

PLANT DIVERSITY IN HAZARIKHIL WILDLIFE SANCTUARY OF CHITTAGONG AND ITS CONSERVATION MANAGEMENT

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Abstract

Plant diversity inventory in the Hazarikhil Wildlife Sanctuary of Bangladesh has been made through qualitative survey and their status of occurrence assessed for taking proper conservation management. The inventory has recognized 89 dicot (Magnoliopsida) families represented in this wildlife sanctuary by 305 genera and 478 species with in an area of 2908.5 ha. Of these, 86 (18%) species were assessed to be rare and endangered while 14 (2.93%) critically endangered. Determination of habit type resulted 189 (39.54%) species of trees, 119 (24.90%) shrubs including 26 (5.44%) climbers and 170 (35.56%) herbs including 46 climbers and two epiphytes. Three species, thought to be possibly extinct from the flora of Bangladesh, are being reported as rediscovery from this sanctuary, these are: *Aglaiia edulis* (Roxb.) Wall., *Knema erratica* (Hook.f. and Thom.) J. Sinclair and *Artabotrys caudatus* Wall ex Hook.f. and Thom. An enumeration of these taxa is prepared citing each species with family name, bangla/local name(s), habit and conservation status for supporting the preparation of protected area management plan for implementation of National Conservation Strategy.

Key words: Plant diversity, inventory, assessment, conservation status, Hazarikhil wildlife sanctuary.

INTRODUCTION

The Hazarikhil reserve forest of Chittagong is one of the richest biodiversity resource areas of Bangladesh and has been declared as wildlife sanctuary for taking proper protection and conservation management. It occupies an area of 2908.5 ha and lies between 22° 40' - 22° 46' N latitude and 91° 38' - 91° 42' E longitude, located to Fatikchari Upazila of Chittagong district, under Ramgarh-Sitakundu Reserve Forest-2 of Chittagong North Forest Division. It includes 3 forest blocks under Hazarikhil Forest Range: Hazarikhil (950.20 ha) and Rangapani (621.05 ha) of Hazarikhil forest beat and Harowalchari (1337.25 ha) of Fatikchari forest beat. The topography of Hazarikhil forests constituted with high (152 to 365 m), medium (76 to 152 m) and low hills with 15 to 76 m altitude. These hills are made up of sand-storms and shale.

The forest of Hazarikhil is a part of the flora of Ramgarh – Bandarban hills which is floristically and geographically more related to Indo-China flora (Khan 1977). The floristic composition of Hazarikhil hills like other vegetations of Chittagong is similar or more related to that of the vegetation of tropical Myanmar.

The flora of this wildlife sanctuary is mostly evergreen and mixed evergreen type except a few blocks of deciduous type composed of Teak plantations. Natural vegetation mostly with forest trees are on the discontinuous hills of low, medium and high elevations. Artificial plantations start in this forest



Fig. 1. Map of Hazarikhil wildlife sanctuary.

since 1921 and significant natural forest areas have been converted to teak and recent acacia plantations. The present investigation was envisaged to assess plant diversity in the Hazarikhil Wildlife Sanctuary aimed at justifying the declaration of WS in this natural forest.

MATERIAL AND METHODS

The survey of the flora has been made through repeated field visits. Listing of known species and collection of specimens with field data for identification and preservation in Taxonomic Data Bank (TDB) have been made. Collections of fertile specimens have been made for identification and preservation as voucher specimens. Data on the status of occurrence, abundance, threats and conservation status, local names, where ever available, were recorded, so far, for individual species based on qualitative survey and investigation throughout the flora.

Identification of unknown species has been made in the Herbarium of Chittagong University (HCU) consulting specimens/taxonomists of Bangladesh Forest Research Institute Herbarium (BFRIH) and Bangladesh National Herbarium (DACB). Nomenclatural determination with current names/synonyms has been made consulting relevant literature, such as, Ahmed *et al.* (2007, 2008, 2009), Rashid and Rahman (2011, 2012), Rahman (2013), Kew Plant List (*internet*) and different Floras of neighboring countries, like, India, Bhutan, Nepal, Myanmar etc. Local/Bangla names of many plants have been collected from local people during field trips and by consulting Prain (1903), Heinig (1926), Huq (1986), Das and Alam (2001), Dey (1995) and Dey *et al.* (1999).

The recognized taxa of this WS are enumerated in Table 1, citing each species with family name, bangle/local name(s), habit, potential value and status of occurrence. The species are arranged family wise in alphabetical order. The families are also arranged alphabetically.

RESULTS AND DISCUSSION

The flora of Hazarikhil Wildlife Sanctuary is composed of 189 trees, 119 shrubs and 170 herbs (Table 1) within an area of 2908.5 ha. The study revealed that the sanctuary is composed of a number of small and fragmented natural forests with rich species diversity and some patches of planted forests with *gorjan, chapalish, teak, mehagini, gamar, telsure, chikrassi, dumur, jam, bhadi, bokain, udhal, mango, rubber* etc. The palms, rattans and bamboos mostly occupy the valleys. Common shrubs, herbs, grasses and babanas are fragmented to degraded habitats. A few individuals of *Boilam, Civit* and *Lohakat* are still available as characteristic elements of the forest. Number of the species of edible fruits and wild fruit trees are not sufficient for wildlife support. Among fruit trees, *amlaki, haritaki, Kawgola, painnagola, lotkan, gab, dumur, barta, buttijam, phuljam* etc. are seavailable. Among epiphytes, species of *Cymbidium, Arides, Dendrobium, Drynaria, Raphidophra, Phothos* etc. are more or less dominant. Natural habitats like waterfall and stony charas (*e.g. Harowalchari chara*), although under degradation, are still support luxuriant growth of *aroids, begonias, arecas, palms, ferns* and *bryophytes*.

Table 1. Plants of Hazarikhil Wildlife Sanctuary of Chittagong.

Family	Species	Bangla/local name	Habit	Status of occurrence
	<i>Andrographis laxiflora</i> (Blume) Lindau.	-	Herb	Common
	<i>A. paniculata</i> (Burm. f.) Wall. <i>ex</i> Nees	Kalomegh	Herb	Common
	<i>Eranthemum pulchellum</i> Andrews	-	Shrub	Common
	<i>E. paltiferum</i> (Wall.) Nees	-	Shrub	Common
Acanthaceae	<i>Hygrophila polysperma</i> (Roxb.) T. Anders	-	Herb	Common
	<i>H. salicifolia</i> (Vahl) Nees	Kakmasha	Herb	Common
	<i>Justicia adhatoda</i> L.	Bashak	Shrub	Common
	<i>J. gendarussa</i> L.	Jagat mardan, Nilnishinda	Shrub	Common
	<i>Lapithogathis incurva</i> Buch.-Ham.	-	Herb	Common

