

Vascular plants, Kinnaur, Himachal Pradesh, India

Amit Chawla^{1*}, Om Parkash¹, Varun Sharma², S. Rajkumar³, Brij Lal¹, Gopichand¹, R.D. Singh¹ and A.K. Thukral⁴

¹ Biodiversity Division, CSIR - Institute of Himalayan Bioresource Technology (Council of Scientific and Industrial Research), Palampur, Himachal Pradesh, India 176 061.

² Nature India Eco Solutions, #14, Thakker's Pride, Opposite Siddharth Hotel, Nashik-Pune Road, Nashik, India 422 011.

³ NRC in DNA Fingerprinting, B202, NBPGRI, IARI, Pusa Campus, New Delhi, India 110 012

⁴ Guru Nanak Dev University, Department of Botanical & Environmental Sciences. Amritsar, India 143 005

* Corresponding author. E-mail: amitchawla21@gmail.com

ABSTRACT: In the present study, we provide a checklist of the vascular plants of Kinnaur district situated in the Himachal Pradesh state of India in the western Himalaya. This checklist includes 893 taxa (*viz.*, species, subspecies and varieties) belonging to 881 species of angiosperms and gymnosperms distributed among 102 families and 433 genera, and 30 species of pteridophytes. Information about the growth habit, threat and endemism status is also provided. Our results show that family Compositae is by far the most species rich family with 122 species, followed by Poaceae (69), Rosaceae (58), Leguminosae (49) and Lamiaceae (38). Among the genera, *Artemisia* is the most diverse genus with 19 species, followed by *Potentilla* (14), *Saussurea* (13), *Polygonum* (11), *Astragalus* (10), *Lonicera* (10) and *Nepeta* (10). Similar to other regions in the western Himalayan range, family-to-genera ratio was 1:4.25 and the genera-to-species ratio was 1:2.04. Out of 893 taxa, our checklist includes 606 herb species, 63 trees, 108 shrubs, 28 climbers, 67 graminoids and 21 sedges and rushes. Of all the species recorded, 108 (12.2%) are endemic to western Himalaya and 27 (3%) are placed under IUCN threatened categories. The present checklist on the flora of Kinnaur provides an important baseline data for further quantitative studies on the characteristics of plant communities in this region and will help in the identification of priority conservation areas.

INTRODUCTION

Western Himalaya has long been recognized as a distinct floristic region in India (Hooker 1904; Mani 1974; Singh and Singh 1987). The mountain ranges situated on the western side of river Sharda (or west of 77° E longitude) in northwestern India, constitutes the 'Indian Western Himalaya' which includes the states of Jammu and Kashmir, Himachal Pradesh and Uttarakhand. This region harbours a rich regional flora due to its diverse topography, wide altitudinal range and location at the intersection of several biogeographical units. The flora of western Himalaya exhibits affinities with that of Mediterranean, Siberian, Tibetan and Indo-Malayan regions. In contrast, the vegetation of eastern Himalaya displays affinities with Chinese and Malayasian elements, and supports luxuriant evergreen broadleaf forests or 'tropical rainforests' at lower elevations. Another notable difference between the western and eastern Himalaya is that conifers are less common and are generally mixed with broadleaved species in the eastern Himalaya as compared to the western Himalaya. In the eastern Himalaya, number of vascular plant species, the number of epiphytes (mostly Orchidaceae), *Rhododendron* and *Quercus* species are also several folds greater than that in western Himalaya (Singh and Singh 1987). The Himalayan Mountain Range forms a distinct biogeographic ecoregion with large variation in topography, climate and harbours considerable plant diversity (Olson *et al.* 2001). The proportion of endemic taxa is substantial in the entire Himalayan Range and thus, this ecoregion has been designated as a global biodiversity hotspot (Myers *et al.* 2000). Around 4000 species of higher plants and about 29% of the endemic taxa of Indian dicotyledonous flora occur in the Himalaya (Singh

and Singh 1987). In the western Himalayan region, the prominent angiosperm families are Asteraceae, Rosaceae, Poaceae, Ranunculaceae and Brassicaceae (Rau 1975). The vegetation is represented by lower and upper western Himalayan temperate forests, dry temperate coniferous forests, sub-alpine forests and scrubs, alpine pastures, dwarf Juniper scrub, and dry alpine scrub communities (Champion and Seth 1968).

Kinnaur is a northeastern frontier district in the state of Himachal Pradesh that mostly consists of the valleys along river Sutlej and its tributaries (Spiti and Baspa rivers, Figure 1). The terrain is rugged with steep precipitous slopes and narrow valleys (Figures 2 A-C). The wide range of altitudinal and climatic geospatial gradients have endowed the landscape with a rich botanic diversity, dominated by conifers in the temperate zone (Figures 3 A-C), *Betula utilis*-dominated forests and *Rhododendron campanulatum*-dominated scrubs in the sub-alpine zone (Figures 3 D, E), medicinal and aromatic herbs in the alpine meadows (Figures 3 F-H) and scrubby vegetation in the cold arid zone (Figure 3I). In Kinnaur, there are three, almost parallel mountain ranges: the Zaskar, the Great Himalaya and the Dhaula Dhar with their peaks varying between 5,180 m to 6,770 m and covered with snow throughout the year. Based on the amount and distribution of precipitation (rainfall and snowfall), the region is classified into three broad climatic zones: the wet zone (Nihar and Sangla areas), the dry zone (Kalpa and Moorang areas) and the arid zone (Pooh area). Only the area south of the Great Himalayan range receives the monsoon rains. The rainfall becomes lesser towards Shipki peak, the highest peak in Himachal Pradesh so that the climate of north eastern Kinnaur is semiarid to arid. The

annual rainfall varies from 45.4 mm at Pooh to 380 mm at Nichar. In the temperate zone, the minimum temperature ranges from -6.9 to 14.6°C and maximum from 7.5 to 23.1°C , the mean January temperature being about 0.3°C (Source: Office of the Deputy Commissioner, Rekonig Peo, Kinnaur (H.P.), India). Seasons of the year comprise of winter from December to end of March, followed by spring season from April to May and summer from June to September, with rains in the months of July and August particularly at lower elevations of Kinnaur. Autumn season spans over October to November.

Based on the classification given by Champion and Seth (Champion and Seth 1968), the vegetation of this region can be classified into 29 types which belong to Himalayan moist and dry temperate forests, sub-alpine forests, dry and moist alpine scrub and meadows. Alpine meadows cover large areas above the tree line (usually above 3300 amsl). Below the tree line, thick coniferous forests are dominated by *Cedrus deodara* (Chawla *et al.* 2011). *Pinus gerardiana* (Chilgoza or Neoza pine) dominated forest occupies large area in the dry zone up to tree line in Kinnaur. This species occurs mostly in Kinnaur district in the state of Himachal Pradesh. The economy of Kinnaur district is mainly dependent on apple cultivation. Among the agro-ecosystems, besides Chilgoza forest plantations and other agricultural crops, apple orchards constitute a major land use in the whole valley (Figures 4 A-E).

Though the flora for Himachal Pradesh (Chowdhery and Wadhwa 1984) presents an extensive list of species distributed across the state, the vegetation in Kinnaur has

not been precisely investigated. In spite of Kinnaur being a biodiversity rich region, no attempt has been made to list the species content of this district and no comparative botanic studies have been carried out between Kinnaur and the neighbouring districts. In this communication, we provide an updated checklist of vascular plants from different elevations representing all the vegetation types of Kinnaur as well as the species growing near streams, lakes, towns, orchards, villages and other human settlements in the region. We have used here the latest delineation of the families, 'Angiosperm Phylogeny Group (APG) III system, 2009'.

This study aims at finding out i) Is the flora of Kinnaur district dominated by the same families as those of other western Himalayan regions? ii) What are the family-to-genera and genera-to-species ratios in Kinnaur and are these comparable to other regions in western Himalaya?, and iii) What is the proportion of threatened and endemic species in the flora of Kinnaur district?

MATERIALS AND METHODS

Study Sites

The present study was undertaken in Kinnaur ($30^{\circ}22'40''$ N to $33^{\circ}12'40''$ N Latitude and $75^{\circ}47'55''$ E to $79^{\circ}04'20''$ E Longitude), which spans over an area of over 6,400 km² in the western Himalaya (www.himachal.gov.nic.in). River Sutlej enters the region at an elevation of 3,050 m, and leaves it at an elevation of 1,320 m above mean sea level dividing the region into almost two equal halves (Figure 1).

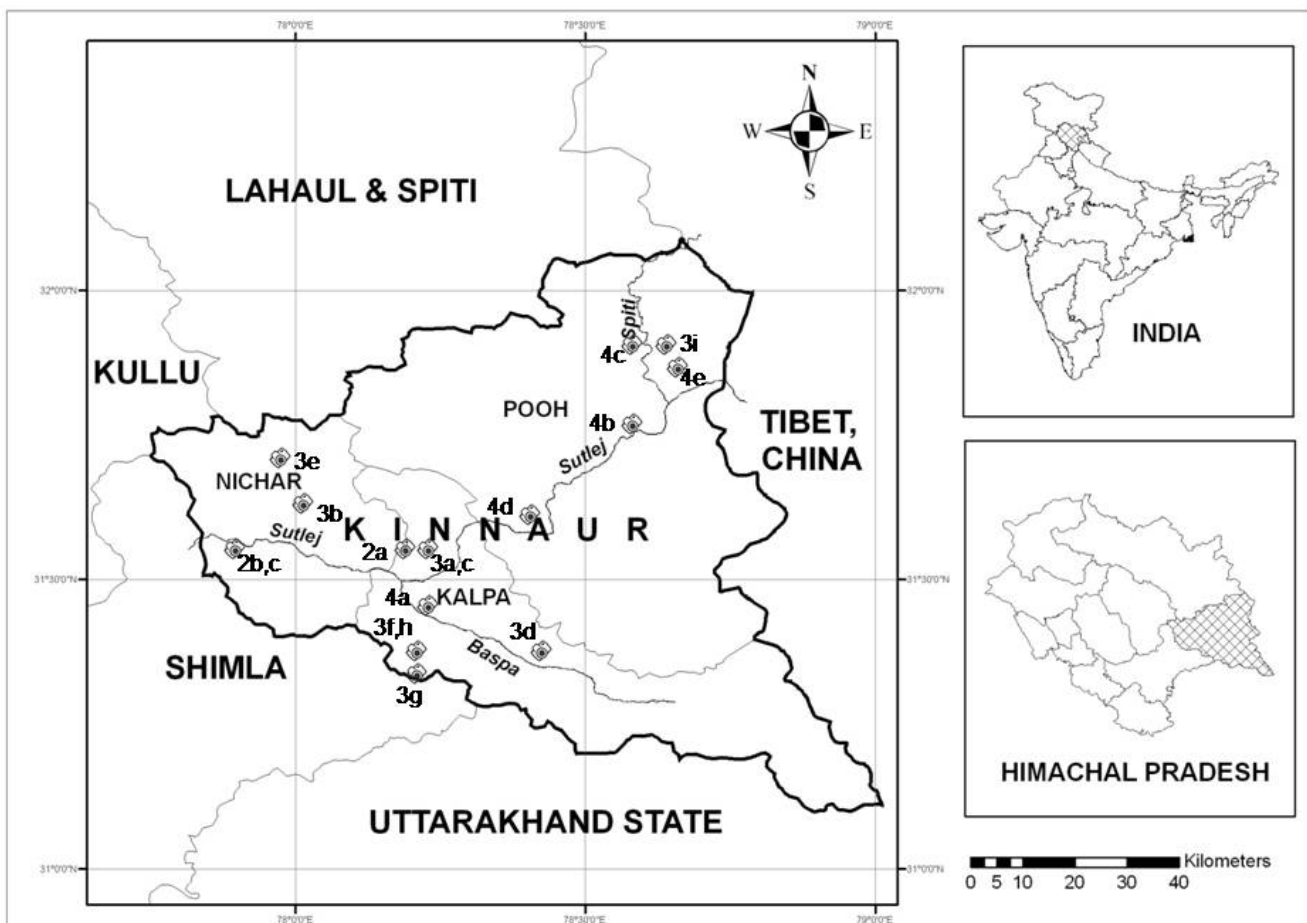


FIGURE 1. Map of the study area. The points at which the photographs have been clicked are shown on the map and are indicated by figure numbers.

Kinnaur is a region of high mountain ranges with narrow valleys of the river Satluj and its tributaries. In southern Kinnaur, the Dhauladhars extend eastwards to meet the Greater Himalayan range, and separate Baspa valley from district Shimla of Himachal Pradesh and Uttarkashi district of Uttarakhand state. Towards the north east, the semi-arid to arid land areas occur across the Zaskar mountains. The Greater Himalaya spans over

most of the geographical area of Kinnaur. The district has three administrative subdivisions, Pooh, Kalpa and Nichar. Pooh subdivision in the upper Kinnaur comprises three *tehsils* (an administrative unit under a district) of Moorang, Pooh and Yangthang. Kalpa subdivision situated in the middle Kinnaur, comprises of two *tehsils*, Kalpa and Sangla. Nichar subdivision in the lower Kinnaur has only one *tehsil* with the same name. The boundaries of the three sub-divisions are thus, co-terminus with the three ecological divisions of the area (Raha 2000). The upper Kinnaur consists of the last stretch of river Spiti which joins river Satluj at Khab, and the main Satluj valley from Shipki La to the Ropa valley lower down to village Shiasu. The gorge like valleys of this region present a cold desert landscape with naked mountains and a few villages with irrigated fields and apple orchards. Almost the whole landscape is covered with steppe vegetation dominated by *Artemisia* spp. scrub. The middle Kinnaur, represented by the Kinner Kailash Massif (highest peak, 6473 m), has beautiful Baspa (or Sangla) valley on one side and Kalpa on the other side reaching upstream the Satluj towards Charang stream. Sangla valley has temperate climate with lush green *Cedrus deodara*, *Abies pindrow* dominated forests, broadleaved forests and alpine meadows. Towards Kalpa, the climate gradually changes to semi-arid, with vegetation dominated by *Pinus gerardiana* forests. The lower Kinnaur receives the maximum rainfall during the monsoon season and is the greenest zone. The valleys of the tributaries of Satluj present a large altitudinal gradient and thus inhabit different forest types with large area under alpine meadows at higher elevations.

The 'Linear Imaging Self Scanner (LISS III)' sensor satellite image (ground resolution, 24.5 m and scene date, 15-Oct-2005) of Indian Remote Sensing (IRS) satellite was used to classify the vegetation of Kinnaur into forests, grasslands, scrublands, snow covered area, rocks and barren area, and cultivated and builtup area (Figure 5). More than half of the total area of Kinnaur (51.91 %) is covered by bare rocks and perpetual snow. Only 44.2 % of the total area of Kinnaur is represented by forests (10.24 %), grasslands (31.04 %) and scrublands (2.95 %) (Chawla *et al.* 2011). The localities and the points of collections are depicted on the classified map. The areas surveyed in the lower Kinnaur represent an altitudinal range from 1500 m to 4600 m that include major localities viz., Solding, Nigulseri, Bhabhanagar, Bari, Nichar on the left bank of river Satluj; Majhgaon in the Rupi valley, and Rarang Panoong, Surchoo, Kafnu, Mulling, Fusteerang, Tau Dor, Kara, Fusteerang in the Bhabha valley on the right banks of river Satluj; and Sholtu, Tapri, Urni further upstream on both the banks of river Satluj. In the middle Kinnaur, the localities surveyed included Kuppa, Sangla, Kharogla, Chitkul, Chansu, Rupin Pass, Nalgon Pass in the Sangla valley encompassing a range of altitudes from 2500 m in Sangla valley to 5200 m towards the Chitkul pass. Besides, Roghi, Kalpa, Sharbo and Pangi, localities were surveyed in the Chilgoza pine dominated zone. The upper Kinnaur presents an arid zone and the studied localities include Ropa valley, Kanam, Jangi, Ribba, Moorang, Thangi, alpine meadows in Charang valley, and cold desert areas of Pooh (Pooh, Chulling, Yangthang, Nako *etc.*).

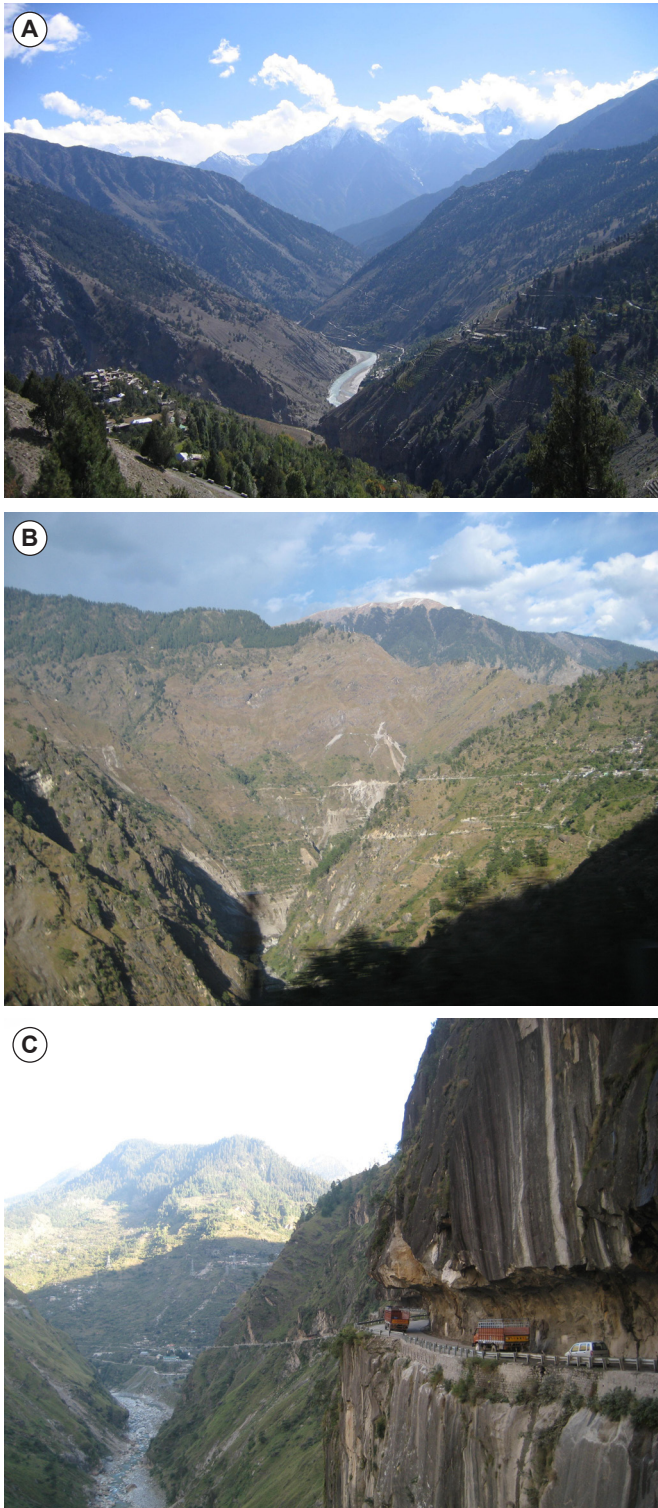


FIGURE 2. A) An Upper Satluj valley landscape (semi-arid zone) with forests dominated by *Pinus gerardiana*, and apple orchards. B) The lower Satluj valley landscape in the Nichar subdivision with scrub, coniferous and *Betula* dominated forests on the upper reaches of mountains, and apple orchards in the lower elevations. C) A degraded forest landscape due to construction of roads and dams, and expansion of agricultural land and orchards.



