

# FLORISTIC DIVERSITY OF UMARI DHAM SACRED GROVE IN JAIPUR, RAJASTHAN, INDIA

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## ABSTRACT

The Umari Dham is a sacred grove situated at the Jamwa Ramgarh Wildlife Sanctuary, Jaipur District of Rajasthan, India. It's a beautiful harbour near the city of Jaipur. Umari Dham sacred grove has a temple, which has been visited by worshippers for approximately 450 years. During present field investigation, attempts were made to categorize the floral diversity of this sacred grove, and around 215 flowering plant species belonging to 159 genera under 52 families have been recorded according to Angiosperm Phylogeny Group III (APG III) classification. This grove serves as a vital pool for preservation of threatened, endemic and medicinal plant species.

**Keywords:** *sacred grove, threatened, Jaipur, Rajasthan, sanctuary*

## INTRODUCTION

The sacred groves are forest fragments which are delimited and protected by indigenous communities under their religious beliefs. Thus, these groves not only conserve nature but also the traditional knowledge associate with it. In Rajasthan, sacred groves are called "Orans/Gochar". Indigenous people residing in these communities live in harmony with nature and conserve its valuable flora and fauna. The locals protect forest and natural vegetation for their religious beliefs and traditional rituals that have run through their several generations. Cultural and religious festivals are often arranged by local people in these sacred groves and they call such a festival "Mela" [1]. Sacred groves are places where religion

interacts with nature [2]. Many sacred groves were established thousands of years ago, when the human's life was in its pre agricultural, hunting and gathering stages. Groves vary in sizes from a small patch of trees to several acres of densely vegetated areas. In these sacred groves, many old and rare plant species are found that are protected by indigenous peoples in order to perform their religious rituals [3]. These groves are hence dedicated to the local folk deities and so the cutting of trees, grazing and hunting is prohibited in these areas [4]. Sacred groves are classified into three categories i.e., traditional sacred groves, temple sacred groves and groves around the burial or cremation ground [5].

Sacred groves are scattered all across India especially in those regions where indigenous communities reside, such as the Western Ghats, the North Eastern and Central hill tracts [6 - 10]. The total number of sacred groves in India could be in ranging from 100,000 to 150,000 [11]. In Rajasthan sacred groves have been known by various names, such as Vani in Mewar, Kenkri in Ajmer, Oran in Jodhpur, Bikaner and Jaisalmer, Shamlatdeh and Devbani in Alwar [12]. Around 560 sacred groves have been documented in the state of Rajasthan [13]. Malhotra (2001) [14] reported sacred groves from the Eastern of the Aravalli range to the Western part of the state. In Aravalli region of Rajasthan, the groves can be categorized into three types i.e., those located near the village, some dedicated to Lord Shiva, and the ones dedicated to a single tree [15].

temperature ranges between 2 °C to 48 °C. The annual average rainfall is 673.9 mm.



Figure 1. Geographical location of Umari Dham sacred grove [17]

## STUDY AREA

The Jamwa Ramgarh WLS is the Southern extension of the Sariska Tiger Reserve. It is located in North-East direction of Jaipur. The geographical coordinates of the Sanctuary extend from 76° 03'E longitude and 27° 02'N latitude. The vegetation of Sanctuary corresponds to Northern Tropical Dry Deciduous Forests and Northern Tropical Thorn Forest [16]. During a field excursion to Jamwa Ramgarh Wildlife Sanctuary, a sacred grove i.e., Umari Dham was recorded. The grove has been protected and managed by local community. Umari Dham is located at 27°03'10.5" N and 076°04'58.4" E in Jaipur District of Rajasthan State (Figure 1). The sacred groves, as the name suggests, are associated with certain deities. This grove also has a historical temple (Figure 2). It is a memorial grove and worship in the memory of a saint Swami Ramdamodar Das. A day's festival colloquially known as the "Mela" is organized in the memory of saint by the descendants and people from the local community. As per the biogeography classification, it falls in semi-arid zone. The semi-arid climate is characterized by very hot summers and very cold winters. The

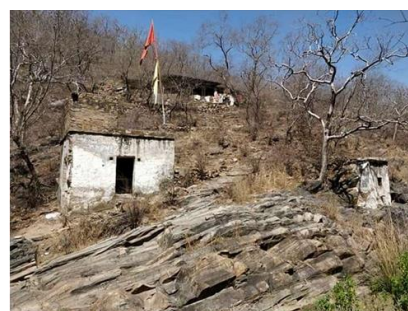


Figure 2. Umari Dham temple

## MATERIALS AND METHODS

This paper describes a case study of Umari Dham sacred grove which is basically a temple grove situated within the Jamwa Ramgarh Wildlife Sanctuary, Jaipur. This sacred grove has existed for the past approximately 450 years, according to the temple priest. An extensive survey has been made during the different seasons and whole area of sacred grove has been examined. All the specimens have been collected and preserved in Rajasthan university herbarium (RUBL). Identification of plant species has been done by the Flora of Rajasthan and Flora of North East Rajasthan [18 - 21].

