### GLOBAL SNOW LEOPARD AND ECOSYSTEM PROTECTION PROGRAM

# **COUNTRY UPDATES 2020**





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# THE GSLEP SNOW LEOPARD LANDSCAPES COUNTRY UPDATES 2020

The Bishkek Declaration, endorsed by the snow leopard range countries on October 23, 2013, aims "to protect and recover snow leopard populations and their fragile habitats for all people to enjoy." Further, the snow leopard range countries "pledge to ensure that snow leopards and the people who live among them thrive in healthy ecosystems that contribute to the prosperity and well-being of our countries and the planet." The Bishkek Declaration led to the initiation of the Global Snow Leopard and Ecosystem Protection Program (GSLEP) with its Secretariat in Bishkek, Kyrgyzstan.

The goal of GSLEP is for the 12 range countries, with support from interested organizations, to work together to identify and secure 23 snow leopard landscapes across the big cat's range over the next few years. Snow leopard landscapes are defined as those that:

- 1. Contain at least 100 breeding age snow leopards, conserved with the involvement of local communities;
- 2. Support adequate and secure prey populations,
- 3. Have functional connectivity to other snow leopard landscapes, some of which cross international boundaries.

In June 2014, the representatives of snow leopard range countries came together for an Action Planning, leadership and capacity development Global Workshop in Issykkul Lake District, Kyrgyz Republic. A total of 23 landscapes were identified to be secured under this first phase of GSLEP. This report describes each landscape and the progress made by each country.





Figure 1: Snow leopard range with the GSLEp landscapes marked

### Table 1: GSLEP landscapes in snow leopard range countries and their area in Sq.km

Country	Landscape	Area in Sq. Km
Afghanistan	Wakhan National Park	10,951
Bhutan	Snow Leopard Habitat	12110.35
China	Qilianshan Tuomuerfeng Taxkorgen	13,600 2,376 15,000
India	Hemis-Spiti Nanda-Devi Gangotri Kanchendzonga-Tawang	29,000 12,000 5,630
Kazakhstan	ZhetysuAlatau (Jungar Alatau) Northern Tien Shan	16,800 23,426
Kyrgyzstan	Central Tien Shan	13,201
Mongolia	Altai South Gobi North Altai	56,000 82,000 72,000
Nepal	Eastern Conservation Central Conservation Western Conservation	9674 9258 10811
Pakistan	Karokoram-Pamir Hindu-kush Himalaya	38, 245 13,888 7,055





Country	Landscape	Area in Sq. Km
Russia	Altai	48,767
Tajikistan	Pamir	92,000
Multi-national Landscapes	Landscape	Area (Sq km)
Kyrgyzstan-Tajikistan	Allay-Gisar	30,232





### **AFGANISTAN**



Figure 2: Areas of potential habitat for snow leopards in Afghanistan (revised from (Moheb and Paley (2016))

### 1. Snow Leopard Landscape(s):

In Afghanistan, the preferred habitat for snow leopard extends through the Hindu Kush in 10 provinces of northeast Afghanistan. Within this range, and for the last 15 years, snow leopard presence has been confirmed in Wakhan National Park, buffer zone districts of Ishkashim and Zebak, and Darwaz-e-Payin district in Badakhshan Province, and in the eastern districts of Bargi Matal and Kamdesh in Nuristan Province (Fig. 1).

#### 2. Landscape's area, in square kilometers

52,047.12 km<sup>2</sup>

### 3. Description of landscape boundaries

Wakhan National Park is an area of outstanding ecological, cultural and aesthetic value, where the Hindu Kush, Pamir and Karakoram mountains meet. Wakhan National Park is part of the headwaters of the Panj-Amu River Basin and shares international borders with Tajikistan (north), China (east) and Pakistan (south), where the snow leopard preferred habitat extends along mountain corridors into neighbouring countries. Within Afghanistan, it extends to Nangarhar province to the south and Baghlan province to the west. According to



the World Wildlife Fund's (WWF) Global Terrestrial Ecoregion classification it includes parts of seven separate global ecoregions: The Pamir Alpine Desert and Tundra, Karakoram-West Tibetan Plateau Alpine Steppe, Paropamisus Xeric Woodland, Afghan Mountains Semi-Desert, Northwestern Himalayan Alpine Shrub and Meadows, Hindu Kush Alpine Meadow, and Ghorat-Hazarajat Alpine Meadow.

# 4. Rationale for selection and estimated snow leopard population, status of prey, and connectivity following the GSLEP criteria:

Wakhan National Park is considered a hotspot for snow leopards in Afghanistan. About 75% of the confirmed snow leopard range within the country lies within Wakhan. The current snow leopard population for WNP is conservatively estimated at 110-136 individuals. The area also supports healthy populations of prey species (Siberian ibex, Marco Polo sheep, long-tailed marmot and other small mammals).

### 5. Countries/provinces/states sharing or adjoining the landscape

The landscape is shared with Xinjiang Uygur Autonomous Region (China), Gilgit-Baltistan and Khyber-Pakhtunkhwa (Pakistan) and Gorno-Badakhsahn Autonomous Region (Tajikistan). In Afghanistan, the snow leopard potential landscape covers parts of 10 provinces including Badakhshan, Baghlan, Kapisa, Kunar, Laghman, Nangarhar, Nuristan, Panjshir, Parwan, and Takhar but to date its presence is only confirmed in Badkahshan and Nuristan.

### 6. Name and total area of protected areas existing within the landscape

On 30th March 2014, the entire Wakhan District (10,950.66 km<sup>2</sup>) was declared as a National Park. The Big Pamir Wildlife Reserve (577 km<sup>2</sup>) and Teggermansu Wildlife Reserve (169.5 km<sup>2</sup>) within the Wakhan National Park were designated as Strict Protection Zones within Wakhan National Park.

In June 2020 the National Environment Protection Agency (NEPA) declared a new protected area in Nuristan (i.e. Nuristan National Park), where snow leopard presence is confirmed in the eastren districts of Bargi Matal and Kamdesh. There are also areas with favorable habitats for snow leopards in Panjshir that shall be proposed for protection in the future.



### BHUTAN



Figure 3: Snow leopard landscape in Bhutan

### 1. Snow Leopard Landscape

Snow Leopard Landscape Conservation Area of Bhutan

### 2. Landscape's area, in square kilometers

The approximate Snow Leopard landscape area in Bhutan is 12110.35 km<sup>2</sup> but after removing the small disjoined habitats, it is 10981.90 km<sup>2</sup>. This landscape is drawn based on the potential habitat mapping from an elevation of 3500 meters above the sea level.

### 3. Description of landscape boundaries

The landscape covers the entire snow leopard distribution of Bhutan, including Jigme Dorji National Park, Wangchuck Centennial National Park, Bumdeling Wildlife Sanctuary, Jigme Khesar Strict Nature Reserve, Sakteng Wildlife Sanctuary, and Paro Forest Division. Potential snow leopard landscape also covers the high-altitude Black mountains in Jigme Singye Wangchuck National Park in central Bhutan.



# 4. Rationale for selection and estimated snow leopard population, status of prey, and connectivity following the GSLEP criteria:

The proposed landscape falls within the country's approved Protected Areas and Biological Corridors, and preliminary assessments conducted in these areas show the presence of the snow leopard including abundance of prey species such as blue sheep, Himalayan marmot and other ungulates. The snow leopard in Bhutan is included under Schedule I of the Forest and Nature Conservation Act 1995, thereby providing the highest level of protection as per conservation law. The snow leopard population is estimated at 96 individuals with an estimated abundance of 79 - 112 individuals (DoFPS 2016).

### 5. Countries/provinces/states sharing or adjoining the landscape

TThe Snow Leopard landscape in Bhutan is contiguous with habitats in China and northeast India (snow leopard habitats of Sikkim and Arunachal Pradesh).

### 6. Name and total area in sq. km of protected areas existing within the landscape

Bhutan's Snow Leopard landscapes cover Jigme Dorji National Park (4374 km<sup>2</sup>), Wangchuck Centennial National Park (4915 km<sup>2</sup>), Bumdeling Wildlife Sanctuary (1534 km<sup>2</sup>), Jigme Khesar Strict Nature Reserve (784 km<sup>2</sup>), Sakteng Wildlife Sanctuary (742 km<sup>2</sup>), Jigme Singye Wangchuck National Park (1730 km<sup>2</sup>) and Paro Forest Division (3032 km<sup>2</sup>). A part of Biological corridor No. 8 (120 km<sup>2</sup>) connecting Jigme Singye Wangchuck National Park with northern protected area also forms a part of the landscape. The Protected Area coverage is 14199 km<sup>2</sup>, while potential snow leopard habitat (areas above 3500 m) is 10981 km<sup>2</sup>.



### CHINA



Figure 4: GSLEP landscape in China

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### 1. Snow Leopard Landscape(s):

Pamir Tienshan Mountains Qilian Mountains

### 2. Landscapes' area, in square kilometers

31,000 km<sup>2</sup>

### 3. Description of landscape boundaries

The three landscapes represent key snow leopard habitats across the distribution range in China. Two landscapes share boundaries with those of neighbouring countries.

# 4. Rationale for selection and estimated snow leopard population, status of prey, and connectivity following the GSLEP criteria:

Currently, Snow Leopard population estimates are lacking, though their estimated population in the landscapes (c. 1000 individuals) may cover represent one fourth of the Snow Leopard population of China. The landscapes have a good prey base. Some parts are influenced by intensive human footprints during last decades.



### 5. Countries/provinces/states sharing or adjoining the landscape

- 1) Pamirs: Tajikistan, Afgkanistan, Pakistan.
- 2) Tianshan Mountains: Kazakhstan, Kyrgyzstan and Uzbekistan.
- 3) North Qilian Mountains: Xinjiang, Gansu and Qinghai within China.

### 6. Name and total area of protected areas existing within the landscape

The Pamirs landscape is situated in the Taxkorgan Administrative Division in the Xinjiang Province, covering the 15,000 km<sup>2</sup> of Taxkorgan Provincial Nature Reserve. Tienshan landscape is encompassed by the 2,376 km<sup>2</sup> of Tomur Nature Reserve in Wensu Administration Division, Xinjiang; and the Qilian Mountains are characterized by the 13,600 km<sup>2</sup> of the Yanchiwan National Nature Reserve in Subei Administrative Division of Gansu Province.



### INDIA



Figure 5: GSLEP landscape in India

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### 1. Proposed name of the Snow Leopard Landscape(s):

Hemis-Spiti Landscape Nanda Devi - Gangotri Landscape Kanchendzonga - Tawang Landscape

### 2. Landscape's area, in square kilometers:

29,000 km<sup>2</sup>,

- c. 12,000 km<sup>2</sup>,
- c. 5,630 km<sup>2</sup>.

### 3. Description of landscape boundaries

The Hemis-Spiti landscape is spread across the Leh District of Jammu & Kashmir and Lahaul & Spiti District of Himachal Pradesh. In the Ladakh region of Jammu & Kashmir State, the area is bounded by the Zanskar River towards the west, the Indus River (till Mahe) towards the north, the eastern ridges of Quin Tso and Tso Mororiri towards the east. Much of the Hemis National Park and parts of the Changthang Wildlife Sanctuary are

![](_page_13_Picture_0.jpeg)

enclosed in this area. In the south, the landscape extends into the Lahaul & Spiti areas of Himachal Pradesh. The ridge extending southeast from the Gya peak at the tri-junction of Ladakh, Tibet and Spiti marks the eastern boundary in the state, which continues down along the Tibetan border till the Sutlej Valley, which marks the southern boundary. The Greater Himalayan (PirPanjal) Ridge extends all along the western border bending into the Kunzam La, and then along the upper Chandra River, the Zanskar Range, all along the west, to join the left bank of Zanskar River near Nimoo.

The proposed Nanda Devi-Gangtori Snow Leopard landscape (c. 12,000 km<sup>2</sup>) is located in the northern region of the State of Uttarakhand. This landscape encompasses the Trans-Himalayan and Greater Himalayan regions above an elevation of 3,200 m; from Gangotri National Park in the west, to the Nepal border in the east, and the Tibetan region in the north. The protected areas enclosed in the Landscape include the Govind and Gangotri National Park, Nanda Devi Biosphere Reserve (including Nanda Devi National Park and Valley of Flowers National Park), Kedarnath Wildlife Sanctuary, and Askot Wildlife Sanctuary. The Sacred Kailash Landscape, a cooperative conservation initiative of India, Nepal and China (catalyzed by the ICIMOD) also forms part of the proposed Snow Leopard Landscape's eastern portion. The upper catchments of Tons, Yamuna, Bhagirathi, Jadhganga, Mandakini, Alaknanda, Dhauliganga and Kaliganga Rivers are part of this landscape.

The Kanchendzonga-Tawang Landscape is spread in the two eastern Himalayan States of India, Sikkim (3,570km<sup>2</sup>) and Arunachal Pradesh (2060km<sup>2</sup>), separated spatially by parts of China and Bhutan. The Indo-Nepal border that includes the Khanchendzonga peak, forms the western boundary of the proposed landscape. From here, it encompasses the northern areas (> 4,200 m) all along the Indo- Tibetan border to join the Indo-Bhutan border to the east of this landscape.

The Tawang and West Kameng Districts in the State of Arunachal Pradesh have potential snow leopard habitat and are suggested as the second unit of the proposed landscape. The boundary here begins at the Indo-Bhutan border in the west, going along the border with Tibetan region in the north into the West Kameng region of the State and then turning south along the 4,200 m contour all the way back till the Indo-Bhutan border.

## 4. Rationale for selection and estimated snow leopard population, status of prey, and connectivity following the GSLEP criteria

Hemis-Spiti is among the best-known areas of snow leopard and prey species in the world, although the information is still far from complete. A large number of Protected Areas and other conservation areas are enclosed in this proposed landscape. The Jammu & Kashmir Department of Wildlife Protection and the Himachal Pradesh Forest Department with their partners are already at different stages of implementation of India's flagship species programme, the Project Snow Leopard. Based on a conservative density of 0.6 snow leopards, per 100 km<sup>2</sup>, the landscape can house c. 120 snow leopards.

Nanda Devi is a large landscape with adequate prey populations and is connected to other snow leopard landscapes in Uttarakhand, Nepal and China. The Nanda Devi National Park is among the few pristine areas of the Himalaya, and along with the Valley of Flowers National Park, the buffer zone of Nanda Devi Biosphere and the Kedaranth Wildlife Sanctuary are well

![](_page_14_Picture_0.jpeg)

studied in terms of vegetation and prey. The Govind and Gangotri National Park is known to have a substantial blue sheep Pseudois nayaur population which is quite habituated to human presence. Further east, the Askot Wildlife Sanctuary forms a part of the Sacred Kailash Landscape and has a functioning conservation-livelihoods programme. Snow leopard and prey abundance estimates suggest a fairly high density in Nanda Devi National Park, Valley of Flowers National Park, buffer zone of Nanda Devi Biosphere Reserve, and Gangotri National Park. Preliminary results of surveys in other parts of this landscape indicate the presence of snow leopard and its prey. Kanchendzonga-Tawang landscape is among the least studied regions in India, however recent preliminary work has established presence of healthy populations of prey and also snow leopards in parts of the proposed landscape. The prey species abundances in Sikkim for example are mostly three to four times higher than in the western parts of the Himalaya. One important reason for this could be the overall higher moisture and productivity of the high mountains in the northeastern parts of the Himalaya compared to the western portions.

### 5. Countries/provinces/states sharing or adjoining the landscape

Hemis-Spiti Landscape is within Jammu & Kashmir, Himachal Pradesh, and borders with Tibetan region.

The Nanda Devi Landscape and Askot Wildlife Sanctuary (part of Kailash Sacred Landscape) are connected to potential snow leopard habitat range in Nepal and Tibetan region. Similarly, the Govind and Gangotri landscape is connected to the potential snow leopard habitat range within Uttarakhand State, adjoining State of Himachal Pradesh, as well as with the Tibetan Region. Pin Valley National Park, Great Himalayan National Park and Kheer Ganga Wildlife Sanctuary, Rupi Bhabha Wildlife Sanctuary, Lipa Asrang Wildlife Sanctuary, and Rakchham & Chitkul Wildlife Sanctuary are protected areas adjoining the landscape.

Both the units of the Kanchendzonga-Tawang landscape in Sikkim and Arunachal Pradesh are contiguous with international borders. Sikkim landscape unit has Nepal to the west, the Tibetan region to the north and east and a small portion is also contiguous with Bhutan. The Arunachal unit has Bhutan in the west and the Tibetan region in the north. India has ongoing agreements for transboundary cooperation and cooperative conservation programmes with both Nepal and Bhutan.

### 6. Name and total area of protected areas existing within the landscape

Hemis-Spiti Landscape includes Hemis National Park (4400 km<sup>2</sup>), Changthang Wildlife Sanctuary (c. 5,000 km<sup>2</sup>) in Jammu & Kashmir; Pin Valley National Park (675 km<sup>2</sup>), Kibber Wildlife Sanctuary (2200 km<sup>2</sup>), Rupa Bhaba Wildlife Sanctuary (503 km<sup>2</sup>), Chandra Tal (38 km<sup>2</sup>), and Lipa Asrang (31 km<sup>2</sup>) in Himachal Pradesh. Nested within the landscape is the Upper Spiti Landscape (c. 4,000 km<sup>2</sup>), which also includes the Kibber Wildlife Sanctuary. The Upper Spiti Landscape and Pin Valley National Park are also part of the Cold Desert Biosphere Reserve (c. 10,000 km<sup>2</sup>). The Hemis-Spiti landscape has trans-boundary potential with parts of Tibet. Nanda Devi Landscape includes Gangotri National Park (2390 km<sup>2</sup>), Govind National Park (559 km<sup>2</sup>), Nanda Devi National Park (625 km<sup>2</sup>), Valley of Flowers National Park (88 km<sup>2</sup>) and Askot Wildlife Sanctuary (600 km<sup>2</sup>). The buffer zone of Nanda Devi Biosphere Reserve is 5148 km<sup>2</sup>. Kanchendzonga-Tawang landscape includes

![](_page_15_Picture_0.jpeg)

Khanchendzonga Biosphere Reserve (2620 km<sup>2</sup>), including the Khanchendzonga National Park (1784 km<sup>2</sup>), Singba Rhododendron Wildlife Sanctuary (43 km<sup>2</sup>), and the proposed HH Tsangyang Gyatso World Peace Park (2520 km<sup>2</sup>).

![](_page_15_Picture_2.jpeg)

![](_page_16_Picture_0.jpeg)

### KAZAKHSTAN

![](_page_16_Figure_2.jpeg)

### 1. Proposed name of the Snow Leopard Landscape (s)

Jungar Alatau (Zhetysu Alatau) and Ile Alatau (Northern Tien Shan)

#### 2. Landscape's area, in square kilometers

16,000 km<sup>2</sup> and 23,400 km<sup>2</sup>

### 3. Description of landscape boundaries

The Jungar Alatau landscape borders China in the South. Towards the east, it spreads up to the tip of the ridge in the Jungar gate, towards the north the northern foothills of the mountain range, whereas towards the west the peripheral arrays of Altyn-Emel, Koyandytau, Toksanbay and Tyshkantau ranges define the landscape's boundaries.

The Northern Tien Shan landscape is bounded towards the south by the ridges of the Trans-Ili Alatau, Kungei and Terskey Alatau ranges. Towards the east, the landscape is characterized by the end of the ridge which also coincides with the State's border. The northern boundary of the landscape is defined by the foothills of these ranges, whereas the western tip of the Trans-Ili Alatau defines the western boundary of the landscape.

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![](_page_17_Picture_0.jpeg)

# 4. Rationale for selection and estimated snow leopard population, status of prey, and connectivity following the GSLEP criteria

In Jungar Alatau, the snow leopard and its prey, characterized by ibex, roe deer, red deer, wild pig and argali are reported from most parts of the landscape. The landscape seems to have a functional connectivity with the snow leopard populations towards Bedzhintau and Borohoro in China.

A good snow leopard population is reported from the Almaty Reserve of the Ile Alatau (North Tien Shan) landscape. Snow leopard prey in the landscape is represented by ibex, roe deer, red deer, wild pig and argali (in the eastern parts), gray marmot and hare. The snow leopard populations may have functional connectivity with different mountain ranges within Kazakhstan, as well as across the international borders, in Kyrgyzstan and China.

#### 5. Countries/provinces/states sharing or adjoining the landscape

The Jungar Alatau landscape is situated in the region that borders China. The Ile-Alatau landscape is situated in the region and borders China towards the east and Kyrgyzstan in the south. The Chon-Kemin National Park in Kyrgyzstan in the south and the Tomur National Park in China in the east are important protected areas with known snow leopard populations. The Ketmen ridge is divided into half with the western half in Kazakhstan and eastern half in China.

