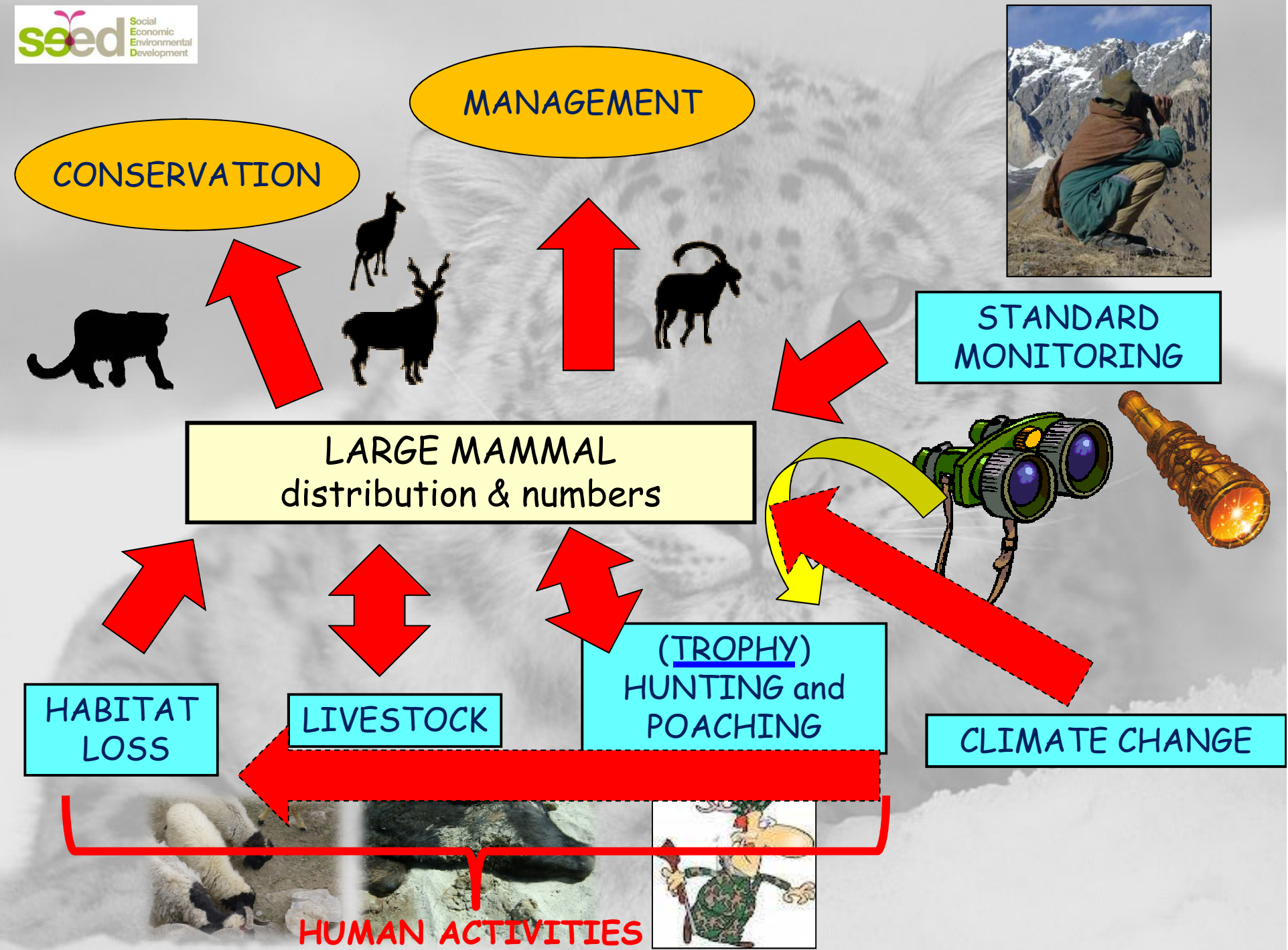


CONSERVATION & MANAGEMENT OF LARGE MAMMALS IN THE CENTRAL KARAKORAM NATIONAL PARK



Dr. Anna Bocci & Mr. Zafar Khan





LARGE MAMMAL community

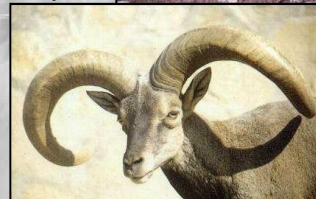
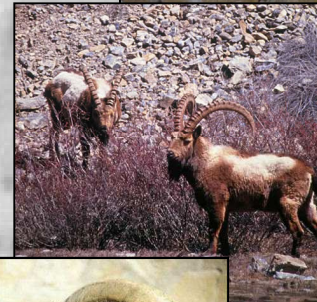
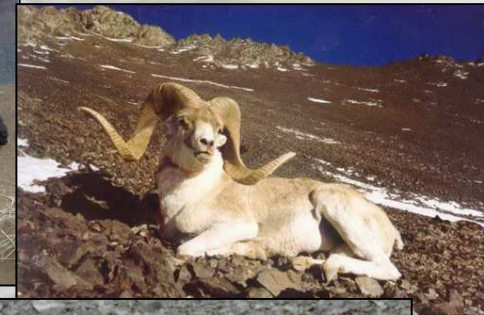
50%
threatened
large mammals

e.g. 66% of Artiodactyl species are "threatened" (IUCN, 2007)

WEST HIMALAYA KARAKORAM:

- Markhor *Capra falconeri* (**EN**)
- Ibex *Capra sibirica*