	<i>Nelsonia canescens</i> (Lam.) Spreng.	Paramul	Herb	Common
	<i>Ruellia acuminata</i> L.	-	Herb	Common
	<i>R. tuberosa</i> L.	Chatpoti	Herb	Common
	<i>Rungia pectinata</i> (L.) Nees	Birlongopark Punaka pundu	Herb	Common
	<i>Staurogyne argentea</i> Wall.	-	Herb	Common
	<i>S. angustifolia</i> T. Anders.	--	Herb	Common
	<i>Strobilanthes auriculatus</i> Nees	Kara,	Shrub	Rare
	<i>S. scaber</i> Nees	-	Herb	Rare
	<i>Thunbergia alata</i> Bojer ex Sims	-	Herbaceous climber	Rare
	<i>T. grandiflora</i> Roxb.	-	Herbaceous climber	Common
Actinidiaceae	<i>Saurauia roxburghii</i> Wall.	Dalup	Tree (small)	Rare
	<i>Cyathula prostrata</i> Blume	-	Herb	Common
	<i>Achyranthes aspera</i> L.	Apang	Herb	Common
	<i>Alternanthera sessilis</i>	Chanchi	Herb	Common
Amaranthaceae	<i>A. philoxeroides</i> (Mart.) Griseb.	Helencha	Herb	Common
	<i>Amaranthus spinosus</i> L.	Kantanotey, Katamaris	Herb	Common
	<i>A. viridis</i> L.	Notey, Nateyshak, Maris sag	Herb	Common
	<i>Celosia argentea</i> L.	Moragh phul	Herb	Common
	<i>Gomphrena celosioides</i> Mart.	-	Herb	Common
	<i>Bouea oppositifolia</i> (Roxb.) Maessn.	Mailam, Uriam, Miriam	Tree (medium)	Critically Endangered
	<i>Buchanania lancifolia</i> Roxb.	Chikki	Tree	Rare
	<i>Drimycarpus racemosus</i> Hook.f.	Kodi-barele, Nala-amshi	Tree	Critically Endangered
	<i>Holigarna longifolia</i> Roxb.	Barola, Rakta-Barola	Tree	Critically Endangered
Anacardiaceae	<i>Lannea coromandelica</i> (Houtt.) Merr.	Jialbhadi, Jiga, Kapila, Bhadi	Tree	Common
	<i>Mangifera indica</i> L.	Aam	Tree	Planted
	<i>M. longipes</i> Griff.	Jangali Aam	Tree	Critically Endangered
	<i>M. sylvatica</i> Roxb. ex Wall.	Uri Aam, Jangali Aam, Laksmi Aam, Kush um,	Tree	Critically Endangered
	<i>Spondias pinnata</i> (L. f.) Kurz	Amra, Deshi-Amra, Pial	Tree	Rare
	<i>Swintonia floribunda</i> Griff.	Civit, Chundul, Am chundul	Ttree	Critically Endangered
	<i>Artabotrys caudatus</i> Wall	Not available	Woody climber	Endangered
	<i>Desmos dumosus</i> (Roxb.) Saff.	-	Shrubby climber	Endangered
	<i>Fissistigma rubiginosum</i> (A. DC.) Merr.	-	Shrubby climber	Endangered
	<i>F. wallichii</i> (Hook.f. & Thom.) Merr.	-	Woody climber	Endangered
Annonaceae	<i>Miliosia globosa</i> G. Panigr. & Mishra	Not available	Tree	Critically Endangered
	<i>M. longiflora</i> (Hook.f. & Thom.) Finet & Gagnep.	Phesicow, Roktagola Horinagola	Tree	Critically Endangered
	<i>Uvaria cordata</i> (Dunal) Alston	-	Woody climber	Endangered
	<i>U. hamiltonii</i> Hook.f. & Thom.	Latkan	Woody climber	Endangered
Apiaceae	<i>Centella asiatica</i> (L.) Urban	Thankuni, Ada gongoni, Adamolki, Adamoni	Herbaceous trailer	Common
	<i>Hydrocotyle sibthorpioides</i> Lam.	-	Herbaceous trailer	Common
	<i>Alstonia nerifolia</i>	Chatim	Tree	Rare
	<i>Alstonia scholaris</i> (L.) R. Br.	Chatim	Tree	Common
	<i>Anodendron manubriatum</i> (Wall.) Merr.	Dul	Woody climber	Rare/ Endangered
Apocynaceae	<i>Chonemorpha fragrans</i> (Moon) Alston	Gar badero	Woody climber	Endangered
	<i>Holarhena antidysenterica</i> (L.) Wall. ex DC.	Kurchi	Tree (small)	Common
	<i>Ichnocarpus frutescens</i> (L.) R. Br.	Dudhilata	Woody twiner	Common
	<i>Melodinus monogynus</i> Roxb.	-	Woody twiner	Endangered
	<i>Rauwolfia serpentina</i> (L.) Benth. ex Kurz	Sarpagandha	Herb	Endangered

	<i>Strophanthus wallichii</i> Decne	-	Shrubby climber	Endangered
	<i>Tabernaemontana recurva</i> Roxb.	Choota katwadar, Rupa tola	Shrub	Rare
	<i>Vallaris solanacea</i> (Roxb.) Kuntze	Hadpur, Mali	Scandent Shrub	Critically Endangered
	<i>Wrightia arborea</i> (Dennst.) Mabb.	Dudh-koraiya	Tree	Common
Araliaceae	<i>Brassaiopsis glomerulata</i> (Blume) Regel	Kurila	Tree (small)	Common
	<i>Trevesia palmata</i> (Roxb.) Vis.	Vombal, Kawhtebeel	Tree (small)	Common
Aristolochiaceae	<i>Aristolochia tagala</i> Cham.	Ishwarmul	Herbaceous climber	Common
	<i>Aristolochia indica</i> L.	Ishwarmul	Herbaceous climber	Rare
Asclepiadaceae	<i>Asclepias curassavica</i> L.	Moricha	Herb	Rare
	<i>Calotropis gigantea</i> (L.) R. Br.	Akanda	Shrub	Common
	<i>Gymnema acuminatum</i> (Roxb.) Wall.	Khara lata	Woody twiner	Rare
	<i>Hemidesmus indicus</i> (L.) R. Br.	Anantamul	Herb	Endangered
	<i>Hoya globolosa</i> Hook. f.	Pargacha	Herbaceous Epiphyte	Rare
	<i>Hoya globosa</i> Hook.f.	-	Herbaceous Epiphyte	Endangered
	<i>Hoya parasitica</i> (Roxb) Wall. ex Wight	Pargacha	Herbaceous Epiphyte	Rare
	<i>Tylophora indica</i> (Burm. F.) Merr.	Antamul, Anantamul	Herbaceous twiner	Rare
Asteraceae	<i>Adenostemma lavenia</i> (L.) Kuntze	Baro-kesuti	Herb	Common
	<i>Ageratum conyzoides</i> L.	Fulkuri	Herb	Common
	<i>Blumea fistulosa</i> (Roxb.) Kurz	-	Herb	Common
	<i>B. lacera</i> (Brum. F.) DC.	Kukursunga, Barakukshima	Herb	Common
	<i>B. lanceolaria</i> (Roxb.) Druce	-	Herb	Common
	<i>Blumeopsis flava</i> (DC.) Gagnep	-	Herb	Common
	<i>Chromolaena odorata</i> (L.)	Barashialmati, Assamlata	Herb	Common
	<i>Crassocephalum crepidioides</i> S. Moore	-	Herb	Common
	<i>Eclipta alba</i> (L.) Hassk.	Kesoraj, Kalokeshi, Keshute	Herb	Common
	<i>Elephantopus scaber</i> L.	Shamdalan, Gajiashak	Herb	Common
	<i>Emilia sonchifolia</i> (L.) DC.	Mechitra, Sadimudi	Herb	Common
	<i>Mikania cordata</i> (Burm. F.) Robinson	Tufanilata, Taralata, Shankunilata	Herbaceous climber	Common
	<i>Pseudelephantopus spicatus</i> Rohr	-	Herb	Common
	<i>Sonchus wightianus</i> DC.	-	Herb	Common
	<i>Sphaeranthus africanus</i> L.	-	Herb	Common
	<i>Sphaeranthus indicus</i> L.	Murmuri	Herb	Common
	<i>Sphaeranthus senegalensis</i> DC.	-	Herb	Common
	<i>Spilanthes calva</i> DC.	Marhata-tiga	Herb	Common
	<i>Syndrella nodiflora</i> (L.) Gaertn.	-	Herb	Common
	<i>Tridax procumbens</i> L.	Tridhara	Herb	Common
	<i>Vernonia cinerea</i> (L.) Less.	Kukshim, Sahadebi, Shillata	Herb	Common
	<i>Xanthium indicum</i> Koenig	Lehra, Ghagra	Herb	Common
Begoniaceae	<i>Begonia</i> sp.	-	Herb (succulent)	Endangered
	<i>Begonia roxburghii</i> (Miq.) A. DC.	-	Herb (succulent)	Endangered
Betulaceae	<i>Alnus nepalensis</i> G. Don	-	Tree	Endangered
Bignoniaceae	<i>Oroxylum indicum</i> (L.) Kurz	Thona	Tree	Rare
	<i>Stereospermum colais</i> Mabberley	Dharmara	Tree	Rare
Bixaceae	<i>Bixa orellana</i> L.	Latkon, Harpara	Tree (small)	Rare
Bombacaceae	<i>Bombax ceiba</i> L.	Simul, Tula	Tree	Rare/ planted
	<i>Bombax insigne</i> Wall.	Ban-simul, Pahari-simul	Tree (large)	Rare
Boraginaceae	<i>Helitropium indicum</i> L.	Hatisur	Herb	Common
Buddlejaceae	<i>Buddleja asiatica</i> Lour.	Neemda, Badhota	Shrub	Common
Burseraceae	<i>Protium serratum</i> (Wall. ex Colebr.) Engl.	Gutgutya, Haliabhadi	Tree	Rare
Caesalpinaceae	<i>Caesalpinia digyna</i> Rottl.	Umul kuchi	Scandent Shrub	Common
	<i>Caesalpinia bonduc</i> (L.) Roxb.	Nata, Natakaranja	Scandent Shrub	Rare
	<i>Cassia fistula</i> L.	Sonalu, Bandar-lati	Tree	Planted
	<i>Cassia javanica</i> L. ssp. <i>nodosa</i>	Bander-lutia, Bon-sonalu	Tree	Rare