# 6. Provide name and total area in sq. km of protected areas existing within the landscape

Jungar Alatau State national park (3560 km<sup>2</sup>). The Ile Alatau includes the Almaty State nature reserve (717 km<sup>2</sup>) and the Ile-Alatau State Nature Park (1992 km<sup>2</sup>). Kungei Alatau includes the Kolsay Koldery State Nature Park (1610 km<sup>2</sup>).

![](_page_18_Picture_0.jpeg)

### **KYRGYZSTAN**

![](_page_18_Figure_2.jpeg)

Figure 7: GSLEP landscape in Kyrgyzstan

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### 1. Proposed name of the Snow Leopard Landscape (s)

Sarychat Landscape (Central Tien Shan Landscape)

Alay-Gissaro Landscape (trans-boundary, shared with Tajikistan and Uzbekistan)

### 2. Landscape's area, in square kilometers

13,201 km<sup>2</sup> (Central Tien Shan Landscape)

(The details of the trans-national Alai Gissar landcape are not yet clear)

### 3. Description of landscape boundaries

The Central Tien Shan Landscape (CTSL) has been defined by enclosing the country boundary with China in the east, south-east and south. The western boundary is defined by those of an existing hunting reserve, Sarychat Nature Reserve and Karakol Nature Reserve. The area towards the north is bounded by an existing paved road. The Alay Gissar Landscape is shared between Kyrgyzstan and Tajikistan.

![](_page_19_Picture_0.jpeg)

# 4. Rationale for selection and estimated snow leopard population, status of prey, and connectivity following the GSLEP criteria

The total area suitable for snow leopard habitat in the country is about 89,000 km<sup>2</sup> (45%) in the Northern, Central, Western Tien Shan and Pamir-Alai ridges. In the CTSL, the snow leopard is found in an area of approximately 6,635 km<sup>2</sup>, or about half of the area of the CTSL.

The region belongs almost entirely to the Kashgar floristic province, its flora is quite rich, but insufficiently studied. At present, over 450 species of vascular plants are known in the Kyrgyz part of the Central Tien Shan, but the potential flora includes at least 700 species, which is a significant part of the total floristic wealth of the country. The fauna as a whole has been studied extremely unevenly and insufficiently. Also, about 1,300 insect species are known in the Kyrgyz part of the Central Tien Shan. Therefore, it can be assumed that the Sary-Jaz basin is inhabited by: 6 species of fish, 1 species of amphibians, 6 species of reptiles, 121 species of birds (including migrants) and 26 species of mammals, this constitutes a significant part of the total faunal wealth of the country. 15 species of animals noted here (1 species of insects, 8 - birds and 6 - mammals) and 5 species of higher plants are listed in the Red Book of the Kyrgyz Republic. The area is rich in mineral resources and mining is a potential activity in the landscape, although there is no mining at present.

### 5. Countries/provinces/states sharing or adjoining the landscape

The landscape is entirely within the Issykkul province of Kyrgyzstan. It borders Kazakhstan towards the north and China towards the East and South.

6. Provide name and total area in sq. km of protected areas existing within the landscape

Within CTSL are three specially protected areas (PAs):

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- Sarychat-Eertash State Nature Reserve (SNR) on an area of 1 491.18 km<sup>2</sup>,
- State Nature parks (SNP) «Karakol» 382.56 km<sup>2</sup> and
- «Khan Tenir» 2,758.00 km<sup>2</sup>, the total area of which is approximately 41% of the total area of the CTSL.

The territory of the hunting grounds of eight game users in the landscape is 6,536.27 km<sup>2</sup>.

![](_page_20_Picture_0.jpeg)

### MONGOLIA

![](_page_20_Figure_2.jpeg)

Figure 8: Map of GSLEP landscapes in Mongolia

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### 1. Snow Leopard Landscape(s)

Altai

South Gobi

North Altai

### 2. Landscape's area, in square kilometers

Altai – 56,000 km<sup>2</sup> South Gobi – 82,000 km<sup>2</sup> North Altai – 72,000 km<sup>2</sup>

### 3. Description of landscape boundaries

The North Altai landscape is situated in the Bayan – Ulgii, some parts of Khovd and Uvs provinces. It is adjacent to the Altai landscape identified by the Russian Federation. It borders Russia towards the North-West and China towards the South-West. The landscape is the main source for fresh gene flow for the Russian snow leopard population in the North and North-West. The Eastern boundaries border with Altai snow leopard

![](_page_21_Picture_0.jpeg)

landscape. Altai snow leopard landscape is located in the main Altai mountain ranges and it is the most suitable habitat for this endangered cat. This landscape is situated in the territory of Khovd, Gobi-Altai Bayankhongor and provinces. The North East boundary connected with corridor sites at the edge of the Khangai Mountain ranges. The South Gobi landscape is situated in Bayankhongor, Uvurkhangai and Umnugovi provinces. It is connected to the Southern area towards China. The Southern part of the region is occupied by intensive copper, gold and coal mining activities. The South-Eastern edge of the snow leopard distribution is located here.

# 4. Rationale for selection and estimated snow leopard population, status of prey, and connectivity following the GSLEP criteria:

Snow leopard density is relatively high in Altai landscape. There are various species such as Siberian ibex, Altai argali, Siberian marmot, Altay snowcock, the red deer (in forest areas), and Mongolian saiga and black tailed gazelle in the desert steppes.

The South Gobi landscape reports high density of rare and endangered snow leopards and its prey base. The northern areas include well-developed shrubs, bushes and endemic desert species. Compared with North Altai, the region has relatively low level mountain chains. The Gobi landscape is affected by mining, ninja mining, and linear infrastructure development. The Gobi landscape includes Dzungarian Gobi desert and Alashan plateau. It includes specific endemic flora and fauna.

The North Altai landscape has a supposedly high snow leopard density in the Mongol Altai/ North Altai Mountain. Apart from the snow leopard and its primary prey, the area supports populations of beech marten, gray wolf, red fox and a number of endangered birds. Several forest dwelling species are also found in the landscape including musk deer and red deer.

### 5. Countries/provinces/states sharing or adjoining the landscape

The Altai landscape is connected to China towards the south-western border and to the North West Altai landscape. Eastern boundaries cover Zavkhan and Gobi-Altai provinces. The southern parts connect with steppe, semi desert and desert steppe ecosystem zones.

The South Gobi landscape is situated in Bayankhongor, Uvurkhangai and Umnugovi, provinces. It is connected to China in the south. The Northern boundary is at the edge of the Khangai Mountain ranges.

The North Altai landscape is situated in the Bayan-Ulgii, some parts of Khovd and Uvs provinces. It is adjacent to Russia in the North-West and with China in the South-West. Some protected areas in Bayan-Ulgii and Uvs provinces connected Russia and China PA network to protect biodiversity of national and global level in Altai-Sayan Ecoregion.

### 6. Name and total area of protected areas existing within the landscape

The Altai landscape includes Munkhkhairkhan Mountain and Uench Canyon National Park (5060 sq.km), Khar us Nuur National Park (8529 sq.km), Mankhan Nature Reserve (828 sq. km), Bulgan river Ikh Ongog National Park (927 sq.km), Myangan Ugalzat National Park (3037 sq.km) in Khovd and Bayan-Ulgii provinces, Sharga Nature Reserve (3134 sq.km),

![](_page_22_Picture_0.jpeg)

Alag Hairkhan Nature Reserve (367 sq.km) and Great Gobi Strictly Protected Area Part B (9271 sq.km) in Khovd and Gobi- Altai provinces.

The South Gobi landscape contains Gobi Gurvan Saikhan National Park (26971 sq.km) in Umnugovi and Bayankhongor provinces and Ikh Bogd National Park (2628 sq.km) in Bayankhongor province.

The North Altai landscape includes Altai Tavan Bogd National park (6561 sq.km), Siilkhem A (699 sq.km) and Siilekhem B National Parks (779 sq.km), Khokh Serkhiin Nuruu Strictly Protected Area (757 sq.km), Develiin Aral Nature Reserve (106 sq.km), Tsambagarav National Park (1137 sq.km) in Bayan-Ulgii and Khovd provinces. Altan Khokhii Mountain Nature Reserve (907 sq.km), Turgen Mountain Strictly Protected Area (1304 sq.km), Tsagaan Shuvuut Strictly Protected Area (333 sq.km) in Uvs and Khovd provinces.

![](_page_23_Picture_0.jpeg)

**NEPAL** 

![](_page_23_Figure_2.jpeg)

Figure 9: GSLEP landscape of Nepal

### 1. Snow Leopard Landscape(s)

Eastern Conservation Landscape (ECL) Central Conservation Landscape (CCL) Western Conservation Landscape (WCL)

### 2. Landscape's area, in square kilometers

Eastern Conservation Landscape (ECL) : 9674 km<sup>2</sup>

Central Conservation Landscape (CCL) : 9258 km<sup>2</sup>

Western Conservation Landscape (WCL): 10811 km<sup>2</sup>

### 3. Description of landscape boundaries

The Eastern Conservation Landscape stretches from Kangenjunga Conservation Area (KCA) in the East to Rasuwaghadhi (Lamtang National Park) in the West. This complex covers Kangenjunga Conservation Area, Makalu Barun National Park, Gaurishankar Conservation area, Sagarmatha National Park, Lamtang National Park and the adjoining National Forest.

![](_page_23_Picture_12.jpeg)

![](_page_24_Picture_0.jpeg)

The Central Conservation Landscape covers the eastern border of Rasuwaghadhi in the east to Tscharka Pass, the western border of Annapurna Conservation Area. This complex includes the entire area of the Annapurna and Manaslu Conservation Areas.

The Western Conservation Landscape extends from Tscharka pass in the East to the Western border of Darchula district (Api Nampa conservation area), which lies along the Nepal-India border and includes Dhorpatan hunting reserve, Shey Pholsundo National Park, Rara National Park and Khaptad National Park and their adjoining national forest.

# 4. Rationale for selection and estimated snow leopard population, status of prey, and connectivity following the GSLEP criteria:

The Eastern Conservation Landscape covers the trans-border areas of Nepal, China and India. This area plays a significant role in the conservation of carnivores. The eastern part of this complex includes KCA, only one area managed by local communities. This landscape has good population of herbivores such as blue sheep (Pseudois nayaur), Himalayan marmot (Marmota himalayana), pika (Ochotona princeps), Himalayan tahr (Hemitragus jemlahicus), musk deer (Moschus chrysogaster), barking deer (Mutiacus muntjac) wild boar (Sus scrofa) and Royle's pika (Ochotona royalei) apart from several species of birds. The prey species are relatively abundant, because of low human interference and certain areas fall under the protected area system. Local communities have been mobilized for the conservation and management of protected areas. The communities benefit from sharing protected area revenue and getting support from the NGOs involved in conservation. That would be the major reason for a high population density of snow leopards in comparison to other areas in the Eastern Conservation Landscape.

The Central landscape is connected with the landscape of TAR China. So, it has transboundary value for long term conservation and management of mega herbivores like snow leopard and its prey species. It has a good population of mega herbivores such as blue sheep, Himalayan marmot, pika, Himalayan tahr, musk deer, barking deer, wild boar and Royale's pika apart from several species of birds including snowcock.

The Western landscape includes Shey-Phoksundo National Park (SPNP) where the first scientific study on snow leopards was conducted. This National Park has the highest snow leopard density in Nepal. This landscape has trans-boundary importance among Nepal, China and India. Blue sheep, Himalayan marmot, pika, Himalayan tahr, musk deer, barking deer, wild boar and Royale's pika apart from several species of birds including snowcock. The Western Conservation Landscape is connected with India and China.

### 5. Countries/provinces/states sharing or adjoining the landscape

Three snow leopard conservation complexes are envisioned in Nepal for long term management of the minimum viable populations (MVP) of at least 50 breeding snow leopards. All the landscapes have been managed with the collaboration between government, NGOs, local communities, and other stakeholders.

The Eastern Conservation Landscape is connected with Sikkim, India and Tibetan Autonomous Region of China. It has trans-boundary values to protect carnivores. The Eastern Conservation Complex has been fragmented because of human habitation, river

25

![](_page_25_Picture_0.jpeg)

gorge, rock terrain and others. Therefore, there is the lack of East and West connectivity. Maintaining the minimum viable population of snow leopards depends on the trans-border landscape of China and India. There is an established system to have regular meetings between Nepal, India and China as well on trans-boundary issues focusing on snow leopard conservation.

The Government of Nepal in collaboration with conservation partners namely the National Trust for Nature Conservation and WWF Nepal and local communities have initiated a satellite collaring of four snow leopards in KCA in 2014, and satellite collaring of two snow leopards in SPNP in 2019. The movement of snow leopards from the satellite data in KCA has shown its movement in the trans-boundary area between Sikkim, India and Nepal. An adult male snow leopard has been recorded travelling about 1000 km<sup>2</sup>.

The Central Conservation Landscape is connected with Tibetan Autonomous Region of China.

### 6. Name and total area of protected areas existing within the landscape

The Eastern Conservation Landscape includes Kanchanjunga Conservation Area (2035 km<sup>2</sup>), Makalu Barun National Park (2330 km<sup>2</sup>), Gaurishankar Conservation Area (2179 km<sup>2</sup>), Sagarmatha National Park (1148 km<sup>2</sup>), Lamtang National Park including the buffer zone (2130 km<sup>2</sup>). There is an additional surrounding forest area of approximately 1000 km<sup>2</sup>, summing it all up to 9674 km<sup>2</sup>.

The Annapurna Manaslu Conservation Landscape (Central landscape) comprises Annapurna Conservation Area (7629 km<sup>2</sup>) and Manaslu Conservation Area (1663 km<sup>2</sup>), summing up to a total of 9258 km<sup>2</sup>.

The Western Conservation Landscape has Dhorpatan hunting reserve (13255 km<sup>2</sup>), Shey Phoksunda National Park (49040 km<sup>2</sup>), Rara National Park (304 km<sup>2</sup>), Api Nampa Conservation Area (1,903 km<sup>2</sup>) and an adjoining forest area of approximately 2000 km<sup>2</sup>. The total area is10,436 km<sup>2</sup>.

![](_page_26_Picture_0.jpeg)

### PAKISTAN

![](_page_26_Figure_2.jpeg)

Figure 10: GSLEP landscapes in Pakistan

### 1. Snow Leopard Landscape(s)

The Pakistan snow leopard range is spread across 80,000 km<sup>2</sup> and encompasses four high mountainous ranges, namely the Hindu Kush, the Pamir, the Karakorum, and the Himalaya. These mountain ranges are home to some of the world's most fascinating and endangered wildlife species, including the Himalayan ibex (*Capra sibirica*), markhor (*Capra falconeri*), blue sheep (*Pseudoisnayaur*), Marco Polo sheep (*Ovis ammonpolii*), musk deer (*Moschus spp.*), Himalayan lynx (*Lynx lynxisbellinus*), brown bear (*Ursus arctos*), Grey wolf (*Canis lupus*), and the snow leopard (*Panthera uncia*), which is an umbrella and indicator species of this high altitude mountainous ecosystem. Apart from the rich and unique biodiversity, these mountainous systems are supporting remote and diverse human cultures. Consequently, the snow leopard ecosystems are important for the coexistence of both indigenous people and wildlife.

Although the country's snow leopard population estimates are as uncertain as those of any other range state, it is estimated that 200 – 420 snow leopards occur in Pakistan's northern mountains across Khyber Pakhtunkhwa (KPK), Gilgit-Baltistan (GB), and Jammu

![](_page_27_Picture_0.jpeg)

and Kashmir (AJK). Besides being down listed (Endangered to Vulnerable) by the IUCN, a national-level assessment considered the snow leopard critically endangered within the country. The snow leopard population in Pakistan though small, yet, it represents the world's third largest by size and significance of this number can be gauged by the population sizes in neighboring India, Afghanistan, Tajikistan, and China, respectively.

Pakistan partnered with the snow leopard range countries by endorsing the 'Bishkek Declaration' in 2103 and subsequently developing its National Snow Leopard and Ecosystem Protection Priorities (NSLEP) to secure the GSLEP goal of "20 by 2020" i.e. to protect at least 20 healthy populations of snow leopards across the cat's range by 2020. Out of these landscapes identified across the snow leopard global range, three fall in Pakistan. Description of the landscapes is provided below.

Karakoram-Pamir: Falls in Gilgit-Baltistan (GB)Province and borders with China, Tajikistan and Afghanistan.

**Hindu Kush:** Situated in Upper and Lower Districts of Chitral in Khyber Pakhtunkhwa (KP) Province and connected with Wakhan Corridor of Afghanistan.

**Himalaya:** Adjacent to the effective line of control between India and Pakistan and is situated partially in Astore District of GB and Neelum District of Azad Jammu & Kashmir (AJ&K) State.

Together, these landscapes cover 59,188 km2 area and constitute ~74% of the snow leopard range in the country. These landscapes have been identified using the GSLEP guidelines and in consultation with the Ministry of Climate Change (MOCC), respective Provincial/ Territorial Wildlife and Forest Departments, conservation NGOs, and communities.

### 2. Landscape's area, in square kilometers

Karakoram-Pamir 38,245 km<sup>2</sup>

Hindu Kush 13,833 km<sup>2</sup>

Himalaya 7,228 km<sup>2</sup>

### 3. Description of landscape boundaries or attach map

The Hindukush landscape borders the Wakhan landscape from Afghanistan to the north. It constitutes the westernmost snow leopard habitat within the country. The Karakoram Pamir landscape is the northern range of the snow leopard distribution in Pakistan and is entirely within the Gilgit-Baltistan province.

The Himalaya landscape is adjacent to the effective line of control between India and Pakistan and is situated partially in Gilgit-Baltistan and partially in AJK province.

# 4. Rationale for selection and estimated snow leopard population, status of prey, and connectivity following the GSLEP criteria:

The Snow Leopard Survival Strategy (SLSS) (McCarthy and Chapron, 2003) and Pakistan's strategic plan for snow leopard conservation in 2008 (Khan, 2008), identify information gaps in snow leopard ecology as one of the major limitations in formulating and implementing

![](_page_27_Picture_16.jpeg)

![](_page_28_Picture_0.jpeg)

an effective conservation strategy. To address this issue, an ambitious data collection program was initiated in the snow leopard range in 2008, to understand snow leopard distribution, habitat requirements, and conservation challenges. Three model landscapes have been selected in Pakistan, based on habitat suitability analysis and snow leopard habitat connectivity (map attached). Moreover, understanding gained from other data (genetic, conflict, and sign surveys), and consultation with concerned departments were also considered for the selection of landscapes.

A study was conducted that focused on the known snow leopard range in Pakistan, which encompass four high mountainous ranges; Himalaya, Karakoram, Pamir and Hindu Kush, spread across three administrative units i.e., Khyber Paktukhwa (KPK) Province, Gilgit-Baltistan (GB) Province and State of Azad Jammu and Kashmir (AJK). We targeted major protected areas and other potentially suitable habitats in the snow leopard range, and sampled 21areas spanning around 40000 km<sup>2</sup>. Our sampled area covers about 50% of reported snow leopard habitat in Pakistan (80,000 sq.km, McCarthy and Chapron, 2003). Data of snow leopard's occurrence was collected using camera trapping and sign-based site occupancy surveys, and DNA analysis of scat samples. Entropy modeling was used for predicting habitat suitability of the snow leopard in Pakistan. Modeling of potential movement corridors of the snow leopard was achieved through Circuitscape 4.0 software. Pairwise modeling mode was used that iterates across all pairs in a focal node file.

Snow leopard detection was low as it was photo-captured in 64 capture events at only 46 stations (in 736 stations). In total 178 locations in different areas with fresh signs (either scrape or pugmark, or both) were acquired. DNA analysis of scats samples confirmed that 111 belonged to the snow leopard. Combining results of all three methods, a total of 335 confirmed locations of snow leopards were acquired, which were used in the maxent model.

Habitat suitability map (Figure 10.1), was divided into four classes based on the probability of habitat suitability of snow leopard. These classes were; none or very low (0-0.5), low (0.05-0.4), medium (0.4-0.7), high (0.7-1). Most of the area falls under none or very low class. The areas of Khunjerab National Park, Misgar, Chapursan, Qurumber National Park, Broghil National Park fall in the category of medium suitability. Limited areas in Khunjerab and Misgar appeared to be of high suitability. Based on scores of the habitat suitability model and natural connectivity, three snow leopard model landscapes, namely Hindu Kush, Karakoram-Pamir and Himalaya were identified.

Circuit model (Figure 10.2) revealed an interesting pattern with respect to the snow leopard habitat connectivity. The population in Hindukush landscape appears to be more connected with the population in Afghanistan, as compared to other populations in Pakistan. Similarly the Pamir-Karakoram population is better connected with China and Tajikistan, and Himalayan population is connected with the population in India.

![](_page_29_Picture_0.jpeg)

![](_page_29_Figure_1.jpeg)

![](_page_29_Picture_2.jpeg)

Figure 10.2: Circuit model showing the potential movement corridors of snow leopard. Blue areas are strong links while brown areas are weakest.

![](_page_30_Picture_0.jpeg)

### 5. Countries/provinces/states sharing or adjoining the landscape

The Karakoram-Pamir Landscape is connected with the China, Afghanistan, and Tajikistan.