FIGURE 3. A) The coniferous forest dominated landscape with Kinner Kailash mountain range in the background. B) The Bhabha valley landscape with forests dominated by conifers. C) A landscape dominated by *Pinus gerardiana* (Neoza/Chilgoza pine) forests. D) Tree line forest landscape dominated by *Betula utilis* (senescent leaves) with patches of *Pinus wallichiana* (evergreen) forests in the Sangla valley. E) Tree line ecotonal landscape in the Bhabha valley. F) The alpine meadows and mountain peaks landscape in the Sangla valley. G) An alpine meadows landscape with *Saussurea obovallata* populations near Nalgong Pass in the Sangla valley. H) The patchy distribution of *Cassiope festigiata* scrub in the alpine meadows. I) Upper Kinnaur landscape dominated by *Artemisia* spp. and *Ephedra gerardiana* in the arid zone (cold desert area).

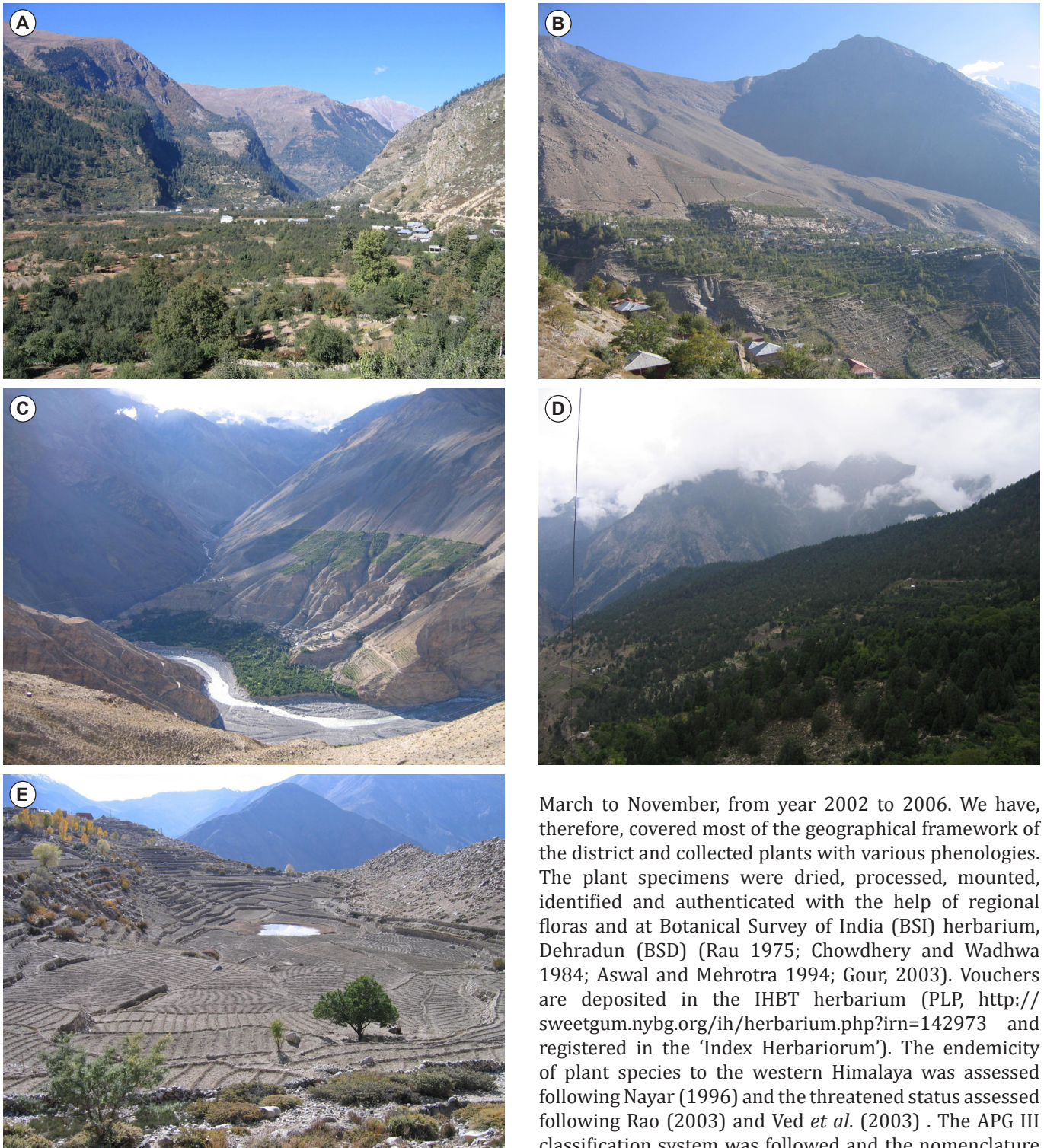


FIGURE 4. A) Apple orchards dominated landscape in the Sangla valley. B) A high altitude village agro-ecosystem in Upper Kinnaur (Pooh). C) Apple orchards in the cold desert zone (Leo village, on the right bank of Spiti river). D) Neoza forest (*Pinus gerardiana*) at Jangi in the upper Kinnaur. E) Agricultural fields in Nako in upper Kinnaur.

Data Collection

Systematic surveys were conducted in district Kinnaur to cover different altitudinal zones, to include all representative vegetation types: forests, scrubs, temperate grasslands, alpine meadows, vegetation transitional zones and anthropogenized environments. Alpine grasslands differ from the temperate grasslands in terms of species composition and diversity due to altitudinal gradient. Surveys were conducted during the snow free period of

March to November, from year 2002 to 2006. We have, therefore, covered most of the geographical framework of the district and collected plants with various phenologies. The plant specimens were dried, processed, mounted, identified and authenticated with the help of regional floras and at Botanical Survey of India (BSI) herbarium, Dehradun (BSD) (Rau 1975; Chowdhery and Wadhwa 1984; Aswal and Mehrotra 1994; Gour, 2003). Vouchers are deposited in the IHBT herbarium (PLP, <http://sweetgum.nybg.org/ih/herbarium.php?irn=142973> and registered in the 'Index Herbariorum'). The endemism of plant species to the western Himalaya was assessed following Nayar (1996) and the threatened status assessed following Rao (2003) and Ved *et al.* (2003). The APG III classification system was followed and the nomenclature was updated from the website 'www.theplantlist.org'. The delineation of only a few dominant families has changed in the APG III system with re-structuring of genera *e.g.*, genera from Scrophulariaceae now belong to Orobanchaceae, Plantaginaceae *etc.* Thus, comparison of floristic summaries of the present checklist with those of the previous lists from other regions in the Himalaya remains minimally affected.

RESULTS AND DISCUSSION

A total of 893 taxa (*viz.*, species, subspecies and varieties) belonging to 881 plant species, 433 genera and 102 families of higher plants, and 30 species of ferns and fern allies were recorded from the study area (Tables 1,2).

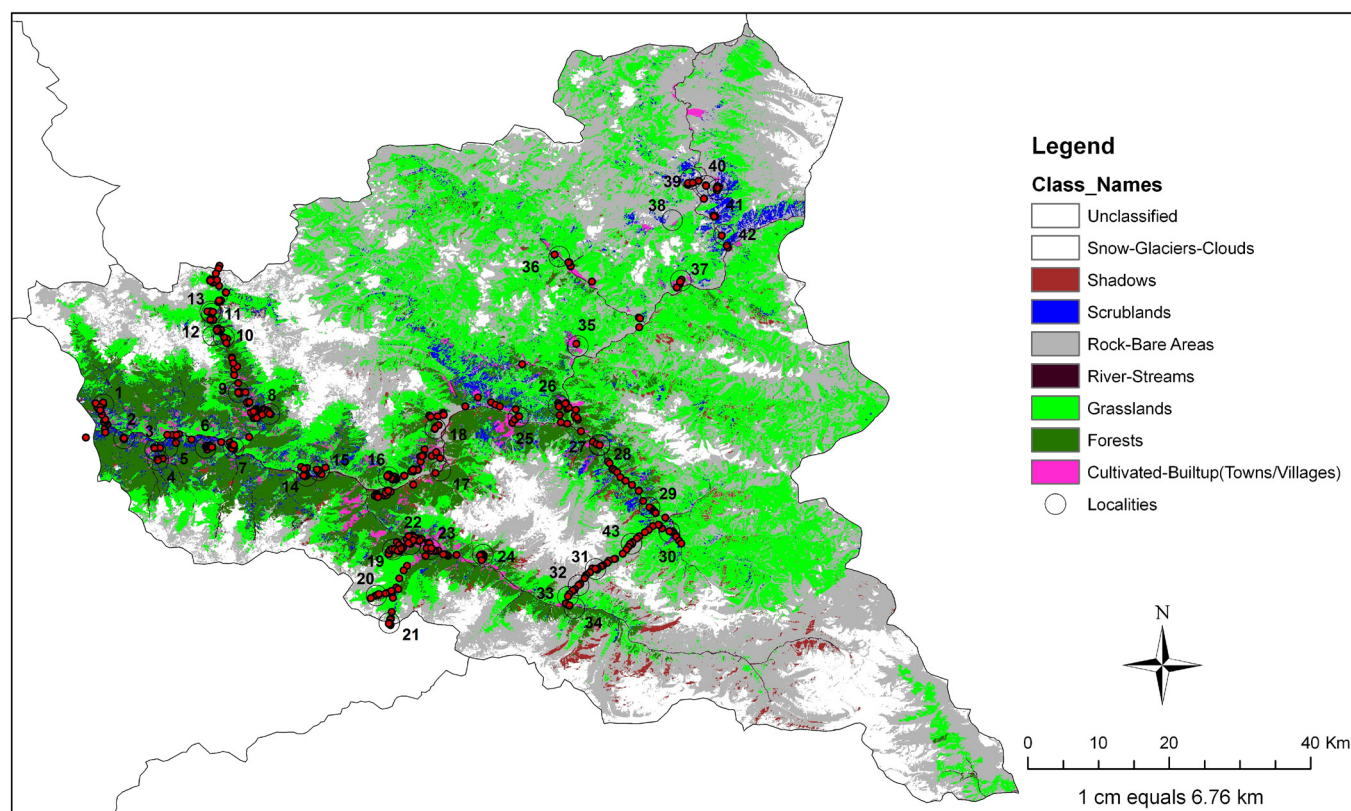


FIGURE 5. Classified map of Kinnaur showing the area under forests, grasslands and scrublands. The localities and points of collections are depicted in this map as circles and points respectively. The codes for localities are as follows: 1 Majhgaon, Rup, 2432m; 2 Nigulseri, 1763m (figure 2B, 2C); 3 Bari, 1869m; 4 Solding, 1545m; 5 Bhabhanagar, 1572m; 6 Nichar, 2298m; 7 Rarang Panoong, 1843m; 8 Surchoo, 2695m; 9 Kafnu, 2450m (figure 3B); 10 Mulling, 3250m (figure 3E); 11 Fusteerang, 4166m; 12 Tau Dor, 3440m; 13 Kara, 3462m; 14 Sholtu, Tapri, 1762m; 15 Urni (Figure 2A), 2238m; 16 Roghi, Kalpa, 3532m; 17 Sharbo, 2304m (figure 3A, figure 3C); 18 Pangi, 2651m; 19 Chansu, 3628m; 20 Rupin Pass, 3739m (figure 3F, figure 3H); 21 Nalgong Pass, 4432m (figure 3G); 22 Kuppa, Sangla, 2547m (figure 4A); 23 Sangla, 2641m; 24 Kharogla, 3086m; 25 Khadra, Moorang, 2434m; 26 Jangi, 2737m (figure 4D); 27 Ribba, 2711m; 28 Thangi, 2666m; 29 Lambar, 3392m; 30 Charang, 3899m; 31 Chitkul Pass (Base camp), 4865m; 32 Chitkul Pass beyond, 4725m; 33 Towards Chitkul, 3726m; 34 Chitkul, 3492m (figure 3D); 35 Kanam, 2858m; 36 Ropa, 3047m; 37 Pooh, 2852m (figure 4B); 38 Chulling, 3234m; 39 Leo, 3113m (figure 4C); 40 Yangthang, 3296m (figure 3I); 41 Nako, 3710m (figure 4E); 42 Ka, 2848m; 43 Lalanti, 4278m.

Among species of higher plants, 869 are angiosperms and 13 are gymnosperms (Table 3). Chowdhery and Wadhwa (1984) reported 3243 species of angiosperms from Himachal Pradesh, 26.8% of which are accounted in Kinnaur.

In Kinnaur, the ten most dominant families are Asteraceae (122 species), Poaceae (69), Rosaceae (58), Leguminosae (49), Lamiaceae (38), Ranunculaceae (30), Brassicaceae (29), Polygonaceae (29), Apiaceae (25) and Caryophyllaceae (22). Altogether, they constitute 53.4 % of the total number of species in Kinnaur and 48.7 % of the genera occurring in this region. The flora of Kinnaur has close affinities with the flora of the adjacent district of Lahaul and Spiti with eight of the ten families being dominant in both of the regions, whereas Lamiaceae and Caryophyllaceae dominate only in Kinnaur (Aswal and Mehrotra 1994) (Table 4). The upper Kinnaur has a similar climate as that of the Spiti region of the Lahaul and Spiti district. It may be noted that Asteraceae, which is the most represented family in Kinnaur and Lahaul and Spiti, ranks second, fourth, and seventh in western Himalaya, eastern Himalaya, and the Flora of British India, respectively (Hooker 1904; Hara and Hohashi 1966- 1974; Rau 1975). Orchidaceae, a prominent family in the eastern Himalaya and the Flora of British India, which ranks ninth in western Himalaya, does not even appear among the first 10 dominant families of Kinnaur and Lahaul and Spiti). Most of the area under Kinnaur and Lahaul and Spiti

districts has semi-arid to arid climates with scanty rainfall and thus almost no epiphytic orchids can be found in this region. The opposite trend was found for the Brassicaceae. This family occupies the sixth, third and seventh positions in Kinnaur, Lahaul and Spiti and western Himalaya respectively, but does not figure among the 10 dominant families in the eastern Himalaya and British India flora. Poaceae, the second most prominent family in both Kinnaur and Lahaul and Spiti districts, is also a prominent family in district Shimla. This may be due to large cover of grasslands (especially alpine meadows) and dry areas in the first two districts. However in Shimla, the large occurrence of grasses may be the result of anthropogenic influences.

The taxonomic structure of biotas which can be measured as the ratio of family-to-genera, genera-to-species, or family-to-species, does not vary randomly on regional or global scales (Krug *et al.* 2007). The species-genus (S/G) ratios are sensitive to diversity and increase with number of species in the sample (Jarvinen 1982). In Kinnaur, the ratio of family-to-genera is 1:4.25 and genera-to-species is 1:2.04. The genera-to-species ratio of Kinnaur is similar to that of Shimla (1:2.08), Lahaul and Spiti (1:2.5), Mussoorie (1:1.88), Nainital (1:1.9) and other areas of western Himalaya (Table 5). All of the above mentioned areas have been found to host roughly the same number of species (~700 to 1300 spp.) except for Srinagar and Garhwal. In Srinagar, the genera-to-species

ratio (1:3.95) is slightly higher, whereas, in Garhwal, this remains similar to other regions, but the family-to-genera ratio is higher (1:5.46). Moreover, different regions compared are also mesoscale landscapes ($\sim 10^2$ to 10^4 km². area). Thus, it may be inferred that overall the family-to-genera and genera-to-species ratios are stable throughout the western Himalaya.

There are 9 families each with 10 genera or more and these 9 families together represent 49.65 % of the total genera observed. Similarly, 24 families have 10 species or more accounting for 74.58 % of the total taxa. A total of 253 (58.43 %) genera are represented by single species. Furthermore, 54 families, represented by a low number of species (3 or less), abound in the study area. There are 46 (45.1 %) families represented by a single genus, and 26 (25.5 %) families represented by a single species. This shows the dominance of families with less taxa which make up the flora of the region.

Our checklist includes 606 herbs, 63 trees, 108 shrubs, 28 climbers, 67 graminoids and 21 sedges and rushes (Figure 6a). Herbs are dominant since grasslands cover a large portion of the landscape. The tree diversity in the western Himalaya is considerably low compared to that in the eastern Himalaya. Most likely, low precipitation limits tree growth in western Himalaya. Out of total 881 species, 108 (12.2 %) are endemic to western Himalaya and 27 (3 %) have been placed under IUCN threatened categories for Himachal Pradesh (Figures 6b and 6c). Out of total 27 threatened species, 14 species are vulnerable, 7 are endangered and 1 is critically endangered in this region (Figure 6d). The collection of several species for traditional medicine or ornamental purposes could be at the origin of their rarity. The populations of the terrestrial orchid *Dactylorhiza hatagirea* (locally known as Hathpanja, referring to its roots resembling a baby's hand with five fingers) have critically dwindled. It is collected for its roots which have important medicinal properties viz., aphrodisiac, general weakness, bone fracture, cough, stomach ache etc. The endangered medicinal plant species viz., *Sinopodophyllum hexandrum*, *Picrorhiza kurrooa*, and *Aconitum heterophyllum* are illegally extracted in very large quantities from alpine meadows. Similarly, *Jurinea dolomiaea* is also extracted in large quantities and its populations are also decreasing in the district. Further, it is very rare to find *Saussurea obvalata*, which locals call as 'Brahmkamal', because it's beautiful, and fragrant flowers are commonly collected as an offering to the Gods. We could find this species in only two localities in Kinnaur viz., Nalgong Pass (~ 4600 m amsl) and Chitkul Pass (~ 4900 - 5000 m amsl), population in the latter area containing only a few plants. The trees *Ulmus wallichiana* and *Betula utilis* fall under the 'endangered' category, while *Pinus gerardiana* or 'Chilgoza pine' is under the rare category. The latter tree is prominent in this region of Himachal Pradesh. However, *Betula utilis* or 'Bhoj patra' which forms the tree line (at ~ 3300 - 3500 m amsl) and is reported as 'endangered' in Himachal Pradesh, was observed in large populations in Kinnaur, especially in the Sangla valley. Therefore, efforts should be made to conserve this species in Kinnaur. Further studies in this region should focus on regular 'quantitative assessments' of the populations of threatened species listed in the present study.

