



**Government of Sikkim**  
**Office of the PCCF-cum-Secretary**  
**Department of Forest, Environment and Wildlife Management**  
**Forest Secretariat, Deorali, Gangtok –737102, Sikkim**

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### **Areylungchok Musk Deer Conservation Zone**

In exercise of the powers conferred by sub-section (8) of section 35 of the Wildlife (Protection) Act, 1972 (53 of 1972) the State Government hereby makes the following notification:-

#### **1. Background and Need**

It is impractical to have large National Parks with no zonation, where essentially the entire area is considered as a 'core zone'. Protected Areas should be zoned according to values in smaller pockets not necessarily as large cores, but a mosaic of smaller, manageable cores, spread in an area with tempered human use. Other areas for incentive programmes such as community based tourism need to be established. The smaller cores should act as 'source' populations for sustaining populations of endangered species outside.

#### **2. Aims and Objectives**

Conservation of the Musk Deer (*Moschus chrysogaster*) population – the flagship species of the high altitude alpine ecosystem, and its habitat alongwith other high altitude flora, fauna, and alpine ecosystems at Areylungchok in West Sikkim by declaration of 27 square kilometer of the Khangchendzonga National Park (1.51% of the total area of KNP) as the Areylungchok Musk Deer Conservation Zone (AMDCZ).

#### **3. Conservation Importance and Values**

The steep rocky ridge of Areylungchok located between the Rathong chu and Relli rivers has been traditionally free from grazing by both sheep and yaks and also collection of medicinal plants. Steep rocky cliff, shortage of water, heavy wind and snow and severe cold all play a vital role in this area being free from livestock grazing pressure. The lower reaches of this ridge along the Onglaktang valley has extensive Rhododendron thickets which give way to Alpine scrub (Rhododendron and Juniper) in the middle reaches. The upper reaches have a limited extent of alpine sedge meadows.

This area has a population of musk deer and blue sheep and is also important from the point of view of studying the impacts of pastoralism, since it has a very limited grazing history by domestic livestock. Valuable medicinal plants like *Sharmaguru*, *Mykopila*, *Bikhma*, *Jatamanshi*, *Bhutkesh*, *Pakhanbhed*, *Dandu* and *Khokim* were also abundantly available. Tussock forming grasses like *Bhalu buki* and *sun buki* formed large meadows. This unique vegetation is not available in other parts of KBR. Availability of other fodder plants like *Ganar*, *Cheeru*, *Suire*, *Teeure*, *Khokim* and *Dandu* further enrich the value of these meadows. The presence of a number of *urars* (caverns) provides cover from inclement weather for wild ungulates. During winter when there is a shortage of winter pastures, these meadows play an important role in providing the much needed fodder during the lean season.



**Musk Deer hoof marks at U. Chonripaley**



**Musk deer hair and pellets at Dhurd**



***Bhalu buki* tussocks in un-grazed pastures**



***Ganer* flowers browsed by musk deer at Ghumney**

#### **4. Baseline Habitat Survey during summer of 2005**

Vegetation sampling was conducted during late July and August based on 30 (1 X 1 meter quadrate) sample plots with the sampling stations at Ghumney, Surgey Danra and Dhurd. This alpine landscape can be categorized as follows:

<b>S. No.</b>	<b>Landscape Property</b>	<b>Value</b>
1	Habitat Type	Tussock forming Sedge Meadow
2	Aspect	South west
2	Biotic Pressure	Very limited history of grazing or collection of medicinal plants traditionally. Status is pristine.
3	% vegetation cover	75 %
4	% cover of palatable plants	58% (dominated by <i>Bhalu buki</i> ( <i>Kobresia duthiei</i> ))
5	Species richness (no of species per sample plot of 1m <sup>2</sup> )	5.5
6	Valuable fodder plants	<i>Bhalu buki</i> ( <i>Kobresia duthiei</i> ), <i>Kesari buki</i> ( <i>Kobresia nepalensis</i> ), <i>Sun buki</i> ( <i>Kobresia capillifolia</i> ), <i>Rani buki</i> ( <i>Festuca vallesiac</i> ), <i>Suire buki</i> ( <i>Juncus sp.</i> ), <i>Ganer</i> ( <i>Heracleum sp.</i> ), <i>Kenjo</i> ( <i>Rheum nobile</i> ), <i>Harkat</i> ( <i>Carex nivalis</i> ) and <i>Shyamphul</i> ( <i>Pleurospermum sp.</i> )