- Argali *Ovis ammon* (**NT**)
- Ladak urial *Ovis orientalis* (**VU**)
- Blue sheep *Pseudois nayaur*
- Musk deer *Moschus chrysogaster* (**EN**)

- Snow leopard *Uncia uncia* (**EN**)
- Wolf *Canis lupus*
- Lynx *Lynx lynx*
- Brown bear *Ursus arctos*



LARGE MAMMAL community

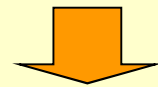
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CKNP

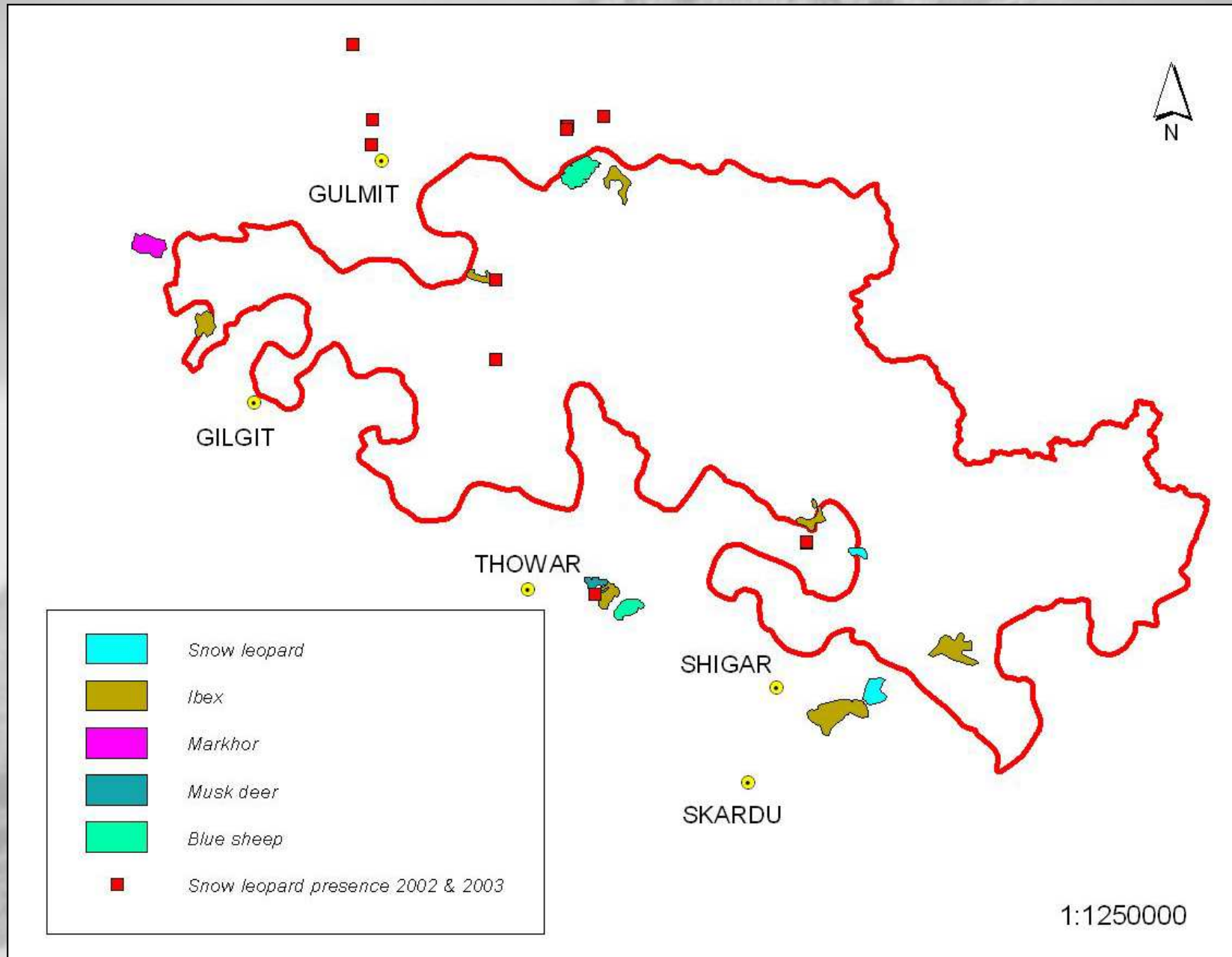
(A) current distribution as a consequence of persecution
by humans