The checklist of Kinnaur will help in undertaking further studies on quantitative assessments of plant species making use of remote sensing and mapping technologies. The vegetation of Kinnaur district is undergoing rapid destruction due to anthropogenic disturbances such as construction of roads, hydropower projects, illegal felling of trees, unreasonable extraction of medicinal plants, and expansion of orchards and agricultural lands. The present

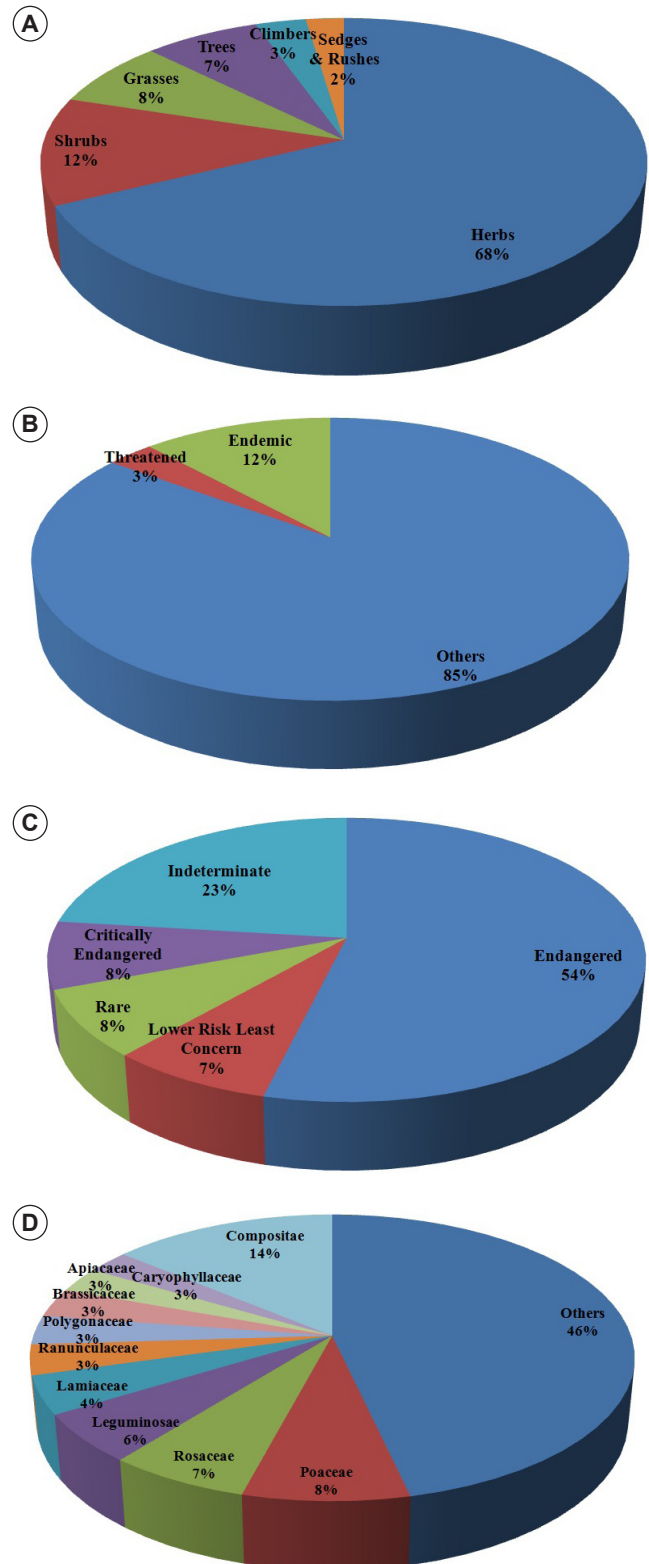


FIGURE 6. A) The proportion of different growth forms in the flora of Kinnaur. B) The proportion of endemic and threatened plants in Kinnaur. C) The proportion of different IUCN risk categories among the threatened plants of Kinnaur. D) The proportion of ten dominant families in Kinnaur in terms of species richness.

study provides an updated checklist of the vascular plants occurring in Kinnaur by extensive collections throughout the district, and includes a list of endemic and threatened species. Further research should now focus on the quantitative assesment of these plants throughout the landscape and to identify potential areas for conservation. Besides this, the biodiversity studies of the area should be performed along with a study of environmental variables

viz., topographic, edaphic and climatic attributes. The population dynamics of plant species along the altitudinal gradient could be studied by establishing permanent monitoring plots (PMPs) in the areas identified for potential conservation, which will also help in elucidating the effect of climate change on the distribution of plant species and their communities.

TABLE 1. List of higher plant species found in Kinnaur.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
Acanthaceae				
<i>Dicliptera bupleuroides</i> Nees	PLP7642	Herb	-	Solding
<i>Dicliptera chinensis</i> (L.) Juss. (Syn. <i>D. roxburghiana</i> Nees)	PLP3026	Herb	-	F
<i>Strobilanthes atropurpureus</i> Nees	PLP3582	Herb	-	Solding, Yangpa
<i>Strobilanthes urticifolia</i> Wall. ex Kuntze (Syn. <i>S. alatus</i> Nees)	PLP7689	Herb	-	F
<i>Strobilanthes wallichii</i> Nees (Syn. <i>Pteracanthus alatus</i> (Nees) Bremek.)	PLP7940	Herb	Endemic	Solding, Rupī
Adoxaceae				
<i>Viburnum cotinifolium</i> D. Don	PLP4115	Shrub	-	F
<i>Viburnum foetens</i> Decne	PLP7422	Shrub	-	Rupī, Katgaon
<i>Viburnum grandiflorum</i> Wall. ex DC.	PLP3148	Shrub	-	Surchoo
Amaranthaceae				
<i>Achyranthes aspera</i> L.	PLP6375	Herb	-	Bhabhanagar
<i>Achyranthes bidentata</i> Blume	PLP7722	Herb	-	F
<i>Amaranthus caudatus</i> L.	PLP8447	Herb	-	Bari
<i>Amaranthus cruentus</i> L. (Syn. <i>Amaranthus paniculatus</i> L.)	PLP3606	Herb	-	Shango
<i>Amaranthus retroflexus</i> L.	PLP6371	Herb	-	F
<i>Axyris hybrida</i> L.	PLP6382	Herb	-	GA, S
<i>Chenopodium album</i> L.	PLP2878	Herb	-	F, G, GA, S
<i>Dysphania botrys</i> (L.) Mosyakin and Clemants (Syn. <i>Chenopodium botrys</i> L.)	PLP3020	Herb	-	F, GA, S
<i>Chenopodium foliosum</i> Asch.	PLP3598	Herb	-	S
<i>Chenopodium murale</i> L.	PLP5006	Herb	-	S
<i>Cyathula capitata</i> Moq.	PLP6369	Herb	-	Sangla
<i>Cyathula tomentosa</i> (Roth) Moq.	PLP2686	Herb	-	F, G
<i>Krascheninnikovia ceratoides</i> (L.) Gueldenst	PLP4395	Herb	-	S
<i>Salsola collina</i> Pall.	PLP4340	Herb	-	Leo, Mulling, Nako
Amaryllidaceae				
<i>Allium carolinianum</i> DC.	PLP2988	Herb	-	Katgaon, Sangla
<i>Allium humile</i> Kunth	PLP2808	Herb	-	Sangla
<i>Allium jacquimontii</i> Kunth	PLP2560	Herb	-	Sangla
<i>Allium stracheyi</i> Baker	PLP2682	Herb	Vulnerable	G
<i>Allium victorialis</i> L.	PLP9486	Herb	-	GA
Anacardiaceae				
<i>Cotinus coggryia</i> Scopoli (Syn. <i>Rhus cotinus</i> L.)	PLP7742	Shrub	-	Ponda
<i>Toxicodendron wallichii</i> var. <i>wallichii</i> (Syn. <i>Rhus wallichii</i> Hook. f.)	PLP6387	Tree	-	Bari
Apiaceae				
<i>Angelica glauca</i> Edgew.	PLP7910	Herb	-	F
<i>Bunium persicum</i> (Boiss.) B. Fedtsch	PLP2845	Herb	-	F
<i>Bupleurum candollii</i> Wall. ex DC.	PLP9828	Herb	-	Pangi
<i>Bupleurum falcatum</i> L.	PLP2671	Herb	Endemic	F, S
<i>Bupleurum falcatum</i> ssp. <i>marginatum</i> Wall. ex DC.	PLP3122	Herb	-	Rarang Panoong
<i>Bupleurum jucundum</i> Kurz	PLP3621	Herb	Endemic	Karaba, Nichar, Kharogla
<i>Bupleurum longicaule</i> Wall. ex DC. (Syn. <i>Bupleurum himalayense</i> Klotz.)	PLP3189	Herb	-	F, GA
<i>Carum carvi</i> L.	PLP2956	Herb	-	G, GA
<i>Chaerophyllum aromaticum</i> L.	PLP2816	Herb	-	Sangla
<i>Chaerophyllum villosum</i> Wall. ex DC.	PLP2957	Herb	-	F, S
<i>Ferula jaeschkeana</i> Vatke	PLP2568	Herb	Vulnerable	F, G, S
<i>Heracleum candicans</i> Wall. ex DC.	PLP2856	Herb	-	Ralli

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
<i>Heracleum lanatum</i> Michx.	PLP2813	Herb	Vulnerable	F
<i>Heracleum pinnatum</i> C.B. Clarke	PLP11328	Herb	Endemic and Vulnerable	Rarang Panoong
<i>Meeboldia achilleifolia</i> (DC.) P.K. Mukh. and Constance (Syn. <i>Pimpinella achilleifolia</i> (DC.) C.B. Clarke)	PLP3230	Herb	-	F
<i>Pimpinella acuminata</i> (Edgew.) C.B. Clarke	PLP4110	Herb	Endemic	F
<i>Pimpinella diversifolia</i> DC.	PLP7634	Herb	-	F
<i>Pleurospermum brunonis</i> (DC.) Benth. ex C.B. Clarke	PLP3254	Herb	Endemic	GA
<i>Pleurospermum candolei</i> Benth. ex C.B. Clarke	PLP9844	Herb	Endemic	GA
<i>Pleurospermum stellatum</i> (D. Don) Benth. ex C.B. Clarke	PLP9827	Herb	-	GA
<i>Pleurospermum stylosum</i> C.B. Clarke	PLP3156	Herb	-	Homte
<i>Selinum coniifolium</i> (Wall. ex DC.) Benth. and Hook. f.	PLP9658	Herb	-	F
<i>Selinum vaginatum</i> (Edgew.) C.B. Clarke	PLP3251	Herb	Endemic and Lower Risk Least Concern	F, GA, S
<i>Selinum wallichianum</i> (DC.) Raizada and H.O. Saxena (Syn. <i>Selinum candollei</i> Edgew., <i>Selinum tenuifolium</i> Wall. ex C.B. Clarke)	PLP4061	Herb	Endemic	F, GA
<i>Seseli thomsonii</i> (C.B. Clarke) Pimenov and Kljuykov (Syn. <i>Eriocyclus thomsonii</i> (Cl.) Wolff)	PLP9767	Herb	-	Shurting
<i>Torilis japonica</i> (Houtt.) DC.	PLP3543	Herb	-	Nigulseri, Bari, Kafnu
Apocynaceae				
<i>Cynanchum auriculatum</i> Royle ex Wight	PLP3168	Herb	-	Shelti
<i>Vincetoxicum hirundinaria</i> Medik.	PLP7978	Herb	-	Rupi
Aquifoliaceae				
<i>Ilex dipyrrena</i> Wall.	PLP7419	Tree	Endemic	Bhabhanagar, Nichar
Araceae				
<i>Arisaema flavum</i> (Forssk.) Schott	PLP3546	Herb	-	F
<i>Arisaema jacquemontii</i> Blume	PLP3184	Herb	-	F, GA
<i>Arisaema tortuosum</i> (Wall.) Schott	PLP8471	Herb	-	F
Araliaceae				
<i>Hedera nepalensis</i> K. Koch	PLP7743	Climber	-	F
Asparagaceae				
<i>Asparagus adscendens</i> Roxb.	PLP2685	Herb	-	F
<i>Asparagus filicinus</i> Buch.-Ham. ex D. Don	PLP3154	Shrub	-	F
<i>Maianthemum purpureum</i> (Wall.) LaFrankie (Syn. <i>Smilacina pallida</i> Royle)	PLP4049	Herb	-	F, S
<i>Polygonatum cirrhifolium</i> (Wall.) Royle	PLP2928	Herb	-	Nichar
<i>Polygonatum geminiflorum</i> Decne.	PLP3253	Herb	-	GA
<i>Polygonatum multiflorum</i> (L.) All.	PLP4051	Herb	Vulnerable	F
<i>Polygonatum verticillatum</i> (L.) All.	PLP3185	Herb	Vulnerable	F, GA
Balsaminaceae				
<i>Impatiens amplexicaulis</i> Edgew	PLP8504	Herb	-	F
<i>Impatiens brachycentra</i> Kar. and Kir	PLP6235	Herb	-	Pangi
<i>Impatiens racemosa</i> DC.	PLP2840	Herb	-	F, S
<i>Impatiens scabrida</i> DC.	PLP4076	Herb	-	F, GA
<i>Impatiens thomsonii</i> Hook. f.	PLP2744	Herb	-	F, GA
Berberidaceae				
<i>Berberis asiatica</i> Roxb. ex DC.	PLP2920	Shrub	-	Sering Chey
<i>Berberis chitria</i> Buch.-Ham. ex Lindl.	PLP2708	Shrub	Endemic	F, S
<i>Berberis coriaria</i> Royle ex Lindl.	PLP4112	Shrub	Endemic	Sangla
<i>Berberis jaeschkeana</i> C. K. Schneid	PLP2792	Shrub	-	F, S
<i>Berberis kunawurensis</i> Royle	PLP7493	Shrub	Endemic	Roghi
<i>Berberis lycium</i> Royle	PLP2696	Shrub	Endemic	F, S
<i>Berberis pachyacantha</i> Bien ex Koehne	PLP2866	Shrub	-	F, GA
<i>Berberis pseudo-umbellata</i> R. Parker	PLP8520	Shrub	Endemic and Indeterminate	F

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
<i>Sinopodophyllum hexandrum</i> (Royle) T.S. Ying (Syn. <i>Podophyllum hexandrum</i> Royle)	PLP3176	Herb	Endangered	F, GA
Betulaceae				
<i>Alnus nitida</i> (Spach) Endl.	PLP2501	Tree	Endemic	F
<i>Betula alnoides</i> Buch.-Ham. ex D. Don	PLP6303	Tree	-	F
<i>Betula utilis</i> D. Don	PLP2934	Tree	Endangered	F
<i>Corylus jacquemontii</i> Decne.	PLP3009	Tree	Endemic	F
Bignoniaceae				
<i>Incarvillea arguta</i> Royle	PLP2718	Herb	-	S
<i>Incarvillea emodi</i> (Royle ex Lindl.) Chatterjee	PLP9862	Herb	-	Nichar
Boraginaceae				
<i>Arnebia euchroma</i> (Royle) I.M. Johnst.	PLP7717	Herb	-	S
<i>Arnebia guttata</i> Bunge	PLP4398	Herb	-	S
<i>Cynoglossum wallichii</i> var. <i>glochidiatum</i> (Wall. ex Benth.) Kazmi (Syn. <i>Cynoglossum glochidiatum</i> Wall. ex Benth.)	PLP7667	Herb	-	F, G
<i>Cynoglossum lanceolatum</i> Forssk.	PLP6218	Herb	-	F
<i>Cynoglossum microglochin</i> Benth.	PLP9626	Herb	-	F
<i>Cynoglossum wallichii</i> G. Don	PLP3112	Herb	-	F, GA, S
<i>Cynoglossum zeylanicum</i> (Lehm.) Brand	PLP2714	Herb	-	G, GA, S
<i>Ehretia acuminata</i> R. Br. (Syn. <i>E. acuminata</i> var. <i>serrata</i> (Roxb.) I.M. Johnst.)	PLP7428	Tree	-	S
<i>Eritrichium canum</i> (Benth.) Kitam. (Syn. <i>E. strictum</i> Decne.)	PLP2947	Herb	-	Solding, Chitkul
<i>Eritrichium nanum</i> (L.) Schrad. ex Gaudin	PLP8551	Herb	Endemic	Rupi
<i>Hackelia uncinata</i> (Benth.) C.E.C. Fisch.	PLP3202	Herb	-	F, GA
<i>Heliotropium strigosum</i> Willd.	PLP2666	Herb	-	F
<i>Lappula barbata</i> (M. Bieb.) Gürke	PLP2880	Herb	-	Pooh
<i>Lasiocaryum munroi</i> (C.B. Clarke) Johnst.	PLP2646	Herb	-	Rekong Peo
<i>Lepechiniella microcarpa</i> (Boiss.) Riedl. (Syn. <i>Paracaryum microcarpum</i> Boiss.)	PLP2842	Herb	-	Roghi
<i>Lindelfia macrostyla</i> (Bunge) Popov (Syn. <i>L. anchusoides</i> (Lindl.) Lehm.)	PLP3227	Herb	Endemic	F, GA, S
<i>Lithospermum arvense</i> L.	PLP7491	Herb	-	Bhabhanagar
<i>Myosotis sylvatica</i> Ehrh ex Hoffm.	PLP3266	Herb	-	F, GA
<i>Rochelia rectipes</i> Stocks (Syn. <i>R. macrocalyx</i> Bunge)	PLP2655	Herb	-	Rekong Peo
<i>Setulocarya diffusa</i> (Brand) R.R. Mill and D.G. Long (Syn. <i>Lasiocaryum diffusum</i> (Brand) Johnst.)	PLP4096	Herb	-	Boktu
Brassicaceae				
<i>Alliaria petiolata</i> (M. Bieb.) Cavara and Grande (Syn. <i>A. officinalis</i> Andr. ex DC.)	PLP2864	Herb	-	Boktu, Ribba, Surchoo, Bhabhanagar
<i>Arabidopsis thaliana</i> (L.) Heynn.	PLP2745	Herb	-	F, GA, S
<i>Arabis nova</i> Vill.	PLP2633	Herb	-	F, S
<i>Arabis tibetica</i> Hook. f. and Thomson	PLP3307	Herb	-	F
<i>Brassica nigra</i> (L.) K. Koch.	PLP6353	Herb	-	Nichar
<i>Brassica oleorea</i> L.	PLP3633	Herb	-	Karaba
<i>Capsella bursa-pastoris</i> (L.) Medik.	PLP2780	Herb	-	F
<i>Cardamine hirsuta</i> L.	PLP11311	Herb	-	Bhabhanagar
<i>Cardamine impatiens</i> L.	PLP2523	Herb	-	F, GA
<i>Cardamine macrophylla</i> Willd.	PLP8514	Herb	-	Bhabhanagar
<i>Chorispora sabulosa</i> Cambess.	PLP3314	Herb	-	GA
<i>Crucihimalaya himalaica</i> (Edgew.) Al-Shehbaz, O'Kane and R.A. Price (Syn. <i>Arabidopsis himalaica</i> (Edgew.) O.E. Schulz.)	PLP2986	Herb	-	Kharogla
<i>Crucihimalaya mollissima</i> (C.A. Mey.) Al-Shehbaz, O'Kane and R.A. Price (Syn. <i>Arabidopsis mollissima</i> (C.A. Mey) N. Busch)	PLP3218	Herb	-	GA
<i>Descurainia sophia</i> (L.) Webb. ex Prantl	PLP2753	Herb	-	Katgaon, Kalpa, Kuppa, Sangla
<i>Draba lasiophylla</i> Royle	PLP3303	Herb	-	GA
<i>Draba setosa</i> Royle	PLP8423	Herb	-	G
<i>Erysimum hieraciifolium</i> L. f.	PLP3108	Herb	-	S
<i>Erysimum malicentae</i> Dunn	PLP3584	Herb	-	Surchoo, Sangla

