SAVING SNOW LEOPARD IN EASTERN HIMALAYAS

Regional Priorities and Actions

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CONTENT

✓ Climate change impacts in Snow leopard habitats
✓ Highlights from Regional Workshop 2011
✓ Regional Prioritized Action Points
✓ National Action Points
✓ Livestock Insurance: Case study from Nepal
Snow Leopard Conservation Areas in Nepal, Bhutan, India, and Tibet
Modeling Climate change impacts in Snow leopard habitats
Modeling Climate change impacts in Snow leopard habitats

Low Emissions Scenario (B1)
Modeling Climate change impacts in Snow leopard habitats

Medium Low Emissions Scenario (A1B)
Modeling Climate change impacts in Snow leopard habitats

High Emissions Scenario (A2)
Current Forest and Alpine Zones (Nepal)
+3 °C Growing Season Temperature Increase (Nepal)
+ 4 °C Growing Season Temperature Increase (Nepal)
+ 5 °C Growing Season Temperature increase (Nepal)
+ 6 °C Growing Season Temperature Increase (Nepal)
Under the high emissions scenario (A2),
• Bhutan would lose over 50% of its current snow leopard habitat

• Nepal habitat could decrease by as much as 40%

• India and China would lose about 20% of habitat.
• Some forest cover shift and fragmentation, but not total elimination of habitat.

• Cascading consequences through inter-specific competition, hunting, and human-snow leopard conflict may be greater threat.

• Maintain transboundary connectivity.

• Secure climate resilient areas

• Monitor habitat

• Adaptive management to account for uncertainty in conservation plans
Objectives

1. To review and evaluate the progress and status of snow leopard conservation (country-wise and regionally) against WWF’s 2006 regional snow leopard action strategy for the Himalayan region.

2. To share and learn successful snow leopard conservation practices amongst the snow leopard range countries in eastern Himalayas for possibilities of replication and up-scaling.

3. To update/revise WWF’s regional snow leopard action strategy for the Himalayan region and include climate change and related drivers.

4. To develop a fund raising plan to deliver greater conservation output in the eastern Himalayas.
Regional Prioritized Action Points

1. Develop standard regional monitoring protocol

2. Create an eastern Himalaya-wide forum

3. Raise the profile of snow leopards for fund raising at national and regional levels

4. Enforce anti-poaching programs

5. Control illegal trade

6. Upscale community stewardship for snow leopard conservation

7. Develop capacity of frontline managers, politicians, and local communities

8. Generate scientific information on snow leopards

9. Address and mitigate human-snow leopard conflict

10. Conduct habitat and prey base survey for generating baseline data.
Prioritized Space

REGIONAL PRIORITY SPACES FOR SNOWLEOPARD CONSERVATION
<table>
<thead>
<tr>
<th>One Year Plan</th>
<th>Three Year Plan</th>
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</thead>
<tbody>
<tr>
<td>• Conduct conservation outreach program in JDNP, WCP</td>
<td>• Prey base survey and monitoring</td>
</tr>
<tr>
<td>• Conduct camera trap survey in WCP and collect DNA for (future) genetic analyses</td>
<td>• Develop Snow Leopard distribution and habitat map</td>
</tr>
<tr>
<td>• Build capacity of frontline park staff (legal process, database mgmt, crime investigation etc.)</td>
<td>• Study the severity of livestock depredation and develop and implement a comprehensive snow leopard – human conflict mitigation program</td>
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<tr>
<td>• Bhutan personnel to visit Nepal to learn about community snow leopard conservation initiatives</td>
<td>• Undertake in-depth studies on snow leopard population and spatial ecology</td>
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<td>• Prepare a climate-integrated Snow Leopard Conservation Action Plan for Bhutan</td>
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<td>• Assess the habitat and food overlap and potential competition between tigers and snow leopards</td>
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## National Actions
### WWF China

