deterioration.
Population number:	Not known.
Mature individuals:	Not known.
Population status:	Less common.
IUCN Status :	
National Status :	Data Deficient
Comments:	A study is required.
Contributors:	
Participants:	

Species name *Ziphius cavirostris* (G. Cuvier, 1823)
Group name / # Cetacea

**TAXON DATA SHEET – End of CAMP Review Version
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Common name	Goosebeak Whale or Cuvier's Beaked Whale
Scientific name :	<i>Ziphius cavirostris</i> (G. Cuvier, 1823) (Beaked Whale)
Family	Ziphiidae
Habitat :	Marine Waters.
Elevation :	N.A.
Distribution:	Off coastal waters of Pakistan.
Location	No. of individuals
1 Sonmani (Balochistan coast)	Remains of stranded specimen (1983).
2	
3	
4	
5	
Extent of occurrence ¹ :	
Area of occupancy ² :	Widely distributed in tropical and sub-tropical seas.
No. subpopulations :	
No. of locations :	
Habitat status :	Still good.
Threats :	No serious threats in Pakistan except accidental entangling in fishing nets.
Population number :	Not known.
Mature individuals :	Not known.
Population status :	Not known.
IUCN Status :	
National Status :	Data Deficient
Comments :	A comprehensive research is required to find out its status.
Contributors:	
Participants:	

Pictures of the Pakistan Mammals CAMP



