



## FOUR NEW REPORTS OF SACRED GROVES FOR THE STATE OF MAHARASHTRA

KALPIT MHATRE <sup>1</sup> AND RAJENDRA SHINDE <sup>2</sup>

<sup>1</sup> Department Of Botany, Arts, Commerce and Science College, Lanja, Ratnagiri

<sup>2</sup> Department Of Botany, St. Xavier's College, Mumbai

Email: <sup>1</sup>kalpitgmhatre@gmail.com, <sup>2</sup>rdshinde@gmail.com

Date of online publication: 31st March 2017

The present paper deals with new report of 4 sacred groves from the Raigad district of Maharashtra State. While conducting an ethnobotanical survey in the district, authors have explored 4 sacred groves which on critical study revealed that these are not reported previously and therefore these sacred groves are being reported first time from the district and thus forms a new report of sacred groves for the state of Maharashtra. A taxonomic study of all the plant species found in all the 4 sacred groves has been carried out. It has been observed that a huge diversity of plant species is being conserved in sacred groves.

**Key Words:** Raigad, Sacred grove, New report, Conservation, Ethnobotany

Raigad district in the state of Maharashtra lies between 17°51'-19°80'N latitude and 72°51'-73°40'E longitude. It covers an area of 7162 sq. km. The district is bounded on the west by Arabian sea, Thane district lies to the north, Pune district to the east, Ratnagiri district to the south while Satara district shares a boundary in south-east. Raigad district forms an important part of the traditional Konkan region. There are several hill ranges stretching out from the main Sahyadri range which runs almost parallel to the west coast. On the north-east boundary of the district, the Sahyadri range is crossed by several passes or ghats. Interesting forest vegetation is reflected due to varied physiological, geological, edaphic and climatic conditions.

Raigad district consist of dark coloured volcanic lava flows and laterites. On plateau, basalt lava forms dominant 'Basaltic composition'. Next to that is a little softer, purple to grayish, usually showing rounded or elongated or tubular cavities and geode with infillings of secondary mineral occupying the portion of slopes and valleys.

Soil in the district is Murum, grayish to dirty green in colour which on decomposition gives reddish-brown to black soil. Rice soil and coastal alluvial soils are also present.

Varied physiographical, geological, climatic and edaphic conditions are reflected in diverse

vegetation types. A total of 2864 sq. km. area in the district is under forests.

### MATERIALS AND METHODS

Village Pali has been fixed as a head quarter for field survey as it is easily approachable and is the central place of the district. Necessary permissions have been taken from the Forest Department for the collection of plant specimens. Detailed program of field visits has been designed by discussing with forest officials and local people. Various forest localities, sacred grooves have been visited regularly for the collection of plant specimens. For the collection of data on sacred grooves, standard format given by Vartak (1980) is used. Flowering and fruiting twigs of plant specimens have been collected as voucher specimens. Global Positioning System (Garmin etrex Vista hcx) has been used to record coordinates of each plant. During field visits, digital images of plants have been taken to show habit, habitat, flower, fruit and other pre-diagnostic characters. Digital images of topography of sacred groves have also been recorded. Plants collected during present study have been properly processed and herbarium sheets have been prepared as per the standard methods given by Jain and Rao (1978) and Bridson and Forman (1998). Critical studies of collected plants have been done at Blatter Herbarium. Collected plants are identified with the help of standard floras and

**Table 1:** New report of sacred groves from Raigad district of Maharashtra State.

Sr. No.	Name of Sacred grove	Taluka	Name of Deity	Area (acre)
1	Kondi	Sudhagad	Kondjai Devi	25
2	Nenavali	Sudhagad	Gramdeo	4
3	Gokulwada	Sudhagad	Gokuladevi	6
4	Pali	Sudhagad	Nrisinha	2