The Hindu Kush Landscape is connected with the Afghanistan.

The Himalaya landscape is adjacent to India (Jammu & Kashmir disputed territory).

### 6. Name and total area of protected areas existing within the landscape

The three landscapes encompass a myriad of protected areas of different management categories. The Karakoram-Pamir Landscape encircles three National Parks (NPs) namely the Central Karakoram, Khunjerab and Qurumbar, the Hindu Kush Landscape encompasses Chitral Gol and Broghil National Parks and Himalaya Landscape encompasses Musk Deer and Gamot National Parks (Fig. 10.3). Other PA categories include the Game Reserves, Wildlife Sanctuaries and Community Managed Conservation Areas (CMCAs).

![](_page_30_Figure_7.jpeg)

Figure 10.3: Map of existing PA's in the three landscapes

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![](_page_31_Picture_0.jpeg)

RUSSIA

![](_page_31_Figure_2.jpeg)

### 1. Snow Leopard Landscape(s)

Figure 11: GSLEP map of Russia

Altai Mountain Transboundary Snow Leopard Landscape

### 2. Landscape's area, in square kilometers

48767 km<sup>2</sup>

### 3. Description of landscape boundaries

The landscape has been defined by encompassing the Argut River Basin, South Altai, Sailugem, Chikhachev, Kuraisky ridges in Altai Republic and surrounding area in Tuva Republic (Mongun-Taiga Massif, Tsagan-Shubetu and Shapshalsky ridges).

# 4. Rationale for selection and estimated snow leopard population, status of prey, and connectivity following the GSLEP criteria:

The landscape, jointly along with the Mongolian one can be considered as a home to 92-122 snow leopards. In 2019 during the annual snow leopard census it was observed that Argut River Basin (Russia) may have 17-18, South Altai Ridge (Russian part) 3-5, Chikhachev Ridge (Russian part) 7-8, Kuraisky Ridge (Russia) 10, Sailugem Ridge (Russian part) 6, Mongun-Taiga Ridge (Russia) 2-3, Shapshal Ridge (Russia) 4-5, and Tsagan-Shibetu Ridge (Russian part) may have 4-5 individual snow leopards.

![](_page_31_Picture_12.jpeg)

![](_page_32_Picture_0.jpeg)

The area reports high abundance of Siberian ibex (compared to other ibex' populations in Russia), Altai argali, musk deer, roe deer and Siberian elk (14,620-18,420 individuals of ungulates in total). Specifically, Argut River Basin and surrounding mountains (Russia) may have 5450-6290, South Altai Ridge (Russia): 50-60, Sailugem Ridge (Russia and Mongolia) 1500-1800, Chikhachev Ridge (Russia and Mongolia) 1250-1450, Kuraisky and Chulyshman Ridge (Russia) 530-810, Mongun-Taiga Ridge (Russia) 140-210, Shapshal Ridge (Russia) 600-700, and Tsagan-Shibetu Ridge (Russia and Mongolia) 1100-1500 prey animals, but that is only expert's guesstimates. There is no exact information on prey abundance in Russia.

All the snow leopard populations in the Altai Mountain Landscape are seemingly well connected via mountain ridges, including Mongol Altai, Sailugem, South Altai, Katunsky, South and North Chuisky, Kuraisky, Chikhachev, Shapshal and Tsagan-Shibetu ridges. There are multiple conservation projects for snow leopards and other species (including Community-Based Conservation Initiatives) are implemented by WWF and other organizations in the Russian, Mongolian and Kazakh parts of the SL Landscape.

### 5. Countries/provinces/states sharing or adjoining the landscape

The landscape is within Altai and Tuva Republics in Russia. It adjoins parts of Bayan Ulgii and Uvs aimags in Mongolia, connects to Xinjiang Province in China and parts of the Eastern Kazakh region in Kazakhstan.

### 6. Name and total area of protected areas existing within the landscape

The landscape encompasses Altaisky Biosphere Reserve (Zapovednik), Katunsky Biosphere Reserve (Zapovednik), Ubsunurskaya Kotlovina Biosphere Reserve (Zapovednik), Sailugemsky National Park, Belukha Nature Park, Uch-Enmeck Nature Park, Ukok Plateau Nature Park, Ak-Cholushpa Nature Park, Tuva Nature Park and Shavlinsky Wildlife Refuge (Zakaznik).

![](_page_33_Picture_0.jpeg)

### TAJIKISTAN

![](_page_33_Figure_2.jpeg)

Figure 12: Map of GSLEP landscape in Tajikistan

### 1. Snow Leopard Landscape(s)

### Pamirs

Alay-Gissaro (transboundary, shared with Kyrgyzstan and Uzbekistan)

### 2. Landscape's area, in square kilometers

92,000 km<sup>2</sup>

### 3. Description of landscape boundaries

The Pamir Landscape is geographically situated at the intersection of the Himalaya, Karakorum, Tian Shan, Alai, Hindu Kush, Kunlun mountain ranges, which jointly comprise the vast majority of global snow leopard habitat. To the southwest, it borders the Hazratisho range and the northeast the Hissar range.

# 4. Rationale for selection and estimated snow leopard population, status of prey, and connectivity following the GSLEP criteria:

The landscape is of global significance to snow leopard conservation, serving as a corridor to link snow leopard populations across the species' range. Nonetheless, the fundamental knowledge needed to inform effective conservation strategies in the Landscape is still far

![](_page_33_Picture_13.jpeg)

![](_page_34_Picture_0.jpeg)

from complete.

Siberian ibex (Capra sibirica), argali (Ovis ammon Polii) and the markhor (Capra falconeri heptneri) are the primary prey species. In the absence of robust wild ungulate populations, snow leopards generally incorporate a high proportion of domestic livestock and small mammals into their diets. Declining prey availability is one of the main factors limiting snow leopard populations. Poaching pressure on prey species remains while simultaneously reducing habitat quality via overgrazing and overharvest of woody plants for fuel. Well-managed areas show higher densities of the prey which translates into higher snow leopard numbers. There are more than 20,000 argali across the eastern Pamirs, mostly in well-managed areas. The most recent markhor survey (2016) shows a total of 1298 markhor in the conservancies alone (the markhor in the Dashtijum PA were not counted in 2016 due to security concerns).

In 2012, cameras were deployed from early July through late September in two areas of 1000 each in the Eastern Pamirs. During that period, in one area we captured photographs of 19 uniquely identifiable individuals in 70 distinct events. Fecal DNA yielded a minimum of 23 individuals. In the other area, we detected six unique individual snow leopards on 14 separate occasions. By contrast, fecal DNA produced a minimum population estimate of 16 individuals in the study area. In 2013, cameras were deployed from January to March 2013 in an area of 73 km<sup>2</sup> in Darvaz, in the Western part of the Pamir landscape. We detected six unique individual snow leopards on 58 separate occasions. In 2013, cameras were deployed in an area of 700 km<sup>2</sup> in the Wakhan Valley. We detected seven unique individual snow leopards on nine separate occasions. In 2014, cameras were deployed from January to March in the Southern Alichur range in the Eastern Pamirs. We detected one snow leopard in an area of 1000 km<sup>2</sup>.

### 5. Countries/provinces/states sharing or adjoining the landscape

The Pamir Landscape is connected with the Kyrgyz Republic, China and Afghanistan

#### 6. Name and total area of protected areas existing within the landscape

The Pamir landscape includes Zorkul Strict Protected Area (8770 km<sup>2</sup>), Tajik National Park (26000 km<sup>2</sup>), Dashtijum Strict Protected Area (197 km<sup>2</sup>) and Dashtijum Zakasnik (500 km<sup>2</sup>).

![](_page_34_Picture_8.jpeg)

![](_page_35_Picture_0.jpeg)

### **TRANS-BOUNDARY**

![](_page_35_Figure_2.jpeg)

Figure 12: Map of trans-boundary landscape Alay-Gissaro 1. Proposed name of the Snow Leopard Landscape(s):

### Alay-Gissaro

### 2. Landscape's area, in square kilometers:

30,232 km<sup>2</sup>

### 3. Description of landscape boundaries

The Alay Gissar landscape is the only GSLEP landscape shared by up to three countries. From the Eastern tip of Uzbekistan towards the South-East of Samarkand, the landscape covers the mountain ranges north of Dushanbe and South of Leninobod. It covers the entire Alay Mountain range in Kyrgyzstan.

# 4. Rationale for selection and estimated snow leopard population, status of prey, and connectivity following the GSLEP criteria:

The Alay Gissar Mountain range, along with the Pamir Mountains constitute the bottleneck of the Northern and Southern distributions of the global snow leopard distributions. As the link between the Himalaya-Hindukush in the South and the Tien Shan and Altai mountain chains in the North, they have high biogeographical and conservation importance. Recent

![](_page_35_Picture_11.jpeg)


studies have reported significant shrinkages in sites used by snow leopards and also Marco-Polo sheep in the Alay region, even though some areas towards the center of the landscape still continue to be the strongholds of large mammalian populations.

#### 5. Countries/provinces/states sharing or adjoining the landscape

The landscape is shared by Uzbekistan, Tajikistan and Kyrgyzstan.

#### 6. Name and total area of protected areas existing within the landscape

The Alay-Gissaro Landscape includes: Shirkent natural park (319 km<sup>2</sup>), Zeravshan (23 km<sup>2</sup>), Sayvotinsky (42 km<sup>2</sup>) Iskandarkul (300 km<sup>2</sup>), Almasinsky (60 km<sup>2</sup>) and Kusavlisaysk (198.44 km<sup>2</sup>) reserves.





# **COUNTRY UPDATES 2020**

#### Global Snow Leopard and Ecosystem Protection Program (GSLEP)

The magnificent snow leopard is an integral part of the cultural history of Asia's mountain people. An indicator of strength, stealth and liberty, snow leopards are revered in all regions where they are found. They occur in the high mountains of Asia, which are considered to be water towers of the continent, supplying water to upto 60% of the world's human population. Snow leopard habitats also provide numerous other ecosystem services that have high economic and cultural value, and these mountains have regional and global relevance for the welfare of humankind.

Unlike many other parts of the world, we are fortunate that snow leopard landscapes have so far been spared large scale destruction of habitats, though the pressures today are immense. We stand at a crossroads today, where our high mountain biological, economic, and cultural resources are under siege due to unsustainable exploitation. At the same time, there is an incredible opportunity to ensure wildlife conservation into perpetuity and facilitate sustainable development at unparalleled spatial scales in the Asian mountains. It is that opportunity that GSLEP seeks to capitalize upon.

GSLEP recognizes that improvement in the lives and livelihoods of local communities is a critical aspect of snow leopard conservation and preservation of Asia's mountains. Ensuring that human development in snow leopard landscapes is environmentally and socially sustainable is essential. The risk of not doing so is immensely high, and evident in the increased frequency of natural disasters in mountain regions in the wake of climate change and erosion, which make it critical to ensure ecologically sensitive and socially sustainable development efforts.

The foundation of the GSLEP program are individual National Snow Leopard and Ecosystem Priorities (NSLEPs) developed by each range country. These NSLEPs are broadly based on the themes of community-based conservation and conflict management, managing habitat and prey, combating poaching and illegal wildlife trade, building institutional capacities, research and monitoring, strengthening of policies, engaging industry in green development, and building awareness and communication. These national priorities are buttressed by five global support components whose scopes transcend national boundaries and include issues such as addressing illegal wildlife trade, facilitating trans-boundary cooperation, enabling comprehensive scientific monitoring, knowledge sharing and institutional capacity building, and sensitizing large- scale infrastructure development towards environmentally sensitive planning.

Significant progress has been made across the snow leopard range countries towards achievement of the GSLEP goals in 2020.

- Countries are developing Climate Smart Management plans . Seven such plans are at various stages of development.
- A detailed management planning guide is accessible on the GSLEP website.





- Eight advisories providing specific guidance on how climate adaptation strategies, species distribution etc. may be included in a management plan, is also accessible on the GSLEP website.
- Across one landscape each in India, Mongolia, Kyrgyzstan, and Pakistan, extensive socio-economic surveys and valuation of ecosystem services have been undertaken. The reports for this are on the GSLEP website.
- Alternative development models are being piloted in different countries. For example, the snow leopard friendly pashmina in India and other models in Kyrgyzstan.
- Alternative funding models are being developed such as the Green Economy in Kyrgyzstan.
- Training and capacity building programs have been run in all 12 range countries to increase research and conservation capacity. A training of Trainers workshop was held in Kyrgyzstan and all the collaterals in the form of manuals, guides, structure, plans etc, is available on the GSLEP website.
- Protocol for population assessment of snow leopards is being followed in the range countries. SPAI was developed in India and a similar protocol is being developed in Kyrgyzstan. Training modules are being developed for stakeholders at all levels with support from Mongolia.
- Illegal wildlife trade database has been created which acts as a repository for all wildlife crimes involving snow leopards.
- The database currently holds 332 incidents of crime from 19 countries. Information
  on at least 897 snow leopard individuals has been captured as well as instances of
  over 30 other species linked with the trade of snow leopards. In December 2019,
  GSLEP released their first annual report on illegal wildlife trade, summarizing learning
  from the database thus far, along with a web interface for the database to reinforce
  communication channels with partners and encourage further information exchange.
- New Protected Areas have been created covering more than 29,000 km2 of the snow leopard habitat (Nuristan, Afghanistan; Khan-Tengri, Kyrgyzstan; and Tost, Mongolia), boundaries of existed protected areas expanded (China) and steps undertaken to strengthen the effectiveness of existing Protected Area Systems through conflict and garbage management and monitoring (Sanjiangyuan, China).
- Research and monitoring programs have been facilitated in parts of the 12 range countries.
- Community based conservation programs have been implemented in at least 14 GSLEP landscapes (Afghanistan, Bhutan, China, Mongolia, India, Kyrgyzstan, Nepal, Pakistan, Russia and Tajikistan).
- A guide for ecotourism describing best practices has been developed and is available on the GSLEP website.



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- A strategy document for environmental education for youth across snow leopard landscapes has been developed and is available on the GSLEP website.
- GSLEP has produced a manual for conservation storytelling which is available for download from the website. This can help scientists and practitioners frame key conservation messages, elicit support from decision makers, partners and funders and engage successfully with Media.
- To help practitioners monitor their snow leopard conservation programs, the GSLEP program has produced tools such as a Threat Reduction Assessment Framework which is available for download on the GSLEP website.
- The GSLEP website has been upgraded to make it a useful source of manuals and guidelines, training kits, tools for interaction, engagement, and resources. Through this website information can be safely put in public domain through a systematic and a monitorable interface

The following section of this report provides country-wise updates on the progress made nationally until September 2020.



### AFGHANISTAN

#### 1. Management Planning of the GSLEP Landscapes

Landscape level conservation includes the declaration of Wakhan National Park (WNP) and the preparation of its Protected Area Management Plan (PAMP). The snow leopard has been included in the Afghanistan Protected Species List since 2008. Nuristan National Park was declared in June 2020 and ecological surveys might be carried out in 2021. WCS will undertake socio-economic and biophysical surveys in Panjshir Province to support the justification process to establish a new protected area within the snow leopard range.

#### 2. Funds raised/committed for GSLEP program implementation

Afghanistan has received US\$ 2.7 M from the GEF replenishment cycle six with US\$ 250,000 UNDP co-financing. The project intends to conserve snow leopards and their critical ecosystems.

WCS, in partnership with NEPA and the Government of Panjshir, has received US\$ 180,000 from a private donor to establish a protected area in Panjshir Province. Panjshir is a very important corridor that links critical ecosystems within the Hindu Kush Mountain range and provides suitable habitats for a variety of wildlife species, including snow leopards and their prey.

NEPA has received US\$ 220,000 from GEF enabling funds through UNEP to revise the Afghanistan National Biodiversity Strategy and Action Plan. WCS will facilitate the process using this fund to update the Afghanistan NBSAP and define the process for new protected areas. The updated NBSAP will identify national criteria for establishing new protected areas to cover all the ecoregions and ecosystems comprising Afghanistan. This will potentially include new protected areas within the snow leopard landscape/range.

# 3. Major Projects initiated or on-going on snow leopard and mountain ecosystem conservation

GEF project GEF9439 (UNDP & WCS; July 2019-2022). The project focuses on conservation of snow leopards and their critical ecosystems in Afghanistan It aims to reduce threats to snow leopards from illegal wildlife trade, retaliatory killing as a result of human-wildlife conflict, and enhance conservation education/awareness, and protected area co-management.

WCS will carry out socio-economic and biophysical surveys in Panjshir Province to support the justification process to establish a new protected area within the snow leopard range.

Nuristan National Park has been declared by NEPA in June 2020 and ecological surveys shall be carried out in 2021.

NEPA, UNEP and WCS are currently implementing a GEF enabling project to revise the Afghanistan National Biodiversity Strategy and Action Plan. The revised NBSAP will define the revised process for identifying and establishing new protected areas in Afghanistan. This will include new protected areas lying within the snow leopard landscape.



#### 4. Existing or new Partnerships for GSLEP Implementation

The Ministry of Agriculture, Irrigation and Livestock, and the National Environment Protection Agency are the key government partners for the establishment and management of protected areas in Afghanistan. Non-governmental organizations involved in snow leopard conservation in WNP include the Wildlife Conservation Society, and the Wakhan Pamir Association (WPA, a local civil society association).

#### 5. Laws amended/created which benefit snow leopard habitats.

- NEPA initiated the Environment Law revision in early 2020.
- NEPA drafted the Wildlife Management and Hunting Law in 2019.
- The National Biodiversity Strategy and Action Plan (NBSAP), developed in 2014, is currently under revision to include human-snow leopard conflict mitigation and addressing illegal wildlife trade.

#### 6. New Protected Areas/Community Reserves established

On 7 June 2020, NEPA declared the entire Nuristan Province (9266,7 km<sup>2</sup>) as a National Park. It covers 5.6% of the confirmed snow leopard range in the country.

### 7. Research (and/or snow leopard monitoring) programs in the snow leopard areas, on-going or newly initiated

In 2019-2020, NEPA monitoring of wildlife-human conflict incidents has confirmed the presence of snow leopards in Darwaz-e-Payin District, Badakhshan, extending by 1,100 km<sup>2</sup> the confirmed range of the species in the country. Because of prevailing security conditions, research and monitoring activities have been limited to Wakhan National Park and adjacent districts. In these areas monitoring is done through camera trapping, direct observations and prey counts.

In August 2020, an Afghan student and fellow researcher of WCS completed his research on livestock-carnivore conflicts in WNP and graduated with a PhD from University of Massachusetts, Amherst, USA.

### 8. On-going or newly initiated community-based conservation programs in snow leopard habitats

Under Afghanistan's Environment Law, all protected areas and programs must collaborate or be co-managed by communities. All protected areas are therefore co-managed with local communities. Therefore, WNP and its buffer zone are co-managed with local communities and this is also the intention for the newly declared Nuristan National Park and all future protected areas in Afghanistan.

### 9. Capacity building programs focusing on issues pertaining to snow leopard and mountain ecosystem conservation

• In July 2020, four half-day training sessions on illegal hunting, trade and law enforcement were delivered to 49 law enforcement officials (Afghan Border Police,





Afghan National Police Force, National Directorate of Security, and INTERPOL) in WNP and Ishkashim District (WNP Buffer Zone).

• Thirty community rangers, including four WCS Snow Leopard Team rangers, received training on how to apply Spatial Monitoring and Reporting Tool (SMART) System to improve detection of violations to protected area regulations and monitoring systems in WNP.

### 10. Economic Evaluation of Ecosystem Services in one or more snow leopard landscapes

No such evaluations have been carried out in the snow leopard landscape in Afghanistan but rangeland and forest management was evaluated in WNP.

### **11.** Events, meetings or workshops organized within the country focused on snow leopard and/or its habitat

Under the UNDP-GEF6 project, NEPA is in the process of establishing a multi-stakeholder illegal wildlife trade taskforce. In order to establish it, three meetings have been conducted with the key stakeholders to discuss the objectives and expected outcomes of the taskforce.

#### 12. Upcoming new threats to snow leopards and their habitats

Under the Belt and Road Initiative, there are plans to construct a road and other infrastructure through Wakhan National Park. The road would connect China in the east with Pakistan to the south-east and Iran in the west, with connections to Central Asian countries. This will potentially fragment the snow leopard ranges in WNP, enabling fast access to poachers and wildlife traders.

There is also the risk of disease spill-over from domestic dogs to snow leopards and from livestock to susceptible snow leopard prey across the range.

#### **13. Climate Change Adaptation program(s) in snow leopard landscapes**

Afghanistan received EUR 35M from the European Union to implement a climate change program titled "Addressing Climate Change in Afghanistan through sustainable energy and ecosystem management in Panj-e-Amu River Basin". The main objective of this programme is to improve the resilience of communities and ecosystems to climate change in the Panj-Amu River Basin, which largely overlaps with the snow leopard preferred habitat in Afghanistan.