	<i>Cassia obtusifolia</i> L.	Chakunda	Undershrub	Common
	<i>C. siamea</i> Lam.	Minjiri, Minjuri	Tree	Planted
	<i>C. sophera</i> L.	-	Shrub	Common
	<i>Senna alata</i> (L.) Roxb.	Dadmordan	Shrub	Common
	<i>Saraca asoca</i> (Roxb.) de Wilde.	Ashok	Tree	Rare
	<i>Senna occidentalis</i> (L.) Link	Bara-Kalkasunda, Eski	Herb	Common
	<i>S.tora</i> (L.) Roxb.	Teraj	Undershrub	Common
Campanulaceae	<i>Campanumoea lancifolia</i> (Roxb.) Merr.	-	Undershrub	Rare
	<i>Cleome rutidosperma</i> DC.	-	Herb	Common
Capparaceae	<i>Cleome viscosa</i> L.	Halde hurhure	Herb	Common
	<i>Cratava manga</i> (Lour.) DC.	Barun, Gota baruna	Tree (small)	Common
Casuarinaceae	<i>Casuarina equisetifolia</i> L.	Bilati jhau	Tree	Planted
Celastraceae	<i>Euonymus attenuatus</i> Wall. ex Laws.	-	Shrub	Rare
Chenopodiaceae	<i>Chenopodium album</i> L.	Betushak, Vathua-sak	Herb	Common
Clusiaceae	<i>Garcinia cowa</i> Roxb.	Kao-gola, Kawa, Kaglichu	Tree (medium)	Rare/Endan
	<i>Mesua floribunda</i> (Wall.) Kosterm	--	Tree (large)	Planted
	<i>Calycopteris floribunda</i> (Roxb.) Lam.	Guicha lata	Scandent Shrub	Rare
	<i>Combretum decandram</i> Roxb.	Kali gumuchi, Sada guicha	Scandent Shrub	Rare
Combretaceae	<i>Terminalia attenua</i> (Gaertn) Roxb.	Hatiyal, Haritaki	Tree (large)	Planted
	<i>Terminalia alata</i> Heyne ex Roth.	Asal, Asna, Hasna, Saj	Tree (large)	Rare
	<i>T. bellerica</i> (Gaertn.) Roxb.	Bohera, Boyra	Tree	Planted
	<i>T. chebula</i> Retz.	Haritaki, Gol horitaki	Tree (large)	Planted
Connaraceae	<i>Connarus paniculatus</i> Roxb.	Katgular	Woody climber	Rare
	<i>Argyria argentea</i> (Roxb.) Chosy.	Bara rupatola, Chotto-biztarak	Herbaceous climber	Common
	<i>A. capitiformis</i> (Poir.) van Cheek. Oostr.	-	Herbaceous climber	Common
	<i>Calystegia hederacea</i> Wall.	-	Herbaceous twiner	Common
	<i>Hewittia sublobata</i> (L. f.) Kuntze	-	Herbaceous climber	Common
	<i>Ipomoea attenua</i> Forsk.	Kalmi shak	Herbaceous trailer	Common
	<i>I. alba</i> L	Hal kalmi, Dudh kalmi	Herbaceous climber	Common
	<i>I. batatas</i> (L.) Lam.	Misti Aloo	Herbaceous trailer	Common
Convolvulaceae	<i>I. fistulosa</i> Mart. ex Choisy	Dhol kalmi, Police lata	Shrub	Common
	<i>I. hederifolia</i> L.	-	Herbaceous climber	Common
	<i>I. pes-tigridis</i> L.	Languli lata	Herbaceous climber	Common
	<i>I. pileata</i> Roxb.	-	Herbaceous climber	Common
	<i>Merremia attenuate</i> (L.) Halleer	Sada kalmi	Herbaceous twiner	Common
	<i>M. umbellata</i> (L.) Halleer	Sadakamni, Korma lata	Herbaceous climber	Common
	<i>Operculina turpethum</i> (L.) S. Marso.	Dudh Kalmi	Herbaceous climber	Common
	<i>Citrullus colocynthis</i> (L.) Schrad.	Indrayan	Herbaceous climber	Endangered
	<i>Coccinia grandis</i> (L.) Voigth	Kawajhinga, Telakucha, Kuchila	Herbaceous climber	Common
Cucurbitaceae	<i>Hodgsonia macrocarpa</i> (Blume) Cogn.	Gular, Pathligular	Herbaceous climber	Critically Endangered
	<i>Thladiantha cordifolia</i> (Blume) Cogn.	-	Herbaceous climber	Rare
	<i>Trichosanthes cordata</i> Roxb.	Bhuikakra	Herbaceous climber	Rare
	<i>T. tricuspidata</i> Lour.	Makal	Herbaceous climber	Rare/Endan
Cuscutaceae	<i>Cuscuta reflexa</i> Roxb.	Sorna lata, Jarbuti	Herbaceous climber	Common
Datisceae	<i>Tetrameles nodiflora</i> R. Br.	Chundul, Maynakat	Tree (large)	Rare/Endan
	<i>Dillenia pentagyna</i> Roxb.	Hargaza	Tree	Critically Endangered
Dilleniaceae	<i>D. indica</i> L.	Chaltha, Chaillah	Tree	Planted
	<i>Anisoptera scaphula</i> (Roxb.) Pierre.	Boilsur, Sada boilam	Tree	Critically Endangered
	<i>Dipterocarpus turbinatus</i> Gaertn.	Kali garjan, Teli garjan, Kuroli	Tree	Rare/Planted
Dipterocarpaceae	<i>D. alatus</i> Roxb. ex G. Don	Dholi garjan, Sil garjan	Tree	Rare/Cult
	<i>D. costatus</i>	Garjan	Tree	Rare
	<i>Hopea odorata</i> Roxb.	Telsur	Tree (large)	Rare/Planted