**Table 2:** A list of plant species recorded from 4 sacred groves.

Sr. No.	Botanical Name	Name of sacred grove	Exsiccata
1	<i>Abrus precatorius</i> L.	Kondi, Nenavali, Pali	KGM – 253, 471, 506, 659, 791
2	<i>Acacia catechu</i> (L.f.) Willd.	Nenavali, Kondi	KGM – 115, 127, 192
3	<i>Acacia pennata</i> (L.) Willd.	Nenavali	KGM – 566
4	<i>Acampe praemorsa</i> (Roxb.) Blatt.& McCann	Pali, Nenavali, Kondi, Gokulwada	KGM – 427, 540
5	<i>Achyranthes aspera</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 69, 264, 366
6	<i>Acmella paniculata</i> (Wall. x DC.) R. K. Jansen	Pali, Nenavali, Kondi, Gokulwada	KGM – 86, 148
7	<i>Aeginetia indica</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 164, 267, 303
8	<i>Agave americana</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – CV113
9	<i>Ageratum conyzoides</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 89, 212, 705
10	<i>Albizia lebbeck</i> (L.) Benth.	Pali	KGM – 594, 671, 767
11	<i>Alstonia scholaris</i> (L.) R. Br.	Pali, Gokulwada	KGM – 557, 684
12	<i>Alternanthera sessilis</i> (L.) R. Br. ex DC.	Pali, Nenavali, Kondi, Gokulwada	KGM – 231, 298
13	<i>Amorphophallus commutatus</i> Engler	Pali, Gokulwada, Kondi	KGM – 108
14	<i>Amorphophallus campanulatus</i> (Roxb.) Blume ex Decne.	Pali	KGM – 135
15	<i>Ampelocissus latifolia</i> (Roxb.) Planch	Pali, Nenavali, Kondi, Gokulwada	KGM – 191, 255, 708
16	<i>Argemone mexicana</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 1, 48, 77, 207
17	<i>Asparagus racemosus</i> Willd.	Kondi, Gokulwada	KGM – 110, 289
18	<i>Azanza lampas</i> (Cav.) Alef.	Pali	KGM – 616
19	<i>Baliospermum solanifolium</i> (Burm.) Suresh	Pali, Nenavali, Kondi, Gokulwada	KGM – 71, 137, 172
20	<i>Bambusa bambos</i> (L.) Voss.	Pali, Nenavali, Kondi, Gokulwada	KGM – 37, 57

21	<i>Barleria prionitis</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 544
22	<i>Bauhinia racemosa</i> Lam.	Pali, Nenavali, Kondi, Gokulwada	KGM – CV98
23	<i>Begonia crenata</i> Dryand	Pali, Nenavali, Kondi, Gokulwada	KGM – 419, 662
24	<i>Bergia capensis</i> L.	Pali, Kondi	KGM – AQ36
25	<i>Biophytum sensitivum</i> (L.) DC.	Gokulwada, Kondi	KGM – 54, 63, 190
26	<i>Blumea lacera</i> (Burm.f.) DC.	Pali	KGM – 518, 786
27	<i>Butea monosperma</i> (Lam.) Taub.	Pali, Nenavali, Kondi, Gokulwada	KGM – 350, 499, 570
28	<i>Calotropis gigantea</i> (L.) R. Br.	Pali, Nenavali, Kondi, Gokulwada	KGM – 29, 84, 308
29	<i>Canavalia gladiata</i> (Jacq.) DC.	Pali, Nenavali, Kondi, Gokulwada	KGM – 634
30	<i>Canscora diffusa</i> (Vahl) R. Br. ex Roem. & Schult.	Pali, Nenavali, Kondi, Gokulwada	KGM – 451, 516
31	<i>Careya arborea</i> Roxb.	Pali, Nenavali, Kondi, Gokulwada	KGM – 156, 383
32	<i>Carissa carandas</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 546, 781
33	<i>Cassia fistula</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 217
34	<i>Catunaregum spinosa</i> (Thunb.) Tiruveng	Pali, Nenavali, Kondi, Gokulwada	KGM – 582, 829
35	<i>Celosia argentea</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 107, 204
36	<i>Cheilocostus speciosus</i> (J. Konig) C. Specht	Pali, Nenavali, Kondi, Gokulwada	KGM – 792
37	<i>Chromolaena odorata</i> (L.) R. M. Kind & H. Rob.	Pali, Kondi, Gokulwada	KGM – 23
38	<i>Cissampelos pareira</i> L.	Pali, Kondi	KGM – 131
39	<i>Clematis hedysarifolia</i> DC.	Pali	KGM – 19
40	<i>Cleome viscosa</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 2
41	<i>Coix lacryma-jobi</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 440
42	<i>Combretum albidum</i> G. Don.	Kondi	KGM – 431
43	<i>Commelina benghalensis</i> L.	Kondi, Pali	KGM – 464
44	<i>Cordia dichotoma</i> Forst. F.	Pali	KGM – 693
45	<i>Crotalaria juncea</i> L.	Pali	KGM – CV24
46	<i>Cryptolepis buchananii</i> Roem. & Schult.	Pali	KGM – 496
47	<i>Cucumis leiospermus</i> (Wight & Arn.) Ghebret. & Thulin	Pali	KGM – 623
48	<i>Curculigo orchiioides</i> Gaertn.	Pali, Nenavali, Kondi, Gokulwada	KGM – 475

