



Study Of Phytodiversity And Phenology Of Some Important Plants In The Beed Conservation Reserve Of Jhunjhunu – A Part Of The Indian Thar Desert, Rajasthan

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Abstract:

The current study's objective was to examine the plant variety and vegetation phenology from Jhunjhunu Beed Conservation Reserve. During the study of Beed conservation reserve 89 plants species were identified which were belonging to 37 families of Angiosperm and one Gymnosperm reported, in phenological study habit form reported of 8%Climber, 53%Herb, 20%Shrub, 11%Tree, 7%Undershrub, and 1%vine. The current documentation will aid in a better knowledge of the plant richness in this exceptional protected region for advancing conservation and managing the Jhunjhunu Beed conservation reserve.

Keyword: Phytodiversity, Beed, Phenology, Conservation, Reserve, Jhunjhunu

Introduction

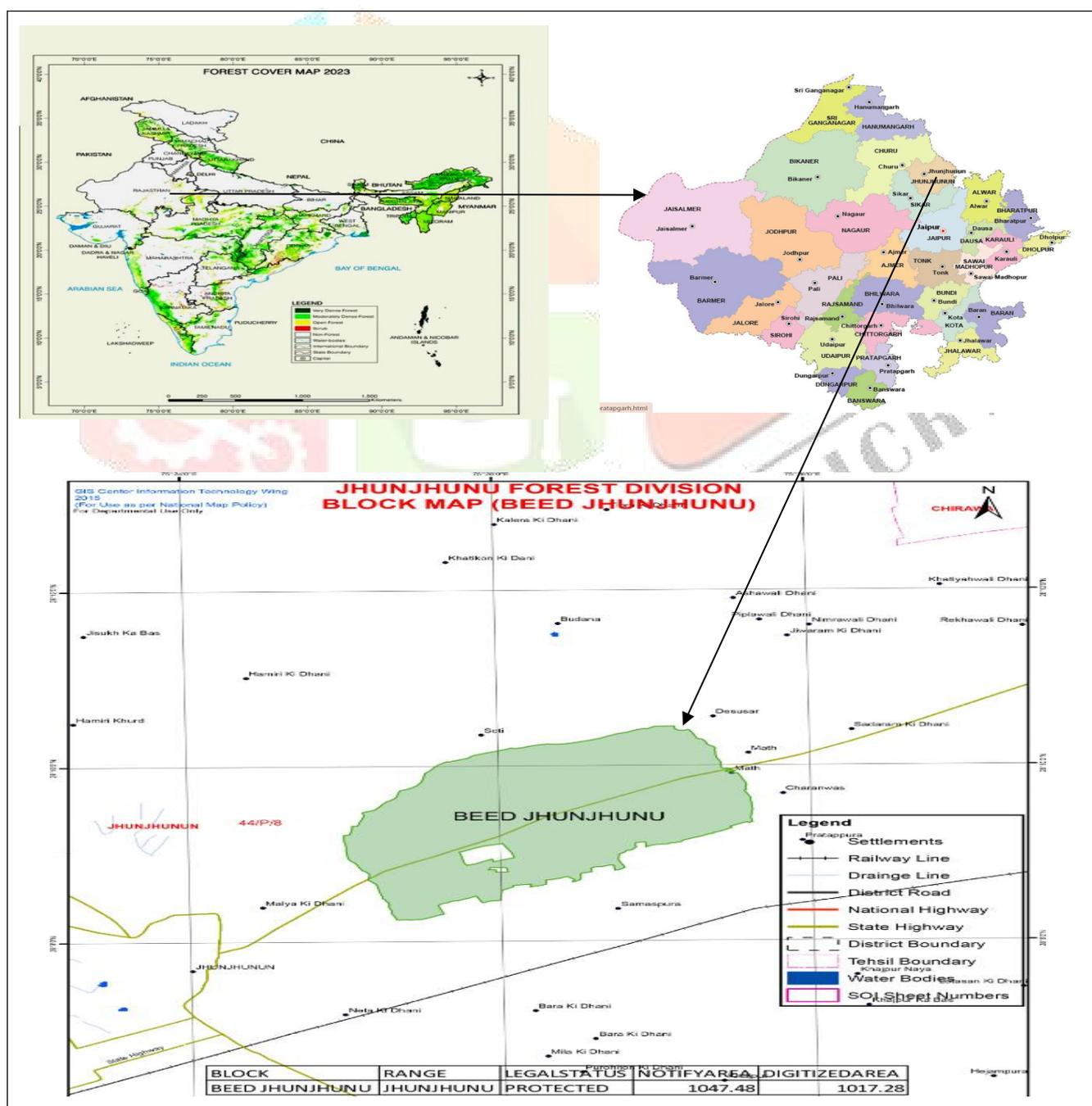
Phyto-diversity of the semi-desert area of Rajasthan is very interesting due to its fluctuate climatic conditions and has been studied by many researchers. flora of Shri Ganganagar (Singh and Dhillon, 1989), flora of Churu (Singh *et al.*, 1997) and Purohit and Sharma (2006) worked on grasses of north-west Rajasthan and reported 63 species and 40 genera of food & fodder grasses. Most of the species are xerophilous in nature. The study focuses on an observation of the plant variety and phenology of the Jhunjhunu Beed Conservation Reserve.