Droceraceae	<i>Drosera burmannii</i> Vahl	Surjasishir	Herb	Critically Endangered
Ebenaceae	<i>Diospyros malabarica</i> (Desr.) Koste.	Gab, Deshi gab	Tree (medium)	Rare
	<i>D. racemosa</i> Roxb.	Gab	Tree (medium)	Rare/Endan
Elaeocarpaceae	<i>Elaeocarpus floribundus</i> Blume	Jalpai, Belphoi	Tree (large)	Planted
	<i>E. tectorius</i> (Lour.) Poir.	Chekio, Jalpai	Tree	Rare
Euphorbiaceae	<i>Antidesma acidum</i> Retz.	Multa, Khudi jam, Limtoa	Large shrub	Rare
	<i>A. bunius</i> (L.) Spreng.	Banshial buka	Tree (medium)	Rare
	<i>A. ghaesembilla</i> Gaertn.	Khudijam	Tree (medium)	Rare
	<i>A. roxburghii</i> Wall. ex Tul.	-	Tree (small)	Rare
	<i>Aporosa wallichii</i> Hook.f.	Karullah, Kakra, Kechua	Tree	Rare
	<i>A. aurea</i> Hook.f.	Kechuan	Tree	Rare
	<i>A. octandra</i> A.R. Vickery.	Patha-kharullah, Ataligula	Tree	Rare
	<i>Baccaurea ramiflora</i> Lour.	Latka, Latkon, Harpata, Vaccum	Tree (medium)	Rare
	<i>Bischofia javanica</i> Blume	Kanjalbhadhi	Tree	Common
	<i>Breynia retusa</i> (Dennst.) Alston.	Silpati	Shrub	Rare
	<i>Briedelia stipularis</i> (L.) Blume	Pat khowi	Tree (small)	Rare
	<i>B. tomentosa</i> Blume	Khoi	Tree (small)	Rare
	<i>Chaetocarpus castanicarpa</i> (Roxb.)Thw.	Bul kakra	Tree (medium)	Common
	<i>Chrozophora rottleri</i> (Geisel.) A. Juss.	Khudi Okra	Herb	Common
	<i>Cnesmone javanica</i> Blume	Chottra patha, Paharibichuti	Shrubby climber	Common
	<i>Croton bonplandianus</i> Bail	Dongalas	Herb	Common
	<i>C. caudatus</i> Geisel.	Nanbhanti	Shrub	Common
	<i>C. lobetius</i> L.	-	Herb	Common
	<i>Euphorbia hirta</i> L.	Ghaopata, Dudhiya, Barakeru	Herb	Common
	<i>Glochidion assamicum</i> (Muell.-Arg.) Hook.f.	-	Tree (small)	Rare
	<i>G. multiloculare</i> (Roxb. ex Willd.) Muell.- Arg.	Aniatori	Tree (small)	Rare
	<i>G. spherogynum</i> Kurz	-	Tree	Rare
	<i>G. lanciolarium</i> (Roxb.) Voigt.	Anguti, Bhauri, Kakra, Kechuan	Tree (small)	Rare
	<i>Macaranga denticulata</i> (Blume) Muell.-Arg.	Burna, Bura-kochi, Rata-bura	Tree (medium)	Common
	<i>M. peltata</i> (Roxb) Muell.-Arg.	-	Tree	Common
	<i>Mallotus philippensis</i> (Lam.) Muell.-Arg.	Kamalaguli	Tree (small)	Rare
	<i>M. roxburghianus</i> Muell.-Arg.	Nim puteli, Nunia kachi	Tree (small)	Rare
	<i>M. tetracoccus</i> (Roxb.) Kurz	Kumari-bura, Main bura	Tree (medium)	Rare
	<i>Phyllanthus attenuatus</i> Poir	Panjuli	Shrub	Rare
	<i>P. emblica</i> L.	Amloki, Ambolothi, Aonla	Tree	Planted
	<i>P. niruri</i> L.	Bhuiamla	Herb	Common
	<i>P. sikkimensis</i> Muell.-Arg.	-	Shrub	Rare
<i>Sapium indicum</i> Willd	Hura, Batul, Bara mel	Tree (small)	Rare	
<i>S. baccatum</i> Roxb.	Chotto mel, Katagola, Kala boil	Tree	Rare	
<i>Suregada multiflora</i> (A. Juss.) Baill.	Ban-naranga, Ban-naringa	Tree (medium)	Common	
<i>Tragia allidrate</i> L.	Bichuti, Chitta	Herb	Common	
<i>T. nudiflora</i> L.	Pitali, Batal, Pitabara	Tree (medium)	Rare	
Fabaceae	<i>Abrus precatorius</i> L.	Kunch	Woody twiner	Rare
	<i>A. pulchellus</i> Wall.	Not available	Woody climber	Rare
	<i>Butea monosperma</i> (Lam.) Kuntze	Palash	Tree (medium)	Planted
	<i>Crotalaria acicularis</i> Buch.-Ham. ex Benth	-	Herb	Common
	<i>C. tetragona</i> Roxb. ex Anders.	-	Herb	Common
	<i>C. pallid</i> Aiton	Jhun jhuni	Herb	Common
	<i>C. dubia</i> Graham ex Benth.	-	Herb	Common
	<i>C. ferruginea</i> Graham ex Benth.	-	Herb	Common
	<i>C. verrucosa</i> L.	Bansan, Jhanjhana	Undershrub	Common
	<i>Dalbergia sericea</i> G. Don	Sristi, Rebinea	Tree	Rare
	<i>D. lanceolaria</i> L. f.	Chakemdia	Tree	Rare
	<i>D. malabarica</i> Prain	-	Tree	Rare
	<i>D. sissoo</i> Roxb.	Sissoo gach	Tree	Planted

	<i>D. spinosa</i> Roxb.	Ananta, Ananta kantha	Shrub (large)	Common
	<i>D. stipulacea</i> Roxb.	Dadbari	Tree (small)	Rare
	<i>D. volubilis</i> Roxb.	Ankilata, Barusirkath	Woody climber	Rare
	<i>Dendrolobium triangulare</i> (Retz) Merr.	Bir Jarwar	Shrub	Common
	<i>Derris robusta</i> (Roxb. ex DC) Benth.	Jangaria, Jamarja, Koroi	Tree	Rare
	<i>D. scandens</i> (Roxb.) Benth.	Amkurchi	Woody climber	Common
	<i>Desmodium monotorium</i> (Houtt.) Merr.	Gorachand, Telegraph plant	Undershrub	Common
	<i>D. triquetrum</i> (L.) DC.	-	Undershrub	Common
	<i>D. gangeticum</i> (L.) DC.	Salpani	Undershrub	Common
	<i>D. heterocarpon</i> (L.) DC.	-	Undershrub	Common
	<i>D. lexiflorum</i> DC.	-	Undershrub	Common
	<i>D. pulchellum</i> (L.) Benth	Jatsalpani	Shrub	Common
	<i>D. triflorum</i> (L.) DC.	Kulalia, Kodalia	Herb	Common
	<i>Erythrina indica</i> L.	Palita, madar, Mandar	Tree (medium)	Planted
	<i>E. stricta</i> Roxb.	Mandar	Tree	Planted
	<i>Flemingia strobilifera</i> (L.) R. Br.	Machipatha	Shrub	Common
	<i>Indigofera tinctoria</i> L.	Nil	Shrub	Planted
	<i>Mucana pruriens</i> (L.) DC.	Al-kushi	Herbaceous climber	Common
	<i>M. monosperma</i> DC.	Soash Guri	Shrubby climber	Common
	<i>Pongamia pinnata</i> (L.) Pierre	Dalkaramcha, Kerum, Pitagoria	Tree	Planted
	<i>Sesbania grandiflora</i> (L.) Poir.	Bakful, Bagful, Agati	Tree (small)	Planted
	<i>Tephrosia purpurea</i> (L.) Pers.	Bon-neel	Herb	Common
	<i>T. purpurea</i> (L.) Pers.	Ban-nill	Herb	Common
	<i>T. candida</i> DC.	Bilakshani	Shrub	Common
	<i>Uraria rufescens</i> (L.) Desv. Ex DC.	Dieng-kha-riiu	Shrub	Common
	<i>Vicia sativa</i> L.	Ankari, Hatka	Herb	Common
Fagaceae	<i>Lithocarpus elegens</i> (Blume) Hatus	Rai batna, Bara cakma	Tree	Rare/Endan
	<i>Quercus semiserrata</i> Roxb.	Batna, Guijja batna	Tree	Rare/Endan
Flacourtiaceae	<i>Flacourtia jangomas</i> (Lour.) Racusch.	Lukluki, Paniala, Paniamala	Tree (medium)	Rare/Endan
	<i>Hydnocarpus kurzii</i> (King) Warb.	Chaulmoogra	Tree	Rare
Gesneriaceae	<i>Rhynchoetochum ellipticum</i> (Wall. ex Diet.)	-	Undershrub	Common
Hydrophyllaceae	<i>Hydrolea zeylanica</i> (L.) Vahl	Kasschara	Herb	Rare
Juglandaceae	<i>Engelhardia spicata</i> Lechen ex Blume	Kichra-vhadi, Bolas, Dad	Tree	Rare
	<i>Anisomeles indica</i> (L.) Kuntze	Gubura	Herb	Common
	<i>Hyptis brevipes</i> Poir.	-	Shrub	Common
	<i>H. suaveolens</i> Poir	Belatitulshi, Tokma	Herb	Common
	<i>Leonurus sibiricus</i> L.	Roktodron	Herb	Rare/Endan
	<i>Leucas aspera</i> (Willd) Link	Choto halkusa	Herb	Common
Lamiaceae	<i>L. indica</i> (L.) R. Br. ex Vathe	Dondokalosh, Shetodron	Herb	Common
	<i>L. pulkenetii</i> (Roth.) Spreng.	Shetodron, Dangalos	Herb	Common
	<i>Ocimum americanum</i> L.	Bon-tulshi	Herb	Common
	<i>O. basilicum</i> L.	-	Herb	Common
	<i>O. sanctum</i> L.	Tulshi	Herb	Common
	<i>Pogostemon auricularius</i> (L.) Hassk.	-	Herb	Common
	<i>Actinodaphne angustifolia</i> Nees.	Tejmatan	Tree	Common
Lauraceae	<i>Dehaasia kurzii</i> King ex Hook.f.	Modon Mostho	Tree (medium)	Rare/Endan
	<i>Litsea glutinosa</i> (Lour.) Robinson	Kukur-chita, Karjiuki, Menda	Tree (medium)	Rare
	<i>Persea bombycina</i> (King ex Hook.f.) Kosterm.	Machilus, Nala-amsi	Tree (medium)	Rare
Lecythidaceae	<i>Barringtonia acutangula</i> (L.) Gaertn.	Hijal, Kumia, Hidjal	Tree (medium)	Common
	<i>Leea acuminata</i> Wall.	Phupharia	Shrub	Rare
	<i>L. aequata</i> L.	Kakjangha	Shrub	Rare
Leeaceae	<i>L. crispa</i> L.	Banchalita, Mach	Shrub	Rare
	<i>L. indica</i> (Burm. F.) Merr.	Kurkur jihwa	Large shrub/ Small tree	Common
	<i>L. macrophylla</i>	-	Tree (small)	Rare
Loganiaceae	<i>Fagraea ceilanica</i> Thunb.	-	Tree (small)	Rare