## RESULTS AND DISCUSSION

This sacred grove contains 215 flowering plant species (Table 1), belonging to 52 families and 159 genera. The identified plant species have been classified on the basis of Angiosperm Phylogeny Group III classification (2009) [22]. The dominant orders in this region are Poales and Fabales (32), Asterales (20), Malvales and Lamiales (19) and

Caryophyllales (17), Figure 3. Similarly, the dominant families are Fabaceae (31), Poaceae (28), Asteraceae (20) and Malvaceae (19), Figure 4. The life forms found in the study area are tree (27), shrub (25), climbers (22) and herbs (142). Herbaceous plants are governing the habitat and represented by 142 individual plants, including one parasite plant, Figure 5.

Table 1. Plant species recorded from Umari Dham sacred grove

Superorder/Order	Family & Species	Common name	Life form
MONOCOTS			
Liliales	<b>Colchicaceae</b>		
	<i>Gloriosa superba</i> L. (Figure 7F)	Kalvari/Kalihari	Climber
Asparagales	<b>Asparagaceae</b>		
	<i>Asparagus racemosus</i> Willd.	Satabari	Climber
COMMELINIDS			
Commelinales	<b>Commelinaceae</b>		
	<i>Commelina benghalensis</i> L.	Bukana	Herb
	<i>Commelina forskalaei</i> Vahl	Kankawa	Herb
	<i>Cyanotis axillaris</i> (L.) D. Don.	-	Herb
	<i>Cyanotis cristata</i> (L.) D. Don.	Bokani	Herb
	<i>Murdannia nudiflora</i> (L.) Brenan	Kanshura	Herb
Poales	<b>Cyperaceae</b>		
	<i>Bulbostylis barbata</i> (Rottb.) Clarke	-	Herb/Sedge
	<i>Cyperus bulbosus</i> Vahl	-	Herb/Sedge
	<i>Cyperus iria</i> L.	-	Herb/Sedge
	<i>Cyperus triceps</i> (Rottb.) Endl.	-	Herb/Sedge
	<b>Poaceae</b>		
	<i>Apluda mutica</i> L.	Phulkia/Bhanjura	Herb/Grass
	<i>Aristida funiculata</i> Trin. & Rupr.	-	Herb/Grass
	<i>Arthraxon lanceolatus</i> (Roxb.) Hochst.	-	Herb/Grass
	<i>Bothriochloa pertusa</i> (L.) A. Camus	Karad	Herb/Grass
	<i>Brachiaria ramosa</i> (L.) Stapf	Kuri	Herb/Grass
	<i>Cenchrus biflorus</i> Roxb.	Bhurat	Herb/Grass
	<i>Cenchrus ciliaris</i> L.	Neenjna	Herb/Grass
	<i>Cenchrus setigerus</i> Vahl	-	Herb/Grass
	<i>Chloris virgata</i> Sw.	-	Herb/Grass
	<i>Chrysopogon fulvus</i> (Spreng.) Chiov.	-	Herb/Grass
	<i>Cynodon dactylon</i> (L.) Pers.	Doob	Herb/Grass
	<i>Dactyloctenium aegyptium</i> (L.) Willd.	Makra-ghas	Herb/Grass
	<i>Desmostachya bipinnata</i> (L.) Stapf	-	Herb/Grass
	<i>Dichanthium annulatum</i> (Forssk.) Stapf	Karad	Herb/Grass
	<i>Digitaria pennata</i> (Hochst.) T. Cooke	-	Herb/Grass
	<i>Echinochloa colona</i> (L.) Link	Homa	Herb/Grass
	<i>Eleusine indica</i> (L.) Gaertn.	-	Herb/Grass
	<i>Eragrostis ciliaris</i> (L.) R.Br.	Under puncho	Herb/Grass
	<i>Eragrostis pilosa</i> (L.) P. Beauv.	-	Herb/Grass
	<i>Eragrostis tremula</i> (Lam.) Hochst. ex Steud.	Phulna ghas	Herb/Grass
	<i>Heteropogon contortus</i> (L.) P. Beauv. ex Roem. & Schult.	Kali-lamp	Herb/Grass
	<i>Melanocentris jacquemontii</i> Jaub. & Spach.	-	Herb/Grass
	<i>Oplismenus burmannii</i> (Retz.) P. Beauv.	-	Herb/Grass

Table 1. Plant species recorded from Umari Dham sacred grove (continued)

