## Original Research Article

# *Phu*: High Altitude Sacred Grove in the *Monpa* Cultural Landscape of West Arunachal Pradesh (Eastern Himalaya)

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**Abstract**: The role of sacred groves in the conservation of biodiversity has long been recognized across the world. Sacred groves are known by different names in different areas. *Phu* is one such form of sacred groves which has not scientifically reported yet. The term *Phu* is mentioned in several local literatures as "Mountain God" but its role in biodiversity conservation is a new report to conservation science. The *Phu* sacred groves are located only at the top of the mountains or hilly areas and so termed as Mountain God by some authors. Local people have close association with *Phu* sacred groves as the soul of each person is believed to be spiritually linked with the *Phu* of the locality. Due to strong beliefs and taboo associated with the *Phu* sacred grove, the forest lands adjoining to it are least harmed, and the biodiversity is maintained, making it an ideal centre for RET and medicinal plant conservation. The *Phu* sacred groves are prevalent in the Buddhist inhabited Himalayan region. During a preliminary survey 29 *Phu* sacred groves were recorded from Arunachal Pradesh including two from bordering districts in Bhutan, but the actual number is believed to be more than several hundred in the Himalayan region. Thus, further study is appreciated to document *Phu* sacred groves existing in the Himalaya.

**Key words:** Arunachal Pradesh, Medicinal plant, Phu, Sacred grove

## Introduction

India has a rich tradition of nature conservation as well as a vigorous official program aims at expanding nature reserves in appropriate geographical locations. Sacred groves are small patches of forest, which have been protected by the local people for their cultural and religious beliefs and taboos that the deities reside in them and may protect the villagers from different calamities (Khan *et al.,* 2008). Sacred groves conserve local biodiversity and offer important ecological services although studies are scanty to substantiate the latter (Khumbongmayum *et al.,* 2006). Indigenous cultural and ritual practices of the local people in sacred groves serve as a tool for conserving biodiversity. Sacred groves are distributed over a wide range of ecosystem in every corner of India where indigenous communities live (Khan *et al.,* 2007). The role of sacred groves in conservation of biodiversity has largely studied across the world (Mgumia and Oba, 2003; Khumbongmayum *et al.,* 2006; Kala, 2011; Chandrakar *et al.,* 2014; Kandari *et al.,* 2014; Behera *et al.,* 2015). Sacred groves help in the conservation of rare and endemic species including culturally significant biodiversity. In the present day in India, the existence and tradition of maintaining sacred

groves is reported from most parts of the country, though it is difficult to make a guess regarding the total number of sacred groves in the country. Estimated figure of 100,000 and 150,000 sacred groves are made from India, of which 101 were reported from Arunachal Pradesh (Khan *et. al.,* 2008). These groves are known by different names in different areas. *Phu* is also a form of sacred groves which has not scientifically reported yet. Thus, a preliminary survey was conducted to know about the *Phu* sacred grove existing in the *Monpa* Cultural Landscape of West Arunachal Pradesh.

## Study area

Arunachal Pradesh is the largest states of north east India with a geographical area of 83,743 km² located between 26°28' N-29°31'N latitude and 91°30'E - 97°30' E longitude (Singh *et al.,* 2007). The state is located within the Eastern Himalaya global biodiversity hotspot which is recognized as one of the 34 global mega biodiversity hotspot (Myers *et al.,* 2000) and is among the 200 globally important Eco-regions (Olson and Dinerstein, 1998). The altitudinal range in the state is wide (100 - 6000 m and above) with low land tropical evergreen and semi-evergreen forests occurring up to 1500 m and temperate oak and conifer forests at higher altitudes. The state harbors the world's northernmost tropical rainforest and is estimated to have nearly 50 % of the total flowering plant species of India (Rao and Hajra, 1986; Rawat and Chowdhury, 1998; Procter *et al.,* 1998; Whitmore, 1998). The state comprises of 21 districts and 26 major tribal groups. The West Kameng and Tawang districts are inhabited by the *Monpa* tribal community. Due to prevalence of Buddhist religion, the *Phu* sacred groves are commonly found in the two districts.