Bansal (2009) Worked on the ecological aspects of the plants of the Nagour district. Iqbaal *et al.* (2012) studied ethnomedicinal diversity of Churu district. They reported 56 medicinal plant species from this area. Study of spermatophytic flora of Ajmer district (Harsh *et al.*, 2018), Vegetation of Deedwana Tehsil, Nagaur (Quereishi, 2018). The Jhunjhunu district region was touched from vegetational study point of view by Nair (1956) studied on vegetation of Chirawa. Joshi (1958) studied on sand-dune vegetation of Pilani and its neighborhood areas.

The Swedish botanist Carolus Linnaeus (also known as Carl von Linné) is credited with founding modern plant phenology and phenological observation networks, but the term "phenology" was first used in 1853 by the Belgian botanist Charles Morren. The life cycle events of a plant, including seed germination, bud burst, leaf emergence, blooming, and fruiting, are known as plant phenology. These events have a cascading influence on several levels of biological organization, ranging from individuals to ecosystems. Because phenology is used to track and forecast the occurrence of recurring life cycle events, it has gained prominence in contemporary global change of study environments. Climate is the main factor controlling and regulating phenological events in plants, and global warming has affected species distributions and the timing of leaf change and reproduction (Chuine and Beaubien 2001; Menzel et al. 2006)

Study Area:

Figure 1: Map of Beed Conservation Reserve of Jhunjhunu



The area that was chosen for this study is in the Jhunjhunu district, which is located between 28° 09' and 28° 10' north latitude and 75° 25' and 75° 27' east longitude. On March 9, 2012, the forest block was designated as a Beed Jhunjhunu Conservation Reserve in accordance with Section 36A of the Wild Life (Protection) Act 1972 in order to preserve wild animals. The villages of Desusar in the north, Samaspur in the south, Charanwas in the east, and agricultural area that borders the city of Jhunjhunu in the west around it. The total area is 1047.48 hectares. It is as one of the most well-known tourist destinations in Jhunjhunu district. It is characterized by a semi-arid climate with a hotter summer and a colder winter than in the state's neighboring districts to the north and northwest. The reserve is located in the Great Indian Desert and has a mostly desert environment with unpredictable rainfall and frequent droughts. During the rainy season, the forest becomes lush and verdant, with an abundance of rare, indigenous, and vulnerable flora as well as medicinal plants.

Material and methods:

The current study placed a strong emphasis on counting the phytodiversity between 2022 and 2024. To examine the diversity of plant species, including tree, shrub, and herb species, a thorough field evaluation was conducted. An extensive poll was conducted all year long to accomplish this goal.

The collected photo plates were identified taxonomically with the help of reviewed and documented earlier by many workers (Bhandari, 1978; 1990; Shetty and Singh, 1987; 1991; 1993; Sharma, 2002; Tiagi and Aery, 2007) and Herbarium of Universities. Final confirmation of identified plants was done from FRI Herbarium Dehradun and BSI Herbarium Kolkata. The listed plant species were alphabetically according to their family, habit, local name, botanical names and flowering and fruiting time.

In phenology investigations, ground-based observation is a beneficial tool that offers firsthand evidence of phenological changes. For certain locales and species, precise timing of phenological occurrences can be recorded by ground-based monitoring. In particular, networks of long-term ground-based phenology data are helpful for examining phenological fluctuations across a wide geographic range and potential changes in response to climate change.