Loranthaceae	<i>Dendrophthoe pentandra</i> (L.) Miq.	-	Shrub	Rare	
	<i>Macrosolen cochinchinensis</i> (Lour.) Van Tiegh.	Chota banda, Rema	Shrub	Rare	
	<i>Scurrula gracilifolia</i> (Roxb. ex Schult.) Danser	Pargacha, Parul	Shrub	Rare	
	<i>S. parasitica</i> L.	Parula	Shrub	Common	
Lythraceae	<i>Lagerstroemia parviflora benghalensis</i>	Baturi, Sidha	Tree (medium)	Rare	
	<i>L. speciosa</i> (L.) Pers.	Jarul, Kanta jarul, Pannya jarul	Tree (medium)	Planted	
	<i>Woodfordia fruticosa</i> (L.) Kurz	Dhatriphul, Ragkat	Shrub	Rare	
Magnoliaceae	<i>Michelia champaca</i> L.	Champa, Chapa	Tree	Planted	
Malvaceae	<i>Abelmoschus moschatus</i> Medik.	Mushakdana, Kalokasturi	Herb	Common	
	<i>Abuliton indicum</i> (L.) Sweet	Petari, Jhampi	Herb	Rare	
	<i>Fioria vitifolia</i> (L.) Mattei	Bon-karpas	Herb	Rare	
	<i>Sida acuta</i> Burm. F.	Kureta	Undershrub	Common	
	<i>S. cordata</i> (Brum. f.) Borss.	Junka	Herb	Common	
	<i>S. cordifolia</i> L.	Pitberela	Undershrub	Common	
	<i>S. mysorensis</i> Wight & Arn.	Chatehata	Herb	Common	
	<i>Urena lobata</i> L.	Banokra	Undershrub	Common	
Melastomataceae	<i>Melastoma malabathricum</i> L.	Lutki, Datranga	Shrub	Common	
	<i>Aglaia edulis</i> (Roxb.) Wall.	Not available	Tree	Critically Endangered	
Meliaceae	<i>Aphanomixis polystachya</i> (Wall.) R. N. Parker.	Pitraj, Ratam, Baidraj, Bajor,	Tree	Critically Endangered	
	<i>Azadirachta indica</i> A. Juss.	Neem, Nim	Tree	Planted	
	<i>Chisochaeton paniculatus</i> Hiern	Rata, Kalikora	Tree	Rare	
	<i>Chukrasia tabularis</i> A. Juss.	Chickrassi	Tree	Rare/Planted	
		<i>Melia azadirachta</i> L.	Gora nim, Kowa nim	Tree (medium)	Rare/Planted
		<i>Swietenia mahagoni</i> (L.) Jacq.	Mehogoni	Tree	Planted
	<i>Toona ciliata</i> J. Roem	Toon, Kuma, Poma, Tongi	Tree	Rare	
Menispermaceae	<i>Cocculus hirsutus</i> (L.) Theob.	Huyer	Herbaceous climber	Rare	
	<i>Stephania glabra</i> (Roxb.) Miers	Akanadi, Musaaanilata	Woody climber	Rare	
	<i>S. japonica</i> (Thunb.) Miers	Akanadi, Nimukha, Raj Pathda	Shrubby climber	Common	
	<i>Tinospora crispa</i> (L.) Hook.f. & Thom.	Gulancha	Shrubby climber	Endangered	
Menyanthaceae	<i>Nymphoides hydriphilla</i> (Lour.) Kuntze	-	Herb (aquatic)	Common	
Mimosaceae	<i>Acacia auriculiformis</i> A. Cunn.ex Beth.	Acasmoni	Tree	Planted	
	<i>A. caesia</i> (L.) Willd.	-	Tree (medium)	Planted	
	<i>A. mangium</i> Willd	Mangium	Tree (small)	Planted	
	<i>Albizia lucidior</i> (Steud.) Nielson. ex Hara	Sil-koroi	Tree	Rare/Planted	
		<i>A. chinensis</i> (Osb.) Merr.	Chakua koroi, Chakua	Tree	Planted
		<i>A. lebeck</i> (L.) Benth.	Kalakoroi, Sirish	Tree	Planted
		<i>A. odorssima</i> (L.f.) Benth.	Tetuya, Koro	Tree	Planted
		<i>A. procera</i> (Roxb.) Benth.	Jath-koroi, Koroi	Tree	Planted
		<i>A. richardiana</i> (Voigt.) King & Prain	Belati amlati, Rajkoroi	Tree	Planted
		<i>Mimosa pudica</i> L.	Lajja-bati	Herbaceous trailer	Common
		<i>Pithecellobium heterophyllum</i> Macbr.	Kuramara gach	Tree (medium)	Rare/Endan
		<i>Samanea saman</i> (Jacq.) Merr.	Belati-siris, Bisti gach, Randi-koroi, Ful-koroi	Tree	Planted
		<i>Xylia dolabiformis</i> L.	Lohakat	Tree	Rare/Endan
	Moraceae	<i>Artocarpus chaplasi</i> Roxb.	Chaplash, Capalish	Tree	Rare/Planted
<i>A. lakoocha</i> Wall. ex Roxb.		Dewa, Dauphal	Tree	Rare	
<i>Ficus hispida</i> L. f.		Dumur, Kakdumur, Dhungri	Tree (small)	Common	
<i>F. macrocarpa</i> L.f.		Bot	Tree	Rare	
<i>F. bengalensis</i> L.		Bot	Tree	Common	