(B) status as a consequence of overhunting, poaching,
habitat degradation



Population fragmentation and isolation

DATA COLLECTION ON LARGE MAMMALS



DATA COLLECTION ON LARGE MAMMALS

QUESTIONNAIRES

... in several steps:

1. through QUESTIONNAIRES to local communities.

CONS

- "Linguistic" & nomenclatural mistakes;
- Different behaviour towards carnivores

PROS

- Using same high altitude areas;
- Livestock depredation



2. checking in the field for blank areas.

3. hot-spots for large mammal conservation

using also all the other
INFORMATIONS

Reliability!

Overlap areas of *flag/umbrella*
species

Mammal seasonal movements
(usually neighbour valleys may share
the same population)

4. checking in the field for *hot-spots* for conservation



MUSK DEER distribution

MANAGEMENT

CONSERVATION

10000 0 10000 20000 Meters





IBEX distribution
Winter

MANAGEMENT



IBEX distribution
Summer

10000 0 1000020000 Meters

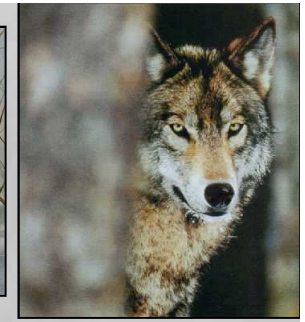
CONSERVATION

10000 0 1000020000 Meters





MINIMUM NUMBERS *



* Any reliable research on large mammals requires at least 5-10 years of data collection

Valley	Brown bear	Snow leopard	Lynx	Wolf	Markhor	Ladak urial	Marco Polo sheep	Blue sheep	Asiatic ibex	Musk deer
Jaglot/Minapin	0	2	1-2	1	20-40 *	0	0	0	100-150 *	0
Bagrote	0	5	5	2	<50	0	0	0	100	0
Haramosh	0	5	5	5	>10	0	0	0	100	2-5
Astak-Tormik	0	3	2	2	8-12	0	0	0	40-150 *	1-10
Hoper	≥ 2	≥ 2	0	> 2	> 2	0	0	0	50-200 *	0
H			0			0	0	0		
H			2			0	0	0		
Thalkey		1	3	2	0	0	0	0		
Braldu	1	2	2	2	0	30	0	0	10-300	2-6
Basha	≤ 6	1	2	2	0	0	0	0	10-150	2-6
Shigar	0	1	2	2	0	6 ?	0	0	10-150	2-5
Nar	0	3	2	2	0	0	0	0	100 *	0