<table>
<thead>
<tr>
<th>One Year Plan</th>
<th>Three Year Plan</th>
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</thead>
<tbody>
<tr>
<td>• Conduct a snow leopard conflict and sighting surveys</td>
<td>• Build capacity of the Sanjiangyuan Nature Reserve staff to protect snow leopards and reduce poaching</td>
</tr>
<tr>
<td>• Verify the presence of snow leopards in survey hotspot</td>
<td>• Communication and education to raise awareness of snow leopard issues amongst the general public with materials, articles, and education campaigns</td>
</tr>
<tr>
<td>• Developing a snow leopard conservation plan for selected hot spots at a landscape level</td>
<td>• Promote trans-boundary cooperation on Snow Leopard protection in the vicinity of Qomolangma National Nature Reserve</td>
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**National Actions
WWF India**

<table>
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<tr>
<th>One Year Plan</th>
<th>Three Year Plan</th>
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<tbody>
<tr>
<td>• Study the status and distribution of snow leopard and associated species in Western Arunachal Pradesh</td>
<td>• Mitigate snow leopard-human conflicts in collaboration with communities and Government in selected localities in Kargil (construction of predator proof corral pens, develop local awareness programme in Kargil)</td>
</tr>
<tr>
<td>• Study the relative abundance of snow leopard and associated species through camera trapping in Kargil and Western Arunachal Pradesh</td>
<td>• Determine home range, movement, dispersal and ranging patterns of snow leopard in Kargil (subject to availability of considerable funds and permission from Dept. of Wildlife Protection, J&amp;K)</td>
</tr>
</tbody>
</table>
### National Actions
**WWF-Nepal**

<table>
<thead>
<tr>
<th>One Year Plan</th>
<th>Three Year Plan</th>
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<tbody>
<tr>
<td>• Revise the 2005 Snow Leopard Conservation Action Plan</td>
<td>• Assess population genetics and dynamics, and ecology of snow leopard and its prey base</td>
</tr>
<tr>
<td>• Develop a comprehensive human – snow leopard conflict mitigation strategy and pilot in Langtang and MCA</td>
<td>• Develop and implement climate-change integrated management and monitoring programs for snow leopard habitat.</td>
</tr>
<tr>
<td>• Map and document the rotational grazing system and pastures through a participatory approach with local herders for habitat management in KCA, MCA and LNP</td>
<td>- Assess the availability of preferred food species of both domestic and wild ungulates</td>
</tr>
<tr>
<td>• Assess feasibility of blue sheep trophy hunting program in the Kangchenjunga Conservation Area</td>
<td>- Document traditional rotational grazing systems including key pastures and institute herders committees</td>
</tr>
<tr>
<td>• Assess abundance of snow leopard in Kangchenjunga Conservation Area</td>
<td>- Identify and map corridors and bottlenecks</td>
</tr>
<tr>
<td>• Conduct a campaign for conservation awareness, including for conflict mitigation and sustainable livestock grazing practices</td>
<td>- Establish permanent monitoring plots to document tree line shift and land use change</td>
</tr>
<tr>
<td>• Initiate ‘Adopt a snow leopard’ project around Kangchenjunga Himalaya</td>
<td>• Form and capacitate the local snow leopard conservation committee.</td>
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<td></td>
<td>• Develop and implement human-snow leopard conflicts mitigation measures</td>
</tr>
<tr>
<td></td>
<td>- Replicate a community-managed livestock insurance scheme at at-least one site</td>
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<td></td>
<td>- Orientation workshop on a community-managed livestock insurance scheme in Langtang National Park.</td>
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Community-based Snow Leopard Conservation

(Piloting livestock insurance scheme in Ghunsa of KCA, Nepal)
Human-Snow Leopard Conflicts

- Loss $123/Hh/year by snow leopard depredation

Snow Leopard Diet Analysis
- 67% Wild Prey
- 33% Livestock

Note: Mass Depredation by snow leopard
- Retaliated Snow leopard

WWF
Piloted Insurance Scheme Site
Background Information

Ghunsa Valley

Before PA Declaration
- Trophy hunting (1982 to 1993)
- At least one Snow Leopard retaliatory killing /Per year
- Lack of awareness about wildlife