### 14. Awareness Building about the importance of snow leopards, their ecosystems and climate change

WCS implemented in November 2019 awareness building activities in WNP for 1,575 women and children to increase their knowledge about snow leopard basic ecology, behavior and the importance of the species conservation for Wakhan community development, and ecosystem management. During this campaign, 1,350 snow leopard posters and 1,200 snow snow leopard anti-poaching stickers were distributed to households.



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### BHUTAN

#### 1. Management Planning of the GSLEP Landscapes

The GSELP landscape in Bhutan falls under the northern protected areas (PAs) stretching from West to Eastern Bhutan. The landscape is inclusive of four PAs namely Jigme Khesar Strict Nature Reserve (JKSNR), Jigme Dorji National Park (JDNP), Wangchuck Centennial National Park (WCNP), Bumdeling Wildlife Sanctuary (BWS) Jigme Singye Wangchuck National Park (JSWNP), and Paro Forest Division (PFD). All the PAs function under their respective conservation management plan that is inclusive in general for species conservation.

The Snow Leopard Conservation Action Plan for Bhutan 2018–2023 synchronizes very well with the 12th Five Year Developmental Plan of the Government of Bhutan within which green economic development in snow leopard habitats is embedded. The government is developing policies, legislations, and by-laws on green infrastructure, especially in the protected areas. Plan implementation capacity and financing are major gap areas.

#### 2. Funds raised/committed for GSLEP program implementation

Funding for GSLEP program implementation will be available from the "Bhutan for Life" project, which is a joint initiative of the Bhutanese government and the World Wildlife Fund. As a strategic, long term project, it aims to address the challenges facing environmental conservation and ensure an economically and environmentally sustainable future for Bhutan. The USD \$43 million project has secured funding from donor agencies and partners. Conservation financing for protected areas in Bhutan is fully sourced from this initiative. Other sources are being explored for conservation works outside the protected area network.

### 3. Major Projects initiated or on-going on snow leopard and mountain ecosystem conservation

The 14-year Bhutan for Life project is already in the 3rd year of implementation. The project covers almost all the snow leopard habitats in Bhutan and snow leopard is one of the focal species under the project. The project also supports species protection, habitat enrichment and community development programs.

The Royal Government of Bhutan (RGoB) during the current five year plan has initiated a flagship program to support nomads and highlanders who share their ecosystem with the snow leopards. The Department of Forests and Park Services, RGoB has been persuading on use of green design in the protected areas for any development works. Livestock insurance packages and other incentives are being provided by the government to reduce human-snow leopard conflict in the highlands.

In order to uplift the living conditions of the highlanders and create awareness on the highland ecosystem, local festivals are conducted annually. The Jomolhari Mountain Festival at the Jomolhari Mountain base in Jigme Dorji National Park has become an annual event since 2013 to celebrate the culture of the communities living together with the natural wonders that surround them, one amongst which is snow leopard. Similarly, the Royal Highland Festival which was started in 2016 by His Majesty the fifth King of Bhutan in one of the



snow leopard landscapes has become an annual event wherein highland communities celebrate their affinity towards the mountains.

#### 4. Existing or new Partnerships for GSLEP Implementation

Existing partners supporting snow leopard and other conservation works in Bhutan include Bhutan for Life Fund, WWF Bhutan Program, Bhutan Trust Fund for Environmental Conservation, Bhutan Foundation, Global Environment Facility, Green Climate Fund, United Nations Development Program and the World Bank.

#### 5. Laws amended/created especially to benefit snow leopard habitats

- Bhutan is in the process of amending the Forest and Nature Conservation Act (FNCA), 1995 wherein killing of a snow leopard is now categorised as a non-bailable felony.
- The Green Bench of the Supreme Court of Bhutan is being instituted to expedite cases related to environmental crimes

#### 6. New Protected Areas/Community Reserves established

#### N/A

- 7. Research (and/or snow leopard monitoring) programs in the snow leopard areas, on-going or newly initiated
  - The first nationwide snow leopard survey was carried out in 2015-2016 using camera traps and spatial capture recapture methods. The survey estimated 96 (79-112) snow leopards in Bhutan.
  - The second nationwide snow leopard population survey is slated for 2021, to be conducted in six protected areas and one forest division.
  - Bhutan also initiated radio telemetry and genetic studies to understand behaviour, spatial ranges, distributions, transboundary movements and genetic diversity of snow leopards.

### 8. On-going or newly initiated community-based conservation programs in snow leopard habitats

- Under the current five-year plan, the Royal Government of Bhutan (RGoB) has initiated the highland development program to support nomads and highlanders who share their ecosystem with the snow leopard.
- With the support from RGoB, Bhutan Foundation, UNDP and GEF, snow leopard monitoring programs by the communities were initiated in Jigme Dorji National Park. Communities were also provided with incentives to acknowledge their support in snow leopard conservation.
- The Jomolhari Mountain Festival which was initiated by the park management is now fully owned by the communities to celebrate their culture and livelihood amidst the mountain ecosystems which are one of the prime habitats of snow leopards. Through this festival, local communities also generate incomes by sale of highland products.



• Ecotourism programs in the snow leopard habitats benefit the communities by providing livelihoods opportunities and additional incomes.

## 9. Capacity building programs focusing on issues pertaining to snow leopard and mountain ecosystem conservation

- The field staff working in the snow leopard habitats are trained to conduct snow leopard population surveys using camera traps. Staff are also regularly trained on patrolling to combat wildlife poaching and socio-ecological data collection.
- Bhutan's Ugyen Wangchuck Institute for Conservation and Environmental Research is working on setting up a genetic laboratory and library for gene samples opening opportunities for collaborating with institutions outside Bhutan.
- 10. Economic Evaluation of Ecosystem Services in one or more snow leopard landscapes

N/A

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**11.** Events, meetings or workshops organized within the country focused on snow leopard and/or its habitat

The country observes important international days such as World Wildlife Day on 3rd March and International Snow Leopard Day on 23rd October each year to create awareness programs among the communities and school children on the need for conservation partnership.

#### **12. Upcoming new threats to snow leopards and its habitats**

Feral dog population in Bhutan is increasing and is occupying the wilderness areas including the snow leopard habitats which is a grave threat to the snow leopards and their prey.

#### 13. Climate Change Adaptation program(s) in snow leopard landscapes

The Snow Leopard Conservation Action Plan (2018-2023) was framed as a climateintegrated landscape approach to SL conservation and identifies climate change as one of the major threats. Therefore, the action plan clearly outlines the climate change adaptation programs needed in the snow leopard landscape and the activities, through the Bhutan For Life funding, are being implemented on an annual basis. For instance, habitat management guidelines are being developed to guide the management of alpine landscapes to ensure a safe ecosystem for alpine flora and fauna. Climate change integrated spatial analysis is to be conducted and suitable habitat identified and zoned to save the snow leopard.

### 14. Awareness Building about the importance of snow leopards, their ecosystems and climate change

The Department of Forests and Park Services conduct regular advocacy and awareness programs to the general public and highlanders in particular about the importance of conserving snow leopards and its ecosystem and the related legal provisions in terms of killing of snow leopards.



### CHINA

#### 1. Management Planning of the GSLEP Landscapes

- China is making extensive efforts to improve the connectivity of snow leopard habitats through a national park system and construction of corridors as evidence from genetic analysis suggests that snow leopards from different areas have different attributes, but more research needs to be done in this aspect.
- A resistant-kernel model of connectivity for snow leopard populations from a set of 8,000 locations was set uniformly on a 20-km grid throughout the potential range of suitable habitat at 100 km dispersal thresholds that likely bracket the range of plausible lifetime movement.
- For the national park system, several experimental units have been piloted in the recent years, including three parks that cover core habitats of snow leopard, which are Sanjiangyuan (river source of Yangtze, Yellow, and Lancang) National Park, Qilian Mountains National Park, and the Giant Panda National Park.
- To improve connectivity, new protected areas between the prime habitats will likely need to be designated to play the role of corridors and stepping stones between existing protected areas.
- Connecting the habitats will help reduce isolation, lower barriers, and address rangerelated challenges

#### 2. Funds raised/committed for GSLEP program implementation

- Government Funds:
  - National park construction: the NFGA will be releasing the National Park Masterplan, which will act as the guidance document for National Park construction and management, further strengthen conservation inputs in National Parks, including National Parks for Snow Leopard conservation, such as Qilianshan, Sanjiangyuan, etc.
  - The Second National Assessment on Terrestrial Wildlife Resources and Endangered wildlife Monitoring Programmes organised by the NFGA: Surveys on the population status, number and density of snow leopard; as well as the quality and status of their habitats, were carried out in Qomolangma NNR, Tienshan region, Taxkorgan, Qilianshan and Xinjiang Tomor peak. The survey will be continued and data will be used to form the Snow Leopard Conservation Management and Conservation Plan for each Reserve.
- Funds from businesses and companies:
  - Vanke Foundation provided funds for the Tibetian Rare Endangered Species Conservation programme(Snow Leopard rescue and research) in Qomolangma NNR. The programme is implemented by Eco-Bridge Continental.118 camera traps have been placed in the project area, covering an area of 1325 km<sup>2</sup>, the



programme will continue to carry out Training and monitoring programmes, to complete the Technical Guide for the Rescue of Snow leopard and other wildlife.

Crowdfunding

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- Tencent 99 public welfare day is the largest public welfare day in China, it combines crowdfunding with company funding by Tencent. This year, there were 3 fundraising programmes regarding snow leopard conservation, all have attracted considerable attention.
- Many NGOs also have monthly or long-term fundraising systems where the public make periodic donations specifically for the programmes they chose, including funds that will specifically be used for snow leopard conservation.
- 3. Major Projects initiated or on-going on snow leopard and mountain ecosystem conservation
  - Implementation of the China Snow Leopard Conservation Action Plan 2013 is underway with efforts to improve population estimation, monitoring, and habitat improvement.
  - China is working on green infrastructure not just in the snow leopards' range, but also areas prioritized for other wildlife.
  - Ministries and Departments in charge of natural resources and environmental conservation include the National Forestry and Grassland Administration (NFGA), Ministry of Ecological Environment (MEE), Ministry of Natural Resources (MNR), and Ministry of Finance (MoF). All ministries increased their share for the natural conservation, ecological construction projects.
  - Industries have also started funding projects in environmental protection and nature conservation.

#### 4. Existing or new Partnerships for GSLEP Implementation

Both Chinese and international NGOs are working on snow leopard conservation issues in China. Relying on 'the Second National Assessment on Terrestrial Wildlife Resources and Endangered Wildlife Monitoring Programmes' organized by the National Forestry and Grassland Administration, the Wildlife Institute of Beijing Forestry University cooperated with Eco-Bridge Continental and related protected areas to implement the snow leopard monitoring and conservation projects in the safety snow leopard landscapes including Tashkurgan, Tomor and Yanchiwan registered in GSLEP.

#### 5. Laws amended/created especially to benefit snow leopard habitats.

- The National Wildlife Protection Law has been revised in 2016. The Law prohibits hunting, capture or killing of wild animals under national major conservation, including snow leopard (Class I) and their prey such as the blue sheep (Class II).
- The renewed Law also expands the banned hunting methods prohibited by the old Law to include poisons, explosives, electronic shock, electronic trap devices,



snares, leg-hold traps, makeshift guns, etc. Night-time hunting with lights, guerrillastyle hunting, and hunting by destroying nests or using fire, smoke, or nets are also generally prohibited. (2016 Law, art. 24.).

- To implement the new law, key habitats of endangered species need to be identified and protected by state, provincial, regional, and local authorities.
- The law mandates that anyone who hunts or kills wild animals under national major conservation shall be pursued in accordance with relevant provisions of the criminal law (2016 Law, art. 43.)
- There are no trophy hunting regulations in China as trophy hunting is not practiced in the country.
- The revised law in general prohibits the sale, purchase, or use of rare or near-extinction wild animals, and their products that are under special national protection, including animals in the national major conservation list and CITES Appendix I & II.
- Since 2016, it has become mandatory for any development activity such as a road construction project, which crosses the snow leopard habitat to be assessed for environmental impact before it is approved.

#### 6. New Protected Areas/Community Reserves established:

The 'National Park Master Plan' is being initiated, the protection areas of several National Parks have been expanded, including Qilianshan, Sanjiangyuan and the Giant Panda National Parks which are highly estimated as snow leopard habitats; this will increase habitat connectivity and strengthen conservation efforts in the National Parks.

# 7. Research (and/or snow leopard monitoring) programs in the snow leopard areas, on-going or newly initiated

Snow leopard monitoring and research in China uses camera traps and scat analysis to focus on distribution, density, territory and habitat connectivity, niche overlap, conflict, genetic diversity, breeding, disease and impact of climate change.

- Snow leopard monitoring is improving in China. Wildlife poaching and illegal trade have reduced remarkably in the last several years.
- Systematic population and habitat estimation is currently ongoing.
- Intensive systematic surveys are ongoing in Taxkorgan Nature Reserve and Tienshan mountains including Tomur NNR in Xinjiang, Qilianshan NNR and Yanichiwan in Gansu and Qilianshan NR in Qinghai, Sanjiangyuan National Parks in Qinghai, and Wolong National Parks in Sichuan.
- Habitat monitoring, habitat analysis and population estimation have been carried out in Qomolangma Everest peak of Himalayas as also monitoring and conservation research in Qinghai plateaus, which are connected with many other range countries – Mongolia, Russia, Nepal, Kazakhstan, Kyrgyzstan, Tajikistan, Pakistan and Afghanistan – with whom China may potentially collaborate on conservation in the future.



• A national monitoring platform to coordinate research and monitoring data and estimations in the snow leopard range, habitat and population will need coordination, international cooperation and close partnership with the GSLEP Secretariat.

# 8. On-going or newly initiated community-based conservation programs in snow leopard habitats

Attention is paid to the attitudes of the local people to understand what they need, what they want, and what they can do. The Sanjiangyuan Conservation Centre worked with the community and farmers using citizen science and community collaborative monitoring of wildlife by increasing awareness about snow leopards and other species. Based on this engagement, they also developed a community-based ecotourism project, which increased the income of farmers and while promoting conservation.

- Community-based Monitoring in Sanjiangyuan Region
  - Over 300 camera traps deployed
  - Monitoring is done over 6000 km<sup>2</sup>, across 12 sites, using 5\*5 grids
  - About 254 monitors are drawn from local communities
  - Local government, National Park Bureau and Forestry Departments are involved in monitoring
  - Continuous Monitoring Leads to Knowledge of Individual IDs and Dynamics of Snow Leopard Population
  - Monitoring will ultimately become the responsibility of National Park Ecological Rangers.
- Ecotourism is on the rise where tourists are being sensitized to conservation and ecological knowledge. Also, public donations are flowing in towards conservation projects.
- The Nature Watch Project in Sanjiangyuan National Park
  - "The Valley of the Cats", was started as a community-based Wildlife Watching Tourism in Namsei Township within the Park, as a pilot.
  - It was opened to visitors in 2018
  - In 2018, 22 local families were trained, the park received 61 groups of visitors, and earned over \$ 60,000.
  - The National Park Bureau, the local government and the community are actively involved.
  - It is operated by the Management Committee selected by the local community.
     100% revenue is retained by the community where it is shared as follows:.
    - 45% to host families

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- 45% to Community Fund run by local management committee



- 10% to community-based conservation initiatives

In 2019, it was awarded the First Ever Franchise for Community-based tourism inside a Chinese National Park

In 2019, it was awarded the First Ever Franchise for Community-based tourism inside a Chinese National Park

Support from the local community is crucial for successful implementation of conservation efforts, while human-wildlife conflict largely hinders the progress of many of those works. A community-based project aiming to explore effective practices in lowering the incidence of human-wildlife conflict and aid effective conservation of snow leopard population in Yanchiwan National Nature Reserve has been initiated, in association with the Global Environment Facility/Small Grants Programme (GEF-SGP) and United Nations Development Programme (UNDP).

- Promoting community based conservation for snow leopards in Yanchiwan part, Qilian Mountain National Park
  - In 2019, 20 local rangers were trained for monitoring snow leopard using cameratrapping techniques;
  - Total areas monitored covers 2775 km<sup>2</sup> of Yanchiwan area in Qilian Mountain National Park, with 111 5km\*5km grids set.
  - 117 local residents were interviewed for information about human-wildlife conflicts.
  - The project is still ongoing, it plans to perform a pilot experiment on corral modification to reduce livestock depredation by wildlife, while organising lectures to local pastoralists about livestock disease and vaccines; improve local livelihood and thus gain more support from the community regarding snow leopard and wildlife conservation.

### 9. Capacity building programs focusing on issues pertaining to snow leopard and mountain ecosystem conservation

- China has received support from the United Kingdom for capacity building for snow leopard conservation.
- Under the project named Capacity Building for Feline Species Conservation in China:
  - Over 600 wardens and staff have so far received training for wildlife monitoring.
  - Training was provided near hundred and the monitoring staff deployed across diverse projects.
- Staff training in corresponding project areas is included as a crucial part in many snow leopard survey and conservation programmes in China. Trainings usually include camera-trap set-up, wildlife trace survey, basic knowledge in wildlife conservation and so on. Trainings are usually given to local rangers and staff of Reserve Authorities. Such training and capacity building programmes will largely increase the quality and



efficiency of monitoring, while strengthening the management ability of Reserve staff at the same time.

10. Economic Evaluation of Ecosystem Services in one or more snow leopard landscapes

N/A

- 11. Events, meetings or workshops organized within the country focused on snow leopard and/or its habitat
  - International Conference for Snow Leopard Conservation, Shenzhen, 2018.
    - 35 reports were made on the status and research achievements of snow leopard conservation around the world by the representatives of snow leopard range countries.
    - "The Shenzhen Consensus on Global Snow Leopard Conservation" was announced upon agreement by the representatives of snow leopard range countries, identifying conservation needs for snow leopards in the future.

#### **12. Upcoming new threats to snow leopards and its habitats**

- Isolation of population, habitat loss and fragmentation;
- Imperfect protection mechanism;
- Public lack of conservation awareness;
- Deficient funding for conservation;
- Insufficient capacity of local conservationists
- Human-wildlife conflict

#### 13. Climate Change Adaptation program(s) in snow leopard landscapes

- National Regulation for Returning farmland to forests and Returning livestock pastures to natural grassland will help combat climate change, especially within National Parks, where deforestation and grazing are strictly restricted within the core zones. Improving the management hierarchy and further clarifying the division of different zones within National Parks is also included in the National Park Masterplan.
- The 'China Snow Leopard conservation action plan' and 'The Shenzhen Consensus on Global Snow Leopard Conservation' also emphasized the effect of climate change on the snow leopard population and high mountain ecosystems, and appealed to increase conservation input and research in the face of climate change.

### 14. Awareness Building about the importance of snow leopards, their ecosystems and climate change

#### **Multimedia publicity**



- Mainstream Media: mainstream media in China are very supportive and interested in conservation stories regarding the snow leopard, CCTV has aired the Snow Leopard serial documentary.
- Social media platforms: Government sectors, Media and NGOs actively update the progress and achievement of Snow leopard conservation on social media platforms such as Weibo and WeChat public accounts. Including information about Shanshui, WWF. China Wildlife Protection Association (CWCA), Eco-bridge Continental etc.

**Citizen science:** worked with the community and farmers using citizen science and community collaborative monitoring of wildlife by increasing awareness about snow leopards and other species.

**International Snow Leopard Day:** Every year the Government, NGOs and the media collaborate to put up various activities for the International Snow Leopard Day, aiming to spread awareness for snow leopard and high-mountain ecosystem conservation, as well as to summarise and review the works that have been done in snow leopard conservation in the past year.



### INDIA

#### 1. Management Planning of the GSLEP Landscapes

The snow leopard for India is the flagship species of the Alpine region, the Indian Himalayas. Systematic snow leopard conservation programs in the country date back to the concerted efforts initiated in the year 2009 under Project Snow Leopard. The main components of Project Snow Leopard are:

- 1. The then innovative, now widely used "landscape conservation approach". Conservation of the snow leopard includes the conservation of its habitat and its entire ecosystem including all other flora and fauna.
- 2. Biodiversity monitoring and conservation
- 3. Climate-smart livelihoods and enterprise
- 4. Multi-stakeholder participation
- 5. Village, landscape, and state-level societies/foundations to capture gains from ecotourism for local development of the human population in the range areas.

In addition to the Project Snow Leopard, the Government of India is also implementing a project funded by the Global Environment Facility (GEF) entitled "Securing livelihoods, conservation, sustainable use and restoration of high range Himalayan ecosystems" (SECURE Himalaya) in partnership with United Nations Development Programme (UNDP) across four Himalayan snow leopard states (barring Arunachal Pradesh) including six landscapes and covering an overall area of 35,000 km<sup>2</sup>. This project focuses on mainstreaming landscape-based conservation and livelihood improvement through participatory natural resource management framework, in line with mandates of the PSL and GSLEP. The main components of this project are the following:

- 1. Landscape level management strategies and plans
- 2. Conservation-linked livelihood improvement
- 3. Mitigating human-wildlife conflicts and illegal trade in wildlife
- 4. Communications and knowledge management

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Capacity building and policy are common themes across the above components. Capacity building is being done not just for the frontline forest staff but also the local community to ensure their participation and secure their cooperation in the project and create sync between their aspirations and the objectives of the Government of India.