Superorder/Order	Family & Species	Common name	Life form
	<i>Paspalidium flavidum</i> (Retz.) A. Camus	Chapri	Herb/Grass
	<i>Saccharum bengalense</i> Retz.	-	Herb/Grass
	<i>Saccharum spontaneum</i> L.	Kans	Herb/Grass
	<i>Setaria intermedia</i> Roem. & Schult.	-	Herb/Grass
	<i>Setaria italica</i> (L.) P. Beauv.	-	Herb/Grass
Ceratophyllales	<b>Ceratophyllaceae</b>		
	<i>Ceratophyllum demersum</i> L.	Sivar/Jal butti	Herb
EUDICOTS			
Ranunculales	<b>Menispermaceae</b>		
	<i>Cissampelos pareira</i> L.	Patha/Brihatika	Climber
	<i>Cocculus hirsutus</i> (L.) Diels.	Chhireta/Bilwani	Climber
	<i>Cocculus pendulus</i> (J. R. & G. Forst.) Diels.	Pilwan/Jal jamni	Climber
	<b>Papaveraceae</b>		
	<i>Argemone mexicana</i> L.	Pili kantali	Herb
	<i>Argemone mexicana</i> L. var. <i>ochroleuca</i> (Sweet) Lindl.	Satyanasi	Herb
CORE EUDICOTS			
ROSIDS			
Vitales	<b>Vitaceae</b>		
	<i>Cayratia trifolia</i> (L.) Domin.	Amabel	Climber
FABIDS			
Zygophyllales	<b>Zygophyllaceae</b>		
	<i>Tribulus terrestris</i> L.	Chhota Gokhru	Herb
Celastrales	<b>Celastraceae</b>		
	<i>Maytenus emarginatus</i> (Willd.) Ding Hou	Kankeda	Tree
Malpighiales	<b>Euphorbiaceae</b>		
	<i>Euphorbia caducifolia</i> Haines.	Danda thor	Shrub
	<i>Euphorbia hirta</i> L.	Dudhi	Herb
	<i>Euphorbia prostrata</i> Ait.	-	Herb
	<i>Euphorbia thymifolia</i> L.	Dudhi	Herb
	<i>Ricinus communis</i> L.	Arand	Shrub
	<i>Securinega leucopyrus</i> (Willd.) Muell. - Arg.	Salpan	Shrub
	<b>Phyllanthaceae</b>		
	<i>Phyllanthus amarus</i> Schum. & Thom.	Bhui amla	Herb
	<i>Phyllanthus reticulatus</i> Poir.	-	Herb
Cucurbitales	<b>Cucurbitaceae</b>		
	<i>Bryonopsis laciniosa</i> (L.) Naud.	Shivlingi	Herb
	<i>Coccinia grandis</i> (L.) J.O.Voigt	Kundru	Climber
	<i>Cucumis callosus</i> (Rottl.) Cogn.	Kachrio	Climber
	<i>Momordica balsamina</i> L.	Jangli karela	Climber
	<i>Momordica dioica</i> Roxb. ex Willd.	Kakoda	Climber

Table 1. Plant species recorded from Umari Dham sacred grove (continued)

Superorder/Order	Family & Species	Common name	Life form
	<i>Mukia maderaspatana</i> (L.) M. Roem.	Ankh phutani ki bel	Climber
	<i>Trichosanthes dioica</i> Roxb.	Palwal	Climber
Fabales	<b>Fabaceae</b>		
	<i>Abrus precatorius</i> L.	Chirmi/Ratti	Climber
	<i>Acacia leucophloea</i> (Roxb.) Willd. (Figure 6G)	Khejra	Tree
	<i>Acacia nilotica</i> (L.) Del. (Figure 7C)	Babul	Tree
	<i>Acacia senegal</i> (L.) Willd.	Kumbat	Tree
	<i>Aeschynomene indica</i> L.	Chhui-mui	Herb
	<i>Albizia lebbek</i> (L.) Benth.	Siras	Tree
	<i>Albizia odoratissima</i> (L. f.) Benth.	Kali Siras	Tree
	<i>Alysicarpus monilifer</i> (L.) DC.	-	Herb
	<i>Alysicarpus vaginalis</i> (L.) DC.	-	Herb
	<i>Atylosia platycarpa</i> Benth.	-	Climber
	<i>Bauhinia racemosa</i> Lam.	Jhinjha	Tree
	<i>Butea monosperma</i> (Lam.) Taub. (Figure 6B)	Palas/Cheela	Tree
	<i>Cassia absus</i> L.	Chaksi	Herb
	<i>Cassia fistula</i> L.	Amaltas	Tree
	<i>Cassia mimosoides</i> L.	Ikrar	Shrub
	<i>Cassia obtusifolia</i> L.	Puadia	Herb
	<i>Cassia tora</i> L.	Panwar/Chakvada	Herb
	<i>Crotalaria medicaginea</i> Lam.	Gulali	Herb
	<i>Desmodium repandum</i> (Vahl) DC.	-	Herb
	<i>Indigofera astragalina</i> DC.	-	Herb
	<i>Indigofera cordifolia</i> Heyne ex Roth	Meh-phuli	Herb
	<i>Indigofera linnaei</i> Ali	-	Herb
	<i>Indigofera sessiliflora</i> DC.	-	Herb
	<i>Indigofera tinctoria</i> L.	Neel	Herb
	<i>Mucuna pruriens</i> (L.) DC.	Kaunch	Climber
	<i>Prosopis juliflora</i> (Swartz.) DC.	Bilayati babul	Tree
	<i>Rhynchosia minima</i> (L.) DC.	Chiro motio	Climber
	<i>Tephrosia purpurea</i> (L.) Pers.	Dhamasa	Herb
	<i>Tephrosia strigosa</i> (Dalz.) Sant. & Mahesh.	Jhino-biyano	Herb
	<i>Tephrosia uniflora</i> Pers.	-	Herb
	<i>Tephrosia villosa</i> (L.) Pers.	Sarfonka	Shrub
	<b>Polygalaceae</b>		
	<i>Polygala erioptera</i> DC.	Sarbhagolia	Herb
Rosales	<b>Moraceae</b>		
	<i>Ficus benghalensis</i> L.	Bargad/Bar	Tree
	<i>Ficus racemosa</i> L.	Gular	Tree
	<i>Ficus religiosa</i> L.	Pipal	Tree