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
<i>Lepidium latifolium</i> L.	PLP5016	Herb	-	Yangthang
<i>Lepidium virginicum</i> L.	PLP6350	Herb	-	S
<i>Litwinowia tenuissima</i> (Pall.) Woronow ex Pavlov (Syn. <i>Euclidium tenuissimum</i> (Pall.) B. Fedtsch.)	PLP2642	Herb	-	S
<i>Mattiola flavida</i> Boiss.	PLP2918	Herb	-	Katgaon
<i>Neurotropis platycarpa</i> (Fisch. and C.A. Mey.) F.K. Mey. (Syn. <i>Thlaspi cardiocarpum</i> Hook. f. and Thomson)	PLP2608	Herb	-	Chandriam
<i>Nasturtium officinale</i> R. Br. (Syn. <i>Rorippa nasturtium-aquaticum</i> (L.) Hayek)	PLP2899	Herb	-	Katgaon, Sunnam
<i>Rorippa indica</i> (L.) Hiern. (Syn. <i>R. montana</i> (Wall. ex Hook. f. and Thomson) Small)	PLP7458	Herb	-	GA
<i>Sisymbrium officinale</i> (L.) Scop.	PLP7761	Herb	-	Ponda
<i>Sisymbrium orientale</i> L.	PLP2891	Herb	-	Sunnam
<i>Thlaspi arvense</i> L.	PLP7710	Herb	-	S
<i>Turritis glabra</i> L.	PLP2996	Herb	-	Kharogla
Buxaceae				
<i>Buxus wallichiana</i> Baill.	PLP11366	Tree	Endemic	F
<i>Sarcococca pruniformis</i> Lindl. (Syn. <i>S. saligna</i> Müll.Arg.)	PLP7626	Shrub	Endemic	F
Campanulaceae				
<i>Campanula alsinoides</i> Hook. f. and Thomson	PLP9774	Herb	-	Shurting
<i>Campanula latifolia</i> L.	PLP9500	Herb	-	GA
<i>Campanula pallida</i> Wall. (Syn. <i>C. colorata</i> Wall.)	PLP2887	Herb	-	GA, S
<i>Codonopsis rotundifolia</i> Benth.	PLP9491	Herb	Endemic	GA
<i>Cyananthus lobatus</i> Wall. ex Benth.	PLP9484	Herb	Endemic	GA
Cannabaceae				
<i>Cannabis sativa</i> L.	PLP3543	Herb	-	F, G, S
<i>Celtis australis</i> L.	PLP2854	Tree	-	Ribba
<i>Celtis tetrandra</i> Roxb.	PLP7926	Tree	-	Bhabhanagar, Sholtu
Capparaceae				
<i>Capparis spinosa</i> L.	PLP2898	Shrub	Endemic	Sunnam, Ka
Caprifoliaceae				
<i>Abelia biflora</i> Turcz.	PLP9627	Shrub	-	F
<i>Abelia triflora</i> R. Br. ex Wall.	PLP6294	Shrub	-	Ralli, Shurting
<i>Dipsacus inermis</i> Wall. (Syn. <i>Dipsacus mitis</i> D. Don)	PLP3006	Herb	Endemic	Homte, Kharogla, Neugal
<i>Lonicera asperifolia</i> Hook. f. and Thomson	PLP9794	Shrub	-	GA, S
<i>Lonicera karelinii</i> Bunge ex P. Kir. (Syn. <i>L. heterophylla</i> Decne.)	PLP2969	Shrub	-	F, S
<i>Lonicera hispida</i> Pall. ex Roem. and Schult.	PLP2801	Shrub	-	F, S
<i>Lonicera hypoleuca</i> Decne.	PLP2852	Shrub	-	F, S
<i>Lonicera japonica</i> Thunb.	PLP7727	Shrub	-	Bhabhanagar
<i>Lonicera myrtillus</i> Hook. f. and Thomson	PLP2707	Shrub	-	F, GA, S
<i>Lonicera obovata</i> Royle	PLP7435	Shrub	-	F
<i>Lonicera orientalis</i> Lam.	PLP2936	Shrub	-	F
<i>Lonicera quinquelocularis</i> Hardw.	PLP11297	Shrub	-	F
<i>Lonicera spinosa</i> Jacq. ex Walp.	PLP9791	Shrub	Endemic	GA, S
<i>Morina coulteriana</i> Royle	PLP2964	Herb	Endemic	GA
<i>Morina longifolia</i> Wall.	PLP3137	Herb	-	GA
<i>Valeriana hardwickii</i> Wall.	PLP2822	Herb	-	Sangla
<i>Valeriana jatamansi</i> Jones	PLP4053	Herb	-	F
<i>Valeriana stracheyi</i> C.B. Clarke	PLP3206	Herb	Endemic	F, GA
Caryophyllaceae				
<i>Arenaria festuoides</i> Benth.	PLP2953	Herb	Endemic	GA, S
<i>Arenaria kansuensis</i> Maxim.	PLP11387	Herb	-	GA
<i>Arenaria orbiculata</i> Royle ex Edgew. and Hook. f.	PLP3658	Herb	-	GA
<i>Arenaria serpyllifolia</i> L.	PLP2667	Herb	-	F, GA
<i>Arenaria tenuifolia</i> L.	PLP5002	Herb	-	S
<i>Cerastium cerastoides</i> (L.) Britton	PLP6266	Herb	-	GA
<i>Cerastium glomeratum</i> Thuill.	PLP9481	Herb	-	GA

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
<i>Cucubalus viceriferous</i> L.	PLP11292	Herb	-	Bhabhanagar
<i>Dianthus angulatus</i> Royle	PLP2908	Herb	-	F, GA
<i>Gypsophila cerastioides</i> D. Don	PLP8000	Herb	-	F
<i>Minuartia kashmirica</i> (Edgew. and Hook. f.) Mattf.	PLP2559	Herb	-	S
<i>Sagina saginoides</i> (L.) H. Karst.	PLP9685	Herb	-	Kharogla
<i>Silene baccifera</i> (L.) Roth. (Syn. <i>Cucubalus baccifer</i> L.)	PLP2849	Herb	-	Ribba
<i>Silene falconeriana</i> Royle	PLP2916	Herb	Endemic	Jangi
<i>Silene indica</i> var. <i>edgeworthii</i> Boquet. Y.J. Nasir (Syn. <i>Silene edgeworthii</i> Bocquet)	PLP7666	Herb	Endemic	G
<i>Silene persica</i> Boiss.	PLP2905	Herb	-	Ropa
<i>Silene songarica</i> (Fisch., C.A. Mey. and Avé- Lall.) Bocquet.	PLP9675	Herb	-	Kharogla
<i>Silene uralensis</i> (Rupr.) Bocquet.	PLP9483	Herb	-	GA
<i>Silene viscosa</i> (L.) Pers.	PLP2970	Herb	-	F
<i>Silene vulgaris</i> (Moench) Garcke	PLP2857	Herb	-	F, S
<i>Stellaria media</i> (L.) Vill.	PLP2524	Herb	Endemic	F, S
<i>Stellaria monosperma</i> var. <i>monosperma</i> (Syn. <i>S. crispata</i> Wall. ex D. Don)	PLP2993	Herb	-	F
<i>Stellaria monosperma</i> Buch.-Ham. ex D. Don	PLP2893	Herb	-	Kharogla, Sunnam
Celastraceae				
<i>Euonymus fimbriatus</i> Wall.	PLP9777	Tree	-	GA
Commelinaceae				
<i>Commelina benghalensis</i> L.	PLP6373	Herb	-	F, S
Compositae				
<i>Achillea millefolium</i> L.	PLP2790	Herb	-	G, GA
<i>Ageratum conyzoides</i> (L.) L.	PLP7636	Herb	-	F
<i>Ageratina adenophora</i> (Spreng.) R.M. King and H. Rob (Syn. <i>Eupatorium adenophorum</i> Spreng.)	PLP7645	Herb	-	F
<i>Ainsliaea aptera</i> DC.	PLP4054	Herb	-	F, S
<i>Ainsliaea latifolia</i> (D. Don) Sch.-Bip.	PLP7692	Herb	-	Sangla
<i>Anaphalis adnata</i> Wall. ex DC.	PLP2997	Herb	-	Surchoo, Kharogla
<i>Anaphalis busua</i> (Buch.-Ham.) DC.	PLP3167	Herb	-	F, S
<i>Anaphalis contorta</i> (D.Don) Hook. f.	PLP7499	Herb	-	F, GA
<i>Anaphalis margaritacea</i> (L.) Benth. and Hook. f. (Syn. <i>A. cinnamomea</i> (DC.) C.B. Clarke)	PLP9655	Herb	-	F
<i>Anaphalis nepalensis</i> (Spreng.) Hand.-Mazz.	PLP3264	Herb	-	F, GA, S
<i>Anaphalis royleana</i> DC.	PLP2941	Herb	-	F, G, GA, S
<i>Anaphalis triplinervis</i> (Sims) Sims ex C. B. Clarke	PLP3161	Herb	-	F, GA, S
<i>Anaphalis virgata</i> Thomson	PLP7489	Herb	-	Roghi
<i>Arctium lappa</i> L.	PLP2819	Herb	-	S
<i>Artemisia biennis</i> Willd.	PLP4164	Herb	-	F, GA, S
<i>Artemisia capillaris</i> Thunb.	PLP4379	Herb	-	F, GA, S
<i>Artemisia dracunculus</i> L.	PLP7697	Herb	-	F, S
<i>Artemisia dracunculus</i> var. <i>glauca</i> (Pall. ex Willd.) H.M. Hall and Clem. (Syn. <i>A. glauca</i> Pall. ex Willd.)	PLP7470	Herb	-	F, S
<i>Artemisia dubia</i> Wall.	PLP4083	Herb	-	F
<i>Artemisia gmelinii</i> Weber	PLP2950	Herb	-	F, G, GA, S
<i>Artemisia indica</i> Willd.	PLP2929	Herb	-	Sering Chey
<i>Artemisia indica</i> var. <i>elegantissima</i> (Pamp.) Y.R. Ling and Humphries (Syn. <i>A. elegantissima</i> Pamp.)	PLP2859	Herb	Endemic	Ribba, Solding
<i>Artemisia japonica</i> Thunb.	PLP3560	Herb	Endemic	F, S
<i>Artemisia laciniata</i> Willd.	PLP9652	Herb	-	F
<i>Artemisia maritima</i> L.	PLP2917	Herb	-	F, S
<i>Artemisia mryantha</i> Wall. ex Besser	PLP2591	Herb	-	Katgaon
<i>Artemisia nilagirica</i> (C.B. Clarke) Pamp.	PLP4067	Herb	-	F, G, S
<i>Artemisia parviflora</i> D. Don	PLP2981	Herb	-	S
<i>Artemisia persica</i> Boiss.	PLP2637	Herb	-	Boktu, Sangla
<i>Artemisia roxburghiana</i> Wall. ex Besser (Syn. <i>A. stronglylocephala</i> Pamp.)	PLP3032	Herb	Endemic	F, GA, S
<i>Artemisia scoparia</i> Waldst and Kitam.	PLP8439	Herb	-	F
<i>Artemisia tournefortiana</i> Rchb.	PLP4394	Herb	-	S

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
<i>Artemisia vestita</i> Wall. ex Besser	PLP2575	Herb	-	F, G, S
<i>Aster albescens</i> (DC.) Wall. ex Hand.-Mazz.	PLP6300	Herb	-	F
<i>Aster falconeri</i> (C.B. Clarke) Hutch.	PLP3231	Herb	Endemic	F
<i>Aster molliusculus</i> (Lindl. ex DC.) C.B. Clarke	PLP11230	Herb	-	GA
<i>Bidens biternata</i> (Lour.) Merr. and Shreff.	PLP3592	Herb	-	F
<i>Bidens pilosa</i> L.	PLP8589	Herb	-	S
<i>Blumea axillaris</i> (Lam.) DC. (Syn. <i>B. mollis</i> (D.Don) Merr.)	PLP9804	Herb	-	Charang
<i>Blumea laciniata</i> (Wall. ex Roxb.) DC.	PLP3575	Herb	-	F, S
<i>Blumea membranacea</i> DC.	PLP3656	Herb	-	Yangpa
<i>Brachyactis pubescens</i> Aitch. and C. B. Clarke	PLP11222	Herb	-	GA
<i>Brachyactis robusta</i> Benth.	PLP9401	Herb	-	Kharogla
<i>Carduus edelbergii</i> Rech. f	PLP7764	Herb	-	Ponda
<i>Carduus onopordioides</i> Fisch. ex M. Bieb.	PLP2903	Herb	-	Ropa
<i>Carpesium nepalense</i> Less.	PLP3580	Herb	Endemic	F
<i>Cephalorhynchus macrorrhizus</i> (Royle) Tuisl (Syn. <i>Lactuca macrorrhiza</i> (Royle) Hook. f.)	PLP6339	Herb	-	F, G, GA
<i>Cirsium arvense</i> (L.) Scop. (Syn. <i>Breea arvensis</i> (L.) Less.)	PLP3234	Herb	-	F, G, S
<i>Cirsium wallichii</i> DC.	PLP2519	Herb	Endemic	F, GA, S
<i>Conyza bonariensis</i> (L.) Cronquist (Syn. <i>E. bonariensis</i> L.)	PLP6374	Herb	-	S
<i>Conyza canadensis</i> (L.) Cronquist (Syn. <i>Erigeron canadensis</i> L.)	PLP3605	Herb	-	F
<i>Conyza stricta</i> Willd.	PLP3113	Herb	-	F
<i>Cousinia thomsonii</i> C.B. Clarke	PLP9795	Herb	-	S
<i>Cremanthodium arnicoides</i> (DC. ex Royle) R.D. Good.	PLP9479	Herb	-	GA
<i>Crepis flexuosa</i> (Ledeb.) Benth. ex C.B. Clarke	PLP3125	Herb	-	G
<i>Crepis multicaulis</i> Ledeb.	PLP2989	Herb	-	F, S
<i>Emilia sonchifolia</i> (L.) DC. ex DC.	PLP7739	Herb	-	Ponda
<i>Erigeron alpinus</i> L.	PLP3653	Herb	-	F
<i>Erigeron annuus</i> (L.) Pers.	PLP7947	Herb	-	Solding
<i>Erigeron borealis</i> (Vierh.) Simmons	PLP4393	Herb	-	S
<i>Erigeron multiradiatus</i> (Lindl ex DC.) Benth. ex C.B. Clarke	PLP6396	Herb	-	F, S
<i>Erigeron umbrosus</i> (Kar. and Kir.) Boiss. (Syn. <i>Brachyactis roylei</i> (DC.) Wendelbo)	PLP7494	Herb	-	GA
<i>Filago hurdwarica</i> (Wall. ex DC.) Wagenitz	PLP2657	Herb	-	F
<i>Galinsoga ciliata</i> (Raf.) S.F. Blake	PLP2992	Herb	-	Kharogla
<i>Galinsoga parviflora</i> Cav.	PLP7747	Herb	-	F
<i>Gerbera gossypina</i> (Royle) Beauverd	PLP2619	Herb	-	Bhabhanagar
<i>Gnaphalium affine</i> D. Don	PLP7950	Herb	-	F, G
<i>Gynura bicolor</i> (Roxb. ex Willd.) DC.	PLP2647	Herb	-	Chaura
<i>Helichrysum luteoalbum</i> (L.) Rchb. (Syn. <i>Gnaphalium luteoalbum</i> L.)	PLP7985	Herb	-	F
<i>Heteropappus altaicus</i> (Willd.) Novopokr.	PLP2912	Herb	-	Moorang
<i>Inula cappa</i> (Buch.-Ham. ex D.Don) DC.	PLP7607	Herb	-	F
<i>Inula orientalis</i> Lam. (Syn. <i>I. grandiflora</i> Willd.)	PLP3144	Herb	-	F
<i>Jurinea ceratocarpa</i> (Decne.) Benth.	PLP2654	Herb	-	GA
<i>Jurinea dolomiaea</i> Boiss.	PLP3194	Herb	Vulnerable	GA
<i>Lactuca dissecta</i> D. Don	PLP2510	Herb	-	F, GA, S
<i>Lactuca dolichophylla</i> Kitam.	PLP3171	Herb	Endemic	Hoye, Kara
<i>Lactuca orientalis</i> (Boiss.) Boiss.	PLP2883	Herb	-	F, S
<i>Launaea asplenifolia</i> Hook. f.	PLP11319	Herb	-	Bhabhanagar
<i>Launaea procumbens</i> (Roxb.) Ramayya and Rajagopal	PLP2659	Herb	-	Bhabhanagar, Nichar
<i>Leontopodium alpinum</i> Colm. ex Cass.	PLP6277	Herb	-	S, GA
<i>Leontopodium brachyactis</i> Gand.	PLP2558	Herb	-	GA
<i>Leontopodium monocephalum</i> Edgew. (Syn. <i>L. fimbrilligerum</i> J.R. Drumm.)	PLP2704	Herb	-	GA
<i>Leucanthemum vulgare</i> (Vaill.) Lam. (Syn. <i>Chrysanthemum leucanthemum</i> L.)	PLP7930	Herb	-	Bhabhanagar
<i>Ligularia</i> sp.	PLP6247	Herb	-	Surchoo
<i>Myriactis nepalensis</i> Less.	PLP3655	Herb	-	F, GA
<i>Myriactis wallichii</i> Less.	PLP5046	Herb	Endemic	F, GA
<i>Pentanema indicum</i> (L.) Ling	PLP3558	Herb	-	Katgaon