49	<i>Curcuma pseudomontana</i> Graham	Pali, Nenavali, Kondi, Gokulwada	KGM – 466
50	<i>Cuscuta reflexa</i> Roxb.	Pali, Nenavali, Kondi, Gokulwada	KGM – 596
51	<i>Cyathocline purpurea</i> (Buch.-Ham. ex Don) Kuntze	Pali, Nenavali, Kondi, Gokulwada	KGM – 180
52	<i>Cyclea peltata</i> (Lam.) Hook.f. & Thomson	Kondi, Gokulwada	KGM – 163
53	<i>Cynarospermum asperrimum</i> (Nees) Vollesen	Kondi, Pali	KGM – 636
54	<i>Cyperus rotundus</i> L.	Pali	KGM – 81
55	<i>Dalbergia volubilis</i> Roxb.	Kondi	KGM – 252
56	<i>Datura innoxia</i> Mill.	Kondi	KGM – 500
57	<i>Dioscorea bulbifera</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 102, 225
58	<i>Diplocyclos palmatus</i> (L.) C. Jeffrey	Gokulwada	KGM – 3
59	<i>Ecbolium ligustrinum</i> (Vahl) Vollesen	Pali, Nenavali, Kondi, Gokulwada	KGM – 485
60	<i>Eclipta prostrata</i> (L.) L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 28
61	<i>Elephantopus scaber</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 626
62	<i>Eleusine indica</i> (L.) Gaertn.	Pali, Nenavali, Kondi, Gokulwada	KGM – 448
63	<i>Embelia basaal</i> (Roem. & Schult.) A. DC.	Pali, Nenavali, Kondi, Gokulwada	KGM – 783
64	<i>Ensete superbum</i> (Roxb.) Cheesm	Pali, Nenavali, Kondi, Gokulwada	KGM – 442
65	<i>Eranthemum roseum</i> (Vahl) R. Br	Pali, Nenavali, Kondi, Gokulwada	KGM – 261
66	<i>Erythrina variegata</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 189
67	<i>Ficus benghalensis</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 439
68	<i>Ficus hispida</i> L. f.	Pali, Nenavali, Kondi, Gokulwada	KGM – 258
69	<i>Ficus racemosa</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 473
70	<i>Ficus religiosa</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 761
71	<i>Gardenia resinifera</i> Roth	Kondi	KGM – 534
72	<i>Getonia floribunda</i> Roxb.	Pali, Nenavali, Kondi, Gokulwada	KGM – 170
73	<i>Glinus oppositifolia</i> (L.) Aug.-DC.	Kondi, Gokulwada	KGM – 521
74	<i>Gloriosa superba</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 65
75	<i>Gmelina arborea</i> Roxb.	Pali, Nenavali, Kondi, Gokulwada	KGM – 85