## Materials and methods

Preliminary surveys were conducted during January 2010 to December 2012 in different villages of the study area. In order to collect the traditional knowledge village heads, farmers, monks and sheep herder were interviewed. One of the *Phu* sacred groves (*Tsoi-Phu*) was visited and globally significant medicinal plants (GSMP) found in that *Phu* was surveyed as a part of a project entitled "Mainstreaming conservation and sustainable use of medicinal plant diversity in three Indian states: Botanical and ecological survey of GSMP and associated flora in Lumla-MPCA (Tawang FD)" sponsored by UNDP, GEF and GOI and implemented by UNDP Cell, APSMPB, SFRI, Chimpu, Itanagar. The voucher specimen of GSMPs collected were deposited in UNDP Cell, APSMPB, SFRI, Chimpu, Itanagar.

## Results

### 1. Concept of *Phu* sacred groves

The origin of the term '*Phu'* is uncertain, but believed that the term originates from Tibetan language, as the *Phu* are mostly prevalent inTibetan Buddhist inhabited areas of India

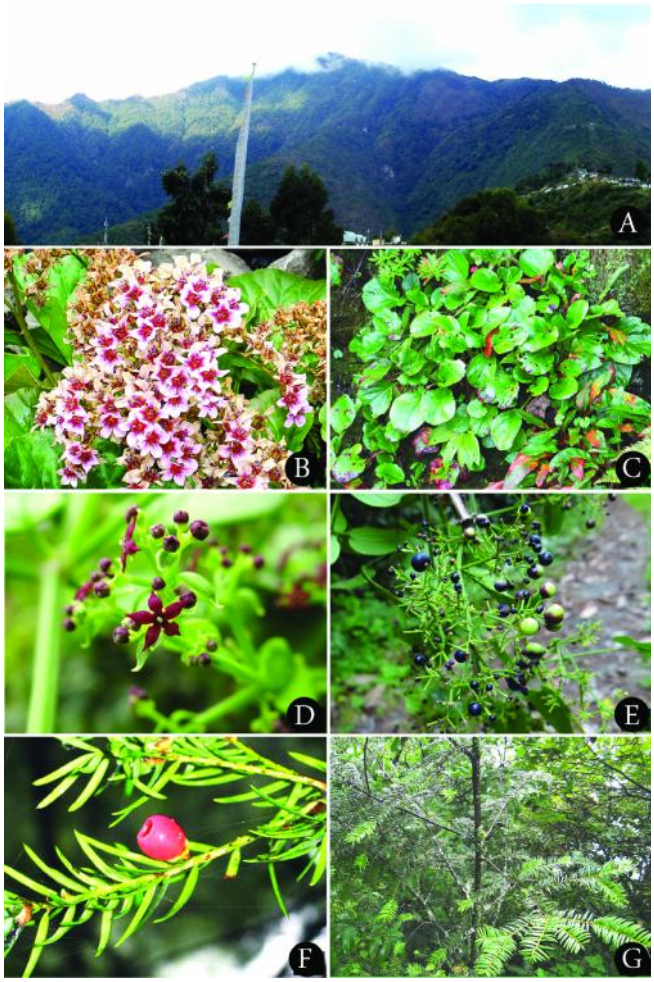


**Fig. 1.** A. Tsoi-phu sacred grove; B. & C. *Bergenia ciliate*; D. & E. *Rubia manjith*; F. & G. *Taxus wallichiana.*

(Arunachal Pradesh), Nepal, Bhutan and Tibet. The term *Phu* can be found mentioned in names of many villages like *Nechi-phu* and *Mandala-phu-dung* of Arunachal Pradesh. *Phu* is also mentioned in several local literatureas 'Mountain God' (Das, 1993; Kalla and Joshi, 2004) but its role in biodiversity conservation is a new to the scientific world.

*Phu* sacred groves in Arunachal Himalaya are mostly concentrated in the Western part among the *Monpa* ethnic community. *Monpa* community resides in two districts (West Kameng & Tawang) of Arunachal Pradesh. They follows Tibetan Buddhism of Mahayana sect. According to them, "*Phu* is apart or patch of mountain forest area, which are least disturbed by human and devoted to particular deity who is believed to have the authority and control over the climate, ecological and hydrological regime, flora and wildlife constituents and human of the locality". According to them, each villages in the study area are associated with a particular *Phu* sacred grove. Most villages have their own recognized *Phu* sacred grove in their community forest area, while some villages with limited undisturbed-mountain forest area in their community land used to share single *Phu* sacred grove for rituals. As *Phu* sacred groves are found only at the top of the mountains or hilly areas, many authors in local literatures termed it as 'Mountain God'.