Table 1. Plant species recorded from Umari Dham sacred grove (continued)

Superorder/Order	Family & Species	Common name	Life form
	<b>Rhamnaceae</b>		
	<i>Ziziphus mauritiana</i> Lam.	Pemjibor	Tree
	<i>Ziziphus nummularia</i> (Burm. f.) Wight & Arn.	Jharbor	Shrub
	<i>Ziziphus xylopyrus</i> (Retz.) Willd.	Gat-Bor	Tree
	<b>Ulmaceae</b>		
	<i>Holoptelea integrifolia</i> (Roxb.) Planch.	Papri/Churel	Tree
MALVIDS			
Myrtales	<b>Combretaceae</b>		
	<i>Anogeissus pendula</i> Edgew. (Figure 7D)	Dhok	Tree
	<b>Lythraceae</b>		
	<i>Ammannia baccifera</i> L.	Jal bhangra	Herb
	<b>Myrtaceae</b>		
	<i>Syzygium cumini</i> (L.) Skeels	Jamun	Tree
	<i>Syzygium heyneanum</i> (Duthie) Wall. ex Gamble	Jamuni	Tree
Brassicales	<b>Capparaceae</b>		
	<i>Capparis decidua</i> (Forssk.) Edgew.	Ker	Shrub
	<i>Capparis sepiaria</i> L.	Jal/Chhail	Shrub
	<i>Maerua oblongifolia</i> (Forssk.) A. Rich. (Figure 6A)	-	Shrub
	<b>Cleomaceae</b>		
	<i>Cleome gynandra</i> L. (Figure 6F)	Safed bagra	Herb
	<i>Cleome viscosa</i> L.	Bagra/Pili hulhul	Herb
Malvales	<b>Malvaceae</b>		
	<i>Abutilon indicum</i> (L.) Sweet	Tara kanchi	Shrub
	<i>Corchorus aestuans</i> L.	Hade-ka-khet	Herb
	<i>Corchorus depressus</i> (L.) Stocks	Chamkash	Herb
	<i>Corchorus tridens</i> L.	Kagnasha	Herb
	<i>Grewia flavescens</i> A. Juss.	Pili gangeti	Shrub
	<i>Grewia tenax</i> (Forssk.) Fiori	Gangeran	Shrub
	<i>Grewia tiliifolia</i> Vahl	Dhamni	Shrub
	<i>Grewia villosa</i> Willd.	Ban phalsa	Shrub
	<i>Hibiscus lobatus</i> (Murr.) O. Kuntze	-	Herb
	<i>Malvestrum coromandelianum</i> (L.) Garcke	-	Herb
	<i>Melhania futteyporensis</i> Munro ex Mast.	-	Herb
	<i>Sida acuta</i> Burm. f.	Bal	Shrub
	<i>Sida cordifolia</i> L.	Sahadari/Kharanti	Shrub
	<i>Sida mysorensis</i> Wight & Arn.	-	Herb
	<i>Sida ovata</i> Forssk.	Dabi	Shrub
	<i>Sterculia urens</i> Roxb.	Kadaya	Tree
	<i>Triumfetta rhomboidea</i> Jacq.	Lapta/Chirpat	Herb
	<i>Triumfetta pentandra</i> A. Rich.	Mandli	Herb
	<i>Waltheria indica</i> L.	Halduli	Herb

Table 1. Plant species recorded from Umari Dham sacred grove (continued)