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
<i>Picris angustifolia</i> subsp. <i>angustifolia</i> (Syn. <i>P. hieracioides</i> L.)	PLP9800	Herb	-	Charang
<i>Prenanthes brunoniana</i> Wall. ex DC.	PLP3610	Herb	-	F
<i>Prenanthes violaeifolia</i> Decne.	PLP6395	Herb	-	F
<i>Saussurea albescens</i> (DC.) Sch.Bip.	PLP2598	Herb	-	F
<i>Saussurea auriculata</i> (DC.) Sch.Bip. (Syn. <i>S. hypoleuca</i> Spreng. ex DC.)	PLP3157	Herb	-	Homte
<i>Saussurea caespitosa</i> Wall.	PLP3296	Herb	Endemic	GA
<i>Saussurea ceratocarpa</i> Decne.	PLP9838	Herb	Endemic	GA
<i>Saussurea costus</i> (Falc.) Lipsch.	PLP9810	Herb	Endemic and Endangered	Charang
<i>Saussurea glanduligera</i> Sch.Bip.	PLP11340	Herb	Endemic	Urni
<i>Saussurea heteromalla</i> (D.Don) Hand.-Mazz.	PLP2563	Herb	-	F
<i>Saussurea jacea</i> (Kl.) C.B. Clarke	PLP5003	Herb	-	Yangthang
<i>Saussurea obovallata</i> (DC.) Edgew.	PLP3256	Herb	Vulnerable	GA
<i>Saussurea roylei</i> C.B. Clarke	PLP9831	Herb	Indeterminate	Kafnu
<i>Saussurea simpsoniana</i> (Fielding and Gardner) Lipsch.	PLP3257	Herb	-	GA
<i>Saussurea taraxacifolia</i> Wall. ex DC.	PLP9868	Herb	-	GA
<i>Scorzonera virgata</i> DC.	PLP9707	Herb	-	F, GA
<i>Senecio desfontainei</i> Druce	PLP2582	Herb	-	G, S
<i>Senecio graciliflorus</i> DC.	PLP3625	Herb	-	Karaba, Hoye
<i>Senecio kashmerianus</i> Balakr.	PLP2553	Herb	-	Ribba
<i>Senecio krashennikovii</i> Schisch.	PLP2553	Herb	-	F
<i>Senecio kunthianus</i> (Wall. ex DC.) Jeff. and Chenn.	PLP9488	Herb	-	G
<i>Senecio laetus</i> Edgew. (Syn. <i>S. chrysanthemoides</i> DC.)	PLP3293	Herb	-	F, GA, S
<i>Senecio nudicaulis</i> Buch.-Ham ex D. Don	PLP2556	Herb	-	Bhabhanagar
<i>Senecio rufinervis</i> DC.	PLP2750	Herb	-	Nichar
<i>Serratula pallida</i> DC.	PLP3005	Herb	Endemic	Charang
<i>Siegesbeckia orientalis</i> L.	PLP3573	Herb	-	F
<i>Solidago virga-aurea</i> L.	PLP3247	Herb	-	F, GA
<i>Sonchus oleraceus</i> (L.) L.	PLP7748	Herb	-	F, S
<i>Sonchus wightianus</i> DC.	PLP6365	Herb	-	Chaura
<i>Tagetes minuta</i> L.	PLP2537	Herb	-	F, S
<i>Tanacetum dolichophyllum</i> (Kitam.) Kitam.	PLP3280	Herb	-	GA
<i>Taraxacum officinale</i> Webb.	PLP2532	Herb	-	F, G, GA, S
<i>Tragopogon gracilis</i> D. Don	PLP2571	Herb	-	G
<i>Tricholepis elongata</i> DC.	PLP2579	Herb	Endemic	F, G, S
<i>Waldheimia glabra</i> (Decne.) Regel	PLP3290	Herb	-	GA
<i>Waldheimia tomentosa</i> (Decne.) Regel	PLP3311	Herb	-	GA
<i>Xanthium strumarium</i> L.	PLP3011	Herb	-	Tapri
Convolvulaceae				
<i>Convolvulus arvensis</i> L.	PLP2897	Climber	-	Sunnam
<i>Cuscuta campestris</i> Yunck.	PLP7766	Climber	-	Ponda
<i>Cuscuta chinensis</i> Lam.	PLP2879	Climber	-	Pooh
<i>Cuscuta reflexa</i> Roxb.	PLP3607	Climber	-	Ponda, Hoye, Chansu
<i>Ipomoea nil</i> (L.) Roth	PLP8481	Climber	-	F, S
<i>Ipomoea purpurea</i> (L.) Roth	PLP3597	Climber	-	Surchoo
Coriariaceae				
<i>Coriaria nepalensis</i> Wall.	PLP7627	Shrub	-	F
Cornaceae				
<i>Cornus capitata</i> Wall.	PLP3017	Tree	-	F
<i>Cornus macrophylla</i> Wall. (Syn. <i>Swida macrophylla</i> (Wall.) Soják)	PLP7772	Tree	-	F
Crassulaceae				
<i>Rhodiola heterodonta</i> (Hook. f. and Thomson) Boriss.	PLP2945	Herb	-	GA
<i>Rhodiola imbricata</i> Edgew.	PLP9843	Herb	Endemic	GA
<i>Sedum quadrifidum</i> Pall. (Syn. <i>Rhodiola quadrifida</i> (Pall.) Fisch. and C.A. Mey.)	PLP2944	Herb	-	G, GA
<i>Sedum roseum</i> (L.) Scop. (Syn. <i>Rhodiola rosea</i> L.)	PLP2931	Herb	-	G, GA
<i>Rhodiola tibetica</i> (Hook. f. and Thomson) S.H. Fu	PLP9835	Herb	-	GA

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
<i>Rhodiola wallichiana</i> (Hook.) S.H. Fu	PLP3308	Herb	-	GA
<i>Rosularia adenotricha</i> (Wall. ex Edgew.) C.-A. Jansson	PLP7903	Herb	-	GA
<i>Rosularia alpestris</i> (Kar. and Kir.) Boriss.	PLP3030	Herb	-	F, S
<i>Rosularia rosulata</i> (Edgew.) H. Ohba	PLP2865	Herb	-	Ribba, Kharogla
<i>Sedum ewersii</i> Ledeb. (Syn. <i>Hylotelephium ewersii</i> (Ledeb.) H. Ohba)	PLP9469	Herb	-	F, GA
<i>Sedum multicaule</i> Wall. and Lindl.	PLP3164	Herb	-	F
<i>Sedum oreades</i> (Decne.) Raym-Hamet	PLP3572	Herb	-	F
<i>Sedum trullipetalum</i> Hook. f. and Thomson	PLP6383	Herb	-	F, GA
<i>Sinocrassula indica</i> (Decne.) A. Berger	PLP2930	Herb	-	S
Cucurbitaceae				
<i>Herpetospermum pedunculatum</i> (Ser.) C.B. Clarke	PLP3618	Climber	-	Nichar
<i>Solena amplexicaulis</i> (Lam.) Gandhi (Syn. <i>Melothria heterophylla</i> (Lour.) Cogn.)	PLP3588	Climber	-	Surchoo
Cyperaceae				
<i>Carex cruenta</i> Nees	PLP11206	Sedge	-	GA
<i>Carex haematostoma</i> Nees	PLP6284	Sedge	Endemic	GA
<i>Carex muricata</i> L.	PLP2726	Sedge	-	GA
<i>Carex nivalis</i> Boott.	PLP9836	Sedge	-	GA
<i>Carex nubigena</i> D. Don ex Tilloch and Taylor	PLP8518	Sedge	-	F
<i>Carex setigera</i> D. Don	PLP2534	Sedge	-	F
<i>Carex wallichiana</i> Sprengel	PLP7457	Sedge	-	GA
<i>Cyperus alulatus</i> Kern.	PLP2770	Sedge	-	G
<i>Cyperus niveus</i> Retz.	PLP3104	Sedge	-	F
<i>Cyperus paniceus</i> (Rottb.) Boeckeler	PLP8413	Sedge	-	Bari, Nigulseri
<i>Echinochloa crusgalli</i> (L.) P. Beauv	PLP3596	Sedge	-	Surchoo
<i>Eriophorum comosum</i> (Wall.) Nees	PLP2630	Sedge	-	F
<i>Isolepis setacea</i> (L.) R. Br. (Syn. <i>Scirpus setaceus</i> L.)	PLP7464	Sedge	-	GA
<i>Isolepis cernua</i> (Vahl) Roem. and Schult. (Syn. <i>Scirpus cernuus</i> Vahl)	PLP7943	Sedge	-	Solding
<i>Kobresia nepalensis</i> (Nees) Kük.	PLP2803	Sedge	-	G
<i>Pycnus flavidus</i> (Retz.) T. Koyama (Syn. <i>Cyperus flavidus</i> Retz.)	PLP7935	Sedge	-	Solding
<i>Pycnus sanguinolentus</i> (Vahl) Nees (Syn. <i>Cyperus sanguinolentus</i> Vahl)	PLP7933	Sedge	-	Solding
Dioscoreaceae				
<i>Dioscorea deltoidea</i> Wall. ex Griseb.	PLP3150	Climber	Vulnerable	F, S
Droseraceae				
<i>Drosera peltata</i> Thunb.	PLP8502	Herb	-	F
Elaeagnaceae				
<i>Elaeagnus parvifolia</i> Wall. ex Royle	PLP3574	Shrub	-	Surchoo, Hoye, Akpa, Sangla, Katgaon
<i>Elaeagnus rhamnoides</i> (L.) A. Nelson (Syn. <i>Hippophae rhamnoides</i> L.)	PLP4400	Tree	-	F, S
<i>Hippophae salicifolia</i> D. Don	PLP2730	Tree	Endemic	S
<i>Hippophae tibetana</i> Schltdl.	PLP9807	Shrub	-	S
Ericaceae				
<i>Cassiope fastigiata</i> (Wall.) D. Don	PLP3278	Shrub	-	GA
<i>Gaultheria nummularoides</i> D. Don	PLP2710	Herb	-	F, S
<i>Gaultheria trichophylla</i> Royle	PLP2983	Herb	-	GA
<i>Lyonia ovalifolia</i> (Wall.) Drude	PLP7981	Tree	-	F
<i>Rhododendron anthopogon</i> D. Don	PLP3273	Shrub	Vulnerable	GA
<i>Rhododendron arboreum</i> Sm.	PLP7655	Tree	-	F
<i>Rhododendron campanulatum</i> D. Don	PLP7431	Shrub	-	F, GA, S
<i>Rhododendron lepidotum</i> Wall. ex G. Don	PLP2995	Shrub	-	GA
Euphorbiaceae				
<i>Euphorbia hispida</i> Boiss.	PLP3559	Herb	-	G
<i>Euphorbia maddenii</i> Boiss.	PLP2615	Herb	-	Surchoo, Sangla
<i>Euphorbia pilosa</i> L.	PLP6372	Herb	-	Pangi
Fagaceae				
<i>Quercus baloot</i> Grift.	PLP3010	Tree	Endemic	F

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
<i>Quercus floribunda</i> Lindl. f ex A. Camus (Syn. <i>Quercus dilatata</i> Lindl. ex A. DC.)	PLP2814	Tree	Endemic	F
<i>Quercus ilex</i> L.	PLP4078	Tree	-	F
<i>Quercus leucotrichophora</i> A. Camus	PLP4162	Tree	Endemic	F
<i>Quercus semecarpifolia</i> Sm.	PLP9689	Tree	-	F
Gentianaceae				
<i>Comastoma tenellum</i> (Rottb.) Toyok. (Syn. <i>Gentiana tenella</i> Rottb., <i>Gentianella tenella</i> (Rottb.) Börner)	PLP9473	Herb	-	GA
<i>Gentiana argentea</i> (Royle ex D. Don) Royle ex D. Don	PLP2773	Herb	-	G
<i>Gentiana capitata</i> Buch.-Ham ex D. Don (Syn. <i>G. marginata</i> Wall.)	PLP3297	Herb	-	GA
<i>Gentiana kurroo</i> Royle	PLP9841	Herb	-	GA
<i>Gentiana stipitata</i> Edgew.	PLP8969	Herb	-	GA
<i>Gentiana tianshanica</i> Rupr. ex Kusn.	PLP9824	Herb	-	GA
<i>Gentiana tubiflora</i> (G. Don) Griseb.	PLP3298	Herb	-	GA
<i>Gentiana venusta</i> (G. Don) Wall. ex Griseb.	PLP3284	Herb	-	GA
<i>Gentianella aurea</i> (L.) Harry Sm.	PLP7439	Herb	-	GA
<i>Gentianopsis detonsa</i> (Rottb.) Ma	PLP9784	Herb	-	GA
<i>Halenia elliptica</i> D. Don	PLP9430	Herb	-	Kharogla
<i>Lomatogonium carinthiacum</i> (Wulfen) Richb.	PLP9732	Herb	-	GA
<i>Lomatogonium spathulatum</i> (A. Kern) Fernald	PLP3285	Herb	-	GA
<i>Swertia angustifolia</i> Buch.-Ham ex D. Don	PLP7432	Herb	-	Karcham
<i>Swertia ciliata</i> (D. Don ex G. Don) B. L. Burtt	PLP3268	Herb	-	F, GA
<i>Swertia cordata</i> (Wall. ex G. Don) C.B. Clarke	PLP3226	Herb	-	GA
<i>Swertia petiolata</i> Royle ex D. Don	PLP3289	Herb	-	GA
<i>Swertia speciosa</i> D. Don	PLP9478	Herb	-	GA
Geraniaceae				
<i>Erodium cicutarium</i> (L.) L'Her.	PLP2641	Herb	-	S
<i>Geranium aconitifolium</i> L'Her.	PLP2521	Herb	-	Solding
<i>Geranium collinum</i> Stephan ex Willd.	PLP2962	Herb	-	F, S
<i>Geranium himalayense</i> Klotzsch	PLP3286	Herb	-	F, GA, S
<i>Geranium nepalense</i> Sweet	PLP11302	Herb	-	F, S, GA
<i>Geranium pratense</i> L.	PLP8421	Herb	-	F, GA
<i>Geranium robertianum</i> L.	PLP4070	Herb	-	Surchoo
<i>Geranium rotundifolium</i> L.	PLP2587	Herb	-	G, S
<i>Geranium sibiricum</i> L.	PLP3002	Herb	-	GA
<i>Geranium wallichianum</i> D. Don ex Sweet	PLP3181	Herb	-	F, G, GA, S
Grossulariaceae				
<i>Ribes alpestre</i> Wall. ex Decne.	PLP9782	Shrub	-	S
<i>Ribes orientale</i> Desf.	PLP6329	Shrub	-	S
Hydrangeaceae				
<i>Deutzia compacta</i> Craib	PLP9451	Shrub	-	Kharogla, Yangpa
<i>Deutzia staminea</i> R. Br. ex Wall.	PLP7793	Shrub	-	F
Hypericaceae				
<i>Hypericum elodeoides</i> Choisy	PLP7740	Shrub	-	Ponda
<i>Hypericum oblongifolium</i> Choisy	PLP2566	Shrub	-	Nigulseri
Hypoxidaceae				
<i>Hypoxis aurea</i> Lour.	PLP8503	Herb	-	Rupi
Iridaceae				
<i>Iris ensata</i> Thunb.	PLP2601	Herb	-	GA
<i>Iris hookeriana</i> Foster	PLP7728	Herb	Endemic	GA
Juglandaceae				
<i>Juglans regia</i> L.	PLP2755	Tree	Endemic	F
Juncaceae				
<i>Juncus articulatus</i> L.	PLP9428	Rush	-	Kharogla
<i>Juncus articulatus</i> subsp. <i>articulatus</i> (Syn. <i>J. lampocarpus</i> Ehrh. ex Hoffm.)	PLP4386	Rush	-	Hango
<i>Juncus himalensis</i> Klotzsch	PLP9796	Rush	-	GA
<i>Juncus thomsonii</i> Ten.	PLP2763	Rush	-	Chansu
Lamiaceae				

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
<i>Ajuga integrifolia</i> Buch.-Ham. (Syn. <i>A. bracteosa</i> Wall. ex Benth.)	PLP8544	Herb	-	F
<i>Ajuga parviflora</i> Benth.	PLP2552	Herb	-	F, G, S
<i>Clinopodium umbrosum</i> (M. Bieb.) Kuntze (Syn. <i>Calamintha umbrosa</i> (M. Bieb.) Fisch and C.A. Mey.)	PLP2697	Herb	-	F
<i>Clinopodium vulgare</i> L.	PLP2922	Herb	-	F, S
<i>Elsholtzia ciliata</i> (Thunb.) Hyl. (Syn. <i>E. cristata</i> Willd.)	PLP5043	Herb	-	F, S
<i>Elsholtzia eriostachya</i> (Benth.) Benth.	PLP9459	Herb	-	F, GA, S
<i>Elsholtzia fruticosa</i> (D. Don) Rehder	PLP2727	Shrub	-	F
<i>Elsholtzia pilosa</i> (Benth.) Benth.	PLP9444	Herb	-	F
<i>Elsholtzia strobilifera</i> (Benth.) Benth.	PLP9450	Herb	-	Kharogla
<i>Hyssopus officinalis</i> L.	PLP5001	Herb	-	S
<i>Isodon rugosus</i> (Wall. ex Benth.) Codd. (Syn. <i>Plectranthus rugosus</i> Wall. ex Benth.)	PLP2506	Shrub	-	F, S
<i>Lamium album</i> L.	PLP2764	Herb	-	Urni
<i>Leonurus cardiaca</i> L.	PLP3612	Herb	-	Hoye, Pangi, Chansu
<i>Leucas lanata</i> Benth.	PLP2742	Herb	-	Wangtoo
<i>Mentha longifolia</i> (L.) L.	PLP2518	Herb	-	F, G, S
<i>Micromeria biflora</i> (Buch.-Ham. ex D. Don) Benth.	PLP2583	Herb	-	F, G, S
<i>Nepeta discolor</i> Royle ex Benth.	PLP7483	Herb	Endemic	F, GA
<i>Nepeta erecta</i> (Royle ex Benth.) Benth.	PLP3007	Herb	Endemic	F, GA, S
<i>Nepeta eriostachya</i> Benth.	PLP3270	Herb	-	F, GA
<i>Nepeta floccosa</i> Benth.	PLP5005	Herb	Endemic	S
<i>Nepeta glutinosa</i> Benth.	PLP4389	Herb	-	GA, S
<i>Nepeta hindostana</i> (Roth.) Haines	PLP2570	Herb	-	Chetatang Tee
<i>Nepeta laevigata</i> (D. Don) Hand.-Mazz.	PLP6345	Herb	-	S
<i>Nepeta linearis</i> Royle ex Benth.	PLP11294	Herb	-	Sangla
<i>Nepeta nervosa</i> Royle ex Benth.	PLP3613	Herb	-	Hoye
<i>Nepeta podostachys</i> Benth.	PLP11294	Herb	-	F
<i>Ocimum americanum</i> L. (Syn. <i>O. canum</i> Sims.)	PLP2771	Herb	-	Sangla
<i>Origanum vulgare</i> L.	PLP2533	Herb	-	F, G, GA, S
<i>Phlomis bracteosa</i> Royle ex Benth.	PLP3201	Herb	-	GA
<i>Prunella vulgaris</i> L.	PLP3170	Herb	-	Solding, Rupi, Yangpa
<i>Salvia coccinea</i> Buc'hoz ex Etl.	PLP3195	Herb	-	GA
<i>Salvia moorcroftiana</i> Wall. ex Benth.	PLP2562	Herb	Endemic	F
<i>Salvia mukerjeei</i> Bennet and Raizada	PLP2581	Herb	-	F, G, S
<i>Salvia nubicola</i> Wall. ex Sweet	PLP2544	Herb	-	F, G, GA, S
<i>Scutellaria prostrata</i> Jacquem ex Benth.	PLP9822	Herb	-	GA
<i>Stachys melissaefolia</i> Benth.	PLP3249	Herb	-	F
<i>Stachys sericea</i> Cav.	PLP3393	Herb	Endemic	GA
<i>Thymus linearis</i> Benth.	PLP2567	Herb	-	F, G, GA, S
Leguminosae				
<i>Astracantha strobilifera</i> (Benth.) Podlech (Syn. <i>Astragalus strobiliferus</i> Benth.)	PLP2913	Herb	-	Leo, Moorang
<i>Astragalus amherstianus</i> Benth.	PLP9744	Herb	-	S
<i>Astragalus chlorostachys</i> Lindl.	PLP2776	Herb	-	Pangi
<i>Astragalus graveolens</i> Benth.	PLP2868	Herb	-	F, S
<i>Astragalus himalayanus</i> Klotzsch (Syn. <i>Astragalus maddenianus</i> Baker)	PLP9684	Shrub	Endemic	Kharogla
<i>Astragalus oplites</i> Benth. ex R. Parker	PLP9799	Shrub	Endemic	S
<i>Astragalus peduncularis</i> Royle	PLP9811	Herb	-	GA
<i>Astragalus rhizanthus</i> Benth.	PLP7484	Shrub	Endemic	F, GA, S
<i>Astragalus rhizanthus</i> subsp. <i>candolleanus</i> (Benth.) Podlech. (Syn. <i>Astragalus candolleanus</i> Benth.)	PLP2954	Herb	Endemic	F, GA, S
<i>Astragalus rhizanthus</i> subsp. <i>rhizanthus</i> Benth. (Syn. <i>Astragalus melacophyllus</i> Bunge)	PLP2966	Herb	-	F
<i>Caragana brevispora</i> Royle	PLP3659	Shrub	-	S
<i>Caragana gerardiana</i> Benth.	PLP4383	Shrub	Endemic	GA, S