KCA
- Declared as Conservation area in 1997
- Area: 2035 km²
- Potential snow leopard habitat: 356 km²
- Estimated snow leopard density: 2.6/100 km² (2008)
- Occupation: Livestock and potato farming

Ghunsa Valley
- 48 Hh (Sherpa) 33 yak/Hh
- Potential snow leopard habitat: ca. 63.6 km²
- 4 Individual snow leopard (2010, genetic result)
- Blue sheep density: 9.5/km² (2010)
- Biomass of yak: 3 times higher than blue sheep
- Livestock depredation rate: 4.2% out of 1152 stock
Livestock Trend in Ghunsa (1996-2006)
Actual Vs Projected Loss of Yaks by Snow Leopard

Actual Loss of Yaks by Snow Leopard in Ghunsa

- 2006: 2
- 2007: 11
- 2008: 8
- 2009: 7
- 2010: 21
- 2011 till Oct: 27

Number of Yaks
Flow Chart of Insurance Scheme

Yak Owners

2.5% Principle

Revolving Fund Community (12%)

$1/yak Premium

IGA

Interest

Compensation/Relief Fund

Surplus

25% add to EF

Endowment Fund Bank (3%)

75% Bonus

One Time Investment

External Sources:
- KCAP/WWF, Gurung, G.2005
- NCCR/Zurich University

$33/yak

Compensation/Relief

Endowment Fund Bank (3%)

One Time Investment

External Sources:
- KCAP/WWF, Gurung, G.2005
- NCCR/Zurich University
Verification mechanism

Application to SLCC

Field verification by SLCC

Decision by SLCC meeting

Insurance payment

Field verification of carcass
Number of Insured Yaks Vs Compensated (2006-2011 till October)

Participant households and insured Vs compensated Yaks

<table>
<thead>
<tr>
<th>Year</th>
<th>Participants</th>
<th>Insured Yak</th>
<th>Compensated</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>18</td>
<td>365</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>8</td>
<td>397</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>6</td>
<td>520</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>10</td>
<td>505</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>7</td>
<td>464</td>
<td></td>
</tr>
<tr>
<td>2011 till Oct</td>
<td>43</td>
<td>43</td>
<td>21</td>
</tr>
<tr>
<td>2011 till Oct</td>
<td>43</td>
<td>27</td>
<td></td>
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</tbody>
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Status of fund availability, expenses and total saving

Graph showing the amount in US$ for each year from 2006 to 2010:
- 2006: 662
- 2007: 1495
- 2008: 2170
- 2009: 2117
- 2010: 2155

Pie chart showing the percentage of Revolving fund utilization:
- Livestock: 30%
- Tourism: 50%
- Communication: 20%

Legends:
- Compensation fund
- Compensated
- Other expenses
- Total saving
Community-based snow leopard and its prey base monitoring

Trends of Snow Leopard signs and Blue sheep density (2006-2010)

<table>
<thead>
<tr>
<th>Year</th>
<th>Bs density/km²</th>
<th>Sl sign/km</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>6.2</td>
<td>8.07</td>
</tr>
<tr>
<td>2007</td>
<td>6.6</td>
<td>11.06</td>
</tr>
<tr>
<td>2009</td>
<td>10.9</td>
<td>12.15</td>
</tr>
<tr>
<td>2010</td>
<td>9.6</td>
<td>13.01</td>
</tr>
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Strengths, Challenges and Opportunities

Strengths/Opportunities
- Locally managed and self sustain (feeling of ownership)
- Equitable benefit sharing mechanism
- Positive attitude towards snow leopard conservation of local people
- Develop snow leopard-based tourism

Challenges
- Needs large amount of seed money to expand the program
- Monitoring
Thank You for your attention