76	<i>Habenaria grandifloriformis</i> Blatt. & McCann	Gokulwada, Kondi	KGM – 323
77	<i>Heliotropium indicum</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 26
78	<i>Hemidesmus indicus</i> (L.) R. Br. ex Schult.	Pali, Nenavali, Kondi, Gokulwada	KGM – 495
79	<i>Holarrhena pubescens</i> Wall.	Pali, Nenavali, Kondi, Gokulwada	KGM – 279
80	<i>Hydrolea zeylanica</i> (L.) Vahl	Pali, Nenavali, Kondi, Gokulwada	KGM – 498
81	<i>Hygrophila auriculata</i> (Schumach.) Heine	Pali, Nenavali, Kondi, Gokulwada	KGM – 486
82	<i>Hygrophila serpyllum</i> T. Anders.	Pali, Nenavali, Kondi, Gokulwada	KGM – 734
83	<i>Hyptis suaveolens</i> (L.) Poir.	Pali, Nenavali, Kondi, Gokulwada	KGM – 487
84	<i>Impatiens balsamina</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 153
85	<i>Ipomoea carnea</i> Jacq.	Pali, Nenavali, Kondi, Gokulwada	KGM – 532
86	<i>Ipomoea hederifolia</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 59
87	<i>Ixora brachiata</i> Roxb.	Pali, Nenavali, Kondi, Gokulwada	KGM – 62
88	<i>Jasminum malabaricum</i> Wight	Pali, Nenavali, Kondi, Gokulwada	KGM – 577
89	<i>Lagerstroemia lanceolata</i> Wall.	Kondi, Gokulwada	KGM – 315
90	<i>Lagerstroemia speciosa</i> (L.) Pers.	Pali, Nenavali, Kondi, Gokulwada	KGM – 58
91	<i>Lantana camara</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 76
92	<i>Ludwigia octovalvis</i> (Jacq.) P. H. Raven	Pali, Nenavali, Kondi, Gokulwada	KGM – 21
93	<i>Macaranga peltata</i> (Roxb.) Muell. – Arg.	Pali, Nenavali, Kondi, Gokulwada	KGM – 755
94	<i>Madhuca longifolia</i> (L.) J. F. Macbr. var. <i>latifolia</i> (Roxb.) A. Chev.	Pali, Nenavali, Kondi, Gokulwada	KGM – 290
95	<i>Martynia annua</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 294
96	<i>Melastoma malabathricum</i> L.	Kondi, Pali	KGM – 638
97	<i>Meyna spinosa</i> Roxb. ex Link.	Pali	KGM – 553
98	<i>Mimosa pudica</i> L.	Pali	KGM – 640
99	<i>Mimusops elengi</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 558
100	<i>Mitragyna parvifolia</i> (Roxb.) Korth	Pali, Nenavali, Kondi, Gokulwada	KGM – 181
101	<i>Momordica dioica</i> Roxb. ex. Willd.	Pali, Nenavali, Kondi, Gokulwada	KGM – 399



102	<i>Moullava spicata</i> (Dalzell) Nicolson	Pali, Nenavali, Kondi, Gokulwada	KGM – 177
103	<i>Mucuna pruriens</i> (L.) DC.	Pali, Nenavali, Kondi, Gokulwada	KGM – 664
104	<i>Mukia maderaspatana</i> (L.) Roem.	Kondi, Gokulwada	KGM – 477
105	<i>Neolamarckia cadamba</i> (Roxb.) Bosser	Pali	KGM – 587
106	<i>Nervilia infundibulifolia</i> Blatt. & McCann	Pali, Kondi, Gokulwada	KGM – 432
107	<i>Oldenlandia corymbosa</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 91
108	<i>Opuntia elatior</i> Mill.	Pali	KGM – 669
109	<i>Oroxylum indicum</i> (L.) Vent	Nenavali, Kondi	KGM – 389
110	<i>Orthosiphon thymiflorus</i> (Roth) Sleesen	Nenavali	KGM – 227
111	<i>Persicaria glabra</i> (Willd.) M. Gomez	Nenavali	KGM – 239
112	<i>Phyllanthus emblica</i> L.	Kondi, Pali	KGM – 729
113	<i>Physalis minima</i> L.	Pali	KGM – 468
114	<i>Pimpinella adscendens</i> Dalz.	Kondi	KGM – 701
115	<i>Pogostemon benghalensis</i> (Burm. f.) Kuntze	Pali, Nenavali, Kondi, Gokulwada	KGM – 132
116	<i>Pogostemon deccanensis</i> (Panigrahi) Press	Pali, Nenavali, Kondi, Gokulwada	KGM – 73
117	<i>Pogostemon purpurascens</i> Dalz.	Pali, Nenavali, Kondi, Gokulwada	KGM – 161
118	<i>Pongamia pinnata</i> (L.) Pierre	Pali, Nenavali, Kondi, Gokulwada	KGM – 238
119	<i>Rauvolfia serpentina</i> (L.) Benth. ex. Kurz.	Pali, Nenavali, Kondi, Gokulwada	KGM – 517
120	<i>Rhamphicarpa longiflora</i> (Arn.) Benth.	Pali, Nenavali, Kondi, Gokulwada	KGM – 774
121	<i>Rhynchostylis retusa</i> (L.) Blume	Pali, Nenavali, Kondi, Gokulwada	KGM – 290
122	<i>Rotheca serrata</i> (L.) Steane & Mabb.	Pali, Kondi, Gokulwada	KGM – 230
123	<i>Saccharum spontaneum</i> L.	Gokulwada	KGM – 75
124	<i>Schleichera oleosa</i> (Lour.) Merr.	Pali	KGM – 186
125	<i>Semecarpus anacardium</i> L. f.	Pali, Kondi	KGM – 647
126	<i>Senecio bombayensis</i> Balakr.	Pali, Kondi	KGM – 590
127	<i>Senna tora</i> (L.) Roxb.	Pali, Nenavali, Kondi, Gokulwada	KGM – 87
128	<i>Sesamum orientale</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 70
129	<i>Sesbania sesban</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 219