Project Snow Leopard, which has been revived very recently, is being implemented in the UTs of Jammu & Kashmir and Ladakh, and States of Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh. The MoEF&CC has reconstituted the PSL Steering Committee in September 2019. In addition to stakeholders from the governments at Central and State/UT levels, the MoEF&CC has involved representatives from scientific agencies (e.g. WII, NCF and WWF), the Ministries of Home Affairs and Defence, respectively, and Wildlife Crime



Control Bureau (WCCB). MoEF&CC has already had two steering committee meetings of the PSL (one in October 2019 and the other in August 2020) with the governments of the Himalayan States/UTs to facilitate implementation of PSL and Snow Leopard Population assessment in India (SPAI).

#### 2. Funds raised/committed for GSLEP program implementation

Tentative committed funds for FY 2020-21 is approximately INR 21 Crores (c. US\$ 2.80 million).

## 3. Major Projects initiated or on-going on snow leopard and mountain ecosystem conservation

- Project Snow Leopard
- Gol-GEF-UNDP's SECURE Himalaya Project
- Central Asian Flyway (CAF)
- National Mission for Sustaining the Himalayan Ecosystem (NMSHE)
- National Mission on Himalayan Studies (NMHS)
- Border Area Development Programme (BADP)

#### 4. Existing or new Partnerships for GSLEP Implementation

- Partnership with the Ministry of Defence and Ministry of Home Affairs through PSL Steering Committee
- Partnership with UNDP-India for implementation of GEF funded SECURE Himalaya Project
- The MoEF&CC has decided to establish Snow Leopard Cell at the WII to better coordinate snow leopard conservation projects in India

#### 5. Laws amended/created especially to benefit snow leopard habitats.

The Wildlife (Protection) Act, 1972, provides the highest level of protection to the snow leopard in India. Additionally, snow leopard is listed in Appendix I of CMS and CITES, respectively.

#### 6. New Protected Areas/Community Reserves established:

The snow leopard habitat in India has 53 Protected Areas covering a total area of 36,019 sq.kms.

- 7. Research (and/or snow leopard monitoring) programs in the snow leopard areas, on- going or newly initiated
  - Snow leopard and prey distribution and population assessment is ongoing in the UT of Ladakh.
  - In Himachal Pradesh, preliminary assessment suggests 44 snow leopard individuals (analyses ongoing).



- Distribution and population assessment surveys for snow leopard and prey base will be initiated in Uttarakhand during the last quarter of this year.
- Snow leopard and prey distribution and population assessment is ongoing in Sikkim.
- Snow leopard and prey distribution assessment is ongoing in Arunachal Pradesh.
- Population assessment is yet to be initiated.

## 8. On-going or newly initiated community-based conservation programs in snow leopard habitats

Mitigation measures are implemented across the landscape in partnership with local communities:

- Landscape level management strategies being developed by research institutes
- Predator-proof corrals & livestock insurance
- Grazing-free pastures
- Garbage management through bio-digester plants (especially in Ladakh)
- Partnerships with Ministries of Defence & Home Affairs
- Participatory monitoring of avifauna in Ladakh through SECURE Himalaya Project.
- Establishment of Biodiversity Management Committees (BMCs) in Himachal Pradesh and Uttarakhand for better management of natural resources.

Examples of community participation in snow leopard conservation through ecodevelopment committees:

- Artificial glaciers in Ladakh & Himachal Pradesh
- Community home stays in Ladakh & Sikkim
- Women-based enterprises (SHEN), Himachal Pradesh
- Grazing-free pastures Ladakh & Himachal Pradesh
- Predator-proof corrals & livestock insurance in Ladakh & HP
- Wolf-trap to stupa conversion in Ladakh

# 9. Economic Evaluation of Ecosystem Services in one or more snow leopard landscapes

Yet to be undertaken in a coordinated manner.

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# 10. Capacity building programs focusing on issues pertaining to snow leopard and mountain ecosystem conservation

A national orientation workshop on SPAI was held by the MoEF&CC in September 2019 to facilitate implementation of distribution and population assessment across the country.



An orientation meeting on Management Effectiveness Tracking Tool (METT) was conducted by the MoEF&CC in September 2019. The METT parameters were modified as per the context of PAs in the Indian Himalayas, and the same was adopted by the Himalayan States/UTs as Himalayan METT (Him-METT).

Local community members have been trained and involved in avifauna ringing and tagging in Ladakh.

Youth (including women) have been trained on mountaineering and sustainable tourism in Uttarakhand.

Local youth have been trained on plant and animal taxonomy in Himachal Pradesh and Uttarakhand.

Youth have been trained on preparation of Peoples' Biodiversity Register and associated skills needed for better functioning of BMCs by ENVIS and State Biodiversity Board in Himachal Pradesh.

A training of trainers on SPAI was organised by the Uttarakhand Forest Department and WII in February 2020.

### **11.** Events, meetings or workshops organized within the country focused on snow leopard and/or its habitat

SPAI workshop, September 2019

METT workshop, September 2019

6th Steering Committee Meeting of PSL, October 2019

GSLEP meeting, October 2019

CMS CoP 13, February 2020

7th Steering Committee Meeting of PSL, August 2020

#### **12. Upcoming new threats to snow leopards and its habitats**

Disease and zoonoses (poor understanding of existing status and risk of transmission).

Livestock grazing & decline in prey base

Retaliatory killing

Feral dog depredation on wildlife

#### 13. Climate Change Adaptation program(s) in snow leopard landscapes

Under PSL, a template for Annual Plan of Operations has been circulated with snow leopard range States/UTs. The State/UT Governments have been advised to implement appropriate climate change risk mitigation activities in snow leopard habitats across Indian Himalaya.

Through SECURE Himalaya project, potential for reduction in dependence on natural resources has been assessed, and alternate climate-friendly options have been piloted, e.g. bio-gas chulha, solar lights, solar space heating etc.



# 14. Awareness Building about the importance of snow leopards, their ecosystems and climate change

- Involving representatives of local communities from snow leopard habitat in GSLEP meeting held in New Delhi during 22-23 October 2019
- Films on snow leopard conservation through SECURE Himalaya Project
- 360 degrees VR film on snow leopard through SECURE Himalaya Project





### **KYRGYZSTAN**

#### 1. Management Planning of the GSLEP Landscapes

Central Tien Shan landscape, Alai-Gissar landscape (transboundary, between Tajikistan and Uzbekistan).

#### 2. Funds raised/committed for GSLEP program implementation

- The Government of the Kyrgyz Republic recently established a wildlife conservation fund, with mandatory transfers (to the tune of \$57 million till date) from the mining industry.
- In addition, as part of the Biofin project, the Ministry of Finance of the Kyrgyz Republic and the state agency for the protection of the mountain environment have together completed a conservation cost estimation exercise.
- The Kyrgyz Republic needs financial resources from international donor organizations to accomplish its conservation goals.

**Green economy:** The green economy plays a very important role in the Kyrgyz Republic. The President's office has a special working group to study and promote the concepts of the green economy. The Ministry of Economics is the nodal ministry and the State Agency for the Protection of the Mountain Environment and Forestry is the authorized state body for implementing initiatives on environmental protection. The program on the green economy is gaining traction; at the moment new policies are being developed and implemented in those sectors where environmental issues require consideration.

# 3. Major Projects initiated or on-going on snow leopard and mountain ecosystem conservation

Measures against illegal poaching have been implemented. Poaching is regulated through hunting rules in Kyrgyzstan.

- In 2016, in Issyk-Kul oblast, one case of poaching for a snow leopard was recorded (a claim was paid for damage to wildlife in the amount of 500.0 thousand soms). According to the legislation of the Kyrgyz Republic, the payment of the claim and fines does not relieve the offender from criminal liability. Consequently, violators are subject to punishment in accordance with the Criminal Code of the Kyrgyz Republic.
- January, 2020 in Talas region residents of the village Kok-Oy found and caught a wounded snow leopard. Examination of the animal showed that it had received a gunshot wound to the head. An operation was carried out to extract the bullet from the head. Currently, the leopard is in the rehabilitation center of the Bugu-Ene Public Fund. At this time, an investigation by law enforcement agencies in tracking down poachers is being done.
- May, 2020, one snow leopard was caught during its attack on a calf at the Teskey-Torpo pass in the Naryn district of the Naryn region. According to the act of 05/04/2020, the snow leopard was very weak, emaciated and old. This snow leopard was sent to the



NABU rehabilitation center (Ananyevo village, Issyk-Kul oblast) to take measures to rehabilitate his condition.

- September 2020, employees of the Main Department of Internal Affairs of the Kyrgyz Republic detained a citizen of Bishkek while selling the skin of a snow leopard (obtained by poaching). Investigative measures are currently underway.
- In addition, the State Agency on Environment Protection and Forestry under the Government of the Kyrgyz Republic systematically carries out a number of measures to identify violations of environmental legislation, works together with law enforcement agencies, customs and border services of the Kyrgyz Republic, and is actively working to combat poaching. As of July 2020, the employees of the Department of Biodiversity Conservation and Protected Areas identified 136 facts of violation of environmental legislation, drawn up protocols for a total amount of 2 785.6 thousand Kyrgyz soms (KGS). Of these, on the facts of causing harm to the plant world, 5 cases were opened for the amount of 46.3 thousand KGS, for the animal world 105 cases for the amount of 564.6 thousand KGS and 25 protocols were drawn up for other violations in the amount of 174.6 thousand KGS.

#### 4. Existing or new Partnerships for GSLEP Implementation

State Agency on Environment Protection and Forestry under the Government of the Kyrgyz Republic.

Conservation Partners include:

- UNDP
- Snow Leopard Trust
- NABU
- UNEP

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#### 5. Laws amended/created especially to benefit snow leopard habitats.

Changes have been made to the Law of the Kyrgyz Republic:

- The Law of the Kyrgyz Republic «On Biosphere Territories in the Kyrgyz Republic» was developed in order to maintain and enforce the specified draft Law of the Kyrgyz Republic to ensure the best regulation of the conservation and sustainable development of the biosphere territory (signed by the President of the Kyrgyz Republic on March 13, 2020, No. 26).
- The Law of the Kyrgyz Republic «On Hunting and Hunting Economy», signed by the President of the Kyrgyz Republic on March 23, 2020 No. 269.

In order to update the key strategic documents on biodiversity conservation, the State Agency has developed three draft resolutions of the Government of the Kyrgyz Republic:

• Draft resolution of the Government of the Kyrgyz Republic «On approval of the Priorities for the conservation of biological diversity of the Kyrgyz Republic for the



period until 2030 and the Action Plan for the implementation of the Priorities for the conservation of biological diversity of the Kyrgyz Republic for 2020-2024". This project provides for certain activities related to the conservation of the snow leopard population of the Kyrgyz Republic.

- Draft resolution of the Government of the Kyrgyz Republic on amendments to the Resolution of the Government of the Kyrgyz Republic «On approval of the Regulation on the biosphere territory Issyk-Kel, «dated January 24, 2000 No. 40. (new edition).
- Draft resolution of the Government of the Kyrgyz Republic «On approval of the Procedure for organizing ecological corridors in the Kyrgyz Republic».

These projects have been coordinated in accordance with the established procedure with ministries and departments and sent for consideration and adoption of relevant resolutions of the Government of the Kyrgyz Republic.

The State Agency has also created and maintains a national database of wild animals of Kyrgyzstan (http://www.wildlife.caiag.kg). On the basis of this database, an electronic specially protected natural area (electronic protected area) was developed, which contains information about specially protected natural areas of the Kyrgyz Republic.

In addition, the Resolution of the Government of the Kyrgyz Republic dated April 12, 2017 No. 214 introduced restrictions on the special use of mountain sheep (argali), mountain goat (ibex), roe deer, wild boar and snowcock for the general period from 2017 to 2026 with alternating regions every three years, including:

- In Talas and Jalal-Abad regions, Alamudun, Sokuluk, Zhayil and Kemin districts of Chui region from July 1, 2017 to July 1, 2020;
- In Osh and Batken regions, Chui, Ysyk-Ata, Moscow and Panfilovsky districts of Chui region from July 1, 2020 to July 1, 2023;
- In Issyk-Kul and Naryn regions from July 1, 2023 to July 1, 2026.

Decree of the Government of the Kyrgyz Republic of August 18, 2017 No. 501 «On Amendments to the Decree of the Government of the Kyrgyz Republic» On Approval of Taxes for Calculating the Amount of Penalties for Damage Caused to Objects of Fauna and Flora, Mummy-Containing Mineral Raw Materials and Mushrooms by Legal Entities and Individuals «dated 3 May 2013 No. 224» increased the size of taxes for certain types, including:

Types of animals	Penalization Old tax (KGS)	New tax (KGS)	Increase in the size of the tax (KGS)
Snow Leopard	500 000	1 500 000	+ 1 000 000
Maral Animal	400 000	1 000 000	+ 600 000
Argali	400 000	1 000 000	+ 600 000
Capricorn Animal	55 000	100 000	+ 45 000
Roe Animal	15 000	50 000	+ 35 000 сом





At present, a project has been developed on amendments and additions to the Decree of the Government of the Kyrgyz Republic «On approval of rates for calculating the amount of penalties for damage caused to objects of flora and fauna, mummy containing mineral raw materials and mushrooms by legal entities and individuals» dated May 3, 2013 No. 224. Changes are made in order to strengthen the protection of flora and fauna in the Kyrgyz Republic, to increase responsibility for compliance with the established order in the implementation of natural resources.For example:

 For illegal production (shooting, trapping) or destruction of wild animals on the territory of state nature reserves, state reserves, state natural parks and other specially protected natural areas (SPNA), as well as for each illegally obtained or destroyed inhabited nest, burrow, lair, etc. other shelters (except for wolves and jackals), it is envisaged to recover sums doubled from the tax for the corresponding type of damage.

This project is aimed at consideration and adoption of the relevant resolution of the Government of the Kyrgyz Republic.

"Ibris Foundation", a public fund, provided equipment (video cameras, video recorders, solar batteries, etc.) to posts in the Barskoon gorge of the Djety-Oguz region of the Issyk-Kul region and in the Bosogo gorge of the At-Bashy region of the Naryn region to preserve the resources of the natural world and to identify and suppress violations in the field of environmental management, within the framework of the project «strengthening the potential and development of international cooperation in the fight against illegal trade in big cats». At the ecological post Barskoon, an enclosure for a service dog was built, a specially trained service dog of the German Shepherd breed was purchased, which is kept for identifying illegally caught and transported wild animals and their derivatives (skins, horns, meat, etc.).

In addition, the rules of hunting management and requirements for tender documentation have been tightened. By the Resolution of the Government of the Kyrgyz Republic on March 30, 2018 No. 173, amendments were made to the Regulations on the procedure for holding a tender for granting legal entities the right to conduct hunting activities on certain hunting grounds of the Kyrgyz Republic.

#### 6. New Protected Areas/Community Reserves established

Since 2016, the State Agency has established four specially protected natural areas (hereinafter - SPNA) of the republic total. pl. more than 370.0 thousand hectares:

- State Natural Park «Khan-Teniri» 275.8 thousand hectares;
- State Natural Park «Kan-Achu» 30.5 thousand hectares;
- State Natural Park «Alatay» 56.8 thousand hectares;
- State complex reserve «Ak-Suu» 7.862 thousand hectares.

Currently, the development of documentation for the organized State Natural Park «Chon-Alai» total. with an area of 66.83079 thousand hectares. and organization of the State Natural Park «Arka» total. with an area of more than 50.0 thousand hectares.





### 7. Research (and/or snow leopard monitoring) programs in the snow leopard areas, on-going or newly initiated

**Population estimation:** Kyrgyzstan has developed a methodology aligned with PAWS, which, with cooperation from relevant ministries and organizations is being tried out in landscapes where financial support is already available.

### 8. On-going or newly initiated community-based conservation programs in snow leopard habitats

Deployment of technology for conservation: Kyrgyzstan has reached out to and received support from partners, intergovernmental organizations, and international donors for assistance with regard to camera traps, capacity building, conducting genetic tests, and working with local communities.

### 9. Capacity building programs focusing on issues pertaining to snow leopard and mountain ecosystem conservation

N/A

10. Economic Evaluation of Ecosystem Services in one or more snow leopard landscapes

N/A

11. Events, meetings or workshops organized within the country focused on snow leopard and/or its habitat

N/A

#### 12. Upcoming new threats to snow leopards and its habitats

N/A

#### 13. Climate Change Adaptation program(s) in snow leopard landscapes

Kyrgyzstan has developed a draft plan for climate change adaptation and mitigation, which is awaiting formal approval for implementation. Finding the required financial resources, engaging relevant government bodies, scientific institutions, and the local population in the plan remain pending challenges.

### 14. Awareness Building about the importance of snow leopards, their ecosystems and climate change

N/A



### MONGOLIA

#### 1. Management Planning of the GSLEP Landscapes

Protected areas are one of the most effective tools for conserving species and natural habitats. They also contribute to the livelihoods and well-being of local communities and society at large. Currently, 17.4 percent of Mongolia's territory is under protection.

- Out of that 28 protected areas are located in Altai Sayan Ecoregion. A management plan is important in improving protection of specially protected areas in addition to covering territories by special protection. In accordance with this, The Ministry of Environment and Green Development has selected WWF-Mongolia to provide advisory services and improve management plans of 10 protected areas (PA) in the Altai-Sayan Ecoregion, which is the main habitat of endangered snow leopards in Mongolia. In accordance with the contract, training was provided to staff of PA administrations in August and September 2013. Seven staff of five PA administrations were trained in the new methodology, Miradi, on developing management plans. During the training a draft management plan was prepared in collaboration with PA administration staff and rangers.A climate-smart snow leopard landscape management plan for the nation's "Altai" GSLEP priority landscape is being drafted by WWF Mongolia program office.
- The Snow Leopard Conservation Plan in South Gobi Snow Leopard landscape is being currently developed and should be completed by the end of 2020. The plan covers state protected areas, local protected areas, as well as new-protected areas.
- 37% of Mongolia's snow leopard landscapes are protected either as state protected areas (118 in all) across four categories or as local protected areas (about 2000 in number).

#### 2. Funds raised/committed for GSLEP program implementation

Funds have been raised through innovative financing.

- WWF provided USD 5 million for the snow leopard and its habitat conservation in Mongolia. WWF- Mongolia Program office is implementing the project "Future of the land of snow leopard" for 5 years from 2018-2023 in Mongolian Altai Sayan Ecoregion. The project goal is to secure the future of the second largest global population of the snow leopard "Irbis"- the Northern subspecies-is fully secured through functional connectivity of sub populations in Russia and within Mongolia and elimination of poaching and retaliation killing in the sustainable managed critical habitats.
- Funds raised /committed for SL conservation, research/ by WWF Mongolia CO, GSLEP program implementation
  - 4.1 million EUR was raised solely and partly for the SL conservation in ASER and being spent via 5 projects during 2015-2023. Main donors are WWF-Netherlands, WWF Germany and an anonymous major donor.
    - 67,000 EUR was raised for the Nationwide Snow leopard population assessment



- aligned with GSLEP's PAWs initiative (2017-2020).

- The second and third phases of the Biodiversity and Adaptation to Climate Change project is being implemented in Mongolia. Within it, a Memorandum of Understanding (MoU) was signed on May 23, 2019 by the Minister of Environment and Tourism, N.Tserenbat and project manager of German Credit Institute for Reconstruction (KFW), Nina Otto. Governors of Uvs, Khovd, Gobi-Altai, Bayan-Ulgii and Bayankhongor provinces, which will be involved in the second and third phases of the project, signed the MoU as well. Worth 27.5 million EUR in total, the Biodiversity and Adaptation to Climate Change project will cover the special protected areas of the above mentioned provinces and other independent areas. The project is implemented by the Ministry of Environment and Tourism from 2019 to 2026 under the Government of Mongolia and Federal Republic of Germany's financial cooperation financing through the KFW Development Bank. The project aims at strengthening the management of Protected Area Networks (including the buffer zones and future ecological corridors) of Mongolia, the conservation of biodiversity while supporting sustainable and alternative livelihoods of local communities. To accomplish the goal, communitybased management will be carried out in collaboration with local administrations, herders' cooperative, NGOs and private entities.
- On June 26, 2019 Ch. Khurelbaatar, Minister of Finance, Stefan Duppel, Ambassador Extraordinary and Plenipotentiary of the Federal Republic of Germany to Mongolia and, Petar Gjorgjiev, Director of the Office of German Credit Institute for Reconstruction (KfW) in Ulaanbaatar signed intergovernmental and financial agreements on the third phase of the 'Biodiversity and Adaptation to Climate Change' project. The Biodiversity and Adaptation to Climate Change-III project will be implemented with a non-refundable aid worth 8 million EUR from Germany.
- Ensuring Sustainability and Resilience (ENSURE) of Green Landscapes in Mongolia project, 2018-2025. The project aims to enhance ecosystem services in multiple landscapes of the Sayan and Khangai mountains and southern Gobi by reducing rangeland and forest degradation and conserving biodiversity through sustainable livelihoods. In Bayankhongor and Gobi-Altai provinces as a key species for conservation the snow leopard and one of its main prey species, wild argali sheep, were selected. Total budget administered by the UNDP Mongolia office is 7.9 million USD and the project is implemented by the Ministry of Nature, Environment and Tourism of Mongolia.
- Mongolian Sustainable Cashmere Platform project is implemented by the Ministry of Nature Environment and Tourism of Mongolia in 2018-2026, total budget administered by the UNDP Mongolia office is 7.9 million USD. The Platform's objectives are to ensure a strong and coherent legal and institutional framework for the sustainability of cashmere production in Mongolia and establish partnerships and coordinated investments and actions that accelerate current efforts to advance the sustainability of production and processing in Mongolia, which will enable it to be a global leader for sustainable cashmere production. MSCP's four overarching Target and stakeholder groups are herders, herder groups, rural communities, national and international



private sector, state, local and national governments, government agencies, development partners, international donor organizations, civil society organizations. The successful project implementation should provide substantial permanent income to local herders and communities which decrease pressure on natural resource use.