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
<i>Chesneya cuneata</i> (Benth.) Ali	PLP6317	Herb	-	GA
<i>Colutea nepalensis</i> Sims	PLP2886	Shrub	-	S
<i>Desmodium elegans</i> DC.	PLP2573	Shrub	Endemic	F, G, S
<i>Desmodium multiflorum</i> DC. (Syn. <i>D. sambuense</i> (D. Don) DC.)	PLP8578	Shrub	-	Katgaon, Nigulseri
<i>Desmodium nutans</i> Wall.	PLP5051	Shrub	-	Rarang Panoong, Bhabhanagar
<i>Desmodium triflorum</i> (L.) DC.	PLP7723	Shrub	-	Katgaon
<i>Dolichos tenuicaulis</i> (Baker) Craib	PLP4377	Herb	-	Shudhrang
<i>Hedysarum microcalyx</i> Baker	PLP4119	Herb	Endemic	F
<i>Indigofera cedrorum</i> Dunn	PLP3547	Shrub	Endemic and Indeterminate	F, GA
<i>Indigofera dosua</i> D. Don	PLP3262	Herb	Endemic	F, GA
<i>Indigofera hebeptala</i> Baker	PLP3208	Shrub	-	S
<i>Indigofera heterantha</i> Brandis	PLP2585	Shrub	-	F
<i>Lathyrus emodi</i> (Fritch.) Ali	PLP3637	Herb	-	F, S
<i>Lespedeza elegans</i> Cambess.	PLP7468	Herb	-	Sharbo
<i>Lespedeza juncea</i> (L.f.) Pers.	PLP3029	Herb	-	F
<i>Lotus corniculatus</i> L.	PLP3647	Herb	-	F, GA
<i>Medicago falcata</i> L.	PLP4156	Herb	-	S
<i>Medicago lupulina</i> L.	PLP6257	Herb	-	Urni, Pangi
<i>Melilotus officinalis</i> (L.) Pall. (Syn. <i>Medicago officinalis</i> (L.) E.H.L.Krause)	PLP2783	Herb	-	F, S
<i>Medicago sativa</i> L.	PLP2906	Herb	-	S
<i>Oxytropis humifusa</i> Kar. and Kir.	PLP6265	Herb	-	GA
<i>Oxytropis mollis</i> Benth.	PLP2967	Herb	Endemic	F
<i>Parochetus communis</i> D. Don	PLP2778	Herb	-	Rekong Peo
<i>Phaseolus coccineus</i> L.	PLP7618	Herb	-	F
<i>Piptanthus nepalensis</i> (Hook.) D. Don	PLP9653	Shrub	-	Kharogla
<i>Pisum sativum</i> L.	PLP3624	Herb	-	Hoye
<i>Robinia pseudo-acacia</i> L.	PLP2502	Tree	-	F
<i>Sophora mollis</i> (Royle) Baker	PLP2554	Shrub	Endemic	F
<i>Thermopsis barbata</i> Benth.	PLP3190	Herb	-	F, GA
<i>Trifolium pratense</i> L.	PLP2789	Herb	-	F, G, GA
<i>Trifolium repens</i> L.	PLP2661	Herb	-	G, GA
<i>Trigonella emodi</i> Benth.	PLP2846	Herb	-	GA
<i>Medicago edgeworthii</i> Sirj. (Syn. <i>Trigonella pubescens</i> Baker)	PLP2803	Herb	Endemic	F
<i>Vicia bakeri</i> Ali	PLP2810	Herb	Endemic	Sangla
<i>Vicia faba</i> L.	PLP2765	Herb	-	Sangla
<i>Vicia hirsuta</i> (L.) Gray	PLP6292	Herb	-	Pangi
<i>Vicia pallida</i> Hook. and Arn.	PLP6246	Herb	-	Pangi, Sangla
<i>Vicia sativa</i> L.	PLP2593	Herb	-	F
<i>Vigna vexillata</i> (L.) A. Rich.	PLP3117	Herb	-	Rarang Panoong
Liliaceae		Herb	-	
<i>Gagea lutea</i> (L.) Ker.Gawl.	PLP2736	Herb	-	S
<i>Lilium polyphyllum</i> D. Don	PLP6301	Herb	-	Ralli
<i>Notholirion thomsonianum</i> (Royle) Stapf	PLP2561	Herb	-	Karcham
Linaceae				
<i>Linum perenne</i> L.	PLP4155	Herb	-	Chulling
<i>Reinwardtia indica</i> Dumort.	PLP2802	Shrub	-	Nigulseri
Malvaceae				
<i>Grewia optiva</i> J.R. Drumm. ex Burret	PLP2721	Tree	-	Sangla
<i>Malva neglecta</i> Wallr.	PLP3127	Herb	-	F, G, GA, S
<i>Malva pusilla</i> Sm. (Syn. <i>M. rotundifolia</i> L.)	PLP2751	Herb	-	Sangla
<i>Malva sylvestris</i> L.	PLP6348	Herb	-	Kalpa
<i>Malva verticillata</i> L.	PLP2809	Herb	-	Nichar
Melanthiaceae				
<i>Trillium govanianum</i> Wall. ex D. Don (Syn. <i>Trillidium govanianum</i> (Wall. ex D. Don) Kunth.	PLP3245	Herb	-	F, GA
Melastomataceae				

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
<i>Osbeckia stellata</i> Buch. -Ham. ex Ker.Gawl.	PLP2817	Shrub	-	Tapri
Meliaceae				
<i>Toona sinensis</i> (Juss.) M. Roem. (Syn. <i>T. serrata</i> (Royle) M. Roem.)	PLP2820	Tree	-	Sholtu
Menispermaceae				
<i>Cissampelos pariera</i> L.	PLP11216	Climber	-	Chaura
Moraceae				
<i>Ficus palmata</i> Forssk.	PLP2535	Tree	-	F, S
<i>Morus serrata</i> Roxb.	PLP11255	Tree	Endemic	Tapri
Nyctaginaceae				
<i>Boerhavia diffusa</i> L.	PLP5037	Herb	-	Pangi
<i>Oxybaphus himalaicus</i> Edgew.	PLP3120	Herb	-	F
Olacaceae				
<i>Olax scandens</i> Roxb.	PLP11284	Shrub	-	Karcham
Oleaceae				
<i>Fraxinus xanthoxyloides</i> (G. Don) Wall. ex A. DC.	PLP2888	Tree	Endemic	F, S
<i>Jasminum humile</i> L.	PLP6296	Shrub	-	F
<i>Olea cuspidata</i> Wall. ex G. Don	PLP2640	Tree	-	Sholtu
<i>Olea europaea</i> subsp. <i>cuspidata</i> (Wall. and G. Don) Cif. (Syn. <i>O. ferruginea</i> Royle)	PLP3036	Tree	-	F
<i>Syringa emodi</i> Wall. ex Royle	PLP9454	Shrub	-	F
Onagraceae				
<i>Circaea alpina</i> L.	PLP2955	Herb	-	GA
<i>Circaea alpina</i> subsp. <i>imaicola</i> (Asch. and Magnus) Kitam. (Syn. <i>Circaea imaicola</i> (Asch.-Magus) Hand.- Mazz.)	PLP8549	Herb	-	GA
<i>Epilobium angustifolium</i> L.	PLP9779	Herb	-	GA
<i>Epilobium chitralense</i> P.H. Raven	PLP3259	Herb	-	GA, S
<i>Epilobium cylindricum</i> D. Don	PLP3248	Herb	-	GA
<i>Epilobium hirsutum</i> L.	PLP3639	Herb	-	Yangpa
<i>Epilobium latifolium</i> L.	PLP3274	Herb	Endemic	F, GA
<i>Epilobium roseum</i> (Schreb.) Schreb.	PLP9490	Herb	-	F, GA
<i>Epilobium royleanum</i> Hausskn.	PLP8516	Herb	-	F
<i>Oenothera rosea</i> L'Her. ex Aiton	PLP7606	Herb	-	F
<i>Raimannia drummondii</i> Rose	PLP2919	Herb	-	Sering Chey
Orchidaceae				
<i>Calanthe plantaginea</i> Lindl.	PLP8591	Herb	-	Rupi
<i>Cephalanthera longifolia</i> (L.) Fritsch. (Syn. <i>C. ensifolia</i> Rich.)	PLP2985	Herb	-	Kharogla
<i>Dactylorhiza hatagirea</i> (D. Don) Soo	PLP3252	Herb	Critically Endangered	F, GA
<i>Epipactis gigantea</i> Douglas ex Hook.	PLP5040	Herb	-	F
<i>Epipactis helleborine</i> (L.) Crantz	PLP4128	Herb	-	F
<i>Epipactis helleborine</i> subsp. <i>Helleborine</i> (Syn. <i>Epipactis latifolia</i> (L.) All.)	PLP8512	Herb	-	F
<i>Epipactis veratrifolia</i> Boiss. and Hohen.	PLP9785	Herb	-	Shurting
<i>Goodyera repens</i> (L.) R. Br.	PLP9677	Herb	-	F
<i>Herminium lanceum</i> (Thunb. ex Sw.) Vuijkj	PLP3654	Herb	-	Yangpa
<i>Malaxis muscifera</i> (Lindl.) Kuntze.	PLP7962	Herb	-	Sangla
<i>Neottia listeroides</i> Lindl.	PLP9442	Herb	-	Kharogla
<i>Spiranthes sinensis</i> (Pers.) Ames.	PLP7955	Herb	-	Solding
Orobanchaceae				
<i>Euphrasia himalayica</i> Wettst.	PLP7447	Herb	-	F, GA
<i>Euphrasia platyphylla</i> Pennell	PLP9735	Herb	-	GA
<i>Leptorhabdos parviflora</i> (Benth.) Benth.	PLP3158	Herb	-	F, S
<i>Orobanche alba</i> Stephen	PLP2872	Herb	-	F, GA, S
<i>Orobanche epithymum</i> DC.	PLP3025	Herb	-	Hoye
<i>Pedicularis bicornuta</i> Klotzsch	PLP3163	Herb	Endemic	F
<i>Pedicularis longiflora</i> Rudolph	PLP3394	Herb	-	F, GA
<i>Pedicularis pectinata</i> Wall. ex Benth.	PLP3211	Herb	Endemic	GA
<i>Pedicularis porrecta</i> Wall.	PLP3153	Herb	-	F
<i>Pedicularis tenuirostris</i> Aitch.	PLP3004	Herb	Endemic	Kharogla

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
Oxalidaceae				
<i>Oxalis acetosella</i> L.	PLP9635	Herb	-	Sangla
<i>Oxalis corniculata</i> L.	PLP2578	Herb	-	F, G, S
Papaveraceae				
<i>Corydalis cashmeriana</i> Royle	PLP9848	Herb	-	GA
<i>Corydalis cornuta</i> Royle	PLP3235	Herb	-	F, GA
<i>Corydalis govaniana</i> Wall.	PLP3626	Herb	Endemic	Hoye
<i>Corydalis meifolia</i> Wall.	PLP3292	Herb	-	GA
<i>Corydalis moorcroftiana</i> Wall. ex Hook. f. and Thomson	PLP11300	Herb	-	F
<i>Corydalis vaginans</i> Royle (Syn. <i>C. ramosa</i> Hook. f. and Thomson)	PLP9743	Herb	-	GA
<i>Fumaria indica</i> (Haussk.) Pugsley	PLP2663	Herb	-	Karaba, Boktu
<i>Meconopsis aculeata</i> Royle	PLP3216	Herb	Endemic and Vulnerable	GA
<i>Papaver dubium</i> L.	PLP2596	Herb	-	Katgaon
<i>Papaver nudicaule</i> L.	PLP2767	Herb	-	Sangla
<i>Papaver somniferum</i> L.	PLP9806	Herb	-	F
Parnassiaceae				
<i>Parnassia laxmanii</i> Pall. ex Schult.	PLP3141	Herb	-	GA
<i>Parnassia nubicola</i> Wall. ex Royle	PLP8507	Herb	-	F
Phrymaceae				
<i>Lancea tibetica</i> Hook. f. and Thomson	PLP6327	Herb	-	Nako
<i>Mazus surculosus</i> D. Don	PLP7988	Herb	-	F
Phyllanthaceae				
<i>Leptopus cordifolius</i> Decne. (Syn. <i>Andrachne cordifolia</i> (Decne.) Müll. Arg.)	PLP2539	Shrub	-	Bhabhanagar
Phytolacaceae				
<i>Phytolacca acinosa</i> Roxb.	PLP9812	Herb	-	Nichar, Sangla
Piperaceae				
<i>Peperomia tetraphylla</i> (G. Forst.) Hook. and Arn.	PLP2687	Herb	-	Wangtoo
Plantaginaceae				
<i>Hemiphragma heterophyllum</i> Wall.	PLP7967	Herb	-	Rupi
<i>Hippuris vulgaris</i> L.	PLP7670	Herb	-	Rupi
<i>Picrorhiza kurrooa</i> Royle ex Benth.	PLP3255	Herb	Endemic and Endangered	GA
<i>Plantago depressa</i> Willd.	PLP2821	Herb	-	F, G, GA
<i>Plantago erosa</i> Wall.	PLP6242	Herb	-	Sangla
<i>Plantago himalaica</i> Pilg.	PLP2733	Herb	-	G, S
<i>Plantago major</i> L.	PLP2984	Herb	-	F
<i>Veronica agrestis</i> L.	PLP2785	Herb	-	Kuppa
<i>Veronica beccabunga</i> L.	PLP3272	Herb	-	GA
<i>Veronica biloba</i> L.	PLP2644	Herb	-	Kalpa
<i>Veronica hederifolia</i> L.	PLP2645	Herb	-	Rekong Peo
<i>Veronica lanosa</i> Royle ex Benth.	PLP7445	Herb	Endemic	GA
<i>Veronica persica</i> Poir.	PLP3381	Herb	-	Sangla
Poaceae				
<i>Agrostis canina</i> L.	PLP9801	Grass	-	GA
<i>Agrostis munroana</i> Aitch. and Hemsl.	PLP9649	Grass	Endemic	G
<i>Agrostis pilosula</i> Trin.	PLP11236	Grass	-	GA
<i>Alopecurus arundinaceus</i> Poir	PLP2804	Grass	-	G, S
<i>Andropogon munroi</i> C.B. Clarke	PLP2651	Grass	-	Katgaon, Kafnu
<i>Apluda mutica</i> L.	PLP2662	Grass	-	Urni
<i>Arundo donax</i> L.	PLP3556	Grass	-	S
<i>Brachypodium distachyon</i> (L.) P. Beauv.	PLP9665	Grass	-	GA
<i>Brachypodium sylvaticum</i> (Huds.) P. Beauv.	PLP2653	Grass	-	S
<i>Bromus arvensis</i> L.	PLP5032	Grass	-	F
<i>Bromus catharticus</i> Vahl (Syn. <i>B. uniloides</i> Kunth.)	PLP3033	Grass	-	Surchoo
<i>Bromus japonicus</i> Thunb.	PLP2652	Grass	-	Kalpa
<i>Bromus lanceolatus</i> Roth	PLP6320	Grass	-	Shyasu Khud
<i>Bromus pectinatus</i> Thunb.	PLP2592	Grass	-	F, GA, S

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
<i>Calamagrostis pseudophragmites</i> (Haller) Koeler	PLP3549	Grass	-	Kafnu, Kharogla
<i>Chrysopogon gryllus</i> (L.) Trin. (Syn. <i>C. echinulatus</i> (Nees) W. Watson)	PLP7993	Grass	-	F, GA
<i>Cymbopogon distans</i> (Nees ex Steud.) W. Watson	PLP2876	Grass	-	S
<i>Cymbopogon jawarancusa</i> (Jones) Schult	PLP2972	Grass	-	Rarang Panoong
<i>Cymbopogon martinii</i> (Roxb.) W. Watson	PLP8551	Grass	-	Katgaon
<i>Cymbopogon pospischilii</i> (K. Schum.) C.E. Hubb. (Syn. <i>C. stracheyi</i> (Hook. f.) Raizada and S.K. Jain)	PLP3105	Grass	-	F, S
<i>Cynodon dactylon</i> (L.) Pers.	PLP2540	Grass	-	F, G, S
<i>Dactylis glomerata</i> L.	PLP3586	Grass	-	F, G, GA
<i>Danthonia cachemyriana</i> Jaub. ex Spach.	PLP2520	Grass	-	GA
<i>Danthonia cumminsii</i> Hook. f. (Syn. <i>D. jacquemontii</i> Bor)	PLP9642	Grass	-	F, GA, G, S
<i>Digitaria ciliaris</i> (Retz.) Koeler (Syn. <i>Digitaria adscendens</i> (Kunth) Henrard)	PLP7449	Grass	-	F, GA, S
<i>Digitaria cruciata</i> (Nees) A. Camus	PLP3123	Grass	-	G, GA
<i>Digitaria stricta</i> Roth	PLP4109	Grass	-	F
<i>Elymus nutans</i> Griseb.	PLP9751	Grass	-	S
<i>Elymus semicostatus</i> (Nees ex Steud.) Melderis	PLP7941	Grass	-	S
<i>Festuca undata</i> Stapf	PLP3577	Grass	-	Surchoo
<i>Festuca valesiaca</i> Schleich. ex Gaudin	PLP3260	Grass	-	GA
<i>Helictotrichon junghuhnii</i> (Buse) Henrard (Syn. <i>H. virescens</i> (Nees ex Steud.) Henrard)	PLP2914	Grass	-	Sangla
<i>Heteropogon contortus</i> (L.) P. Beauv. ex Roem. and Schult	PLP4169	Grass	-	Nichar
<i>Imperata cylindrica</i> (L.) Raeusch.	PLP3310	Herb	-	G
<i>Koeleria royleana</i> (L.) Pers.	PLP7486	Grass	-	S
<i>Koeleria macrantha</i> (Ledeb.) Schultes	PLP2909	Grass	-	Moorang
<i>Koeleria pyramidata</i> (Lam.) P. Beauv. (Syn. <i>K. cristata</i> (L.) Pers.)	PLP2624	Grass	-	F, GA, S
<i>Melica persica</i> Kunth	PLP9789	Grass	-	S
<i>Microstegium nudum</i> (Trin.) A. Camus	PLP7960	Grass	-	Solding
<i>Muhlenbergia duthieana</i> Hack.	PLP9415	Grass	-	GA
<i>Muhlenbergia himalayensis</i> Hack. ex Hook. f.	PLP6224	Grass	-	F
<i>Neyraudia arundinacea</i> (L.) Henr.	PLP6367	Grass	-	S
<i>Oplismenus compositus</i> (L.) P. Beauv.	PLP7609	Grass	-	F, S
<i>Oryzopsis aequilum</i> Duthie ex Hook. f.	PLP7497	Grass	-	F, GA
<i>Oryzopsis munroi</i> Stapf ex Hook. f.	PLP5029	Grass	-	F, S
<i>Oryzopsis vicaria</i> Grig. (Syn. <i>O. microcarpa</i> Pilg., <i>Piptatherum microcarpum</i> (Pilg.) Tzvelev)	PLP3183	Grass	-	Mulling, Jangi
<i>Pennisetum flaccidum</i> Griseb.	PLP3551	Grass	-	F, G
<i>Pennisetum glaucum</i> (L.) R. Br. (Syn. <i>Setaria glauca</i> (L.) P. Beauv.)	PLP8464	Grass	-	F
<i>Pennisetum lanatum</i> Klotzsch	PLP2861	Grass	-	F, GA, S
<i>Pennisetum orientale</i> Rich.	PLP6381	Grass	-	Bhabhanagar, Katgaon
<i>Phacelurus speciosus</i> (Steud.) C.E. Hubb	PLP2775	Grass	-	Urni
<i>Phleum alpinum</i> L.	PLP3193	Grass	-	GA
<i>Phleum himalaicum</i> Mez	PLP11335	Grass	-	F
<i>Phragmites karka</i> (Retz.) Trin. ex Steud.	PLP2514	Grass	-	F
<i>Poa annua</i> L.	PLP8545	Grass	-	F
<i>Poa polycolia</i> Stapf	PLP6248	Grass	-	F
<i>Poa supina</i> Schrad.	PLP7462	Grass	-	F
<i>Polypogon fugax</i> Nees ex Steud.	PLP7615	Grass	-	F
<i>Saccharum filifolium</i> Steud.	PLP2837	Grass	-	Sangla
<i>Schizachyrium exile</i> (Hochst.) Pilg.	PLP2572	Grass	-	F, G
<i>Setaria pumila</i> (Poir.) Roem and Schult.	PLP3569	Grass	-	F
<i>Setaria viridis</i> (L.) P. Beauv.	PLP2827	Grass	-	Kafnu
<i>Stipa brandisii</i> Mez	PLP5044	Grass	-	F
<i>Themeda anathera</i> (Nees ex Steud.) Hack.	PLP3019	Grass	-	F
<i>Themeda arundinacea</i> (Roxb.) A. Camus	PLP3568	Grass	-	F, GA
<i>Themeda triandra</i> Forssk.	PLP2612	Grass	-	G
<i>Trisetum klarkei</i> (Hook. f.) R.R. Stewart	PLP7414	Grass	-	F, GA
<i>Trisetum spicatum</i> (L.) K. Richt.	PLP3192	Grass	-	F, GA