Superorder/Order	Family & Species	Common name	Life form
Sapindales	<b>Anacardiaceae</b>		
	<i>Rhus mysorensis</i> G. Don	Dansara	Tree
	<b>Burseraceae</b>		
	<i>Boswellia serrata</i> Roxb. ex Cocleb.	Salar	Tree
	<b>Rutaceae</b>		
	<i>Aegle marmelos</i> (L.) Corr.	Bel	Tree
	<b>Sapindaceae</b>		
	<i>Cardiospermum halicacabum</i> L.	Chirphuta	Herb
Santalales	<b>Loranthaceae</b>		
	<i>Dendrophthoe falcata</i> (L. f.) Ettingsh.	Banda	Parasite
Caryophyllales	<b>Aizoaceae</b>		
	<i>Trianthema portulacastrum</i> L.	Santi	Herb
	<b>Amaranthaceae</b>		
	<i>Achyranthes aspera</i> L.	Andhi jhara	Herb
	<i>Alternanthera pungens</i> Kunth	-	Herb
	<i>Amaranthus viridis</i> L.	Jangli chauli	Herb
	<i>Celosia argentea</i> L.	Surligarke	Herb
	<i>Chenopodium murale</i> L.	Moti sil	Herb
	<i>Digera muricata</i> (L.) Mart.	Lehsua	Herb
	<i>Gomphrena celosioides</i> Mart.	-	Herb
	<i>Pupalia lappacea</i> (L.) Juss.	Undio bhurat	Herb
	<b>Cactaceae</b>		
	<i>Opuntia stricta</i> (Haw.) Haw.	Nagphani	Shrub
	<b>Caryophyllaceae</b>		
	<i>Spergula fallax</i> (Lowe) Krause	Khandidal	Herb
	<b>Nyctaginaceae</b>		
	<i>Boerhavia diffusa</i> L.	Punarnavwa/Santi	Herb
	<b>Plumbaginaceae</b>		
	<i>Dyerophytum indicum</i> (Gibbs ex Wight) Kuntze	-	Shrub
	<i>Plumbago zeylanica</i> L.	Chitrak	Shrub
	<b>Polygonaceae</b>		
	<i>Polygonum plebeium</i> R. Br.	-	Herb
	<b>Portulacaceae</b>		
	<i>Portulaca oleracea</i> L.	Kulpha	Herb
	<i>Portulaca pilosa</i> L.	-	Herb
ASTERIDS			
Ericales	<b>Ebenaceae</b>		
	<i>Diospyros melanoxylon</i> Roxb.	Timroo/Tendu	Tree
	<b>Primulaceae</b>		
	<i>Anagallis arvensis</i> L.	Neel	Herb
LAMIIDS			
	<b>Boraginaceae</b>		
	<i>Cordia dichotoma</i> Forst. f.	Lasora	Tree
	<i>Ehretia laevis</i> Roxb.	Bainoha	Tree
	<i>Heliotropium marifolium</i> Retz.	-	Herb
	<i>Trichodesma indicum</i> R.Br.	Chhota kulpha	Herb

Table 1. Plant species recorded from Umari Dham sacred grove (continued)

Superorder/Order	Family & Species	Common name	Life form
Gentanales	<b>Apocynaceae</b>		
	<i>Calotropis procera</i> auct. non (Ait.) Ait. f.	Madar/Aak	Shrub
	<i>Catharanthus pusillus</i> (Murr.) G. Don	Hingmu	Herb
	<i>Cryptostegia grandiflora</i> Roxb. ex R. Br. (Figure 7G)	Rubber ki bel	Climber
	<i>Ichnocarpus frutescens</i> (L.) R. Br.	Kali Dudhi	Climber
	<i>Pergularia daemia</i> (Forssk.) Chiov.	Gadaria ki bel	Climber
	<i>Sarcostemma acidum</i> (Roxb.) Voigt	Somlata	Shrub
	<i>Wrightia tinctoria</i> (Roxb.) R. Br.	Kerni/Dudhi	Tree
	<b>Rubiaceae</b>		
	<i>Borreria articularis</i> (L. f.) F.N. Will.	-	Herb
	<i>Borreria pusilla</i> (Wall.) DC.	-	Herb
	<i>Oldenlandia corymbosa</i> L.	Pitta papro	Herb
Lamiales	<b>Acanthaceae</b>		
	<i>Adhatoda zeylanica</i> Medik.	Adusa	Shrub
	<i>Blepharis maderaspatensis</i> (L.) Heyne ex Roth	-	Herb
	<i>Dipteracanthus prostratus</i> (Poir.) Nees	-	Herb
	<i>Elytraria acaulis</i> (L. f.) Lindau	-	Herb
	<i>Indoneesiella echioides</i> (L.) Sreem. (Figure 6D)	Pathar chatta	Herb
	<i>Justicia simplex</i> D. Don.	Kagner	Herb
	<i>Peristrophe bicalyculata</i> (Retz.) Nees	-	Herb
	<b>Lamiaceae</b>		
	<i>Anisochilus carnosus</i> (L. f.) Wall.	Panjiri	Herb
	<i>Anisomeles indica</i> (L.) Kuntze (Figure 7A)	-	Herb
	<i>Hyptis suaveolens</i> (L.) Poit.	-	Herb
	<i>Leucas aspera</i> (Willd.) Link	Munda patti/Gotta	Herb
	<i>Leucas urticifolia</i> (Vahl) R. Br.	-	Herb
	<i>Ocimum canum</i> Sims	Mar tulsi	Herb
	<b>Linderniaceae</b>		
	<i>Lindernia ciliata</i> (Colsm.) Pennell	-	Herb
	<i>Lindernia crustacea</i> (L.) F. Muell.	-	Herb
	<b>Pedaliaceae</b>		
	<i>Pedaliium murex</i> L. (Figure 7E)	Bara gokhru	Herb
	<i>Sesamum mulayanum</i> Nair (Figure 7B)	Jangli til	Herb
	<b>Scrophulariaceae</b>		
	<i>Lindenbergia indica</i> (L.) Vatke	-	Herb
	<b>Verbenaceae</b>		
	<i>Phyla nodiflora</i> (L.) Greene	Jal buti	Herb
Solanales	<b>Convolvulaceae</b>		
	<i>Evolvulus alsinoides</i> L.	Phooli	Herb
	<i>Ipomoea eriocarpa</i> R. Br.	Nakhri	Climber
	<i>Ipomoea indica</i> (Burm. f.) Merr.	Morning glory	Climber
	<i>Ipomoea pes-tigridis</i> L.	Panchpatta	Climber