Result and discussion:

The present study reveals the occurrence of a total of 89 plants belonging to 37 families of Angiosperm and one Gymnosperm (*Ephedra foliata* Boiss) in Beed Jhunjhunu conservation reserve of Rajasthan (Table 1.). The phenology of the study area revealed of 8% Climber, 52% Herb, 21% Shrub, 11% Tree, 7% Undershrub, and 1% vine (Table-2 & Chart-1). Which makes this area represent of herb-grassland diversity. The analysis shows a comparatively higher representation of herbaceous plants in the study area. Most herbaceous plants are represented by the Amaranthaceae, Fabaceae, Nyctaginaceae, Rubiaceae, Cyperaceae, Commelinaceae, Euphorbiaceae, and Poaceae families. Trees are the comparatively lowest-

represented plants in the study area, and most trees are represented by the Moraceae, Mimosaceae, Tamaricaceae, and Bignoniaceae families.

Table: 1. Enlisted of Angiosperm and Gymnosperm

Photo Plate No.	Plant Name	Local Name/ vernacular Name	Family	Locality	Phenology	
					Habit	Flowering and Fruiting
1.	<i>Abutilon indicum</i> (L.) Sweet	Kanghi	Malvaceae	Lat. 28.1264385 Long. 75.4149886	Shrub	Oct. - Nov.
2.	<i>Acacia nilotica</i> (L.) Willd.	Babool	Fabaceae	Lat. 28.165446 Long. 75.454932	Tree	May - Oct.
3.	<i>Achyranthes aspera</i> L.	Andha kata	Amaranthaceae	Lat. 28.1487614 Long. 75.4241071	Herb	Sept. - Dec.
4.	<i>Aerva javanica</i>	Bui	Amaranthaceae	Lat. 28.149481 Long. 75.424376	Herb	Aug. - Dec.
5.	<i>Aerva persica</i> (Burm.f.) Merrill	Bui	Amaranthaceae	Lat. 28.157274 Long. 75.427777	Undershrub	Aug. - Jan.
6.	<i>Ailanthus excelsa</i> Roxb.	Ardu	Simaroubaceae	Lat. 28.161007 Long. 75.437614	Tree	June - Oct.
7.	<i>Alysicarpus monilifer</i> var. <i>venosus</i> Blatt. & Hallb.	Neel	Fabaceae	Lat. 28.163151 Long. 75.446847	Herb	June - Oct.
8.	<i>Argemone mexicana</i> L.	Satyanasi	Papaveraceae	Lat. 28.147666 Long. 75.420963	Undershrub	Nov. - May
9.	<i>Aristolochia bracteolata</i> Lam.	Isharmul	Aristolochiaceae	Lat. 25.159245 Long. 75.439592	Shrub	June - Oct.
10.	<i>Austrocylindropuntia cylindrica</i>	Thor	Cactaceae	Lat. 28.150804 Long. 75.427278	Shrub	Throughout year
11.	<i>Boerhavia diffusa</i> L.	Punarnava, santi	Nyctaginaceae	Lat. - 28.161 Long. 75.437613	Herb	Throughout year
12.	<i>Boerhavia erecta</i> L.	Santa	Nyctaginaceae	Lat. 28.151566 Long. -	Herb	Throughout year