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
Polemoniaceae				
<i>Polemonium caeruleum</i> L.	PLP3395	Herb	-	Chansu
Polygalaceae				
<i>Polygala hottentotta</i> C. Presl (Syn. <i>P. abyssinica</i> R. Br. ex Fresen.)	PLP2716	Herb	-	Wangtoo
Polygonaceae				
<i>Bistorta vacciniifolia</i> (Wall. ex Meisn.) Greene (Syn. <i>Polygonum vacciniifolia</i>)	PLP9605	Herb	-	GA
<i>Fagopyrum esculentum</i> Moench	PLP2597	Herb	-	F, S
<i>Fagopyrum tataricum</i> (L.) Gaertn.	PLP2757	Herb	-	Sangla
<i>Fallopia convolvulus</i> (L.) Á Löve (Syn. <i>Polygonum convolvulus</i> L.)	PLP2689	Climber	-	F
<i>Fallopia dumetorum</i> (L.) Holub (Syn. <i>Polygonum dumetorum</i> L.)	PLP9619	Herb	-	F
<i>Oxyria digyna</i> (L.) Hill	PLP3221	Herb	-	F, GA, S
<i>Persicaria amplexicaulis</i> (D. Don) Ronse Decr. (Syn. <i>Polygonum amplexicaule</i> D. Don)	PLP2549	Herb	-	F
<i>Persicaria capitata</i> (Buch.-Ham. ex D. Don) H. Gross (Syn. <i>Polygonum capitatum</i> Buch.-Ham. ex D. Don)	PLP6239	Herb	-	F
<i>Persicaria hydropiper</i> (L.) Delarbre (Syn. <i>Polygonum hydropiper</i> L.)	PLP3638	Herb	-	F
<i>Persicaria nepalensis</i> (Meisn.) Miyabe (Syn. <i>Polygonum nepalense</i> Meisn.)	PLP7964	Herb	-	F
<i>Persicaria vivipara</i> (L.) Ronse Decr. (Syn. <i>Polygonum viviparum</i> L.)	PLP2971	Herb	-	F, GA, S
<i>Persicaria wallichii</i> Greuter and Burdet (Syn. <i>Polygonum polystachyum</i> Wall. ex Meisn.)	PLP3138	Shrub	-	F, GA
<i>Polygonum affine</i> D. Don	PLP3142	Herb	-	GA
<i>Polygonum aviculare</i> L.	PLP3589	Herb	-	F, G, GA, S
<i>Polygonum cognatum</i> Meisn.	PLP9790	Herb	-	S
<i>Polygonum glaciale</i> var. <i>glaciale</i> (Syn. <i>P. glaciale</i> (Meisn.) Hook. f.)	PLP3602	Herb	-	Katgaon
<i>Polygonum molliforme</i> Boiss.	PLP6312	Herb	-	S
<i>Polygonum paronychioides</i> C.A. Mey.	PLP2881	Herb	Endemic	F, G, S
<i>Polygonum plebeium</i> R. Br.	PLP3557	Herb	-	S
<i>Polygonum pubescens</i> Blume (Syn. <i>Persicaria pubescens</i> (Blume) Hara)	PLP7641	Herb	-	F
<i>Polygonum somdevae</i> Aswal and Mehrotra	PLP3388	Shrub	-	GA
<i>Polygonum tortuosum</i> D. Don	PLP3315	Herb	-	GA, S
<i>Polygonum rothboelliioides</i> Jaub. and Spach (Syn. <i>P. tubulosum</i> Boiss.)	PLP3018	Herb	-	F, GA
<i>Rheum australe</i> D. Don	PLP2673	Herb	Vulnerable	F, GA
<i>Rheum webbianum</i> Royle.	PLP6280	Herb	Endemic	GA
<i>Rumex acetosa</i> L.	PLP9472	Herb	-	Chansu
<i>Rumex hastatus</i> D. Don	PLP2541	Herb	-	G
<i>Rumex nepalensis</i> Spreng.	PLP2895	Herb	-	F, G, GA, S
<i>Rumex patientia</i> subsp. <i>orientalis</i> (Bernh. ex Schult. and Schult. f.) Danser (Syn. <i>R. orientalis</i> Benth. ex Schult. and Schult. f.)	PLP6338	Herb	-	GA
Portulacaceae				
<i>Portulaca oleracea</i> L.	PLP3118	Herb	-	F
Primulaceae				
<i>Androsace globifera</i> Duby	PLP3294	Herb	-	GA
<i>Androsace lanuginosa</i> Wall.	PLP3136	Herb	-	F, GA
<i>Androsace rotundifolia</i> Hardw.	PLP7661	Herb	-	F
<i>Androsace sarmentosa</i> Wall.	PLP4106	Herb	-	Rupi, Kharogla
<i>Myrsine africana</i> L.	PLP2921	Shrub	-	Bhabhanagar
<i>Primula denticulata</i> Sm.	PLP2806	Herb	-	GA
<i>Primula floribunda</i> Wall.	PLP2569	Herb	Endemic	G
<i>Primula macrophylla</i> D. Don	PLP9847	Herb	-	GA
<i>Primula sessilis</i> Royle ex Craib	PLP3034	Herb	Endemic	Sangla
Ranunculaceae				
<i>Aconitum heterophyllum</i> Wall. ex Royle	PLP3215	Herb	Endemic and Endangered	GA
<i>Aconitum rotundifolium</i> Kar and Kir	PLP11260	Herb	-	GA
<i>Aconitum violaceum</i> Jacquem ex Stapf	PLP3288	Herb	Endemic and Vulnerable	GA
<i>Adonis aestivalis</i> L.	PLP2719	Herb	-	F, S
<i>Anemone obtusifolia</i> D. Don	PLP7656	Herb	-	F

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
<i>Anemone rivularis</i> Buch.-Ham. ex DC.	PLP3140	Herb	-	F, GA
<i>Aquilegia fragrans</i> Benth.	PLP3617	Herb	Endemic	F, S
<i>Aquilegia pubiflora</i> Wall. ex Royle	PLP2937	Herb	-	F
<i>Caltha palustris</i> L.	PLP3242	Herb	-	GA
<i>Ceratocephala falcata</i> (L.) Pers. (Syn. <i>Ranunculus falcatus</i> L.)	PLP2656	Herb	-	Rekong Peo, Sangla
<i>Clematis buchananiana</i> DC.	PLP7731	Climber	-	Ponda
<i>Clematis connata</i> DC.	PLP3609	Climber	-	Hoye
<i>Clematis grata</i> Wall.	PLP3151	Climber	-	F, S
<i>Clematis montana</i> Buch.-Ham. ex DC.	PLP4122	Climber	-	F
<i>Clematis orientalis</i> L.	PLP2896	Climber	Endemic	S
<i>Delphinium brunonianum</i> Royle	PLP3291	Herb	-	GA
<i>Delphinium cashemirianum</i> Royle	PLP3630	Herb	Endemic	GA
<i>Delphinium denudatum</i> Wall. ex Hook. f. and Thomson	PLP2616	Herb	Endemic	F
<i>Delphinium vestitum</i> Wall. ex Royle	PLP9463	Herb	Endemic	GA
<i>Ranunculus brotherusii</i> Freyn.	PLP2940	Herb	-	F
<i>Ranunculus hirtellus</i> Royle	PLP4124	Herb	-	F, GA
<i>Ranunculus distans</i> Royle (Syn. <i>R. laetus</i> Wall. ex Royle)	PLP3642	Herb	-	F
<i>Thalictrum chelidonii</i> DC.	PLP2855	Herb	-	Katgaon, Ribba
<i>Thalictrum cultratum</i> Wall.	PLP5036	Herb	-	F, GA
<i>Thalictrum foetidum</i> L.	PLP11363	Herb	-	F
<i>Thalictrum foliolosum</i> DC.	PLP2717	Herb	-	F, G, S
<i>Thalictrum minus</i> L.	PLP6331	Herb	Endemic	F, GA, S
<i>Thalictrum pauciflorum</i> Royle	PLP4384	Herb	-	F
<i>Thalictrum platycarpum</i> (Trel.) Greene	PLP2836	Herb	-	F, GA
<i>Thalictrum reniforme</i> Wall.	PLP4057	Herb	-	F
Rhamnaceae				
<i>Rhamnus triquetra</i> (Wall.) Brandis	PLP2723	Tree	-	F
<i>Rhamnus virgata</i> Roxb.	PLP7785	Tree	-	F
<i>Sageretia thea</i> var. <i>thea</i> (Syn. <i>S. theezans</i> (L.) Brongn.)	PLP2528	Shrub	-	F
Rosaceae				
<i>Acomastylis elata</i> (Wall. ex G. Don) F. Bolle (Syn. <i>Geum elatum</i> Wall. ex G. Don)	PLP3269	Herb	Endemic	F, GA
<i>Agrimonia aitchisonii</i> Schonbeck-Temesy	PLP8410	Herb	-	Nigulseri, Rupi
<i>Agrimonia pilosa</i> Ledeb.	PLP9614	Herb	-	GA
<i>Cerasus cerasoides</i> (Buch.-Ham. ex D. Don) S.Y. Sokolov (Syn. <i>Prunus cerasoides</i> Buch.-Ham. ex D. Don)	PLP7913	Tree	-	Kalpa
<i>Cotoneaster acuminatus</i> Lindl.	PLP9446	Shrub	-	Kharogla
<i>Cotoneaster affinis</i> Lindl.	PLP2884	Shrub	-	Pooh
<i>Cotoneaster bacillaris</i> Wall. ex Lindl.	PLP9688	Shrub	-	Kharogla
<i>Cotoneaster falconeri</i> Klotz	PLP3143	Shrub	-	F, GA
<i>Cotoneaster gilgitensis</i> Klotz	PLP2910	Shrub	-	S
<i>Cotoneaster microphyllus</i> Wall. ex Lindl.	PLP7498	Shrub	-	GA
<i>Cotoneaster obovata</i> Wall. ex Dunn	PLP4117	Shrub	Endemic	F
<i>Cotoneaster rotundifolius</i> Wall. ex Lindl.	PLP6259	Shrub	-	Sangla
<i>Cotoneaster schubertii</i> Klotz	PLP4092	Shrub	-	F
<i>Crataegus curvisepala</i> Lindm. (Syn. <i>C. oxyacantha</i> L.)	PLP7919	Tree	-	Kalpa
<i>Duchesnea indica</i> (Andrews) Focke (Syn. <i>Fragaria indica</i> Andrews)	PLP2698	Herb	-	F
<i>Filipendula vestita</i> (Wall. ex G. Don) Maxim.	PLP3204	Herb	-	F, GA
<i>Fragaria nubicola</i> (Hook. f.) Lindl. ex Lacaita	PLP2545	Herb	-	F, GA, S
<i>Fragaria vesca</i> L.	PLP4069	Herb	-	F, S
<i>Geum roylei</i> F. Bolle	PLP3657	Herb	-	Yangpa
<i>Geum urbanum</i> L.	PLP4068	Herb	-	Surchoo
<i>Malus pumila</i> Mill. (Syn. <i>Pyrus malus</i> L.)	PLP3585	Tree	-	F
<i>Padus cornuta</i> (Wall. ex Royle) Carrière (Syn. <i>Prunus cornuta</i> (Wall. ex Royle) Steud.)	PLP3165	Tree	-	F
<i>Photinia nussia</i> (Buch.-Ham ex D. Don) Kalkman	PLP3608	Tree	-	Hoye

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
<i>Potentilla anserina</i> L.	PLP6342	Herb	-	Nako
<i>Potentilla argyrophylla</i> Wall. ex Lehm.	PLP3258	Herb	-	F, GA, S
<i>Potentilla atrosanguinea</i> Lodd., G. Lodd. and W. Lodd.	PLP2948	Herb	-	F, G, GA
<i>Potentilla bifurca</i> L.	PLP3109	Herb	-	G, GA
<i>Potentilla cuneata</i> Wall. ex Lehm.	PLP9604	Herb	-	GA
<i>Potentilla cuneifolia</i> (Rydb.) Th. Wolf	PLP2961	Herb	-	GA
<i>Potentilla fragarioides</i> L.	PLP2739	Herb	-	S
<i>Potentilla fruticosa</i> var. <i>arbuscula</i> (D. Don) Maxim. (Syn. <i>P. arbuscula</i> D. Don)	PLP9814	Herb	-	GA
<i>Potentilla gerardiana</i> Lindl. ex Lehmann	PLP11316	Herb	-	Bhabhanagar
<i>Potentilla leucochroa</i> Lindl.	PLP2580	Herb	-	F, G
<i>Potentilla multifida</i> L.	PLP6344	Herb	Endemic	Nako
<i>Potentilla nepalensis</i> Hook.	PLP3214	Herb	-	F, GA
<i>Potentilla parviflora</i> Desf.	PLP6397	Herb	-	F, GA
<i>Potentilla sundaica</i> Kuntze	PLP3222	Herb	-	F, GA
<i>Prinsepia utilis</i> Royle	PLP2505	Shrub	-	F, S
<i>Prunus amygdalus</i> Batsch (Syn. <i>P. communis</i> (L.) Arcang)	PLP5020	Tree	-	F
<i>Prunus armeniaca</i> L.	PLP2747	Tree	-	Sangla, Nigani
<i>Prunus domestica</i> L.	PLP2746	Tree	-	Sangla
<i>Prunus persica</i> (L.) Stokes	PLP2715	Tree	-	S
<i>Pyrus pashia</i> Buch.-Ham ex D. Don	PLP7758	Tree	-	F
<i>Rosa brunonii</i> Lindl.	PLP7643	Shrub	-	F
<i>Rosa cymosa</i> Tratt. (Syn. <i>R. indica</i> L.)	PLP5049	Shrub	-	F
<i>Rosa macrophylla</i> Lindl.	PLP2794	Shrub	Endemic	F, GA, S
<i>Rosa sericea</i> Lindl.	PLP4062	Shrub	-	Katgaon
<i>Rosa webbiana</i> Wall. ex Royle	PLP2875	Shrub	-	F, S
<i>Rubus biflorus</i> Buch.-Ham. ex Sm.	PLP7782	Shrub	-	Katgaon
<i>Rubus ellipticus</i> Sm.	PLP7651	Shrub	-	F
<i>Rubus irritans</i> Focke (Syn. <i>R. purpureus</i> Bunge ex Hook. f.)	PLP2722	Shrub	-	F, GA
<i>Rubus niveus</i> Thunb. (Syn. <i>R. foliolosus</i> D. Don)	PLP7625	Shrub	-	F
<i>Rubus paniculatus</i> Sm.	PLP4113	Climber	-	Sangla
<i>Sibbaldia cuneata</i> Hornem. ex Kuntze	PLP6278	Herb	-	GA
<i>Sibbaldia parviflora</i> Willd.	PLP3182	Herb	-	G, GA
<i>Sorbaria tomentosa</i> (Lindl.) Rehder	PLP2724	Shrub	-	F
<i>Sorbus lanata</i> (Don) Schauer	PLP7421	Shrub	-	Homte
<i>Spiraea canescens</i> D. Don	PLP7434	Shrub	-	F, S
Rubiaceae				
<i>Agrostemma verticillatum</i> L.	PLP2738	Herb	-	Wangtoo
<i>Asperula oppositifolia</i> Regel and Schmalh.	PLP9775	Herb	-	GA
<i>Galium aparine</i> L.	PLP3387	Climber	-	F, G, GA, S
<i>Galium asperifolium</i> Wall.	PLP7695	Climber	-	S
<i>Galium asperuloides</i> Edgew.	PLP3236	Climber	-	F
<i>Galium elegans</i> Wall. ex Roxb. (Syn. <i>Galium vestitum</i> D. Don)	PLP8428	Climber	-	F
<i>Galium serpylloides</i> Royle ex Hook. f.	PLP9730	Climber	-	GA, S
<i>Galium verum</i> L.	PLP3197	Herb	-	F, GA
<i>Leptodermis lanceolata</i> Wall.	PLP7908	Shrub	-	Ponda
<i>Rubia cordifolia</i> L.	PLP3601	Climber	-	F, S
Rutaceae				
<i>Boenninghausenia albiflora</i> (Hook.) Rchb. ex Meisn.	PLP7768	Herb	-	Chaura
<i>Dictamnus albus</i> L.	PLP7737	Herb	-	Pangi
<i>Skimmia anquetilia</i> N.P. Taylor and Airy Shaw	PLP3566	Shrub	Endemic	Surchoo
<i>Zanthoxylum armatum</i> DC.	PLP7735	Shrub	-	Ponda
Salicaceae				
<i>Populus ciliata</i> Wall. ex Royle	PLP4118	Tree	-	F
<i>Populus nigra</i> L.	PLP2900	Tree	-	F
<i>Salix alba</i> L.	PLP2503	Tree	-	F
<i>Salix denticulata</i> Andersson	PLP2965	Shrub	Endemic	F, GA
<i>Salix flabellaris</i> Andersson	PLP3275	Shrub	-	F, GA