CONSERVATION

MANAGEMENT

TROPHY HUNTING



Sikandarabad



ZONING OF CKNP

STRICTLY CONSERVATION AREAS

- Strictly regulated in order to completely protect wildlife:
- livestock grazing;
 - stay, roaming, camping and fishing;
 - any other human activity than wildlife surveys/research activities

FORBIDDEN

CORE AREA

CONSERVATION AREAS

- regular counts;
- controlling illegal hunting;
- reduction of human activity impact at the minimum level, where endangered large mammals live;
- trophy hunting programme for endangered populations cannot be started (unless their status is well assessed through at least 5 years of seasonal data collected in conjunction with, or by, an independent party, and using a standardized approach).

BUFFER ZONE

CCHA (or CMCA)

Global approach to conservation!!

1:650,000



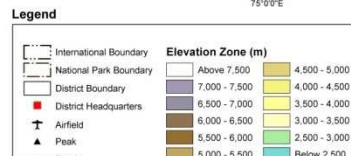
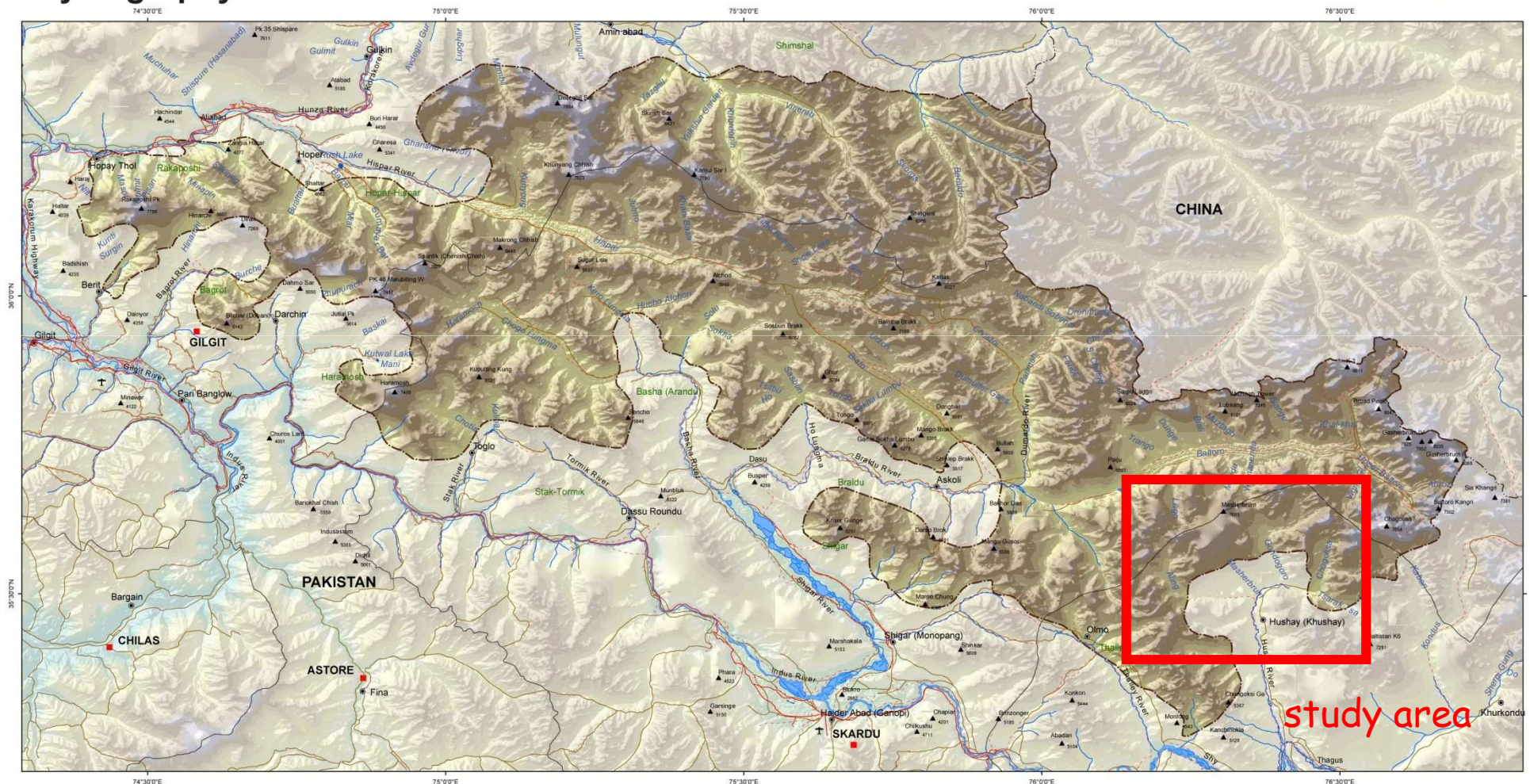
Projected Coordinate System: WGS1984 UTM Zone43N
Geographic Coordinate System: GCS WGS 1984