- North-East Asian Subregional Programme for Environmental Cooperation (NEASPEC) is implementing the Project, "Transboundary cooperation on the conservation of Amur tigers, Amur leopards and Snow leopards in North-East Asia" in 2020-2022, which emphasized the importance of cross-border cooperation among range countries, especially on scientific assessment, for the effective conservation and transboundary management of the protected species. The Project was jointly formulated by experts from China, Mongolia and the Russian Federation, and endorsed by the 23rd Senior Officials Meeting of NEASPEC (2019) in Ulaanbaatar, Mongolia. Funded by the Russian Government, the Project component three is entitled "Assessment of the current status of two Snow leopard subpopulations in transboundary areas between Mongolia and the Russian Federation". The Agreement was made between the United Nations Economic and Social Commission for Asia and the Pacific "ESCAP") with the Irbis Mongolia Center NGO, Mongolia and WWF Russia as implementing agencies, with a project budget maximum of 50,000 USD during the project period of March 2020 by March 2021.
- The Snow leopard conservation foundation of Mongolia activities are funded mostly via Seattle based SLT, USA.
- Irbis Mongolia Center activities are funded mostly by Institute of Biology, Mongolian Academy of Sciences, Snow leopard conservancy, Siberian wellness LLC and others.
- The Nature Conservancy Mongolia projects are funded via TNC global.

### 3. Major Projects initiated or on-going on snow leopard and mountain ecosystem conservation

The following are a list of on-going projects or government programmes:

- Capacity building in PAs of Mongolia
- Conservation of snow leopards and other endangered wildlife
- Improving livelihood of locals herders and citizens
- Offering ways for alternative income sources with pilot projects
- Education awareness

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Trans-boundary Conservation has been initiated:

- Russia: Cooperation at all levels
- China: Cooperation at Government, Ministry level and academic institution's level
- 2nd management plan of Uvs lake basin international bio-sphere reserve is approved



- Intergovernmental commission for implementation of management plan of Uvs lake basin international biosphere reserve
- Monitoring program of snow leopard population in transboundary areas of Russia and Mongolia

The following are a list of projects initiated by NGOs:

- Mongolian saiga and Snow leopard conservation (2020-2022)
- Nationwide Snow leopard population assessment (2017-2020)
- Snow leopard protection- IRBIS (Future of the Land of Snow leopard) (2018-2023)
- Supporting local communities in conservation of globally endangered snow leopard and Mongolian saiga antelope in priority areas in ASER, Mongolia (2017-2021)

#### 4. Existing or new Partnerships for GSLEP Implementation

Partners:

- WWF-Mongolia CO, leading organization
- Snow leopard Conservation Foundation
- Irbis Mongolian Center
- National University of Mongolia
- Mongolian Academy of Sciences
- Snow Leopard Trust
- Ministry of Environment and Tourism of Mongolia

#### 5. Laws amended/created especially to benefit snow leopard habitats.

A report on the ecological and economical value of wildlife has been prepared wherein fines imposed for poaching of each species represents its ecological and economic value. Adult males, females, and offspring (young) all have different values. The snow leopard is highly valuable for Mongolia because

- The Mongolian Government has made commitments internationally to protect it
- It is a rare species
- It is elusive
- It is a flagship species of its habitat/ecosystem

Each of these factors earn it points which makes it very valuable and poaching invites heavy penalties. On the contrary, small rodents may be very important for the pasture land ecosystem, but they are numerous so they attract less points. All important species including fish, goats, and wildlife have thus been listed and valued in Mongolian currency. The report is awaiting clearance from the Mongolian Government.



The species is included in the Mongolian Red Data Book (1987, 1997, 2013) and protected as very rare by Mongolian Law of Wildlife.

#### 6. New Protected Areas/Community Reserves established

- New nature reserve created in the Tost Mountains of South Gobi (Tost Toson Bumbat NR established in 2017), which bridges two existing protected areas, the Great Gobi and the Gobi Gurvansaikhan National Park. The resulting landscape is one of the world's largest continuous protected snow leopard habitats.
- Great Gobi B SPA extended in 2019
- Otgon Tenger SPA extended in 2019
- Bulgan goliin Ekh Ikh Ongog NP extended in 2019
- Achit Nuur Develiin aral NR extended in 2020
- Altan Khukhii extended in 2020

- Khukh Nuur Bumbat NR established in 2020
- Parliament of Mongolia has approved 10 areas (5 new protected areas, 5 expansion and upgrade of category) for national protected areas on 7 May 2020. The territory of protected areas will increase by 1.3 million ha, which accounts for 21 percent (32,891,617 ha) of the total land of Mongolia. The described areas cover 1.3 million hectares of eight provinces throughout the nation and 6 areas out of them are located in the headwater of the Amur-Heilong and Altai-Sayan landscape. WWF-Mongolia provided technical and financial support to the proposal, which will result in the protection of 1.05 million hectares represents the freshwater ecosystem, breeding area of multiple crane species, including the white naped crane and the run-off generating areas of Onon river.We highlight only three of them in connection with the initiative on New Deal for Nature and People as follows;
  - 1. Gutai and Khumul NP which are the run-off generating areas of Onon river, one of the only two sources of the Amur river. The Amur river is one of the biggest freeflowing rivers of the world – it is the ninth longest (almost 4,500 kilometers long) and has the tenth biggest watershed (nearly two million square kilometers). The locals are happy that the Gutain Davaa, which have attracted a lot of attention in recent years, have been taken under special state protection. Thanks to parliament decision gold mining stopped in Gutai gold deposit located in the territory of Khentii province and Onon River, head of the Amur river kept from the risk of pollution. If mining takes place at this deposit, risk of pollution and reduction of water level where thousands of people and animals live on it. This is an achievement only after over 12 years of tireless effort of WWF-Mongolia in cooperation with other key stakeholders especially local communities. WWF-Mongolia has been actively involved in initiating this decision, where it was appreciated by locals. We had jointly conducted a broader set of preparation activities such as developing the justification for the proposed protected area, organizing discussions and consultations at local and decision making level, and conducting public awareness activities.



- 2. Two sites from the RAMSAR site have been included under special state protection. In particular, the Khurkh Khuiten river valley in the eastern part of the country and the Achit Nuur in the western part of the country have been included in the state protected area. In addition, the expansion of the Onon Balj national park to protect the Onon river basin, the source of the Amur river, will help improve its protection. Meanwhile, the Onon river basin is valuable ecologically and historically.
- 3. The newly protected Khomiin Tal national park is the third most important place for the reintroduction of takhi or Przewalski's horses in Mongolia. Today, the number of Przewalski's horses has risen to 89 in Khomiin Tal. The expansion of the Altan Khukhii nature reserve in the Altai Sayan ecoregion is an important decision for the protection of endangered wildlife not only in Mongolia but also in the world. WWF-Mongolia is committed to increasing the participation of stakeholders in the decision making process and contributing to the healthy and safe environment of citizens.

### 7. Research (and/or snow leopard monitoring) programs in the snow leopard areas, on-going or newly initiated

Initial snow leopard monitoring programs including advanced techniques (camera-trapping, scat and genetic analysis) were done with the support of WWF Mongolia, Institute of Biology/ Irbis Mongolian Center, Snow Leopard Conservation Foundation and National University of Mongolia to estimate key snow leopard populations across Mongolia, including Tsagaan Shuvuut, Turgen, Siilhem B, Jargalant, Munkhkhairkhan state protected areas and Altan khokhii, Baga Bogd mountains.

14 mountains covering nearly 35,000 km<sup>2</sup> area have been surveyed by camera traps to assess the snow leopard population. The data is currently being analyzed.

Mongolia conducted the first range-wide genetic assessment of snow leopards within and among different geographic regions based on non-invasive scat surveys representing all major regions of the species range. Thirty-three microsatellites were genotyped and a total of 638-bp of mitochondrial DNA sequenced in 70 individuals. Snow leopards exhibit low genetic diversity at microsatellites (AN = 3.4 and HO = 0.443), virtually no variation at the mtDNA, and underwent a bottleneck in the mid Holocene (~6,000 years ago). Multiple genetic analyses recovered three primary genetic clusters:

- (1) Northern (the Altai region),
- (2) Central (core Himalaya and Tibetan Plateau), and
- (3) Western (Tien Shan, Pamir, trans-Himalaya region). Accordingly, Mongolia recognizes three subspecies, P. u. irbis (Northern group), P. u. uncia (Western group), and P. u. uncioides (Central group) based upon genetic distinctness.

Field work for the snow leopard occupancy has been undertaken. Details are provided below:

- August 2018 November 2018
  - 1 team in March 2019



- 20x20 km 1200 grids surveyed
- 12 teams of 217 personnel from the following organizations:
  - WWF-Mongolia, leading organization
  - Snow leopard Conservation Foundation
  - Irbis Mongolian Center
  - National University of Mongolia
  - Mongolian Academy of Sciences
  - Snow Leopard Trust

Telemetry has been done in West Mongolia and South Mongolia. About 45 snow leopards have been collared in Mongolia between 1993 and 2019.

International conservation agencies from the US, the Russian Federation, and PRC are currently working on snow leopard conservation in West Mongolia. A total of 30 snow leopards were collared in Tost NR, Southern Mongolia in 2008–2019 (17 males, 13 females). A total of 5 snow leopard dens were visited (cubs counted and microchipped). About 249 prey sites were visited through GPS clusters (73% were wild prey, 27% livestock).

Nationwide Snow leopard population assessment

#### Expected results:

- Detailed distribution map of snow leopard in Mongolia, July 2019
- Nationwide Snow leopard population assessment report by end of 2019
  - Nationwide Snow leopard population assessment is ongoing. Many partners such as SLCF and IMC are cooperating on this research. Currently SL occupancy estimates for Mongolia covering 480,000 square km area is completed and the camera trapping survey by SCR methodology during the last four years on 20 Mountains by WWF-Mongolia and around 10 Mountains by SLCF, covering around 30% of entire SL distribution, is near completion. Final report of the Nationwide Snow leopard population assessment will be delivered by early 2021.
  - Newly initiated transboundary snow leopard monitoring programme along the Mongolia and Russian border in 5 areas are being discussed by both governments.
  - Population size of the Siberian Ibex, the main prey species of Snow leopard, and other ungulate species are surveyed at 10 Mountains in Altai Mountain range during 2017 and 2019. It will be repeated in two years.
  - Population size of the Siberian marmot, the main prey species of Snow leopard, is surveyed at 7 Mountain ranges in North Altai SL landscape in 2020 and will be monitored every year until 2022.



# 8. On-going or newly initiated community-based conservation programs in snow leopard habitats

Conservation Programs: SLCF/SLT

- Livestock insurance since 2009 (direct compensation)
  - Community managed insurance fund
  - Runs in Tost, Tosonbumba Nature Reserve
  - Involves 54 households
  - Compensates annually (approx. \$1000)
  - Insures approx. 11000 livestock
  - Covers snow leopard and wolf livestock losses
  - Conservation contract is made
- Predator Proof Corrals (prevent from night time losses)
  - A total of 20 households have corrals securing at least 6800 livestock
  - No livestock lost from predators since 2016
  - No losses of livestock in the corrals since 2016
- Snow Leopard Enterprises since 1997 (direct compensation)
  - Income source handicrafts
  - Runs throughout western and southern Mongolia
  - Involves 280+ households and 30+ communities
  - Earns approx. \$35000 income
  - Non poaching bonus is paid based on conservation contract
- 14 Snow leopard volunteer rangers from the local herders are being supported by WWF-Mongolia at Baatar Khairkhan, Bumbat Khairkhan and Jargalant Khairkhan Mountains
- WWF-Mongolia supported newly established factories on the development of the product branding and packaging. As per the technical proposal, 150-200 families in total would benefit from 120-150 days of milk supply which would bring opportunities MNT 46.4 million of increased income compared with the baseline. Project contribution was given as part of project goal to reduce seasonal income dependency and increase income variance from the existing livestock. Also this specific project has been recognized as a great example of maximizing public sector and project contribution through effective collaboration to support local cooperatives which will benefit communities and support the snow leopard, its habitat conservation in the



targeted areas minimizing the illegal hunting of wildlife, and securing pastures from degradation.

# 9. Capacity building programs focusing on issues pertaining to snow leopard and mountain ecosystem conservation

Capacity Building Programs: SLCF/SLT

- Building capacity of Tost NR
  - Have it declared as State PA in 2016
  - Revoked all mining licenses
  - Establishing management mechanism of NR
  - Building capacity of rangers
  - Creating management plan
- Eco-camp since 2013
  - Interactive learning for 12-13 year old children
  - Runs in Tost NR
  - 40 school kids, 2 teachers participate every summer
- Ecological police established in Mongolia for the first time. The environmental police will have the right of a state inspector as well to open a case for those who have caused environmental damage. Thus, Mongolia forming an ecological police unit opened up opportunities for reducing environmental crime. The ecological police unit was an initiative in 2017 during the "Great Gobi-6" meeting and the Government of Mongolia has supported the initiative and efforts of the parties to achieve better environmental protection.

# 10. Economic Evaluation of Ecosystem Services in one or more snow leopard landscapes

#### N/A

# 11. Events, meetings or workshops organized within the country focused on snow leopard and/or its habitat

Snow Leopard Population Assessment training

2010, 2013 (5 days) - National Park specialists

Snow Leopard Population Assessment training

2018 (5 days) – Biologists from multiple organizations

• Ranger monitoring and patrolling training in Tost NR, communities

yearly since 2012


• Ranger monitoring training in TNC communities

2019

• Ungulate survey training for specialists and rangers

yearly since 2017

- Nationwide snow leopard population assessment meeting and trainings in May 2018, June and September 2019 by WWF Mongolia CO
- Several Camera trap field survey methodology and training for western Mongolian PAs by Institute of Biology MAS / Irbis Mongolia Center.
- NextGIS and Survey 123 application use to accumulate snow leopard survey data in the field and direct its uploading to the database. 2 Training by Pas by Institute of Biology MAS / Irbis Mongolia Center.
- World snow leopard day festival is organized by WWF Mongolia CO since 2013
- School children eco clubs are supported local administration, conservation organizations
- School children summer eco trips/ schools are organized in different parts of Mongolia

### **12. Upcoming new threats to snow leopards and its habitats**

- Rapid decrease of mountain ungulates in 1990s and later due to competition for open water sources and pasture land with domestic livestock
- Illegal poaching
- Pasture land degradation due to increased number of livestock
- Habitat fragmentation because of development of mining and infrastructure

Between 2015 to 2018 seven snow leopard skins and derivatives were confiscated but after the establishment of the ecological Police of Mongolia, between 2019 and September 2020, 13 snow leopard skin and derivatives were confiscated

- It may show that rapid increase in illegal wildlife trade and poaching.
- But we assume that with establishment of Ecological police in Mongolia rapidly increased detection of illegal wildlife trade.

### **13. Climate Change Adaptation program(s) in snow leopard landscapes**

Climate-smart Landscape Conservation plans

- Management Plan for South Gobi Snow leopard Landscape is developed and in the status of review
- Northern Altai SLL management plan development was initiated by WWF Mongolian Program Office



• National parks, SPAs in snow leopard habitats developed Park management plan, in 10 of them the snow leopard is the flagship species

This Mongolia Third National Communication (TNC) has been prepared in accordance with the UNFCCC Guidelines for National Communications for Non-Annex Countries. Available at https://cdn.greensoft.mn/uploads/users/805/files/2018%20Mongolia%20TNC%20EN.pdf

- Alternative livelihood programmes are being implemented in ASER by WWF Mongolia CO.SLCF and TNC Mongolia office
- 14. Awareness Building about the importance of snow leopards, their ecosystems and climate change
  - World Snow leopard Day celebrated annually at different cities in Mongolia
  - Snow leopard documentary is being produced by WWF-Mongolia
  - Snow leopard documentary is being produced by Gamma photography agency
  - Snow leopard photo exhibition was organized in Uvs, Khovd, Bayan-Olgii, Dornod, Southgobi, Khuvsugul provinces and Ulaanbaatar, Darkhan, Erdenet cities during Sep 25-Oct 23, 2020 by Gamma photography agency
  - "Sayan" Snow leopard chocolate was produced with along other 3 endangered wildlife in Mongolia. 10% of sale will go to conservation of these animals.



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Snow leopard stamp produced in mongolia



### NEPAL

### 1. Management Planning of the GSLEP Landscapes

In 2017, snow leopard research using camera traps, scat analysis, and DNA analysis was followed by satellite collaring of 4 animals. Tracking revealed that of these, one was moving between India and Nepal and another across habitats in India, Nepal, and China. Nepal also satellite-collared rhinoceroses, elephants, gharial, Bengal floricans, vultures and a few other animals. The tracking data reinforces the understanding that conservation efforts cannot focus on a single animal in a limited habitat. A landscape level conservation approach including transboundary conservation is required.

The Snow Leopard and the Ecosystem Management Plan, initially drafted for the Eastern landscape, is being extended/adapted for the Western and Central Complexes as well. This plan has been on-going and a budget has been allocated by the Nepal Government along with funds from other conservation partners. A study team has been constituted for the Western Complex, which will be provided with camera traps and equipment for DNA and scat analysis.

#### 2. Funds raised/committed for GSLEP program implementation

The Government of Nepal is allocating a budget for snow leopard conservation, the research centre, and even for the monitoring of the snow leopard. While there are supporting partners, the primary measures are led by the government.

### 3. Major Projects initiated or on-going on snow leopard and mountain ecosystem conservation

Dhorpatan Hunting reserve is the only Hunting Reserve in Nepal. It lies in Rukum, Myagdi and Baglung Districts in the Dhaulagiri Himal range in West Nepal and was gazetted in 1987. Management objectives of the reserve allow sports hunting over an area of 1325 sq. km. The reserve is one of the prime habitats of blue sheep, a highly prized trophy animal, which is the main target of hunters. Other game species are goral, serow, Himalayan tahr, black bear, and various pheasants and partridges. Controlled hunting is allowed through issue of proper licenses only during certain seasons of the year. Game license is issued by the Department of National Parks and Wildlife Conservation in Kathmandu and selected hunting outfitters then make arrangements for expeditions.

Nepal partners with TRAFFIC which is a leading non-governmental organisation working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development.

Nepal has several tiered institutional arrangements for wildlife crime control.

- In the apex level, the Right Honourable Prime Minister is leading the National Tiger Conservation Committee as the Chair.
- Wildlife Crime Control Coordination Committee WCCC is led by the Honourable Minister for Forests and Environment, Nepal.



- Wildlife Crime Control Bureau, at the central level is headed by Director General of Department of National Parks and Wildlife Conservation
- The Wildlife Crime Control Bureau has 26 District Units that have been selected based on their history of wildlife crime.
- The local people have community-based poaching control units involved in Wildlife Crime Control through information sharing and identification of criminals.

There are institutional arrangements to support the needs of the South Asia Wildlife Enforcement Network (SAWEN) which is an inter-governmental wildlife law enforcement support body of South Asian countries namely – Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. Nepal hosts the permanent Secretariat of SAWEN which is currently based in the Department of National Parks and Wildlife Conservation since its launch in 2011. The Chief Enforcement Coordinator of SAWEN right now is the Director General of the Department of National Parks and Wildlife Conservation. The operational modality of SAWEN consists of a General Assembly as an apex body of SAWEN comprising minister of the concerned ministry or his/her senior level government delegate, principal focal person of the SAWEN member countries, and one representative from each of the associate members and international/partner members. All communication, information sharing and other activities are done through these focal persons.