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
<i>Salix pycnostachya</i> var. <i>oxycarpa</i> (Andersson) Y.L. Chou and C.F. Fang (Syn. <i>S. oxycarpa</i> Andersson)	PLP4065	Tree	-	F, GA, S
<i>Salix pycnostachya</i> Andersson	PLP2731	Tree	-	F
<i>Salix tetrasperma</i> Roxb.	PLP11280	Tree	-	F
Santalaceae				
<i>Arceuthobium minutissimum</i> Hook. f.	PLP2703	Herb	Endemic	F
<i>Thesium multicaule</i> Ledeb.	PLP2973	Herb	-	F
<i>Viscum album</i> L.	PLP2700	Shrub	-	F
Sapindaceae				
<i>Acer caesium</i> Wall. ex Brandis	PLP3239	Tree	Endemic and Vulnerable	F
<i>Acer lobelia</i> subsp. <i>pictum</i> (Thunb.) Wesm. (Syn. <i>Acer pictum</i> Thunb.)	PLP3578	Tree	-	F
<i>Aesculus indica</i> (Wall. ex Camb.) Hook.	PLP7754	Tree	-	F
Saxifragaceae				
<i>Bergenia ciliata</i> (Haw.) Sternb.	PLP4059	Herb	Endemic	F
<i>Bergenia stracheyi</i> (Hook. f. and Thomson) Engl.	PLP2728	Herb	-	F, G, GA
<i>Saxifraga diversifolia</i> Wall. ex Ser.	PLP2711	Herb	-	GA
<i>Saxifraga jacquemontiana</i> Decne.	PLP3295	Herb	Endangered	GA
<i>Saxifraga parnassifolia</i> D. Don	PLP3283	Herb	-	GA
Scrophulariaceae				
<i>Buddleja asiatica</i> Lour.	PLP2586	Shrub	-	Rarang Panoong
<i>Buddleja crispa</i> Benth.	PLP5031	Shrub	-	Pangi
<i>Scrophularia decomposita</i> Royle ex Benth.	PLP2610	Herb	-	GA
<i>Scrophularia koelzii</i> Pennell	PLP9608	Herb	Endemic	F
<i>Scrophularia polyantha</i> Royle ex Benth.	PLP4160	Herb	-	Chulling
<i>Verbascum thapsus</i> L.	PLP2543	Herb	-	F, G, GA, S
Simaroubaceae				
<i>Ailanthus altissima</i> (Mill.) Swingle	PLP2525	Tree	-	F, S
Smilacaceae				
<i>Smilax menispermoides</i> A. DC.	PLP3001	Climber	-	Ponda
<i>Smilax vaginata</i> Decne.	PLP2636	Climber	-	F
Solanaceae				
<i>Datura stramonium</i> L.	PLP8584	Herb	-	S
<i>Hyoscyamus niger</i> L.	PLP5014	Herb	-	S
<i>Nicandra physalodes</i> (L.) Gaertn.	PLP7939	Herb	-	Solding
<i>Physalis divaricata</i> D. Don	PLP8468	Herb	-	Bhabhanagar
<i>Physochlaena praealta</i> (Walp.) Miers.	PLP6328	Herb	-	Nako
<i>Solanum americanum</i> Mill. (Syn. <i>S. nigrum</i> L.)	PLP3027	Herb	-	F, S
<i>Solanum viarum</i> Dunal	PLP8484	Herb	-	Bhabhanagar
Tamaricaceae				
<i>Myricaria germanica</i> (L.) Desv.	PLP4159	Shrub	-	GA, S
Thymelaeaceae				
<i>Daphne cannabina</i> Lour	PLP4371	Shrub	-	Shudhrang
<i>Daphne mucronata</i> Royle	PLP2643	Shrub	-	F, S
<i>Daphne oleoides</i> Schreb.	PLP4080	Shrub	-	F
<i>Daphne papyracea</i> Wall. ex W.W. Sm. and Cave	PLP7786	Shrub	-	Moorang
<i>Wikstroemia canescens</i> Wall. ex Meisn.	PLP4390	Shrub	-	Rarang
Ulmaceae				
<i>Ulmus villosa</i> Brandis.	PLP7788	Tree	-	F
<i>Ulmus wallichiana</i> Planch.	PLP4127	Tree	Endemic and Endangered	F
Urticaceae				
<i>Debregeasia saeneb</i> (Forssk.) Hepper and J.R.I. Wood	PLP2522	Shrub	-	F
<i>Elatostema monandrum</i> (Buch.-Ham. ex D. Don) H. Hara (Syn. <i>E. surculosum</i> Wight.)	PLP4125	Herb	-	Surchoo
<i>Girardinia ardens</i> Blume	PLP7726	Herb	-	F
<i>Girardinia diversifolia</i> (Link) Friis	PLP8461	Herb	-	F
<i>Girardinia palmata</i> (Forssk.) Gaudich.	PLP7684	Herb	-	F

TABLE 1. CONTINUED.

SPECIES	VOUCHER SPECIMEN NO.	HABIT	ENDEMIC / THREATENED STATUS	HABITAT / LOCALITY
<i>Gonostegia hirta</i> (Blume ex Hassk.) Miq.	PLP6237	Herb	-	Chaura
<i>Pilea scripta</i> (Buch.-Ham. ex D. Don) Wedd.	PLP6240	Herb	-	Bhabhanagar
<i>Pilea umbrosa</i> Blume	PLP2517	Herb	-	F
<i>Pouzolzia zeylanica</i> (L.) Benn. and R. Br.	PLP7649	Herb	-	F
<i>Urtica ardens</i> Link.	PLP2512	Herb	-	F
<i>Urtica dioica</i> L.	PLP2589	Herb	-	G
<i>Urtica parviflora</i> Roxb.	PLP6232	Herb	-	Nichar
Violaceae				
<i>Viola betonicifolia</i> J. Sm.	PLP2617	Herb	-	GA, S
<i>Viola biflora</i> L.	PLP6227	Herb	-	GA
<i>Viola canescens</i> Wall.	PLP2542	Herb	-	F, GA, S
<i>Viola kashmiriana</i> W. Becker	PLP2550	Herb	-	Bhabhanagar
<i>Viola pilosa</i> Blume	PLP7495	Herb	-	F
<i>Viola pilosa</i> Blume var. <i>canescens</i> (Wall.) Hook. f. and Thomson	PLP3205	Herb	-	G, GA
Vitaceae				
<i>Ampelocissus divaricata</i> (Wall. ex M.A. Lawson) Planch.	PLP3146	Climber	-	Surchoo, Shelti
<i>Parthenocissus semicordata</i> (Wall.) Planch.	PLP7604	Climber	Endemic	F
Xanthorrhoeaceae				
<i>Eremurus himalaicus</i> Baker	PLP2761	Herb	Endemic	S
Zingiberaceae				
<i>Hedychium spicatum</i> Sm.	PLP7976	Herb	-	F
GYMNOSPERMS				
Pinaceae				
<i>Abies pindrow</i> (Royle ex D. Don) Royle	PLP2834	Tree	-	F
<i>Cedrus deodara</i> (Roxb. ex Lamb.) G. Don	PLP6287	Tree	-	F
<i>Picea smithiana</i> (Wall.) Boiss.	PLP2833	Tree	-	F
<i>Pinus gerardiana</i> Wall. ex D. Don	PLP2639	Tree	Rare	F
<i>Pinus roxburghii</i> Sarg.	PLP2574	Tree	-	F
<i>Pinus wallichiana</i> A.B. Jacks.	PLP2968	Tree	-	F
Cupressaceae				
<i>Juniperus communis</i> L.	PLP2952	Shrub	-	F, GA
<i>Juniperus indica</i> Bertol.	PLP3386	Shrub	-	F
<i>Juniperus polycarpus</i> K. Koch	PLP2885	Tree	-	S
<i>Juniperus recurva</i> Buch.-Ham. ex D. Don	PLP9770	Tree	-	F, S
Taxaceae				
<i>Taxus wallichiana</i> Zucc. (Syn. <i>Taxus baccata</i> L. ssp. <i>wallichiana</i> L.)	PLP4052	Tree	-	F
Ephedraceae				
<i>Ephedra gerardiana</i> Wall. ex Stapf	PLP2762	Shrub	-	S
<i>Ephedra intermedia</i> Schrenk and C.A. Mey.	PLP 5011	Shrub	-	S

F: Forests, G: Temperate Grasslands, GA: Alpine grasslands and meadows, S: Scrublands; Localities: Akpa 2194m, Bari 2117m, Bhabhanagar 1606m, Boktu 2478m, Chandriam 2581m, Chansu 2800m, Charang 3400m, Chaura 1535m, Chetang Tee 2074m, Chitkul 3389m, Chulling 2700m, Hango 2800m, Homte 2670m, Hoye 2521m, Jangi 2779m, Ka 2983m, Kafnu 2951m, Kalpa 2759m, Karaba 2707m, Karcham, Katgaon 2341m, Kharogla 2982m, Kuppa 2580m, Leo 2947m, Moorang 2810m, Mulling, 3199m, Nako 3646m, Neugal 3463m, Nichar 2108m, Nigani 1600m, Nigulseri 1687m, Pangti 2593m, Ponda 1874m, Pooh 2749m, Ralli 2199m, Rarang 2770m, Rarang Panoong 1876m, Rekong Peo 2311m, Ribba 2262m, Rupi 1543m, Sangla 2640m, Sering Chey 2400m, Shango 2230m, Sharbo 2184m, Shelti 2810m, Sholtu 1776m, Shudhrang 2600m, Shurting 3408m, Shyasu Khud 2390m, Solding 1573m, Sunnam 2670m, Surchoo 2455m, Tapri 1781m, Urni 2286m, Wangtoo 1550m, Yangpa 2440m, Yangthang 3296m."

TABLE 2. List of Ferns and Fern Allies from Kinnaur.

SPECIES	VOUCHER NO.	LOCALITY
Adiantaceae		
<i>Adiantum venustum</i> D. Don	PLP2546	Bhabhanagar
<i>Adiantum incisum</i> Forssk. subsp. <i>incisum</i>	PLP7664	Nigulseri
<i>Adiantum capillus-veneris</i> L.	PLP7662	Sangla
Aspleniaceae		
<i>Asplenium dalhousiae</i> Hooker	PLP2530	Bhabhanagar
<i>Asplenium septentrionale</i> Hoffm.	PLP9445	Kharogla
<i>Asplenium trichomanes</i> L. subsp. <i>trichomanes</i>	PLP2531	Bhabhanagar
<i>Asplenium laciniatum</i> D. Don subsp. <i>laciniatum</i>	PLP7682	Rupi

TABLE 2. CONTINUED.

SPECIES	VOUCHER NO.	LOCALITY
Athriaceae		
<i>Athyrium schimperi</i> Moug ex Fée subsp. biserrulatum (Christ) Fraser-Jenk.	PLP11381	Rupin Pass
Blechnaceae		
<i>Woodwardia unigemmata</i> (Makino) Nakai	PLP9862	Ponda
Cryptogrammaceae		
<i>Cryptogramma brunoniana</i> (Wall. ex Hk.) Grev.	PLP2529	Bhabhanagar
Davalliaceae		
<i>Araiostegia delavayi</i> (Bedd. ex C.B. Clarke and Baker) Ching	PLP8519	Raksham
Dryopteridaceae		
<i>Deparia allantodioides</i> (Bedd.) M. Kato	PLP3385	Mulling
<i>Dryopteris barbigire</i> (Hook.) Ktze.	PLP9464	Chansu
<i>Dryopteris redactopinnata</i> S.K. Basu and Panigrahi	PLP3544	Kharogla
<i>Dryopteris cochleata</i> (Don.) C. Chr.	PLP2511	Solding
<i>Dryopteris chrysocoma</i> (Christ) C. Chr.	PLP11290	Katgoan, Rupin
<i>Dryopteris juxtaopposita</i> Christ	PLP3563	Rekong Peo
<i>Diplazium maximum</i> (D. Don) C. Chr.	PLP7720	Solding
<i>Polystichum squarrosum</i> (D. Don) J. Sm.	PLP7657	Ralli
<i>Polystichum discretum</i> (D. Don) J. Sm.	PLP9752	Ralli
Equisetaceae		
<i>Equisetum arvense</i> L.	PLP2729	Sangla
<i>Equisetum diffusum</i> L.	PLP9746	Solding, Karaba, Kuppa, Shurting
Hymenophyllaceae		
<i>Mecodium exsertum</i> (Wall. ex Hook. et Grev.) Cop	PLP2735	Sangla
Ophioglossaceae		
<i>Botrychium ternatum</i> (Thunb.) Swartz	PLP2740	Sangla
Pteridaceae		
<i>Pteris cretica</i> L.	PLP2516	Bari, Ponda, Solding
<i>Pteris pseudo-quadriaurita</i>	PLP3564	Surchoo
<i>Notholaena marantae</i> (L.) Desv.	PLP2683	Roghi
<i>Onychium contiguum</i> (Wall.) Hope.	PLP7738	Ponda
<i>Onychium japonicum</i> (Thunberg) Kunze var. <i>lucidum</i> (D. Don) Christ	PLP8579	Kafnu
Selaginellaceae		
<i>Selaginella subdiaphana</i> Spreng.	PLP8542	Rupin

TABLE 3. The number of families, genera and species of higher plants in Kinnaur.

GROUPS	FAMILIES	GENERA	SPECIES
Angiosperms	98 (96.07 %)	426 (98.37 %)	869 (98.52 %)
Gymnosperms	4 (3.92 %)	7 (1.62 %)	13 (1.47 %)
Total	102	433	882

TABLE 4. Comparison of ten dominant families of Angiosperms with flora of adjacent regions in Himalaya and India.

FAMILIES	RANK					
	PRESENT STUDY - KINNAUR	LAHAUL-SPITI	FLORA SIMLENSIS	WESTERN HIMALAYA	EASTERN HIMALAYA	BRITISH INDIA
Compositae	1	1	3	2	4	7
Poaceae	2	2	1	1	2	3
Rosaceae	3	5	6	8	8	
Leguminosae	4	4	2	3	3	2
Lamiaceae	5		4	5		9
Ranunculaceae	6	7	10	6		
Polygonaceae	7	9				
Brassicaceae	8	3		7		
Apiaceae	9	8				
Caryophyllaceae	10					
Cyperaceae		10	5	4	5	8
Orchidaceae			8	9	1	1
Scrophulariaceae		6	7	10	7	

TABLE 4. CONTINUED.

FAMILIES	RANK					
	PRESENT STUDY - KINNAUR	LAHAUL-SPITI	FLORA SIMLENSIS	WESTERN HIMALAYA	EASTERN HIMALAYA	BRITISH INDIA
Urticaceae			9		6	10
Rubiaceae					9	4
Euphorbiaceae					10	5
Acanthaceae						6

TABLE 5. The genus-to-species and family-to-genera ratios of different regions of Western Himalaya (Source: Collett 1902; Raizada and Saxena 1978; Aswal and Mehrotra 1994; Singh and Rawat 1999).

REGION	FAMILIES	GENERA	SPECIES	GENERA-TO-SPECIES	FAMILY-TO-GENERA
Nainital	107	457	869	1:1.90	1:4.27
Shimla	-	639	1326	1:2.08	-
Mussoorie	131	649	1219	1:1.88	1:4.95
Upper Liddar valleys Kashmir	86	341	764	1:2.24	1:3.97
Tons valley	132	480	761	1:1.58	1:3.64
GHNP	128	427	832	1:1.94	1:3.33
Srinagar	-	741	2928	1:3.95	-
Sirmour	139	544	898	1:1.65	1:3.91
Lahaul & Spiti	79	353	985	1:2.5	1:4.47
Garhwal	189	1032	2150	1:2.08	1:5.46
Udhampur	119	495	807	1:1.63	1:4.16
Kullu	126	504	930	1:1.84	1:4

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LITERATURE CITED

- Aswal, B.S., and B.N. Mehrotra. 1994. *Flora of Lahaul-Spiti*. Dehradun: Bishen Singh Mahendra Pal Singh.
- Bennet, S.S.R. 1987. *Name Changes in Flowering Plants of India and Adjacent Regions*. Dehradun: Triseas Publishers.
- Champion, H.G., and S.K. Seth. 1968. *A Revised Survey of the Forest Types of India*. Delhi, India: Manager of Publications, Govt. of India Press.
- Chawla, A., A. Kumar, B. Lal, R.D. Singhand A.K. Thukral. 2011. Ecological characterization of high altitude Himalayan landscapes in the upper Satluj river watershed in Kinnaur, Himachal Pradesh, India. *Journal of Indian Society of Remote Sensing* OnlineFirst DOI: 10.1007/s12524-011-0169-0.
- Chowdhery, H.J., and B. M. Wadhwa. 1984. *Flora of Himachal Pradesh Analysis. 3 vols.* Calcutta: Botanical Survey of India.
- Collett, H. 1982. *Flora Simlensis*. Dehradun: Bishen Singh Mahendra Pal Singh.
- Hara, H., and H. Hohashi. 1966-1974. *The Flora of Eastern Himalaya. 3 Vols.* Tokyo, Japan: The University of Tokyo Press.
- Hooker, J.D. 1904. *A Sketch of the Flora of British India*. London: Kessinger Publishing.
- Jarvinen, O. 1982. Species-to-genus ratios in biogeography: a historical note. *Journal of Biogeography* 9(4): 363-370.
- Krug, A.Z., D. Jablonski, and J.W. Valentine 2008. Species-genus ratios reflect a global history of diversification and range expansion in marine bivalves. *Proceedings of the Royal Society: Biological Sciences* 275(1639): 1117-1123.

- Myers, N, R.A. Mittermeier, C.G. Mittermeier, G.A.B. daFonseca, and J. Kent. 2000. Biodiversity hotspots for conservation priorities. *Nature* 403, 853-858.
- Nayar, M.P. 1996. *"Hot spots" of Endemic Plants of India, Nepal and Bhutan*. Thiruvanthapuram: Director, Tropical Botanic Garden and Research Institute.
- Olson, D.M., E. Dinerstein, E.D. Wikramanayake, N.D. Burgess, G.V.N. Powell, et al., 2001. Terrestrial ecoregions of the world: a new map of life on earth. *Bioscience* 51(11), 933-938.
- Raha, M. K. 2000. Structure and culture in a high Himalayan society. *Science and Culture* 66, 77-83.
- Raizada, M.B., and H.O. Saxena. 1978. *Flora of Mussoorie*. Dehradun, India: Bishen Singh Mahendra Pal Singh.
- Rau, M.A. 1975. *High Altitude Flowering Plants of Western Himalaya*. Calcutta: Botanical Survey of India.
- Singh, J.S., and S.P. Singh. 1987. Forest vegetation of the Himalaya. *Botanical Review* 53 (1):80-192.
- Ved, D.K., G.K. Kinhal, K. Ravikumar, V. Prabhakaran, U. Ghate, R. Vijaya Shankar, and J. H. Indreshu, (ed.). 2003. *Conservation Assessment and Management Prioritisation for the Medicinal Plants of Jammu & Kashmir, Himachal Pradesh and Uttaranchal. A Synthesis of Regional Expertise in Medicinal Plants Taxonomy and Distribution*. Bangalore, India: Foundation for Revitalisation of Local Health Traditions.

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