				75.428492		
13.	<i>Borreria articularis</i> (L.f.) Willd.	Agio	Rubiaceae	Lat. 28.150246 Long. 75.425593	– –	Herb June - Oct.
14.	<i>Bulbostylis baarbata</i>	Masa, bearded watergrass	Cyperaceae	Lat. 28.159465 Long. 75.430429	– –	Herb June - Oct.
15.	<i>Calotropis procera</i> R.Br.	Aak	Asclepiadaceae	Lat. 28.160716 Long. 75.444966	– –	Shrub Throughout year
16.	<i>Capparis decidua</i> (Forsk.) Edgew	Ker	Capparaceae	Lat. 28.159842 Long. 75.443207	– –	Shrub Mar. - April
17.	<i>Cassia fistula</i> L.	Amaltas	Fabaceae	Lat. 28.152371 Long. 75.430645	– –	Tree May - Oct.
18.	<i>Chloris virgata</i> Sw.	Chotaranio	Poaceae	Lat. 28.187691 Long. 75.435293	– –	Herb June - Oct.
19.	<i>Citrullus colocynthis</i>	Tumba	Cucurbitaceae	Lat. 28.151031 Long. 75.422368	– –	Vine June - Nov.
20.	<i>Cleome viscosa</i> L.	Hulhul	Capparaceae	Lat. 28.159191 Long. 75.438612	– –	Herb Aug. - Nov.
21.	<i>Clerodendrum phlomidis</i> L.f.	Arni	Verbenaceae	Lat. 28.165149 Long. 75.453983	– –	Shrub Oct. - Nov.
22.	<i>Coccinia grandis</i> (L.) J.O. Voigt	Parwal	Cucurbitaceae	Lat. 28.148053 Long. 75.420749	– –	Climber Throughout year
23.	<i>Cocculus hirsutus</i> (L.) Diels.	Pilwani	Menispermaceae	Lat. 28.160424 Long. 75.436689	– –	Climber June - Oct.
24.	<i>Commelina benghalensis</i> L.	Moriyabati	Commelinaceae	Lat. 28.166457 Long. 75.44121	– –	Herb Aug. - Dec.
25.	<i>Commelina forskalaei</i> Vahl	Moriyabati	Commelinaceae	Lat. – 28.141 Long. 75.426453	– –	Herb June - Oct.
26.	<i>Corchorus aestuans</i> L.	Chonche	Tiliaceae	Lat. 28.154796 Long. 75.443744	– –	Herb June - Oct.

27.	<i>crotalaria medicaginea</i> var. <i>medicaginea</i>	Gugario	Fabaceae	Lat. – 28.16733 Long. – 75.43511	Herb	March – Aug.
28.	<i>Croton sparsiflorus</i> Morong	Kala Bhangra	Euphorbiaceae	Lat. – 28.167898 Long. – 75.448837	Herb	May - Oct.
29.	<i>Cryptostegia grandiflora</i>	Indian rubber vine	Apocynaceae	Lat. – 28.157549 Long. – 75.438812	Shrub	May - Oct.
30.	<i>Cucumis callosus</i> (Rottl.) Cogn.	Kachri	Cucurbitaceae	Lat. – 28.159084 Long. – 75.438774	Climber	Apr.- Oct.
31.	<i>Cyperus aromaticus</i> (Ridl.) Mattf. & Kük.	Moth	Cyperaceae	Lat. – 28.169135 Long. – 75.43004	Herb	June – Oct
32.	<i>Cyperus difformis</i> L	Umbrella moth	Cyperaceae	Lat. – 28.148789 Long. – 75.420214	Herb	June – Nov.
33.	<i>Cyperus rotundus</i> L.	Bada nagarmot ha	Cyperaceae	Lat. – 28.15135 Long. – 75.428218	Herb	Feb. – Nov.
34.	<i>Dactyliandra welwitschii</i> Hook.f.	Badi aankh phootni bel	Cucurbitaceae	Lat. – 28.159382 Long. – 75.442096	Climber	Aug - Nov.
35.	<i>Dactyloctenium aegyptium</i>	Makera	Poaceae	Lat. – 28.147224 Long. – 75.426238	Herb	June – Oct.
36.	<i>Dalbergia sissoo</i>	Shisham	Fabaceae	Lat. – 28.149526 Long. – 75.424414	Tree	Mar. – Jul.
37.	<i>Datura stramonium</i> L.	White dhatura	Solanaceae	Lat. – 28.154026 Long. – 75.428404	Undershrub	Sept. - Jan.
38.	<i>Dicliptera paniculata</i>	Atrilal	Acanthaceae	Lat. – 28.159677 Long. – 75.440982	Herb	Oct. – Feb.
39.	<i>Digera muricata</i> (L.) Mart.	Ghundro	Amaranthaceae	Lat. – 28.159129 Long. – 75.438886	Herb	June – Oct.
40.	<i>Eragrostis minor</i>	Lesser love grass	Poaceae	Lat. – 28.160781 Long. – 75.443032	Herb	June – Oct.
41.	<i>Euphorbia hirta</i> L.	Lal dudheli	Euphorbiaceae	Lat. – 28.169086	Herb	May - Oct.