130	<i>Sida cordifolia</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 117
131	<i>Solanum anguivi</i> Lam.	Kondi	KGM – 483
132	<i>Solanum virginianum</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 489
133	<i>Sphaeranthus indicus</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 686
134	<i>Sterculia urens</i> Roxb.	Pali, Nenavali, Kondi, Gokulwada	KGM – 682
135	<i>Syzygium cumini</i> (L.) Skeels	Pali, Nenavali, Kondi, Gokulwada	KGM – 101
136	<i>Tamarindus indica</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 633
137	<i>Tectona grandis</i> L. f.	Pali, Nenavali, Kondi, Gokulwada	KGM – 387
138	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	Pali, Nenavali, Kondi, Gokulwada	KGM – 632
139	<i>Terminalia bellerica</i> (Gaertn.) Roxb.	Pali, Nenavali, Kondi, Gokulwada	KGM – 610
140	<i>Terminalia chebula</i> Retz.	Pali, Nenavali, Kondi, Gokulwada	KGM – 96
141	<i>Terminalia crenulata</i> Roth	Pali, Nenavali, Kondi, Gokulwada	KGM – 125
142	<i>Thunbergia fragrans</i> Roxb.	Pali, Nenavali, Kondi, Gokulwada	KGM – 175
143	<i>Trichodesma indicum</i> (L.) Lehm	Pali, Nenavali, Kondi, Gokulwada	KGM – 595
144	<i>Tricholepis glaberrima</i> DC.	Pali, Nenavali, Kondi, Gokulwada	KGM – 559
145	<i>Trichosanthes cucumerina</i> L.	Pali, Kondi	KGM – 607
146	<i>Urena lobata</i> L.	Kondi	KGM – 216
147	<i>Vigna vexillata</i> (L.) A. Rich.	Kondi, Gokulwada	KGM – 251
148	<i>Vitex negundo</i> L.	Pali, Nenavali, Kondi, Gokulwada	KGM – 574
149	<i>Woodfordia fruticosa</i> (L.) Kurz.	Pali, Nenavali, Kondi, Gokulwada	KGM – 149
150	<i>Wrightia tinctoria</i> R. Br.	Pali, Nenavali, Kondi, Gokulwada	KGM – 749
151	<i>Xanthium strumarium</i> L.	Kondi	KGM – 716
152	<i>Zizyphus mauritiana</i> Lam.	Pali, Nenavali, Kondi, Gokulwada	KGM – 221

manuals. Correct identity of plant specimens has been confirmed by matching them with authenticated specimens at BLAT (Mumbai) and BSI (Pune). Nomenclature of all plants has been updated as per International Code of Nomenclature for algae, fungi and plants (McNeill *et al.* 2011). Prepared herbarium specimens are incorporated in Blatter Herbarium.

### **OBSERVATIONS AND RESULTS**

In the present investigation 4 new sacred groves have been reported for the first time from the Maharashtra State. A list of sacred groves is given in table no. 1. A list of plant species recorded from all the 4 sacred groves is given in table no. 2.

Authors would like to thank the Principal of St. Xavier's College and Arts, Commerce and Science College, Lanja for providing necessary facilities. Authors also extend their

sincere thanks to Mr. Rajdeo Singh, Mr. Sandip Tirmale and Miss. Sweedle Cerejo for her help during field visits.

### **REFERENCES**

- Diane B and Formann L 1999 *The Herbarium Handbook*. Royal Botanic Gardens, Kew. (Repr. ed.).
- Jain S K and Rao R R 1978 *A Handbook of Field and Herbarium Methods*. Today and Tomorrow Publishers, New Delhi.
- McNeill J, Turland N J, Barrie F R, Buck W R, Demoulin V, Greuter W, Hawksworth D L, Herendeen P S, Knapp S, Marhold K, Prado J, Prud'homme van Reine W F, Smith G F and Wiersema J H 2012. International Code of Nomenclature for algae, fungi, and plants (Melbourne Code). *Regnum Vegetabile* 154. A.R.G. Gantner Verlag KG. ISBN 978-3-87429-425-6