Central Karakoram National Park Physiography

Institutional Consolidation for the Coordinated and Integrated Monitoring of Natural Resources towards Sustainable Development and Environmental Conservation in the Hindu Kush-Karakoram-Himalaya Mountain Complex

HKKH Partnership
for ecosystem management

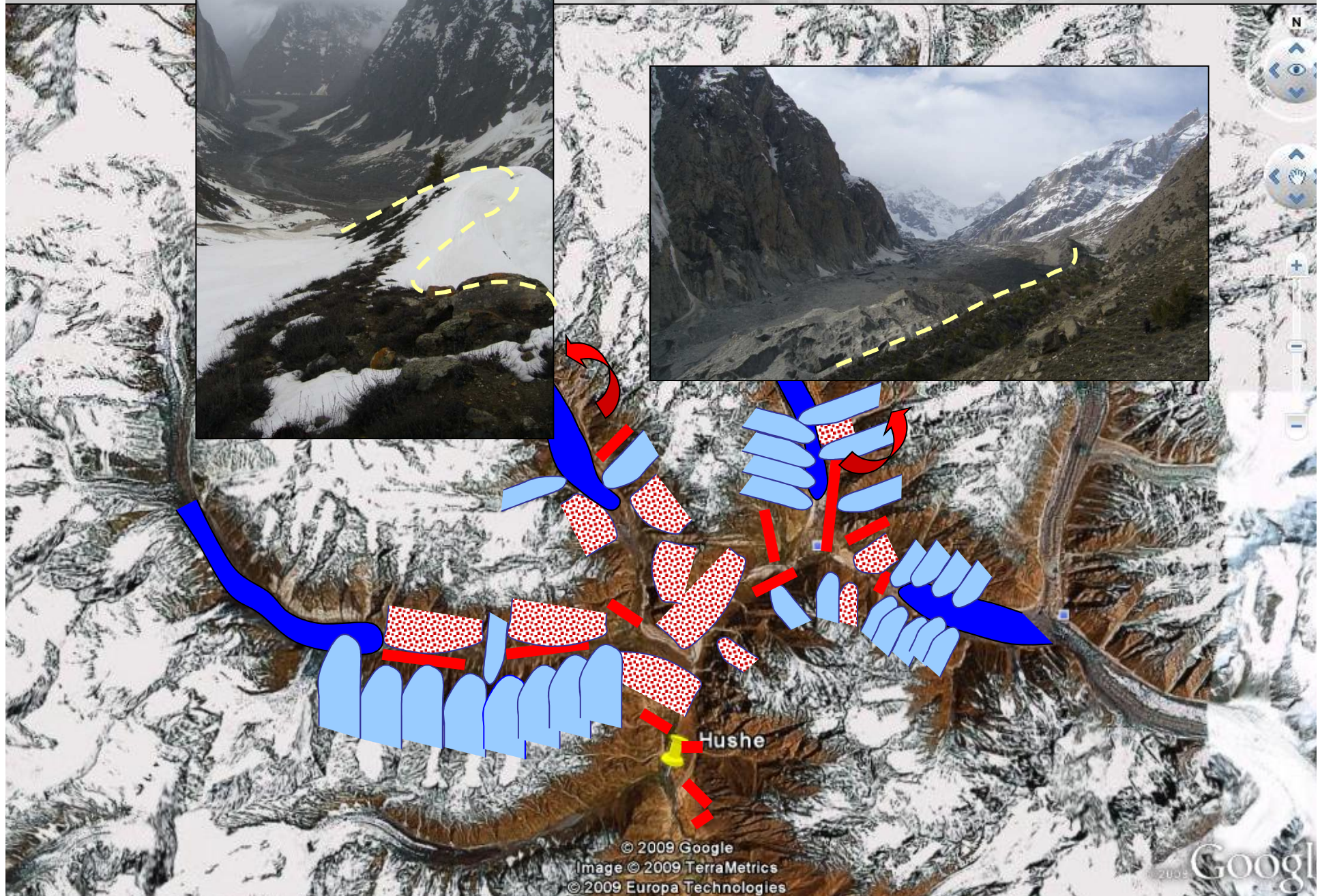


0 4 8 16 24
Kilometers
1:350,000

Source:
DEM: SRTM, USGS
Park boundary and places: Northern Area Development Project and
Hagler Bailly
Development Project.
Projection: Geographic; Datum: D_Clark_1866
Prepared by:
Mountain Environment and Natural Resources Information Systems