Table 1. Plant species recorded from Umari Dham sacred grove (continued)

Superorder/Order	Family & Species	Common name	Life form
	<b>Solanaceae</b>		
	<i>Datura stramonium</i> L.	Dhatura	Herb
	<i>Physalis minima</i> L. (Figure 6E)	Chirphoti/Papotan	Herb
	<i>Solanum nigrum</i> L.	Kali mukko	Herb
	<i>Solanum surattense</i> Burm. f. (Figure 6C)	Nar kanta/Bhurangini	Shrub
<b>CAMPANULIDS</b>			
<b>Asterales</b>	<b>Asteraceae</b>		
	<i>Acanthospermum hispidum</i> DC.	Dokanta	Herb
	<i>Bidens biternata</i> (Lour.) Merr. & Sherffex Sherff	-	Herb
	<i>Blainvillea acmella</i> (L.) Philipson	Kanghi	Herb
	<i>Eclipta alba</i> (L.) Hassk.	Bhringraj	Herb
	<i>Erigeron bonariensis</i> L.	-	Herb
	<i>Emilia sonchifolia</i> (L.) DC.	-	Herb
	<i>Glossocardia bosvallia</i> (L. f.) DC.	Chirya ka Chugga	Herb
	<i>Gnaphalium luteo-album</i> L.	-	Herb
	<i>Laggera alata</i> (D. Don.) Schultz Bip. ex Oliver	-	Herb
	<i>Launaea procumbens</i> (Roxb.) Ramayya& Rajagopal	-	Herb
	<i>Oligochaeta ramosa</i> (Roxb.) Wagen.	-	Herb
	<i>Parthenium hysterophorus</i> L.	Gajar ghas	Herb
	<i>Pulicaria angustifolia</i> DC.	Soneli	Herb
	<i>Sclerocarpus africanus</i> Jacq.	-	Herb
	<i>Sonchus oleraceus</i> L.	-	Herb
	<i>Tridax procumbens</i> L.	Sadahari	Herb
	<i>Verbesina encelioides</i> (Cav.) Benth. &Hk. f. ex A.Gray	-	Herb
	<i>Vernonia cinerea</i> (L.) Less.	-	Herb
	<i>Vicoa indica</i> (L.) DC.	-	Herb
	<i>Xanthium strumarium</i> L.	Chirchita/Adhasisi	Herb

