Climate Change and Water Management in Snow Leopard Range Areas

WWF Asia High Mountains Project
Kangchenjunga, 8586 m
Snow Leopards

Snow Leopards live in the high mountains of:

- Afghanistan
- Bhutan
- China
- India
- Kazakhstan
- Kyrgyzstan
- Mongolia
- Nepal
- Pakistan
- Russia
- Tajikistan
- Uzbekistan
Snow Leopards
endangered with a total population of about 4000 to 7000 individuals
Snow Leopards

Snow Leopards are solitary and primarily prey on Blue Sheep, Ibex, and Argali that inhabit alpine grasslands.

Blue Sheep, Nepal
Snow Leopards

Apex Predator of Asia’s Alpine Ecosystems and therefore are an Umbrella Species for the protection of these ecosystems
Snow Leopards have large home ranges that overlap international boundaries.
Snow Leopards

live in the headwaters of Asia’s Great Rivers, including the Yellow, Yangtze, Mekong, Salween, Brahmaputra, Ganges, Amu Darya, and Syr Darya
Snow Leopards
Threats include

- Retaliatory Killing by Livestock Herders
- Human Encroachment
- Climate Change
Some Climate Change Impacts on Snow Leopard Range Areas

- Rising Temperatures
- Melting of Glaciers
- Melting of Permafrost
- More Erratic Precipitation
- More Extreme Weather Events
- Disappearance of Surface Springs and Streams
- Degradation of Alpine Grasslands
- Declining Water, Food, and Livelihood Security
- Increased Potential Human Threats to Wildlife
Map of Permafrost Zones in Central Asia

Map of Snow Leopard Range
Some WWF Water and Climate Adaptation Actions in Snow Leopard Range Areas

Ghunsu Village, 3420m
Kangchenjunga Conservation Area, Nepal
Bhutan

Gangkhar Puensum, 7570m
Model Climate Smart Village

Shawa Village, 2280m
Lhuntse Province
Solar-Powered Electric Fence

Shawa Village, Lhuntse Province
India

Khangchendzonga Biosphere Reserve
Sikkim
Sustainable Cordyceps Harvesting

Lachen Village, 2700m Sikkim
1. Do not leave your garbage in the forest areas. It will harm wildlife. Always carry a garbage bag and bring back everything and dispose responsibly. Organise cleanliness campaigns regularly.

2. After extraction of the cordyceps, pat soil back into place and leave the area undisturbed.

3. Remember, next year's harvest depends on the spores of this year's fungus. So make sure everything is not harvested.

4. Do not burn rhododendrons and other high altitude plants for fire. It takes more than 200 years for them to become mature.

5. Be careful of where you are stepping. Do not trample plants/flowers rampantly.

6. MAINTAIN SILENCE in forest areas.
Kyrgyzstan

Terskey Ala-Too, Issyk Kul Province
Drip Irrigation

Kyzyl Suu Village, Issyk Kul Province
Sair Mountain
Local Protected Area
High Altitude Greenhouses

Ollanchung Gola Village, 3180m
Kangchenjunga Conservation Area
Cardamom Irrigation

Tapethok Village, 1430m
Kangchenjunga Conservation Area
Cardamom Sprinkler Irrigation
Pakistan

Meir Glacier, Gilgit-Baltistan
Alfalfa Fodder Crop Planting

Hoper Valley, Gilgit-Baltistan
Participatory Watershed Management Planning

The WWF Asia High Mountains Project has also launched participatory watershed Management Planning Processes at Project Sites in:

- Bhutan
- Kyrgyzstan
- Mongolia
- Nepal
- Pakistan
Global Snow Leopard and Ecosystem Protection (GSLEP) Program

- Launched in 2013
- 12 Member States
- Funding Partners: WWF, SLT, UNDP, GEF
- **Goal:** Protect 20 Snow Leopard Landscapes by 2020
- **Strategy:** Develop and Implement 20 Climate-smart Snow Leopard Landscape Management Plans
- GSLEP is opening a dialogue on shared environmental issues among the 12 member states
President Atambayev, Kyrgyzstan
Prime Minister Dahal, Nepal
Необходимо решить более насущные проблемы
Conclusions

- Climate change impacts are leading to declines in the water, food, and livelihood security of mountain peoples.

- These impacts are only expected to worsen in coming decades, increasing threats to Snow Leopards and downstream water resources.

- These high mountain regions are also being rapidly developed. Still, critical data gaps in climate and hydrology. CHARIS is making inroads on filling some of these.

- WWF is helping communities adapt through innovative interventions that benefit both people and local ecosystems - improving water, food, and livelihood security in the process.
• Through the GSLEP, WWF is supporting snow leopard range states to develop and implement landscape management plans that integrate conservation, development, and climate risks.

• CHARIS and the WWF AHM Project have shown that snow leopard habitat provides vital ecosystem services for millions well beyond the remote mountain peaks of high Asia.

• We hope to make a contribution to improving water security for millions downstream who depend directly on mountain rivers for their livelihoods and economic well-being.

• Still, more effort is needed to demonstrate how upstream conservation can best benefit lowland peoples.
WWF Asia High Mountains Project
www.worldwildlife.org/initiatives/asia-high-mountains

Akshyrak Village, 3150m, Issyk Kul Province, Kyrgyzstan
Khan Tengri, Kyrgyzstan, 6995m
Photo by Pavel Van-Yu-Tsai