HUSHEY valley



DATA

Apr. 2011 - Mar. 2013

Indirect signs of presence

SNOW LEOPARD



88 scats

3 ind,

Only 21 of them (24%)
usefull for genetic
analyses!!!



WOLF



63 scats

3 ind,

19 of them (30%) usefull
for genetic analyses!!!



3 predation attacks in
8 days!!!

Counts (from vantage points)

IBEX



100-500 individuals!!

at least 2 subpopulation

from 1 year
STANDARD
MONITORING
data



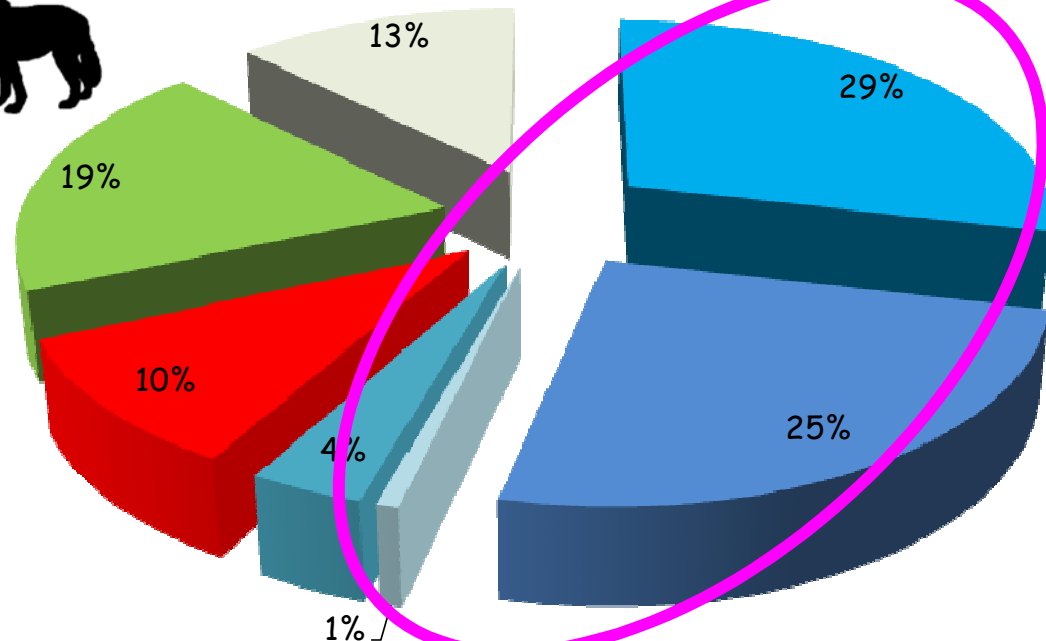
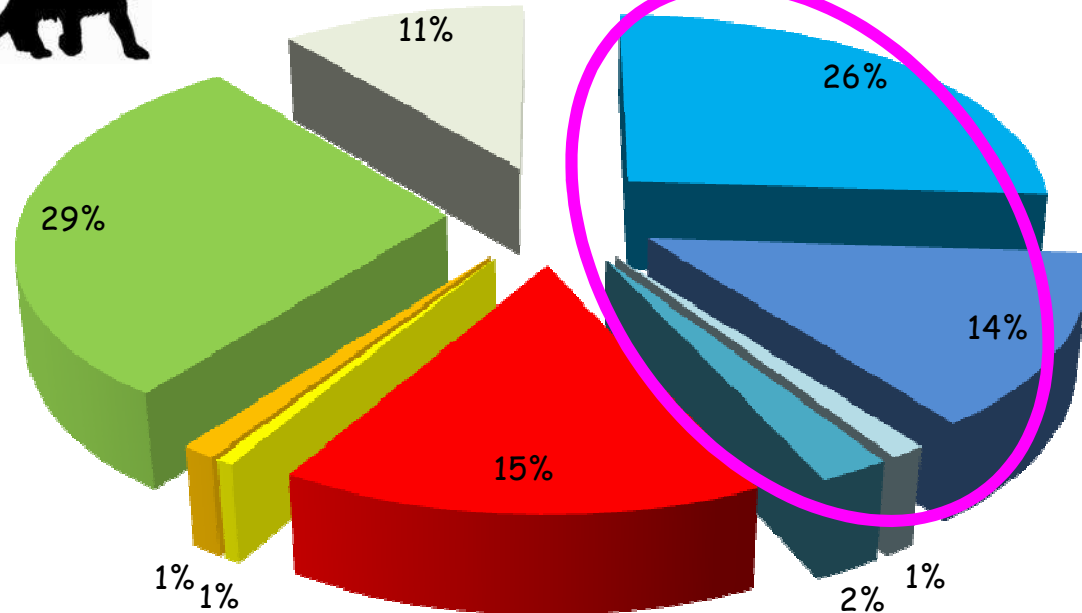
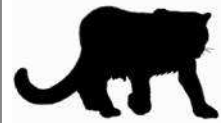
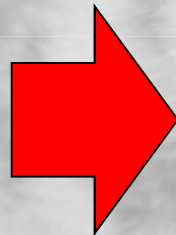
DIET ANALYSIS