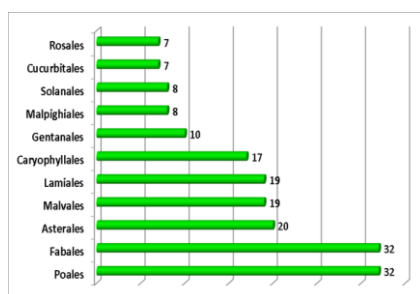


Figure 3. Dominant orders of the Umari Dham sacred grove

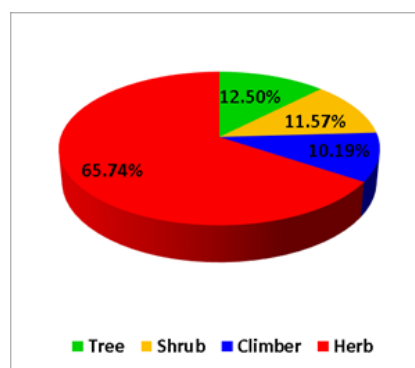


Figure 5. Habit categorization of plant species in Umari Dham sacred grove

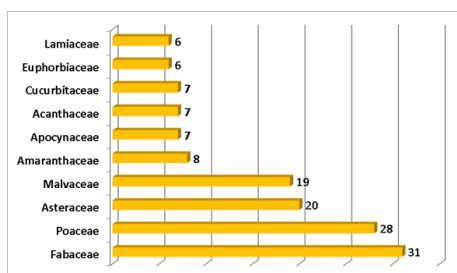


Figure 4. Dominant families of the Umari Dham sacred grove

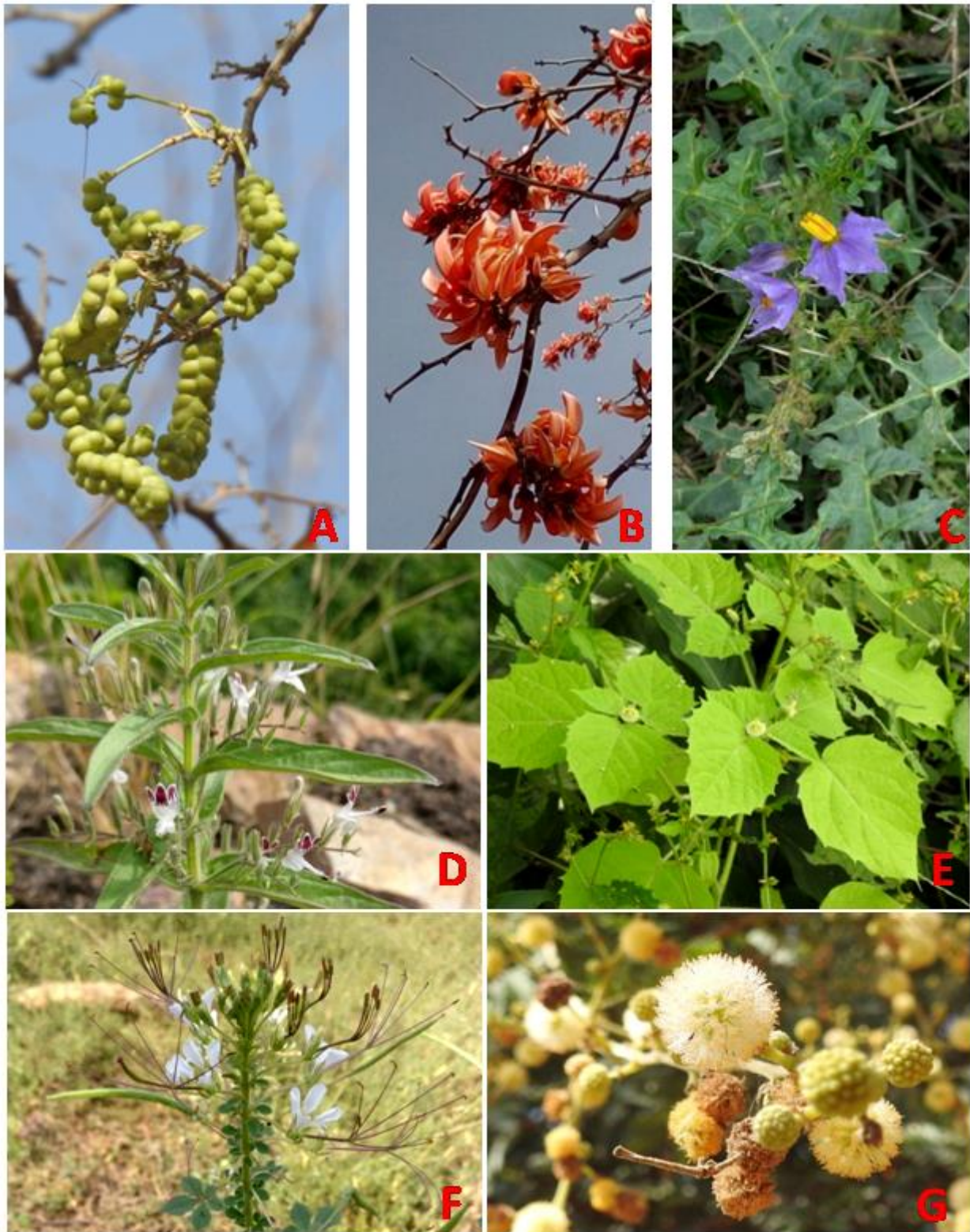


Figure 6. A) *Maerua oblongifolia* (Forssk.) A. Rich., B) *Butea monosperma* (Lam.) Taub., C) *Solanum surattense* Burm. f., D) *Indoneesiella echioides* (L.) Sreem., E) *Physalis minima* L., F) *Cleome gynandra* L., G) *Acacia leucophloea* (Roxb.) Willd



Figure 7. A) *Anisomeles indica* (L.) Kuntze, B) *Sesamum mulayanum* Nair, C) *Acacia nilotica* (L.) Del., D) *Anogeissus pendula* Edgew., E) *Pedalium murex* L., F) *Gloriosa superba* L., G) *Cryptostegia grandiflora* Roxb. ex R. Br.

## CONCLUSION

Umari Dham temple grove is a part of Jamwa Ramgarh Wildlife Sanctuary and hence is an important region for conservation of biodiversity. It is a home to many threatened and medicinal plants such as *Gloriosa superba* L., *Asparagus racemosus* Willd., *Cocculus pendulus* (J.R. & G. Forst.) Diels., *Tribulus terrestris* L., *Ricinus communis* L., *Abrus precatorius* L., *Mucuna pruriens* (L.) DC., *Cleome gynandra* L., *Rhus mysorensis* G. Don., *Boswellia serrata* Roxb. ex Cocleb., *Plumbago zeylanica* L., *Diospyros melanoxylon* Roxb., *Boerhavia diffusa* L., *Sarcostemma acidum* (Roxb.) Voigt, *Calotropis procera* auct. non (Ait.) Ait. f., *Adhatoda zeylanica* Medik., *Petalium murex* L., *Evolvulus alsinoides* L., *Eclipta alba* (L.) Hassk., *Tridax procumbens* L. and *Glossocardia bosvallia* (L. f.) DC. The expansion of the invasive species like *Prosopis juliflora*, *Hyptis suaveolens*, *Parthenium hysterophorus* etc. in the grove has created huge impact on the native species. Although under the bounds of the Jamwa Ramgarh Wildlife Sanctuary, the sacred grove of Umari Dham is presently under threat and it could be due to the dwindling of the religious beliefs or the modernisation and rapid extension of the urbanization. So, there is a need for conservation measures for the protection of biodiversity. The following measures may be adopted:

- sustainable collection of forest products and control the over harvesting of forest products,
- creating awareness about the importance of biodiversity,
- taking some effective actions for the prevention of overgrazing or rotational grazing should be adopted to maintain the habitat,
- preventing deforestation for fuel wood.