	<i>F. fistulosa</i> Reinwtdt.	-	Tree (small)	Common
	<i>F. gibbosa</i> Blume	Bot	Tree	Common
	<i>F. glomerata</i> 51ttenuat Roxb.	Bot	Tree (small)	Common
	<i>F. racemosa</i> L.	Jog-dumur	Tree	Common
	<i>F. religiosa</i> L.	Ashwatha, Ashwath	Tree	Common
	<i>Streblus asper</i> Lour.	Sheora, Arga	Tree	Common
Myristicaceae	<i>Knema erratica</i> (Hook.f. & Thom.) J. Sinclair	Not available	Tree	Critically Endangered
Myrsinaceae	<i>Ardisia colorata</i> Roxb.	-	Tree (small)	Rare/Endan
	<i>A. paniculata</i> Roxb.	-	Tree (small)	Rare/Endan
	<i>A. solanacea</i> Roxb.	Ban-jam	Shrub	Rare/Endan
	<i>Maesa .attenua</i> A. DC.	Naricha gach	Large shrub/ Small tree	Common
	<i>M. indica</i> (Roxb.) DC.	Sesu, Sirkhi	Large shrub/ Small tree	Common
	<i>M. paniculata</i> A. DC.	Noa-maricha	Tree (small)	Common
	<i>M. ramantacea</i> Wall.	Noa-maricha	Large shrub/ Small tree	Common
Myrtaceae	<i>Cleistocalyx nervosum paniala</i>	Bhutijam, Godajam	Tree	Rare
	<i>Euclalyptus citrodora</i> Hook.	Eucalyptus	Tree	Planted
	<i>Syzygium cumini</i> (L.) Skeets	Jam, Kalajam	Tree	Planted
	<i>S. cymosum</i> DC.	Khudijam, Khurijam, Jonkijam	Tree	Planted
	<i>S. formosum</i> (Wall.) Masamune.	Paniya jam, Phul jam	Tree	Planted
	<i>S. fruticosum</i> DC.	Banjam, Putijam, Khudijam	Tree (small)	Rare
	<i>S. macrocarpa</i> (Roxb.) Balak.	Banjam, Chalta-jam	Tree (medium)	Planted
	<i>S. praecox</i> (Roxb.) Rathakr & N.C. Nair	Dholi jam, Poorajam	Tree (small)	Planted
	<i>S. aqueum</i> (Burm. F.) Alston	Jambo	Tree (medium)	Planted
<i>S. Jambos</i> (L.) Alston	Golapjam	Tree (medium)	Planted	
Nympheaceae	<i>Nymphaea nouchali</i> Brum. F.	Sada Sapla	Herb (Aquatic)	Common
Ochnaceae	<i>Ochna wallichii</i> Planch.	Champabaha	Tree (small)	Rare/Endan
Oleaceae	<i>Jasminum sambac</i> (L.) Aiton	Belphul, Beli	Shrubby climber	Rare
	<i>J. scandens</i> Vahl	--	Woody climber	Rare
	<i>Myxopyrum smilacifolium</i> (Wall.) Blume	--	Scandent Shrub	Rare/Endan
Onagraceae	<i>Ludwigia hyssopifolia</i> (G. Don.) Exell.	-	Herb	Common
	<i>L. adscendens</i> (L.) Hara	Keshardam	Herb	Common
Orobanchaceae	<i>Aeginetia indica</i> L.	-	Herb	Common
Oxalidaceae	<i>Oxalis corniculata</i> L.	Amrul	Herb	Common
	<i>Adenia trilobata</i> (Roxb.) Eng.	Akandaphal	Herbaceous climber	Common
Passifloraceae	<i>Passiflora foetida</i> L.	Jomkalata	Herb	Common
	<i>Peperomia 51ttenuat</i> (L.) Kunth.	Peperomea	Herb (succulent)	Common
Piperaceae	<i>Piper longum</i> L.	Pipul	Herb	Common
	<i>P. sylvaticum</i> Roxb.	Ban Pan	Herbaceous creeper	Common
	<i>Salomonina ciliata</i> (L.) DC.	-	Herb	Common
Polygalaceae	<i>Xanthophyllum flavescens</i> Roxb.	Ajensak, Gabdi, Han sak	Tree	Common
	<i>Ampelygonum chinense</i> (L.) Lindl.	Mohicharan sak	Herb	Common
	<i>Persicaria orientalis</i> (L.) Spach.	Bara panimarich	Herb	Common
	<i>P. hydropiper</i> (L.) Spach.	Pakurmul	Herb	Common
	<i>P. viscosa</i> Nakia	Atala Biskatali	Herb	Common
Proteaceae	<i>Helicia excels</i> (Roxb.) Blume	-	Tree (medium)	Rare
	<i>Gouinia tiliaefolia</i> Lam.	-	Scandent Shrub	Rare/Endan
	<i>Zizyphus glabrata</i> Heyne ex Roth.	Pahari boroi	Shrub	Rare
	<i>Z. mauritiana</i> Lam.	Kul, Boroi	Tree (medium)	Common
Rhamnaceae	<i>Z.oenoplia</i> (L.) Mill.	Boot boroi	Large srub/ Small tree	Common
	<i>Aidia oppositifolia</i> (Roxb.) Rahman & Das	Bhadi, Dalya phul	Tree (small)	Rare/Endan
	<i>Canthium angustifolium</i> Roxb.	Katamalli, Katalichapa	Shrub	Common
Rubiaceae	<i>Cerescoides campanulata</i> (Roxb.)Tirveng.	Not available	Tree	Endangered
	<i>Chasalia curviflora</i> var. <i>ophioxyloodes</i>	-	Shrub	Rare
	<i>Dentella repens</i> (L.) Forst. & G. Frost.	Bhuiapat	Herb	Common