COLD season
Snow cover



High diet overlap

- Sheep
- Goat
- Yak
- Cow
- Ibex
- Small mammals
- Birds
- Vegetation
- Other



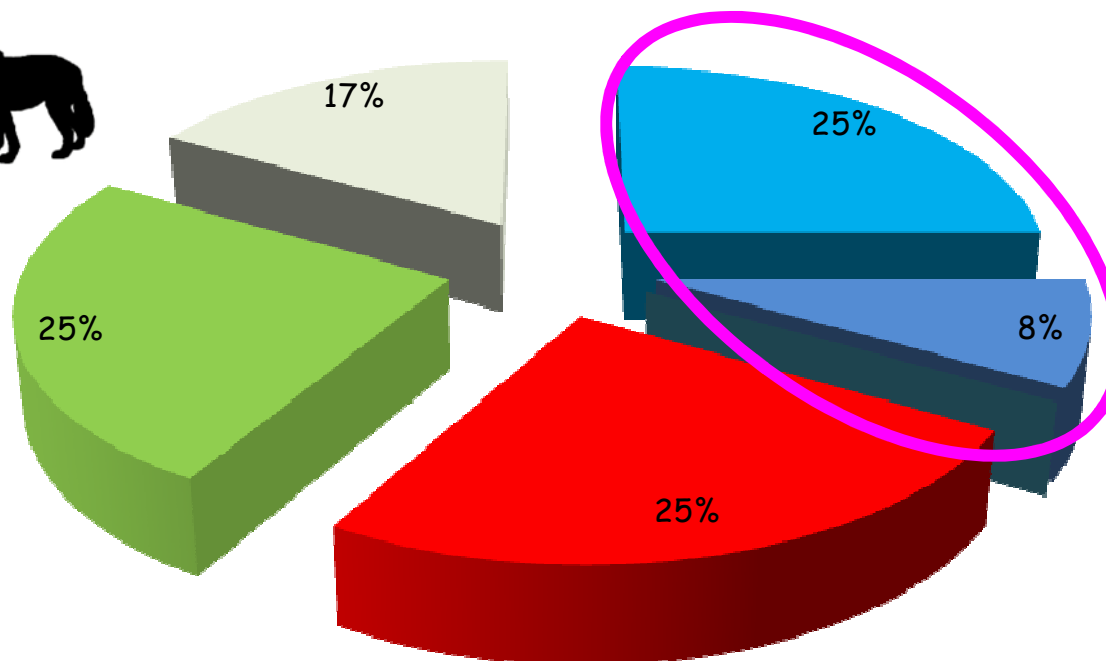
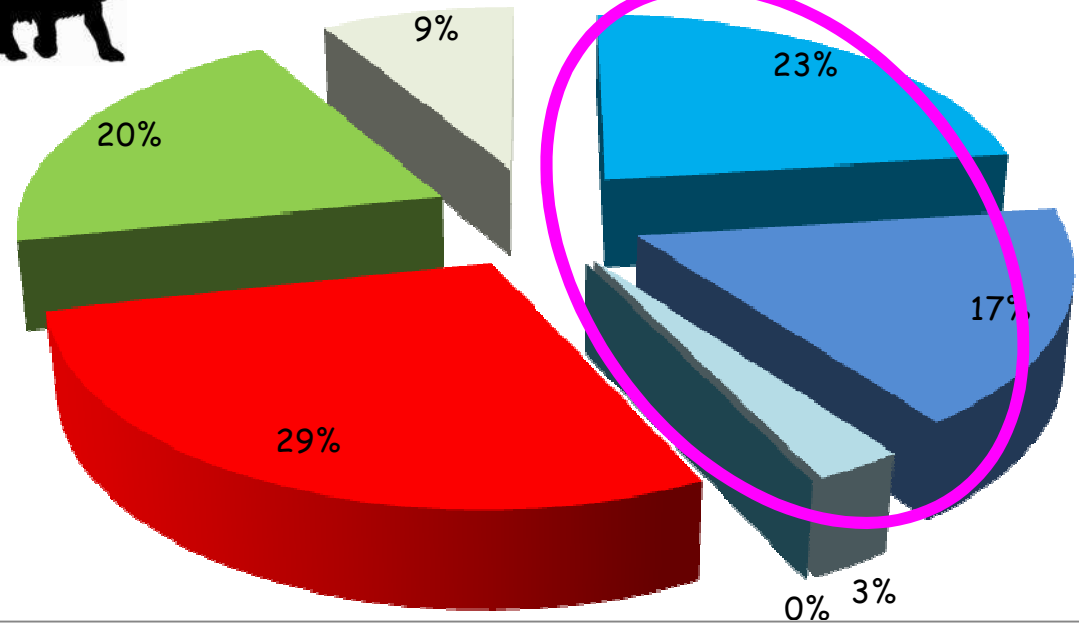
DIET ANALYSIS

WARM season
No snow



Almost COMPLETE
diet overlap

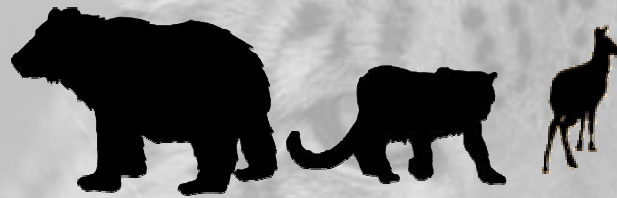
- Sheep
- Goat
- Yak
- Cow
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- Small mammals
- Birds
- Vegetation
- Other



LARGE MAMMAL distribution & numbers

CONSERVATION

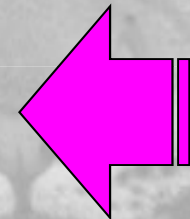
STRICTLY CONSERVATION
AREAS



Reliable
STANDARD
MONITORING *



MANAGEMENT
implications



CONSERVATION AREAS

CCHA

COEXISTENCE WITH
HUMAN ACTIVITIES

* Any reliable data collection on large mammals requires
at least 5-10 years

Thank you
for your
attention!

and THANKS to:

Prof. S. Lovari
Mr. Musa Ali
Mr. Sakawat
Ali

Dr. Erica Ercoli
Dr. Jan Janecka
Dr. Ali Nawaz