## 2. Beliefs associated with *Phu* sacred groves

The local people believe that any epidemic diseases, dryness, crop infections, crop loss and natural calamities can be overcome by offering prayers to the deities living in the *Phu* sacred groves. Deities of *Phu* sacred groves are also known as 'rain deities' as drought like situation can be overcome by invoking *Phu* deities through performing rituals. Hunting and logging are strictly prohibited within the *Phu* sacred groves. It is also believed that any illegal human activities inside the *Phu* sacred groves may bring an adverse effect in the whole village and hence not a single forest products are allowed to extract without performing rituals. It is a customary belief that the living soul of every person is spiritually linked with a particular *Phu*. Association of a person with the *Phu* depends on person's birth place irrespective of the village or clan wise and the rites and rituals have to be performed in the name and honour of the particular *Phu*.

## 3. Ritual activities performed in the *Phu* sacred groves

The local people usually offers prayer to the *Phu* deities in the first month of every year (lunar calendar)and during which various religious activities also are performed inside the *Phu* sacred groves. The main activities include religious flag hoisting, burning of incense and holy lamp, and offering agricultural products and prayers. Due to tough barriers to reach the core region of the *Phu* sacred groves, most people perform

**Table 1:** *Phu* sacred groves and their controlling villages

| Sl. No. | Name of the *Phu* /Location of core region | Name of Controlling Villages |
|---|---|---|
| | **Tawang District, Arunachal Pradesh, India** | |
| 1. | *Geshe-Phu* (27°36'52"N; 91°55'19"E) | Kharsanang region (Batung, Khordung, Kitpi, Soma, etc.) |
| 2. | *Ningmae* (27°37'05"N; 91°51'46"E) | Tawang region (Lebrang, Shyo, Tsangpu, Urgelling, etc.) |
| 3. | *Sho-Wang* (27°29'23"N; 91°53'06"E) | Gyamdong |
| 4. | *Tsoi-Phu* (27°34'13"N; 91°44'13"E) | Lumla, Kharteng |
| 5. | *Dung-Phu* | Bongleng |
| 6. | *Got-Phu (JaGoi)* | Khet |
| 7. | *Khan-Phu* | Sharho, Shungfa |
| 8. | *Langai-Punsum* | Gomkeleng, Mirba |
| 9. | *MaanmaDrema* | Gongkhar |
| 10. | *Ongmae* | Lhou |
| 11. | *Puphu* | Jang |
| 12. | *Serghar* | Shurbi |
| 13. | *Tsong-tsong-la* | Kharung |
| | **West Kameng District, Arunachal Pradesh, India** | |
| 1. | *Atnamshi Phu* | Namshu |
| 2. | *Brane* | Moorshing |
| 3. | *Chaksen Phu* | Panjapati |
| 4. | *Dumri* | Thembang |
| 5. | *Dunglegae-Phu* | Nyungmadung |
| 6. | *Joute* | Jerigaon |
| 7. | *Karpu* | Khalaktang |
| 8. | *Lachong* | Thembang |
| 9. | *Melae* | Mandalaphudung |
| 10. | *Neche-Phu* | Villages under Aka tribe |
| 11. | *Neychin-Dombo-Lagang* | Shergaon |
| 12. | *Tsang-Phu* | Dirang |
| 13. | *Wangle* | Dumkho |
| 14. | *Wojo Phu* | Villages under Aka tribe |
| | **Trashigang District, Bhutan** | |
| 1. | *Amu-jomu-kungkhar* | Merak |
| 2. | *Joun-Phu* | Phongmey |

rituals from distant places. People of some villages like Thembang and Namshu used to give special religious emphasis on the *Phu* deities. They organize grand ritual ceremony for 3-5 days involving the whole village people.

## 4. *Phu* sacred groves in Arunachal Pradesh

Present study documented 29 *Phu* sacred groves from the two districts of the state. Their names and the controlling villages are listed in table 1 including two *Phu* sacred groves reported to be located in neighboring country Bhutan.