	<i>Gardenia coronaria</i> Buch.-Ham.	Torgular, Koinar, Painna phul	Tree (medium)	Rare
	<i>Haldina cordifolia</i> (Roxb.) Ridsd.	Bangka, Kalakadam, Mala, Dhakudom, Haldu	Tree	Rare
	<i>Hedyotis corymbosa</i> (L.) Lam.	Ketpapra, Panki	Herb	Common
	<i>H. scandens</i> Roxb.	Kannaya bata, Kumbhardhala	Herb (scandent)	Common
	<i>Ixora athrorantha</i> Bremek.	-	Large shrub/ Small tree	Common
	<i>I. balakrishnanii</i> Deb & Rout	Bhantjhara	Large shrub/ Small tree	Common
	<i>I. pavetta</i> Andr.	Swetrangan, Gandhalrangan	Tree (small)	Common
	<i>I. pubirama</i> Bremek	Kaemosi, Chichainpa	Large shrub/Small tree	Common
	<i>Ixora spectabilis</i> Wall.	-	Tree (small)	Common
	<i>Ixora subsessilis</i> Wall. ex G. Don	Pool tree, Kondor, Rengchan	Shrub	Common
	<i>I. cuneifolia</i> Roxb.	Beophul, Kesua Gachh	Shrub	Rare
	<i>I. nigricans</i> R. Br. ex Wight & Arn.	Nikranga chuillya	Tree (small)	Common
	<i>Knoxia sumatrensis</i> (Retz) DC.	-	Herb	Common
	<i>Lasianthus hirsutus</i> (Roxb.) Merr.	Kala long	Shrub	Common
	<i>Meyna spinosa</i> Roxb. ex Link	Maina, Mainakata	Tree (small)	Rare
	<i>Mitracarpus hirtus</i> (L.) DC.	-	Herb	Common
	<i>Morinda angustifolia</i> Roxb.	Rangash, Banamali, Harinar ful	Tree (small)	Common
	<i>M. citrifolia</i> L.	Banach, Haldi kachu, Ronch	Large shrub/Small tree	Common
	<i>Mussaenda</i> sp.	Not available	Shrub	Common
	<i>M. roxburghii</i> Hook.f.	Chauri-chaonri, Silchauri	Tree (small)	Common
	<i>Ophiorrhiza mungos</i> L.	Gandhanakuli	Herb	Common
	<i>O. rugosa</i> Wall. var. prostrata	Jari, Kalashona	Herb	Common
	<i>Oxyceros kunstleri</i> (King & Gamble) Tirveng.	Mahish kanta, Manika gach	Shub	Rare
	<i>Paederia foetida</i> L.	Gandha-badali, Baduli-badulia	Herbaceous climber	Common
	<i>Pavetta indica</i> L.	Banamali	Large shrub/Small tree	Common
	<i>Prismatomeris tetrandra</i> (Roxb.) K. Schum.	Chinatita, Katmali	Large shrub/Small tree	Common
	<i>Psychotria calocarpa</i> Kurz	Ranga bhutta	Undershrub	Common
	<i>P. monticola</i> Kurz	Hatichotra	Shrub	Common
	<i>P. adenophylla</i> Wall.	Baro sudma	Large shrub/Small tree	Common
	<i>P. symplocifolia</i> Kurz	-	Large shrub/Small tree	Common
	<i>Spermacoce articularis</i> L. f.	Ahtharogia	Herb	Common
	<i>Tarenna companiflora</i> (Hook.f.) Balakrishnan	Kakra, Rebek	Large shrub/Small tree	Common
	<i>Tarrenoidea wallichii</i> Tirveng. & Sastre	-	Tree	Common
	<i>Uncaria scandens</i> (Smith) Hutch.	Vailful lata	Herbaceous climber	Rare
	<i>Wendlandia tinctoria orientalis</i>	Tulaload, Tulaladh	Tree (small)	Common
Rutaceae	<i>Acronychia padunculata</i> (L) Miq.	Bon jamir	Tree (small)	Rare
	<i>Clausena heptaphylla</i> (Roxb.) Wight & Arn	Karanphul, Panbahar	large shrub	Common
	<i>Glycosmis pentaphylla</i> (Retz.) Corr.	Datmajan, Matkila	Shrub	Common
	<i>Paramignya scandens</i> (Griff.) Craib.	Bannebu, Karipa	Large shrub/ Small tree	Rare
Sabiaceae	<i>Meliosma pinnata</i> (Roxb.) Maxim.	Bativa, Attalia	Tree (medium)	Rare
	<i>Allophylus cobbe</i> L. var. glaber	Chita	Tree (small)	Common
	<i>A. villosa</i> (Roxb.) Blume	-	Tree (small)	Common
Sapindaceae	<i>Cardiospermum helicacabum</i> L.	Phutka	Herbaceous climber	Common
	<i>Lapisanthes rubiginosum</i> (Roxb.) Leech.	Baraharina	Tree (small)	Rare
	<i>L.senegalensis</i> (Pior.) Leenh.	Gotahorina, Amjam, Kawajhijhi	Tree (small)	Rare
	<i>Xerospermum laevigatum</i> Radlk.	Murailah lichu	Tree	Rare
Sapotaceae	<i>Mimusops elengi</i> L.	Bakul	Tree	Planted
	<i>Adenosma indianum</i> (Lour.) Merr.	Barakesuti	Herb	Common
	<i>Curanga amara</i> Juss.	-	Herb	Common
	<i>Lindernia antipoda</i> (L.) Alston	-	Herb	Common
Scrophulariaceae	<i>Scoparia dulcis</i> L.	Bandhaney	Herb	Common
	<i>Torenia asiatica</i> L.	-	Herb	Common
	<i>T. diffusa</i> D. Don	-	Herb	Common
	<i>T. flava</i> Benth.	-	Herb	Common
Solanaccae	<i>Physalis minima</i> L.	Fotka	Herb	Common

	<i>P. micrantha</i> Link.	Bantipariya, Phuika, Terare	Herb	Common
	<i>Solanum nigrum</i> L.	Gurkhi	Herb	Common
	<i>S. sisymbriifolium</i> Lam.	Kanta begun	Herb	Common
	<i>S. torvum</i> Sw.	Goth begun	Shrub	Common
	<i>S. virginianum</i> L.	Kantakari	Herb	Common
Sonneratiaceae	<i>Duabunga grandiflora</i> (Roxb. ex DC) Walp	Bandarhulla	Tree	Rare
Sphenocleaceae	<i>Sphenoclea zeylanica</i> Gaertn.	Jhil Marich	Herb	Common
	<i>Abroma augusta</i> (L.) L.f.	Ulatkambal, Tambol	Large shrub/Small tree	Common
	<i>Byttneria pilosa</i> Roxb.	Harjora-lata, Jumi, Harbanga-lata	Shrubby climber	Common
	<i>Firmiana colorata</i> (Roxb.) R.Br.	Naichicha-udal, Ujal, Patagota, Samarri, Pisi	Tree	Critically Endangered
Sterculiaceae	<i>Pterospermum semisagittatum</i> Buch.-Ham.	Laona assar, Bara assar	Tree	Rare/Endan
	<i>Sterculia foetida</i> L.	Udal	Tree (medium)	Rare/Endan
	<i>S. hamiltonii</i> (Kuntze) Adelb.	--	Tree (small)	Rare/Endan
	<i>S. villosa</i> Roxb. ex Smith	Udal, Chandal	Tree (medium)	Rare/Endan
Styracaceae	<i>Styrax serolatus</i> Roxb.	Kanchuni, Fulkat	Tree (small)	Rare/Endan
Symplocaceae	<i>Symplocos racemosa</i> Roxb.	-	Tree (medium)	Rare/Endan
Theaceae	<i>Eurya attenuate</i> DC.	Lapet, Sagoler bori	Tree (small)	Rare/Endan
	<i>Brownlowia elata</i> Roxb.	Mass, Masjot, Moos	Tree	Critically Endangered
	<i>Corchorus aestuans</i> L.	Titapat	Herb	Rare
Tiliaceae	<i>Grewia disperma</i> Roxtt.	Laona assar, Dhaman	Tree (medium)	Common
	<i>G. nervosa</i> (Lour.) Panigr.	Assar, Pisla, Patka	Tree (small)	Common
	<i>Triumfetta pilosa</i> Roth	-	Herb	Common
	<i>T. rhomboidea</i> Jacq.	Ban-okra	Herb	Common
Ulmaceae	<i>Trema orientalis</i> (L.) Blume	Bonjiyal, Jiban, Dhalagar, Dhola	Tree (small)	Common
	<i>Boehmeria glomerulifera</i> Miq.	Borthurthuri	Tree (small)	Common
Urticaceae	<i>Pouzolzia zeylanica</i> (L.) Benn.	Kullaruki	Herb	Common
	<i>Sarcochlamys pulcherrima</i> Gaud.	Acila	Large shrub	Common
	<i>Callicarpa arborea</i> Roxb.	Barmala	Tree (medium)	Common
	<i>Clerodendrum indicum</i> (L.) Kuntze	Bamunhati	Shrub	Common
	<i>C. viscosum</i> Vent.	Bhant, Ghetu phul	Shrub	Common
	<i>C. wallichii</i> Merr.	Malbong, Dieng-julkah	Shrub	Rare
	<i>Duranta erecta</i> L.	Durantha, Katamehedhi	Large shrub	Common
	<i>Gmelina arborea</i> Roxb.	Gamari	Tree	Planted
	<i>Lantana camara</i> L.	Lantana	Shrub	Common
Verbenaceae	<i>Lippia alba</i> Mill. N. E. Br. ex Brit. & Wilson	Pichas-lakr	Shrub	Common
	<i>Phyla nodiflora</i> (L.) Greene	Bhuiokra, Karoghar	Herb	Common
	<i>Premna esculenta</i> Roxb.	Lalana, Lalong	Shrub	Common
	<i>Tectona grandis</i> L. f.	Shegun, Shegoon, Teak	Tree	Planted
	<i>Vitex glabrata</i> R. Br.	Goda, Horina, Aswal	Tree	Rare
	<i>V. negundo</i> L.	Baranishinda, Nishinda	Tree (small)	Common
	<i>V. peduncularis</i> Wall. ex Schauer	Goda, Horina, Arswal	Tree	Rare
	<i>V. trifolia</i> L.	Choto nishinda	Shrub	Common
	<i>Ampelocissus barbata</i> (Wall.) Planch.	Jarila-lahari	Herbaceous climber	Common
	<i>Cayratia japonica</i> (Thunb.) Gagnep.	-	Herbaceous climber	Common
	<i>C. trifolia</i> (L.) Domin	Amallat, Amal lata	Herbaceous climber	Common
	<i>Cissus assamica</i> (Laws.) Craib	Amasha lata	Herbaceous climber	Rare
Vitaceae	<i>C. elongata</i> Roxb.	Dhemna, Chemna	Herbaceous climber	Common
	<i>C. javana</i> DC.	Bichitra lata	Herbaceous climber	Rare
	<i>C. pentagona</i> Roxb.	Sona-lota, Sona-tola	Herbaceous climber	Rare
	<i>Tetrastigma angustifolia</i> (Roxb.) Deb	Nekung riubi	Herbaceous climber	Rare
	<i>T. bracteolatum</i> (Roxb.) Planch.	Golgoti lata	Herbaceous climber	Common
	<i>T. leucostaphylum</i> (Dennst.) Alston	Horinia-lata, Jarul lata	Woody climber	Common