### 4. Existing or new Partnerships for GSLEP Implementation

Government agencies include:

- Ministry of Forests and Environment
  - Department of National Parks and Wildlife Conservation
  - Department of Forests and Soil Conservation
  - Divisional Forest Offices of the Provincial Governments.

Conservation partners include:

- National Trust for Nature Conservation, Nepal
- World Wildlife Fund Nepal,
- UNESCO Nepal
- TRAFFIC

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Local bodies include Snow Leopard Conservation Committees in the Protected Areas which are participating in snow leopard monitoring and snow leopard identification as well as mitigation of human–snow leopard conflict.

5. Laws amended/created especially to benefit snow leopard habitats.

 For Nepal's National Parks and Wildlife Conservation Act, 2029 (1973) and all its amendments, see <a href="http://www.lawcommission.gov.np/en/wp-content/uploads/2018/10/national-parks-and-wildlife-conservation-act-2029-1973.pdf">http://www.lawcommission.gov.np/en/wp-content/ uploads/2018/10/national-parks-and-wildlife-conservation-act-2029-1973.pdf</a>.



- For Environment Protection Act 2019, see <a href="https://mofe.gov.np/downloadfile/
  काताकरण-सारक्षण-एन-२०७६">https://mofe.gov.np/downloadfile/
  काताकरण-सारक्षण-एन-२०७६</a>. The Environment Protection Act (2019) makes legal
  provisions in order to maintain a clean and healthy environment by minimizing, as far
  as possible, adverse impacts likely to be caused from environmental degradation on
  human beings, wildlife, plants, nature and physical objects.
- For Climate Change Policy, 2019, see file: //C:/Users/Dell/Downloads/climatechange\_policy\_english\_1580984322.pdf
- Besides these, Nepal has a National Forest Policy, National Biodiversity Strategy and Action Plan, Environmental Policy which benefit the snow leopard habitats.

Recently, the 5thAmendment of the National Parks and Wildlife Conservation Act has permitted wildlife farming though it has still not been implemented fully for the want of necessary regulations.

#### 6. New Protected Areas/Community Reserves established

There is no new protected area established after 2010.

## 7. Research (and/or snow leopard monitoring) programs in the snow leopard areas, on-going or newly initiated

The population estimate, based on linear relationships between genetic analysis and scrape encounter rates, which have been cross-verified with predator-prey relationship is 301-400 individuals in Nepal. The population density ranges from 1.5 to 3.2 animals per 100 km<sup>2</sup>, with the highest density found in Western Complex. However, to verify this figure requires more systematic and rigorous study in the near future.

The National Level Population Survey for the Snow Leopard was planned to be started in 2020 using camera traps and non-invasive genetic sampling methods. However, due to COVID-29 Pandemic it was postponed. In the near future the Department of National Parks and Wildlife Conservation supported by partner organisations, will hold the survey. For the overall field work, an Advisory Committee has already been formed and work was initiated.

Research is on-going for the enumeration of prey populations including blue sheep and Himalayan tahr in the various national parks and reserves using camera trap survey methods.

The Government has permitted the use of satellite collars on 12 snow leopards in Western and Central Complex. WWF Nepal and Nature Trust for Conservation are helping with the work plan and implementation which have already been approved by the Ministry of Forests and Environment, Government of Nepal.

The Himalayan Snow Leopard Research Centre is being set up in the Kanchenjunga Complex and the construction work will be completed by 2021.

### 8. On-going or newly initiated community-based conservation programs in snow leopard habitats

The local community is involved in the Snow Leopard Conservation Committee (SLCC) to monitor the snow leopards.



## 9. Capacity building programs focusing on issues pertaining to snow leopard and mountain ecosystem conservation

Citizen Scientists of Nepal are youth and others from local communities who are involved in scientific activities such as the systematic collection, analysis and dissemination of data on forests, wildlife, water or climate. In Kanchenjunga Conservation Area, most of the camera trapping work is taken care of by the local community.

### 10. Economic Evaluation of Ecosystem Services in one or more snow leopard landscapes

Not conducted yet.

11. Events, meetings or workshops organized within the country focused on snow leopard and/or its habitat

A training to the field level technicians for satellite telemetry on snow leopards was conducted at DNPWC in 2019 before collaring two snow leopards of Shey-Phoksundo National Park.

#### 12. Upcoming new threats to snow leopards and its habitats

Development infrastructures such as rural roads and hydropower projects are increasing with support from Province governments under the newly restructured political system in Nepal.

#### **13. Climate Change Adaptation program(s) in snow leopard landscapes**

N/A

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### 14. Awareness building about the importance of the snow leopard, their ecosystems and climate change.

Awareness building programs about the importance of snow leopards, their ecosystems and climate change are regularly implemented for the local communities inside the protected areas.



### PAKISTAN

### 1. Management Planning of the GSLEP landscapes

Three of the twenty-three landscapes identified across the snow leopard range to secure the GSLEP goal of "Secure 20 by 2020" fall in Pakistan. These landscapes cover 59,188 km<sup>2</sup> area and constitute ~74% of the snow leopard range in the country. Management planning process as per guidelines set by the GSLEP continued during the reporting period. Progress made under this strategic intervention is summarized below.

- Management plan of Karakoram-Pamir Landscape drafted in 2019 was updated using the socio-economic and ecological data secured through the PSLEP project. Draft plan will be shared with the stakeholders for input and validation and the final version of the plan will be made public by the end of 2020.
- Major write up of the management plan of Himalaya Landscape was completed. Draft plan will be ready for stakeholder consultation in November 2020.
- Similarly, data collection, analyses, mapping and write up of the background chapters of the management plan of the Hindu Kush landscape was completed and the first draft will be produced in December 2020.
- Apart from the landscape management planning, fourteen Valley Conservation and Development Plans (VCDPs) of Ujnu, Washich (Zewar Gol), Shagrom (Atahk and Udrian Gol), Zondrangam (Rosh Gol), and Lon Koh (Lon Gol) Valleys in KP, Gurez and Shounter Valleys in AJ&K and Hopper, Hisper, Haramosh, Astak, Tormic, Braldo and Basha Valleys in GB alleys were drafted that are under implementation

#### 2. Funds raised/committed for GSLEP program implementation

The Government of Pakistan supported the development of the Pakistan Snow Leopard and Ecosystem Protection Program (PSLEP) project under the GEF-6 funding cycle to secure national goals of the GSLEP. PSLEP is a joint venture of the Ministry of Climate Change (MOCC), GEF, UNDP and Snow Leopard Foundation (SLF). Total allocation from GEF is USD 4.64 million for the period of five years i.e. 2018-2023. The project is aimed at promoting a landscape approach for survival of snow leopards and prey species by reducing threats & applying sustainable land & forest management in critical habitats in northern Pakistan.

PSLEP area of operation includes the three landscapes and seventeen valleys within these landscapes to pilot research, conservation and education initiatives. The project interventions support achieving the following four broad and interrelated outcomes.

- 1. Landscape level approach for snow leopard conservation;
- 2. Protected area expansion and strengthening;
- 3. Participatory conservation in snow leopard model landscapes through sustainable community development;



- 4. Support for international cooperation and conservation and management actions informed by knowledge, awareness and monitoring and evaluation.
- 3. Major products initiated or on-going on Snow Leopard and Mountain Ecosystem Conservation
  - The Pakistan Snow Leopard Program is a long term and focused conservation initiative undertaken by the Snow Leopard Foundation (SLF), since its inception in 2008, in collaboration with the Snow Leopard Trust (SLT), Federal and Provincial Governments, academia, other conservation NGOs and local communities.
  - As stated earlier, another noteworthy initiative was the launch of the PSLEP project which helped foster the conservation agenda of snow leopards in the country. SLF is implementing the project in collaboration with the MOCC, UNDP-Pakistan, Provincial Wildlife Departments of GB, KP and AJK, local communities, academia and conservation NGOs.
  - Apart from, the TBTTP initiated by the Federal Government has allocated significant resources for the revival of wildlife resources in the country. The TBTTP is a national initiative and thus also encompasses the three snow leopard range provinces/ territories and supports conservation of the snow leopard, its wild prey base and habitat.
  - The Prime Minister's Protected Areas initiative is aimed to expand the Protected Areas Network in the country from 13% to 15% by 2023 through quality enhancement to achieve international standards. It covers 15 selected protected areas, out of which four national parks fall in the snow leopard range.
  - Besides, the Provincial Wildlife Departments have also implemented wildlife centered projects with funding from the Public Sector Development Program (PSDP) funds of the respective provinces.
  - Lastly, some regional and national conservation NGOs such as WWF-Pakistan, IUCN and Baltistan Wildlife Conservation and Development Organization (BWCDO) are also supporting the snow leopard conservation paradigm in the country through various on field interventions under different projects/programs.

All these initiatives are supporting to dilute threats to snow leopard and its ecosystem and enhance awareness in the masses about the importance of snow leopard conservation in the country.

#### 4. Existing or new partnerships for GSLEP implementation

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Under the PSLEP project Landscape Coordination Committees (LCCs) have been established in the landscapes. These forums are aimed to develop multi-sector & multistakeholder coordination & governance mechanisms to upscale and sustain conservation management measures relating to snow leopard, its prey base and associated ecosystems in the country. At the national level, international organizations such as GEF and UNDP are engaged in the conservation agenda of the snow leopard. Efforts were made to develop collaboration with the international research and academic organizations such Argaly



Genetic Lab France, University of Massachusetts, USA and University of St. Andrew, Scotland to adopt state-of-the-art ecological research tools pertaining to snow leopard, its prey and habitat. Coordination with the GSLEP Secretariat and Snow Leopard Trust was also enhanced to adopt a landscape approach for the conservation of the snow leopard.

### 5. Laws amended/created especially to benefit snow leopard habitats.

The three snow leopard range Province/Territories updated their wildlife protection acts. The KP Wildlife Department revised the wildlife protection act in 2015. The new act is called "the Khyber Pakhtunkhwa Wildlife and Biodiversity (Protection, Preservation, Conservation and Management) Act, 2015". Major objectives of the new act are the following.

- Strengthen the administration of the organization to effectively manage wild animals and their habitats;
- Holistically manage Protected Areas in a sustainable manner for the best interest of the indigenous communities and local stakeholders;
- Secure appropriately the goods and services produced from wild animals and their habitats at the level of local communities;
- Fulfil the obligations envisaged under the biodiversity related multilateral environmental agreements ratified by the Government of Pakistan;
- Promote of public awareness and capacity building for proper appreciation of the environmental significance and socio-economic values of wildlife; and
- Conservation of biological diversity and realization of its intrinsic and extrinsic values through sustainable use and community participation.

As part of the implementation of the new Act, two ibex poachers identified from the snow leopard habitat were fined 200,000 PKR each.

The Wildlife Department, AJ&K also revised the wildlife act in 2104 and the new act is titled "the Azad Jammu and Kashmir Wildlife (Protection, Preservation, Conservation and Management) Act, 2014". The new act provides increased protection to the wildlife. The objectives of the act are very similar to those of the KP Wildlife Act, 2014.

The Gilgit-Baltistan Forest and Wildlife Department has also revised the Northern Areas Wildlife Protection Act, 1975. It is approved in principle and awaiting formal approval from the GB Assembly. Recently, poachers were arrested for the killing of a snow leopard in Hopper valley, were imprisoned for one year and two of them were fined 5,000,000PKR each. The penalty levied is the highest ever reported in the snow leopard range Province/ Territories.

#### 6. New Protected Areas/Community Reserves established

Protected area expansion through identification, mapping and gazettal of new protected areas in the snow leopard landscapes constitutes a major outcome of the PSLEP project. Working with the Provincial/Territorial Wildlife Authorities, the project team developed a spatial modelling approach "Species-Habitat Modelling" and developed inferences to identify suitable areas to be delineated as PAs in the model landscapes.



Consequently, the AJ&K Government notified the entire area of the Himalaya Landscape falling in AJ&K i.e. Neelum District as State Biosphere Reserve (3,439 km<sup>2</sup>) in August 2020. Proposal to establish Shounter Valley, Neelum District as National Park is also submitted to the concerned authorities for notification and gazettal.

The Forest and Wildlife Department, GB has initiated steps to notify the following new protected areas.

### 7. Research (and/or snow leopard monitoring) programs in the snow leopard areas, on-going or newly initiated

A comprehensive monitoring plan was drafted under the PSLEP to ensure systematic assessment of snow leopard, its prey species and habitat during the next 3-5 years. Using the guidelines developed by GSLEP under PAWS program and applying Bayesian spatially explicit capture- recapture (SECR) simulation models, the snow leopard range was divided into polygons to initiate studies to assess the occupancy and abundance of snow leopards in the country.

Following the study design, three extensive camera trapping studies were undertaken, one each in Hindu Kush, Himalaya and Karakoram-Pamir Landscapes during the years 2018-2019.

The camera trapping studies were augmented with the non-invasive genetic sampling over an area of ~10,000 km<sup>2</sup> in the three landscapes.

Similarly, rut and lambing surveys to assess snow leopard prey i.e. markhor, ibex, blue sheep, Marco Polo sheep were undertaken in 48 valleys of Hindu Kush and Karakoram-Pamir Landscapes.

A comprehensive study to assess the resilience and carrying capacity of rangelands was initiated in the three landscapes. The study will result in the development of rangeland/ pasture management strategy and plan for the landscapes and valleys.

### 8. On-going or newly initiated community-based conservation programs in snow leopard habitats

Myriad community support initiatives aimed to mitigate, offset and compensate for livestock losses due to snow leopards were initiated in the snow leopard range valleys in tandem with the livelihood enhancement and habitat improvement measures. Summary of the community-based conservation and livelihood improvement measures is provided below.

- Over 200,000 livestock belonging to 20,000 households are vaccinated biannually against prevalent contagious diseases.
- Around 10,000 livestock were protected from mass killing by the snow leopard through construction of 50 predator proof corrals.
- Livestock insurance schemes have been launched in 25 valleys.
- About 4,000 families have been engaged in social entrepreneurship including snow leopard enterprises (SLE), conservation tourism, LPG promotion, fodder and fruit trees cultivation, etc.





- Natural forests (2000 hectares) have been protected through social fencing under the PSLEP.
- ~500,000 timber and fuelwood plants were provided to the communities under the PSLEP in the three landscapes.
- Forty-two community members were hired as Community Wildlife Guards in consultation with the communities and Provincial/Territorial Wildlife Departments in the three landscapes to enhance wildlife crime monitoring and surveillance.
- One hundred field kits containing camping and survey gear and equipment were distributed in the field staff of GB, KP and AJ&K Wildlife Departments to enhance their capacity and improve wildlife surveillance.

## 9. Capacity building programs focusing on issues pertaining to snow leopard and mountain ecosystem conservation

- A training workshop on "Design, Survey and Analysis of Wildlife Populations" was designed and conducted to build the capacity of researchers, wildlife managers, and conservationists in applied research in wildlife ecology. Both survey and analytical components of modern wildlife research were integrated in this training course which was facilitated by 4 renowned ecologists and conservation biologists from USA and Europe. A total of 30 participants from all the Provinces/territories and representing Government Departments, conservation NGOs, and academia attended this twoweek long training.
- Another nationwide training to assess wild ungulates using latest survey protocols was organized for more than 50 participants in October 2019. The training was organized under the direction of the Ministry of Climate Change to materialize the innovative initiative "Update Red Data Book of Wild Ungulates of Pakistan".
- Apart from this, short trainings in wildlife monitoring techniques were arranged at the Regional Project Management Units in GB, KP and AJ&K which were attended by the field staff of the Forest and Wildlife Departments, students and local communities. More than 200 participants attended these theoretical and on field trainings.
- A training on Ecotourism Promotion (ETP) in Snow Leopard Habitat" was organized in Gilgit in April 2019. The workshop was attended by 45 community members from four selected valleys of PSLEP including Hopper, Bagrot, Rupal and Haramosh.
- A total of 28 community activists from 4 valleys were trained as tour guides by arranging a training workshop in June, 2019.
- 40 community members from the three landscape valleys were trained in animal health and production by organizing a three weeks long certificate course at National Agricultural Research Council, Islamabad. The trained personal are implementing the livestock vaccination program in their respective valleys.



# 10. Economic Evaluation of Ecosystem Services in one or more snow leopard landscapes

The provisioning, cultural and regulatory ecosystem services in the Khunjerab and Qurumbar National Parks falling in the Karakoram-Pamir Landscape were measured. Our results indicated that the economic benefits resulting from the two NPs were US\$ 4.6 million (QNP) and US\$ 3.8 million (KNP) per year. Moreover, the derived benefits per household per year ranged from US\$ 5955 - US\$ 8912 in QNP and KNP, respectively. The values of PES were higher as compared to regulatory and cultural services which explains the importance of the monetary benefits generated from the PAs for the betterment of remote communities. Together with the cultural and regulatory services measured in this study, the alleged economic threshold per household / year was 10–15 times higher than the average household income per year.

### 11. Events, meetings or workshops organized within the country focused on snow leopards and/or its habitat.

To monitor the implementation of the National Goals of GSLEP, national and regional forums are established under the supervision of the Federal and Provincial Governments.

At national level, a project steering committee (PSC) is established. The Federal Secretary, Ministry of Climate Change (MOCC) is the chair of the committee. The PSC has membership from the range Provincial/Territorial Governments, Ministry of Science and Technology, Ministry of Economic Affairs, Economic Affairs Division, IUCN and WWF Pakistan and Snow Leopard Foundation (SLF). The committee meets biannually to review progress, remove hindrances in the implementation of the program and approve annual work plan and budget.

A meeting of the PSC was convened in February 2020. The forum reviewed progress of the project for 2019 and approved the annual work plan and budget for 2020.

At Regional/Landscape level, Landscape Coordination Committees (LCCs) have been notified under the chairmanship of the provincial secretaries of Forest, Wildlife and Environment Departments and membership from the line departments, conservation NGOs, academia and communities. A meeting of the LCC in KP was convened during the year 2020 while LCC meetings in GB and AJ&K could not be held due to COVID-19 pandemic.

#### 12. Upcoming new threats to snow leopards and its habitats

Climate change in tandem with intensive mining and other developmental projects has appeared as an emerging threat to snow leopards and its ecosystem in Pakistan. Climate change is resulting in changes in species historical ranges and environmental hazards such as flash floods, GLOF and warmer summer seasons in the snow leopard range. Common leopard was recently reported in the snow leopard habitat in Chitral and Gojal valley of Gilgit-Baltistan.

#### 13. Climate Change Adaptation program(s) in snow leopard landscapes

The Government of Pakistan initiated a five years project "Scaling-up of Glacial Lake Outburst Flood (GLOF) risk reduction in Northern Pakistan" with funding from the Green





Climate Fund and co- financing from the provinces. This project aims to empower communities to identify and manage risks associated with GLOFs and related impacts of climate change, strengthen public services to lower the risk of disasters related to GLOF, and improve community preparedness and disaster response. The project is also supporting the development of sustainable options for livelihoods in the project areas, with a particular focus on the participation of women in ensuring food security and livelihoods.

The Prime Minister of Pakistan's initiative "Ten Billion Tree Tsunami Programme" also supports climate change adaptation in snow leopard landscapes by reversing deforestation, tackling climate change and managing forests sustainably in Pakistan.

# 14. Awareness Building about the importance of snow leopards, their ecosystems and climate change

National and regional communication plans have been developed under the PSLEP project to promote sense of stewardship for snow leopards and ecosystems in the masses. Youth and schoolchildren are the main focus of the awareness raising program of the PSLEP. The project uses a myriad of learning tools to improve public tolerance for snow leopards.

- Twenty-six snow leopard clubs have been established in the project landscapes;
- Resource material such as thematic posters, brochures, booklets and documentaries have been developed and disseminated;
- Nature study camps have been organized for the schoolchildren;
- Important international environmental days such as Snow Leopard Day and World Wildlife Days have been celebrated at national and regional levels.



### RUSSIA

### 1. Management Planning of the GSLEP Landscapes

- It is noteworthy that the five-year goal of the strategy (to increase the number of SL in 6 key populations in the Russian Federation by 15%-20% by 2017) has been achieved and the number of snow leopards has reached 65 individuals.
- It is well recognized that the 10-year national goal of restoring the total population of SL in the Russian Federation from current 70–90 up to 110–120 individuals by 2022 cannot be achieved without focusing on climate change impact and adaptation. So now a special analysis of the impact of climate change on the habitat of the snow leopard is under process.

#### 2. Funds raised/committed for GSLEP program implementation

Federal PA's budget: ~3 000 k€ annually

Regional PA's budget:

50 k€ annually: the Republic of Altai

100 k€ annually: the Republic of Tyva

WWF Russia

250 k€ annually: VTB-bank. It's finished this year.

200 k€ annually: regional corporate donors

250 k€ annually: from WWF Netherlands

The main source of funds is the federal budget allocated for the maintenance of specially protected natural territories of federal significance. Regional budgets are, as a rule, allocated to regional protected areas.