7	Evidence of key wildlife (direct and indirect evidence)	Musk Deer, Blue Sheep, Himalayan Tahr, Snow Partridge and Himalayan Monal
8	Valuable medicinal plants	<i>Bikh (Aconitum ferox)</i> , <i>Khokim (Rheum acuminatum)</i> , <i>Dandu (Allium wallichii)</i> , <i>Bhutkesh (Anemone polyanthes)</i> and <i>Jatamanshi (Nardostachys grandiflora)</i>

Rocky ledges were also present which act as shelter for blue sheep during heavy snowfall. It is also an important Himalayan Tahr habitat. These meadows serve as a critical winter pasture for them. Should be given highest conservation importance and kept free from competition from domestic livestock. Also these meadows are limited in extent.

Feeding signs of musk deer on the nutrient rich inflorescence (flowers) of *Ganar* and *Khokim* at Ghumne and Danra Jhareni was found. Pellets and hoof marks of musk deer were found at Upper Chonrigang and Khola Urar. Above Chonripaley we came across hoof mark of musk deer and pellets of blue sheep. Pellets of snow partridge (*Larewa*) and Himalayan Monal (*Danphe*) were abundantly available.

The team also came across five traps in the ridge above Rungdung village which were subsequently demolished by the park authorities. Also there are unconfirmed reports of a sheep herder from Dhoopi to have indulged in poaching of musk deer at Areylungchok in the same year.

### 5. Existing legal status and threats

The Areylungchok Musk Deer Conservation Zone (AMDCZ) falls within the Khangchendzonga National Park which is notified under the Wildlife Protection Act -1972 and the flagship species here is the globally endangered Musk Deer (*Moschus chrysogaster*) which is protected under schedule I of Wildlife Protection Act-1972. Adult males have a pod under their abdominal skin which is valued for its scent. The musk deer is persecuted for its valuable pod using trained dogs as well as setting traps. The main threat to the musk deer is from hunting by laying traps and also using hunting dogs by sheep herders from Dhoopi village and professional hunters from Karjee village.



**Trap laid above Rungdung village**

There are increasing linkages between local persecution of wildlife and the larger illegal wildlife trade. Unplanned tourism also threatens this sensitive and shy animal.

### 6. Boundaries

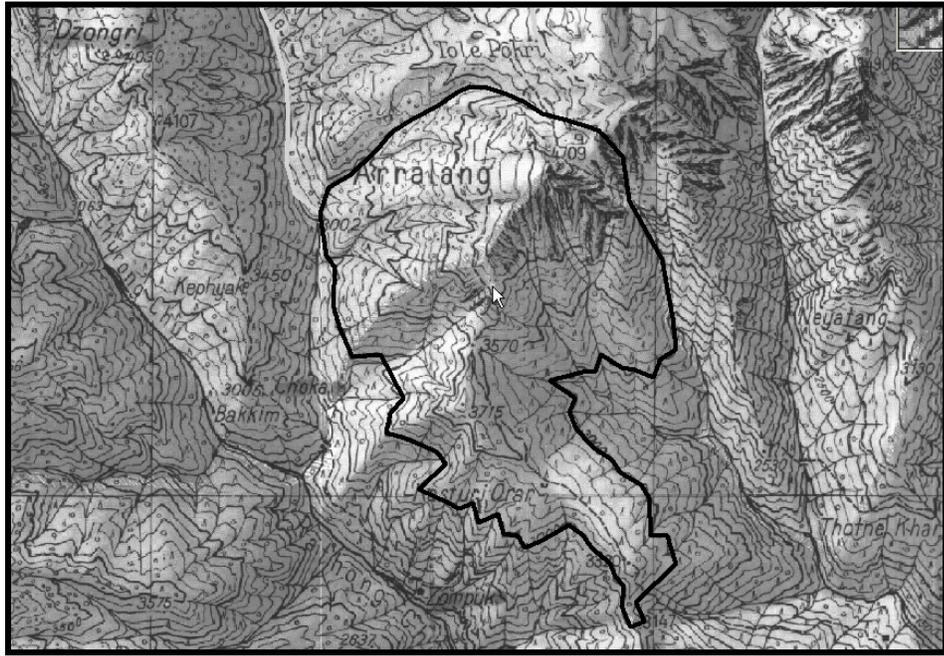
Declaring this area within the KNP, with the following borders as a Areylungchok Musk Deer Conservation Zone.