It revealed from Table 2 that 22 threatened plants, reported in the Red Data Book of Bangladesh (Khan *et al.* 2001, Rahman 2013 and Ara *et al.* 2013), were located to the area of Hazarikhil WS. These threatened species in this Wildlife Sanctuary are likely to be under conservation management.

The study also resulted with the rediscovery of 3 species which were thought to be possibly extinct from the flora of Bangladesh since these have neither been collected nor reported to occur elsewhere in Bangladesh for more than 100 years after their first record (Rahman 2013) and these are:

Aglaia edulis (Roxb.) Wall. (Meliaceae)

It was recorded from Sylhet by J. D. Hooker in 1875 (Hook.f. 1875). Since then no report of its occurrence in Bangladesh was available. It is being rediscovered from Hazarikhil WS.

Knema erratica (Hook.f. & Thom.) J. Sinclair (Myristicaceae)

Basionym: *Myristica erretica* Hook.f. and Thom. (1855). It was first recorded from Chittagong by Hook.f. & Thom. and thereafter by Prain (1903) as *Myristica longifolia* Wall. var. *erratica* (Hook.f. and Thom.) Hook.f. (1885). Since then no report of its collection from elsewhere in Bangladesh was available. The present collection was made from Hazarikhil WS after more than 100 years.

Artabotrys caudatus Wall ex Hook.f. and Thom. (Annonaceae)

This species was recorded from Sylhet by J. D. Hooker and T. Thomson in 1855. Since then it has neither been collected nor reported to occur elsewhere in Bangladesh, and hence reported as possibly extinct (Rahman 2013). It is being rediscovered from Hazarikhil WS.

Table 2. Some rare and endangered species of Bangladesh relocated to Hazarikhil WS (as per RDB).

Family	Threatened species	Bangla name	Habit	Status of occurrence*
Apocynaceae	<i>Alstonia nerifolia</i> D. Don	<i>Chatim</i>	Tree	EN
	<i>Melodinus monogynus</i> Roxb.	-	Woody twiner	EN
	<i>Vallaris solanacea</i> (Roxb.) Kuntze	<i>Hadpur, Mali</i>	Shrub (scandent)	EN
	<i>Wrightia arborea</i> (Dennst.) Mabb.	<i>Dudh-koraiya</i>	Tree	EN
Myrsinaceae	<i>Ardisia colorata</i> Roxb.	--	Small tree	VU
Bombacaceae	<i>Bombax insigne</i> Wall.	<i>Ban-simul, Pahari-simul</i>	Tall tree	DD
Anacardiaceae	<i>Bouea oppositifolia</i> (Roxb.) Adelb.	<i>Miriam, Mailam, Uriam, Maillom</i>	Medium tree	EN
	<i>Buchanania lancifolia</i> Roxb.	<i>Chikki</i>	Tree	NE
	<i>Mangifera sylvatica</i> Roxb. ex Wall.	<i>Uri Aam, Jangali Aam, Laksmi Aam</i>	Tree	NE
	<i>Swintonia floribunda</i> Griff.	<i>Civit, Chundul, Am chundul</i>	Tree	DD
Tiliaceae	<i>Brownlowia elata</i> Roxb.	<i>Mass, Masjot, Moos</i>	Tree	VU
Lauraceae	<i>Dehaasia kurzii</i> King ex Hook.f.	<i>Modon Mostho</i>	Medium tree	VU
Annonaceae	<i>Fissistigma wallichii</i> Merr.	--	Woody climber	EN
	<i>Uvaria cordata</i> (Dunal) Alston	--	Woody climber	VU
Asclepiadaceae	<i>Hemidesmus indicus</i> (L.) R. Br.	<i>Anantamul</i>	Herb	EN
	<i>Hoya globosa</i> Hook.f.	--	Herbaceous Epiphyte	NE
Rubiaceae	<i>Wendlandia tinctoria orientalis</i>	<i>Tulaload, Tulaladh</i>	Small tree	EN
	<i>Psychotria symplocifolia</i> Kurz	--	Large shrub	EN
Sterculiaceae	<i>Pterospermum semisagittatum</i> Buch.-Ham.	<i>Laona assar, Bara assar</i>	Tree	DD
Menispermaceae	<i>Stephania glabra</i> (Roxb.) Miers	<i>Akanadi, Musaahanilata</i>	Woody climber	VU
	<i>Tinospora crispa</i> (L.) Hook.f. & Thom.	<i>Gulancha</i>	Shrubby climber	EN
Sapindaceae	<i>Xerospermum laevigatum</i> Radlk.	<i>Murailah lichu</i>	Tree	VU

*EN=Endangered, VU=Vulnerable, DD=Data deficient, NE=Near threatened

This rediscovery indicates that many species which are thought to be possibly extinct from Bangladesh still could be existed in the biodiversity reserves of Chittagong and Hill Tracts. Conservation of a Protected Area for its floristic elements, wild lives, ecosystem and habitats depend largely on its sustainable Management Plan and proper implementation. Conservation management of this WS, as assessed, is seemed to be poor for which natural habitats are being degraded and floristic elements depleting at an alarming rate although the creation of planted forests is increased. Both core and buffer zones of fragmented reserves are largely affected by illegal encroachments, manmade forest fire, hunting and over exploitation of rare-endangered species and lack of alternative livelihood management for forest inhabitants etc.

Based on present survey, a total of 478 species belonging to 88 dicot families are recognized to be represented in the flora of Hazarikhil WS. Of these, about 39.54% species are trees; 18% species are rare and endangered (EN) and 2.93% species are critically endangered (CR). The floristic diversity of this sanctuary is comparatively richer than Rampahar, Sitapahar and Chunati wildlife sanctuaries in terms of total land area.

The floristic and faunal elements of this Wildlife Sanctuary are the dependable source of food, medicine, water, timber and fuel wood of the local inhabitants. The floral biodiversity of the sanctuary exists under different degraded ecosystems and its protection management is still inadequate.

Sustainable Management Plan of the Protected Area in the light of National Conservation Strategy is to be made and proper implementation through action plan is urgently required with collaboration and cooperation of stakeholders and local administrations. Specially rare and endangered species along with their degraded habitats, as recognized in this study, are suggested to protect taking proper conservation management.

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