## REFERENCES

- [1] S. Singh, M. Youssouf, Z.A. Malik, R.W. Bussmann, Sacred Groves: Myths, Beliefs and Biodiversity Conservation - A Case Study from Western Himalaya, India, International Journal of Ecology, Volume 2017, 1-12. <https://doi.org/10.1155/2017/3828609>.
- [2] M. Amirthalingam, Sacred Groves of India - An Overview, International Journal of Current Research in Biosciences and Plant Biology 3(2016) 4, 64-74.
- [3] M. Gadgil, V.D. Vartak, Sacred groves of India - A plea of the continuous conservation, Journal of the Bombay Natural History Society 72(1975) 2, 314-320.
- [4] D. Brandis, Indigenous Indian Forestry: Sacred Groves, Indian Forestry, Oriental University Institute, Woking, 1897, 12-13.
- [5] Sacred Groves of India, C.P.R. Environmental Education Centre, Chennai, Conservation of Ecological Heritage and Sacred Sites of India. [http://ecoheritage.cpreec.org/innerpageof.php?\\$mFJyBfKPkE6](http://ecoheritage.cpreec.org/innerpageof.php?$mFJyBfKPkE6). Accessed: April 20, 2020.
- [6] M. Gadgil, V.D. Vartak, Sacred Groves of Western Ghats in India, Economic Botany 30(1976) 2,152-160.
- [7] J.J. Roy Burman, The institution of sacred grove, Journal of Indian Anthropology and Society 27(1992), 219-238.
- [8] K. Balasubramanyan, N.C. Induchoodan, Plant diversity in sacred groves of Kerala, Evergreen 36(1996), 3-4.
- [9] R.S. Tripathi, Sacred groves: Community biodiversity conservation model in north-east India, Proceedings of the International Conference on Tropical Ecosystems: Structure, Diversity and Human Welfare (Supplement), ed. K.N. Ganeshiah, R. Uma Shaanker, K.S. Bawa, Ashoka Trust for Research in Ecology and Environment (ATREE), Bangalore, 2001, 104-107.
- [10] A.D. Khumbongmayum, M.L. Khan, R.S. Tripathi, Sacred groves of Manipur, northeast India: Biodiversity value, status and strategies for their

- conservation, Biodiversity and Conservation 14(2005) 7, 1541-1582.
- [11] K.C. Malhotra, Y. Gokhale, S. Chatterjee, S. Srivastava, Sacred Groves in India, Aryan Books International, New Delhi, India, 2007, 108.
- [12] A. Mitra, S. Pahl, The spirit of the sanctuary, Down to Earth 2(1994) 17, 21-36.
- [13] A. Singh, Sacred groves of Rajasthan, Sacred Groves of India - A Compendium, ed. N. Krishna, M. Amirthalingam, C.P.R. Environmental Education Centre, Chennai, 2014, 359-365.
- [14] K.C. Malhotra, Y. Gokhale, S. Chatterjee, S. Srivastava, Cultural and Ecological Dimensions of Sacred Groves in India, Indian National Science Academy, New Delhi, and Indira Gandhi Rashtriya Manav Sangrahalaya, Bhopal, India, 2001.
- [15] D.N. Pandey, Sacred Forestry: The Case of Rajasthan, India in Forest Service, India, 2003.
- [16] H.G. Champion, S.K. Seth, A Revised Survey of Forest Types of India, Govt. of India Press, New Delhi, India, 1968.
- [17] Google Earth, Geographical location of Umari Dham Sacred Grove, Jaipur, Rajasthan, India. <https://earth.app.goo.gl/?apn=com.google.earth&isi=293622097&ius=googleearth&link=https%3a%2f%2fearth.google.com%2fweb%2f%4027.05297567,76.08226439,465.67889458a,4392.68096799d,30y,0h,0t,0r>. Accessed: July 2, 2020.
- [18] B.V. Shetty, V. Singh, Flora of Rajasthan, BSI Howrah, India, Vol. I., 1987.
- [19] B.V. Shetty, V. Singh, Flora of Rajasthan, BSI Howrah, India, Vol. II., 1991.
- [20] B.V. Shetty, V. Singh, Flora of Rajasthan, BSI Howrah, India, Vol. III. 1993.
- [21] S. Sharma, B. Tiagi, Flora of North-East Rajasthan, Kalyani Publishers, New Delhi, India, 1979.
- [22] The Angiosperm Phylogeny Group, An update of the Angiosperm Phylogeny Group classification for the orders and

families of flowering plants: APG III, Botanical Journal of the Linnean Society 161(2009) 2, 105-121.

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