# 3. Major Projects initiated or on-going on snow leopard and mountain ecosystem conservation

N/A

### 4. Existing or new Partnerships for GSLEP Implementation

N/A

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#### 5. Laws amended/created especially to benefit snow leopard habitats.

- Penalty (Illegal Hunting, article 258.1 of Criminal Law): 2-7 years imprisonment, 7500-30000 USD fine for hunting the snow leopard
- Trophy hunting regulations: only for Siberian ibex (in accordance with official quotas)
- Gaps: high level of poaching (on Siberian ibex and musk deer)



Specialized hunting organizations are involved in the fight against poaching. Responsibility for the illegal extraction and trafficking of especially valuable wild animals and aquatic biological resources belonging to species listed in the Red Book is determined by special articles of the Criminal Code. Penalties include up to seven years in prison. Penalties applied by court order to violators of this law, in dollar terms, range from 7.5 thousand to 30 thousand dollars.

Today, in the habitat of the snow leopard, a trophy hunt is officially permitted only for the Siberian ibex and red deer. But the main problem in the region remains a high level of poaching specifically for these species of ungulates - the Siberian ibex and musk deer. Musk deer are caught in loops. The snow leopard also falls into these loops and is lost needlessly.

Status of illegal wildlife trade in the country

- Number of snow leopard poaching/confiscation cases in the past
  - 1 year 1 case
  - 5 years 5 cases at least (9 individuals)
  - 10 years 9 cases at least
- Number of convictions 1 case (fine only)
- There is only 1 confirmed case in last 3 years

Over the past three years, Russia has had only one documented case of poaching or selling parts of a snow leopard. However, earlier they were recorded almost every year. Accordingly, this could not but affect the total population of the snow leopard in Russia. With the aim of environmental awareness and increasing attention to the problem of preserving the snow leopard in the Altai Republic, a monument of a female snow leopard killed by poachers was erected. This incident caused a public outcry and today this monument is visited by both domestic and international tourists in Altai.

#### 6. New Protected Areas/Community Reserves established

N/A

# 7. Research (and/or snow leopard monitoring) programs in the snow leopard areas, on-going or newly initiated

In conditions of such a complex mountain system, it is impossible to accurately calculate how many leopards there should be, ideally. How many leopards can naturally sustain and find adequate prey in such conditions is a very difficult question. Can snow leopards be bred in captivity and released into the wild? What are the pros and cons of doing so? These are complex questions.

Snow Leopard Abundance Studies

• Camera trapping (~300 camera traps in regular basis)



- NextGIS Toolbox for occupancy and density calculations
- DNA-based approach (~1000 snow leopard samples)
- Scale (all Altai-Sayan transboundary area and Central Asia)
- Collaborators: PA's, WWF Russia, Russian Academy of Sciences, University of New York, Panthera
- In 2018, a specialized mobile application was developed, and the introduction of this technology allowed Russia to optimize and accelerate the flow of field information from experts. Russia is currently adapting this application for Tajikistan and cooperation with India has begun. On the main screen of this application, one can select the type of map displayed, and the corresponding data is displayed on the map in separate layers. The application allows one to use different languages. The main languages are Russian and English. But it can be translated into any language. This convenient system allows one to get information very quickly. A simple system, it allows specialists to quickly record and transmit information without losing any data. A total of 16 forms are used. There are special forms for working with camera traps and various cameras that allow this information to be automatically systematized and synchronized. In addition, it is possible to transmit route records of monitoring groups.
- Russia also actively uses molecular genetics. More than thousand snow leopard samples were transferred for detailed analysis on the scale of the entire range of the species.
- In addition, in Mongolian landscapes adjacent to Russia, a cross-border grouping of the snow leopard is being done using satellite sensors.
- For the first time it has been documented by experts that snow leopards of Russia and Mongolia regularly cross the international border. Russia is committed to cooperation, not only regarding the snow leopard, but other species including the rarest Altai mountain sheep.
- Non-profit organizations, the Russian Academy of Sciences and other specialists provide substantial assistance.

### 8. On-going or newly initiated community-based conservation programs in snow leopard habitats

Involving ex-poachers and local herders into conservation activities in Altai-Sayan Ecoregion. Creating public voluntary inspections to realize antipoaching activities in Altai Republic. Involving Buddhism leaders and community elders into snow leopard conservation in Buryatia Republic.

# 9. Capacity building programs focusing on issues pertaining to snow leopard and mountain ecosystem conservation

 International workshops on monitoring methodologies and GIS (Russia, Tajikistan, India)





- Interregional forum on conservation and anti-poaching
- Trainings on climbing skills
- International Meeting on Snow Leopard Monitoring and Conservation (probably it will be postponed on May 2021, Novosibirsk, Russia)

In addition, specialists are trained annually about snow leopard conservation. Within the framework of cooperation between WWF India and WWF Russia, a related seminar was held in India this year, as well as in Tajikistan earlier this summer. For ten years, an Interregional Forum on the Conservation of Wildlife in this region was organized. In addition, cooperation with the Mountain Climbing Federation of the Altai Republic has begun, and all experts who are involved and interested in this programme were invited to cooperate and learn the basics of mountain climbing skills, because without this skill it is very difficult to work in such conditions.

10. Economic Evaluation of Ecosystem Services in one or more snow leopard landscapes

N/A

11. Events, meetings or workshops organized within the country focused on snow leopard and/or its habitat

In May 2020, Russia was to host an international meeting on monitoring and conservation of the snow leopard. This event was to be organized by WWF. It was cancelled because of COVID-19 pandemic and probably will be postponed to May 2021.

#### 12. Upcoming new threats to snow leopards and its habitats

N/A

#### 13. Climate Change Adaptation program(s) in snow leopard landscapes

It is well recognized that the 10-year national goal of restoring the total population of SL in the Russian Federation from current 70–90 up to 110–120 individuals by 2022 cannot be achieved without focusing on climate change impact and adaptation.

### 14. Awareness Building about the importance of snow leopards, their ecosystems and climate change.

N/A



### TAJIKISTAN

### 1. Management Planning of the GSLEP Landscapes

- The snow leopard landscape spread over 85,700 square kilometers is home to about 280–300 individuals representing 6% of the global snow leopard population.
- In the snow leopard landscape, 11 specially protected territories are demarcated across 3 million hectares. Besides, new specially protected areas are also being created to preserve the ecosystem of the snow leopard and its prey.

### 2. Funds raised/committed for GSLEP program implementation

#### N/A

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- 3. Major Projects initiated or on-going on snow leopard and mountain ecosystem conservation
  - The Snow Leopard Conservation Project in Tajikistan has the following objectives:
    - Capacity improvement of specially protected territories that are part of the Tajik National Park
    - Improvement of the management of pastures and forest areas, restoration of degraded forest and pasture territories.
    - International and cross-border cooperation on snow leopard conservation.
    - Increase in protected territories, improving the level of protection of both the snow leopard and its prey.
  - Within the framework of the project, demarcation of borders, zoning of territories, determination of the mainland users, and a study of factors that affect the ecosystems and landscapes of the snow leopard were carried out.
  - Currently, a smart-patrol system for key territories is being developed through consultations with the World Wildlife Fund.
  - A training program was held for employees of specially protected territories, who were provided with vehicles and equipment required for smart-patrolling.
  - Protective barns were created to defend livestock against leopard attacks and reduce human–animal conflict.
  - Alternative energy sources are being developed in those areas where there is no electricity. Farms are provided with solar panels, water heaters and other alternative sources to reduce the load on the forest for firewood.
  - Tajikistan has an aviary in the Murgab territory for snow leopards. For the past 2 years a wounded snow leopard has been kept in this aviary and due to the huge amount of conflicts last year another snow leopard has been located in the aviary but was released recently (fully recovered).



### 4. Existing or new Partnerships for GSLEP Implementation

A smart-patrol system for key territories is being developed through consultations with the World Wildlife Fund

- 5. Laws amended/created especially to benefit snow leopard habitats.
  - Republic of Tajikistan has well developed legislation on environmental protection.
  - The Law of the Republic of Tajikistan on Environment Protection (dated 27.11.2014, No. 1160)
  - The Law of the Republic of Tajikistan on Wildlife Protection (No. 354 of 5 January 2008)
  - The Law of Republic of Tajikistan on the Protection and Use of the Flora (05.01.2008 № 353)
  - The Law of the Republic of Tajikistan on Specially Protected Natural Areas (SPNA) adopted in 2011
  - The Law of the Republic of Tajikistan "On Hunting and hunting ground" dated 17 July 2014, No. 705)
  - Regulation on Hunting and Hunting Ground on the Territory of the Republic of Tajikistan (16 July 1997, No. 324)
  - Tajikistan signed and ratified the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
  - Under these laws, new by-laws are being drafted for environmental and biodiversity conservation.

Regulations related to Hunting

- Red-listed animal hunting in Tajikistan is limited and regulated by the country's legislation.
- The hunting season is from September 1 to March 1. Only males aged 7 years and older are shot.
- Trophy hunting objects: argali, urial (Bukhara mountain sheep), markhor (spiral goat), Siberian ibex (ibex).
- "The limited quota for hunting Pamir argali (Marco Polo sheep) this year was about 100 heads, 12 heads for markhor and 9 heads for urial.
- The cost of the license is from 55 thousand Tajikistani somoni for Pamir argali and 300 thousand Tajikistani somoni for markhor.
- The annual income from hunting is more than 5 million Tajikistani somoni or 500 thousand USD.
- 25% of the money from the licenses goes to the state budget, 20% goes to the account of the CEP of the RT, and the rest of the money remains local, in particular the local department to support the environment uses 45% of the funds ordered by the district head.



• These funds are spent on the development and restoration of the protected territories and on protective measures, and other events to preserve the diversity and ecosystems of the snow leopard.

Legal Enforcement against Illegal Poaching and Trade of Wildlife

- Every year, more than 30 cases of poaching and illegal export of wild animals are prevented in Tajikistan by nature protection authorities and customs and border services.
- In the summer of 2018, a dead body of a snow leopard calf was found in the village of Shawnee Bolo, which was caught under the wheels of a car.
- Due to the increase in the population, during the last 2 years poaching of Marco Polo sheep (5 cases), Siberian ibex (11 cases), brown bear (12 cases), spinster goat (1 case) was recorded.
- In 2019, poachers with Siberian ibex trophies were detained in Sangvor National Park and fined.
- In 2019, customs authorities detained a group of smugglers who attempted to remove 27 falconry birds (peregrine falcons) from Tajikistan.
- In general, illegal hunting and poaching in the protected territories are preempted in a timely manner and punished through fines and other obligations.
- Kashars (reinforced sheds for livestock) were conducted to safeguard the livestock.

#### 6. New Protected Areas/Community Reserves established

N/A

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- 7. Research (and/or snow leopard monitoring) programs in the snow leopard areas, on-going or newly initiated
  - Snow leopard abundance studies are carried out using visual, aero-visual methods, camera traps, and through surveys and field expeditions. Nature conservation specialists from the Academy of Sciences are supported by international experts in their research.
  - Surveys and interviews were conducted among local communities and environmental authorities
  - Field routes and the establishment of monitoring observations
  - The area covered by the monitoring was 5626.73 sq.km.
  - Scientific research is carried out according to the SLIMS methods with advisory support of the Severtsov Institute in Moscow. The institute provides technical support on genetic and scat analysis.
  - More than 100 camera traps have been installed in snow leopard habitats which have generated rich data on the presence and movement of snow leopards in the territories under consideration.



### 8. On-going or newly initiated community-based conservation programs in snow leopard habitats

- Several measures are being taken to restore degraded pasture and forest ecosystems. For instance, users of pastures and forestry have been provided with seed, feed fertilizers and other products necessary for the restoration of forest and pasture ecosystems. Shepherds who use pastures have been provided with gas cylinders so that firewood pressure on forests is reduced.
- Although there are no legislative obligations for any organization or governmental agency to compensate the amount of the livestock lost the Association of Hunters on the will bases compensate the amount of the livestock lost.

### 9. Capacity building programs focusing on issues pertaining to snow leopard and mountain ecosystem conservation

Tajikistan faces a needs gap in technical capacity and deployment of trained human resources to the specially protected territories

- A training program was held for employees of specially protected territories, who were provided with vehicles and equipment required for smart-patrolling.
- 10. Economic Evaluation of Ecosystem Services in one or more snow leopard landscapes

N/A

11. Events, meetings or workshops organized within the country focused on snow leopard and/or its habitat

N/A

#### 12. Upcoming new threats to snow leopards and its habitats

With 2 million hectares of pasture supporting 8 million livestock, the load on pasture ecosystems is immense in Tajikistan.

#### **13.** Climate Change Adaptation program(s) in snow leopard landscapes

- With support from Asian Development Bank and the World Bank, several biodiversity conservation and climate change adaptation and mitigation projects are being implemented in Tajikistan.
- These include projects on forecasting and climate change, on the restoration of weather stations and gauging stations to predict climate change and prevent natural disasters.

### 14. Awareness Building about the importance of snow leopards, their ecosystems and climate change

 The Government of Tajikistan has declared and adopted special protocols for snow leopard conservation assigning specific responsibilities to identified nodal agencies and departments.



- Assigned activities include, information dissemination and awareness building around snow leopard and prey population conservation through the media, magazines, periodicals etc. Every district of Tajikistan is dotted with signs and banners with snow leopard pictures, messages and statues declaring the animal a national treasure.
- A video on snow leopards is being made and will be soon available.





### UZBEKISTAN

### 1. Management Planning of the GSLEP Landscapes

- Currently, a joint project is being implemented by UNDP and the State Ecology Committee of the Republic of Uzbekistan «Sustainable natural resource and forest management in key mountainous areas important for globally significant biodiversity» on the conservation of mountain ecosystems, within the framework of which measures are being taken to study and preserve the snow leopard landscapes.
- Measures are being taken to restore forests and mountain ecosystems.
- Deforestation for industry and construction is prohibited in Uzbekistan. Only sanitary clearings are allowed.
- In the future, the country plans to strengthen efforts to preserve diversity, including mountain diversity by:
  - creating new protected areas,
  - developing programs for certain species of animals and plants listed in the Red Book of the country, including the snow leopard,
  - implementing the National Strategy and Action Plan on Diversity Conservation for 2019-2028.
- Technical and financial support from international organizations such as the World Wildlife Fund, the Snow Leopard Trust, and the Panther Foundation would bring tremendous added value to the conservation of the snow leopard in Uzbekistan.

#### 2. Funds raised/committed for GSLEP program implementation

No funds raised / committed for GSLEP program implementation.

### 3. Major Projects initiated or on-going on snow leopard and mountain ecosystem conservation

A joint project of UNDP / GEF and the State Ecology Committee of the Republic of Uzbekistan has been monitoring and researching the snow leopard since 2018.

- Work is underway to implement the Presidential Decree on the Development of Tourism, including eco-tourism, in the Uzbek highlands of the country.
- International investment projects on mountain eco-tourism are being implemented.
- Mountain villages designated as tourist villages are witnessing dramatic rise in economic activities.
- In August 2019, a Presidential Decree on the Development of Green Economy in Uzbekistan was issued, which supports the introduction of environmental- and climate-friendly technologies including alternative energy.



• Under sustainable hunting management initiatives Uzbekistan seeks collaboration with the Kyrgyz Republic and Kazakhstan for the restoration of populations of some species of ungulates, such as the Tian Shan mountain sheep and the red deer, which form the food base of the snow leopard.

### 4. Existing or new Partnerships for GSLEP Implementation

The joint project is being implemented by UNDP and the State Ecology Committee of the Republic of Uzbekistan «Sustainable natural resource and forest management in key mountainous areas important for globally significant biodiversity».

#### 5. Laws amended/created especially to benefit snow leopard habitats.

- The Red Book of the Republic of Uzbekistan, national legislation and international conventions such as CMS, CITES, national priorities for the conservation of the snow leopard and its ecosystems in 2014-2020, and projects of UNDP / GEF and the State Ecology Committee of 2017 together define the legal framework for wildlife protection in Uzbekistan.
- No snow leopard poaching has been reported in the last ten years.

#### 6. New Protected Areas/Community Reserves established

#### None

- 7. Research (and/or snow leopard monitoring) programs in the snow leopard areas, on-going or newly initiated
  - Survey of snow leopard cells including DNA and scat was analysis has been carried out.
  - New camera traps in snow leopard transects have been installed.
  - The snow leopard monitoring program in Uzbekistan was developed on the basis of methodological recommendations for testing the Snow Leopard Grid monitoring system followed in Russia and Central Asia.
  - This program was based on two approaches: assessment of the territories occupied by the species, on the basis of a survey of a transect set within each cell, and estimation of the population density of the species based on the information from camera traps and DNA and excrement analysis.
  - A team of specially trained researchers collected the information in September 2018 from across 510 cells (294 in Gissar-Alai and 258 cells in the western Tian Shan).
  - Data examination and large-scale research was conducted in November 2018. Data from camera traps was obtained this winter.
  - Genetic research training was conducted.
  - According to expert studies, there are from 30-50 to 80-120 snow leopards in the country.





### 8. On-going or newly initiated community-based conservation programs in snow leopard habitats

In 2019, the UNDP / GEF and the Government of the Republic of Uzbekistan project "Sustainable use of natural resources and forestry in key mountain regions important for globally significant biodiversity" assisted in the creation of two associations of grassland users in the high mountain grasslands of the Ugam-Chatkal and Gissar snow leopard landscape in Akhangaran (Tashkent region) and Shakhrisabz (Kashkadarya region). The project consultants conducted trainings on effective management of grassland resources and existing infrastructure, drafting of grassland management plans, etc.

## 9. Capacity building programs focusing on issues pertaining to snow leopard and mountain ecosystem conservation

- Field trainings are being held for employees of the special protected territories, the Academy of Sciences and other departments on the implementation of this monitoring program.
- Trainings and seminars have been conducted.
- Support for the signing and further implementation of the cross-border memorandum on the snow leopard.
- Conducting joint exchange events. For example, next year's international conference on nature protection is to be held in Tashkent.
- Building potential and professional development of specialists. For example, an exchange visit of Uzbek scientists and personnel of specially protected territories to Kyrgyzstan for joint monitoring of the snow leopard.
- Participation of customs and border forces in trainings to curb the illegal trade in animals, CITES and others.
- To act as a depositary of cross-border cooperation to preserve the snow leopard in Central Asia.

### 10. Economic Evaluation of Ecosystem Services in one or more snow leopard landscapes

In 2019, an economic evaluation of ecosystem services was carried out in the Ugam-Chatkal snow leopard landscape: arguments in favour of investing into conservation projects was prepared by UNDP / GEF project "Sustainable natural resource and forest management in key mountainous areas important for globally significant biodiversity".

The aim of the study was to describe and assess the economic value of ecosystem services in the Ugam-Chatkal Snow Leopard Landscape in order to provide evidence and arguments that can be used to economically justify investments in conservation of snow leopard habitat.

Work is underway on the economic evaluation of ecosystem services in the Ghissar snow leopard habitat.



## **11.** Events, meetings or workshops organized within the country focused on snow leopard and/or its habitat

- 1) In 2019 training was conducted about snow leopard identification (species, sex, individual characteristics) based on DNA analysis of excrement. New training is planned to be held in October 2020.
- Field trainings were conducted for the employees of the protected areas (Ugam-Chatkal Snow Leopard Landscape, Chatkal State Biosphere Reserve, Ghissar State Reserve) on monitoring the snow leopard and prey species;
- 3) A round table was held on the economic evaluation of ecosystem services in Uzbekistan (on the example of the Ugam-Chatkal snow leopard landscape)

#### 12. Upcoming new threats to snow leopards and its habitats

Within the framework of the UNDP / GEF and the Government of the Republic of Uzbekistan project «Sustainable natural resource and forest management in key mountainous areas important for globally significant biodiversity» monitoring research was was carried out and the following was revealed:

Along the Chatkal ridge, during the monitoring work, the construction of a new resort zone "Amirkhan" in the Badamsay tract was noted. During the construction of ski slopes and the accompanying infrastructure, heavy equipment completely changed the relief of the mountain slope. Also, construction of new buildings are underway in the existing recreation areas of Chimgan and Beldersay. It became known about plans to build a hydroelectric dam in the bed of the Chatkal River. This place is bordered by the Karaarcha and Pulatkhan tracts, which are promising for the snow leopard habitat. The construction will undoubtedly make these natural boundaries more accessible and increase the anthropogenic load on them. A hydroelectric power station is being built in the Pskem river valley.

#### **13. Climate Change Adaptation program(s) in snow leopard landscapes**

N/A

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### 14. Awareness Building about the importance of snow leopards, their ecosystems and climate change

Workshops and awareness raising events for the population and local communities about the issues related to the snow leopard and its landscape are being held. Within the framework of the UNDP / GEF and the Government of the Republic of Uzbekistan «Sustainable natural resource and forest management in key mountainous areas important for globally significant biodiversity» micro-grant projects are being implemented that not only in the field of sustainable and green activities in mountain ecosystems but also in contributing to raising awareness of the population about these issues.