<b>North</b>	Khola Urar stream (is contiguous with the southern boundary of the Lampokhri Medicinal Plants Conservation Zone)
<b>East</b>	Follows the source of the Khola Urar Stream, crosses the ridge and again follows the stream till it meets with the 3000m contour

<b>South</b>	Follows the 3000 meter contour
<b>West</b>	Follows the 3000 meter contour till it meets the Khola Urar stream
<b>Total Area</b>	27 square kilometers (1.51% of the total area of KNP)

This conservation area includes the areas around Khola Urar, Surgey Danra, Ghumne, Shyarbey, Chongripaley, Sukey Pokhri, Dhurd, Mool Dhunga, Patey Bhanjyang, and Kasturi Urar.

### 7. Map of the conservation Area



### 8. 3-D Satellite Image of the conservation Area



## **9. Key Issues in the Conservation Management Plan**

### **(A) Conservation Initiatives**

- (1) Publicity of these regulations by installing adequate signages at Yuksam, Labdang and near the trekker's huts, camping sites and the conservation zone.
- (2) Informing the travel agents, tour operators, herders, panchayats, pack animal operators, trekking service providers, Himal Rakshaks, JFMC/EDC and NGOs about these regulations.
- (3) Capacity building of field staff of forest department, travel agents, herders, pack animal operators, Himal Rakshaks, Panchayats, JFMC/EDC and local NGOs.
- (4) Annual census / survey of the population, distribution and status of musk deer and blue sheep and other indicator flora and fauna in this conservation zone shall be conducted.
- (5) Encourage focused conservation and recovery programs for the musk deer.
- (6) Regular patrolling jointly with the local community, JFMC/EDC and Himal Rakshaks especially during monsoons and winters should be conducted to ascertain instances of poaching and status of other threats and controlling them.
- (7) Setting up of a wildlife intelligence network
- (8) Involvement of reputed NGOs in wildlife research, conservation and monitoring
- (9) These conservation initiatives should be incorporated into the existing schemes and programmes of the Khangchendzonga National Park and Khangchendzonga Biosphere Reserve in order to provide adequate funds for implementation of this zonation and conservation management plan.

### **(B) Conservation Regulations**

- (1) Movement of pack animal (horses, dzos and yaks) beyond Thangsing into Chonrigang, Lampokhri, Chamrey, Khola Urar and Areylungchok is prohibited throughout the year.
- (2) Movement of pack animal (horses, dzos and yaks) beyond Labdang into Kasturi Urar, Patey Bhanjyang, Sukey Pokhri, Areylungchok and Khola Urar is prohibited throughout the year.
- (3) For tourists entering from Thangsing, only day trek is permitted from Thangsing to Lampokhri. Movement of tourists and support staff is permitted only up to Lampokhri. No camping by tourists within this conservation zone is permitted.
- (4) For tourists entering from Labdang on the Areylungchok-Dzongri trek, camping is permitted only at Kasturi Urar and Khola Urar. Pack animals (horses, dzos and yaks) are not permitted on this trek. Lighting fire or cooking food is permitted only at the designated campsites.

**(C) Legal provisions and penalty**

- (1) Pack animal (horse, dzo and yak) operators or yak herders who enter into this conservation zone shall be punishable with a fine which shall not be less than five thousand rupees but may extend to ten thousand rupees apart from the compensation for the damage caused. Provided that in case of a subsequent offence the fine shall not be less than ten thousand rupees and may extend to twenty five thousand rupees apart from the compensation for the damage caused and the concerned pack animal operator or yak herder shall be banned from entering in the forest areas of the state for a period of five years.
- (2) If tourists or support staff violate the conservation regulations then the concerned travel company organizing the trek or in its absence the group leader of the trekking party (hereinafter referred to as “trek manager”) shall be punishable with a fine which shall not be less than five thousand rupees but may extend to ten thousand rupees apart from the compensation for the damage caused. Provided that in case of a subsequent offence the fine shall not be less than ten thousand rupees and may extend to twenty five thousand rupees apart from the compensation for the damage caused and the concerned “trek manager” shall be banned from trekking or organizing trekking in the forest areas of the state for a period of five years.
- (3) The compounding officer shall include all forest officers not below the rank of a block officer. The compounding officer may order reward to be paid to a person who renders assistance in the detection of the offence or apprehending the offender out of the sum of money accepted as fine not exceeding twenty percent of such money. The compounding officer may meet up the expenditure incurred for detecting the offence and apprehending the offender out of the sum of money accepted as fine not exceeding twenty percent of such money.
- (4) These rules shall apply in addition to the laws relating to forests, environment, wildlife and biodiversity.

**Sd/-**

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