## 5. Medicinal plant diversity in *Tsoi-Phu* sacred grove

A preliminary floral study was conducted in *Tsoi-phu* sacred grove. The sacred grove is located in between sub-temperate to alpine region in Tawang district. The core region is located at 27°34′N and 91°44′E. *Tsoi-Phu* sacred grove is maintained and protected by the villagers of Lumla and Kharteng and access to the core region required explicit permission of village elders or society leaders. The study revealed the existence of many GSMPs. Such 10 GSMPs are listed in Table 2. Three plants namely *Bergeniaciliate, Rubiamanjith* and *Taxus wallichiana* were widely found in all ranges within the *Tsoi-phu* sacred grove (Fig. 1).

## Discussion

The present study recorded 29 *Phu* sacred groves including 02 from Bhutan country but the total number in the Himalayan region is believed to be more than several hundreds, which needs to be documented or studied. Khan *et al.* (2007) reported 101 sacred groves from Arunachal Pradesh, most of which are attached with Temples (Gompa) and termed as Gompa Forest Areas (GFAs). Similar GFAs were also reported from Sikkim by *Chatterjee et al.* (2000), however, reporting *Phu* sacred groves in the present study for the first time will definitely increase the total strength of sacred grove found in the state.

The size of the *Phu* sacred groves varies from a few hectares to several square km, which is much larger as compared to GFAs and other forms of sacred groves and hence greater level of biodiversity is maintained within it with least floral and faunal disturbances. Most of the sacred groves mainly conserves trees and some shrubs of religious importance, but *Phu* sacred groves conserve whole biodiversity present within it. Today, large number of the threatened medicinal plants are concentrated only in the *Phu* sacred grove's region. The larger size, distant locations, strong religious and customary beliefs associated with *Phu* sacred groves keeps its forest least disturbed and the biodiversity is well maintained.

The virgin forests ofthe *Phu* sacred groves are an ideal centre for medicinal plant conservation and can serve as a gene bank for RET species. *Phu* sacred groves can be portrayed as a role model for community based conservation initiatives and can be developed into 'community nature reserves' for ensuring uninterrupted flow of goods and services emanating out of this valuable sacred land of the Eastern Himalaya.Such grove can also be the first choice for the establishment of protected areas like MPCA, MPDA, etc.

Based on experience gained from current studies, it can be concluded that *Phu* sacred grove is powerful concept

**Table 2:** GSMPs located in *Tsoi-phu* sacred grove in Tawang district

| Plants | Family | Local name,Vchr. Spcm. No. | Habitat | Occurrence | Altitude(m) |
|---|---|---|---|---|---|
| *Aconitum ferox* Wall. ex Ser. | Ranunculaceae | *Tsando* JT/HT/148/2012 | Grassy slopes | Uncommon | 3500-3600 |
| *Aconitum heterophyllum* Wall. ex Royle | Ranunculaceae | *Gonga-karpu* JT/HT/149/2012 | Grassy and rocky mountain slopes | Rare | 3500 - 3600 |
| *Bergeniaciliata* (Haw.) Sternb. | Saxifragaceae | *Brah-mentoh* JT/HT/224/2012 | Rock crevices | Common | 2590- 3050 |
| *Panaxbipinnatifidus* Seem. | Araliaceae | *Ginseng* JT/HT/240/2012 | Thickets | Rare | 2800- 2850 |
| *Parispolyphylla* Smith | Liliaceae | *Do-tala* JT/HT/135/2011 | Thickets | Uncommon | 2870-2900 |
| *Rubiamanjith*Roxb. ex Fleming | Rubiaceae | *Tsoat* JT/HT/309/2012 | Sparse forest and grassland | Common | 2700-3550 |
| *Swertia chirayita* (Roxburgh) H. Karst. | Gentianaceae | *Chirata* JT/HT/133/2011 | Grassy slopes | Uncommon | 2730-3220 |
| *Taxus wallichiana* Zucc. | Taxaceae | *Tae-sheng* JT/HT/147/2012 | Mixed Bamboo forest | Common | 2770-3020 |
| *Valeriana jatamansi* Jones | Caprifoliaceae | *Lung-poes* JT/HT/248/2012 | Grassy slopes | Uncommon | 2500-3000 |
| *Zanthoxylum armatum* DC. | Rutaceae | *Yer* JT/HT/069/2011 | Thickets | Uncommon | 1700-2500 |

in itself for biodiversity conservation where research inside the *Phu* area are still least attempted. Therefore, scientific study should be conducted to know the actual number of *Phu* sacred grove in the region and biodiversity elements found within it should be documented.

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