				Long. 75.438306	–		
42.	<i>Euphorbia hyssopifolia</i> L.	Dhodhi	Euphorbiaceae	Lat. 28.167252 Long. 75.449081	–	Herb	June Nov.
43.	<i>Euploca strigose</i>	Chitiphul	Boraginaceae	Lat. 28.167477 Long. 75.448925	–	Herb	June Oct.
44.	<i>Ficus benghalensis</i>	Banyan	Moraceae	Lat. – 28.14823 Long. 75.420556	–	Tree	Mar. Dec
45.	<i>Ficus religiosa</i> L.	Pipal	Moraceae	Lat. – 28.14823 Long. 75.420556	–	Tree	Apr. June.
46.	<i>Grewia tenax</i>	Gondni	Tiliaceae	Lat. – 28.151145 Long. 75.427541	–	Shrub	Jun. Nov.
47.	<i>Heliotropium curassavicum</i> L.	Salt heliotrop e	Boraginaceae	Lat. – 28.149116 Long. 75.421132	–	Herb	Sept. Apr.
48.	<i>Hypertelis cerviana</i> (L.) Thulin	Chiri grass	Molluginaceae	Lat. 28.149109 Long. 75.424257	–	Herb	June Oct.
49.	<i>Indigofera linnaei</i> Ali.	Birdsvill e indigo	Fabaceae	Lat. – 28.159011 Long. 75.43874	–	Herb	June Oct.
50.	<i>Indigofera tinctoria</i> L.	Neel	Fabaceae	Lat. 28.169334 Long. 75.438439	–	Herb	June Oct.
51.	<i>Jatropha gossypifolia</i> L.	Ratanjay ot	Euphorbiaceae	Lat. 28.147775 Long. 75.420596	–	Shrub	July Nov.
52.	<i>Launaea nudicaulis</i> (L.) Hook.f.	Jangali gobi	Asteraceae	Lat. 28.148406 Long. 75.424345	–	Herb	Oct. Mar.
53.	<i>Leucaena latisiliqua</i> (L.) Gillis	Pardasi- banwal	Mimosaceae	Lat. 28.147483 Long. 75.420956	–	Tree	Feb. May.
54.	<i>Leucas deflexa</i> Hook.f.		lamiaceae	Lat. 28.157404 Long. 75.429133	–	Herb	Oct. Mar.
55.	<i>Micrococca mercurialis</i>	Mercury doughwo od	Euphorbiaceae	Lat. 28.154392 Long. 75.443893	–	Herb	June Oct.
56.	<i>Momordica balsamina</i> L.	Baad- karello	Cucurbitaceae	Lat. 28.159217 Long.	–	Climber	June Oct.

				75.441936		
57.	<i>Morus alba</i>	shathuth e	Moraceae	Lat. 28.230451 Long. 75.64577	– –	Tree Feb. – Apr.
58.	<i>Nerium indicum</i> L.	Kaner	Apocyanaceae	Lat. 28.159287 Long. 75.442106	– –	Shrub Througho ut year
59.	<i>Ocimum americanum</i> L.	Bapchi	Lamiaceae	Lat. 28.159085 Long. 75.438768	– –	Herb Apr.- Oct.
60.	<i>Opuntia elatior</i> Mill.	Nagphan i	Cactaceae	Lat. 28.161508 Long. 75.430282	– –	Shrub Apr.- Oct.
61.	<i>Panicum virgatum</i>	Muratio grass	Poacear	Lat. – 28.15155 Long. 75.425013	– –	Herb June – Oct.
62.	<i>Parthenium hysterophorus</i> L.	Gajar ghas, Congress weed	Asteraceae	Lat. 28.163193 Long. 75.446667	– –	Herb June. – Oct.
63.	<i>Pedaliium murex</i> L.	Bada gokhru	Pedaliaceae	Lat. – 28.15135 Long. 75.428212	– –	Herb June – Oct.
64.	<i>Pentatropis spiralis</i> (Forsk.) Decne.	Aakari-bel	Asclepiadacea e	Lat. 28.160424 Long. 75.436689	– –	Climber June – Oct.
65.	<i>Phyllanthus amarus</i> Schum. & Th.	Googa Janti	Euphorbiaceae	Lat. – 28.148 Long. 75.426434	– –	Herb June – Nov.
66.	<i>Physalis minima</i> L.	Wild gooseber ry	Solanaceae	Lat. 28.152525 Long. 75.443617	– –	Herb Aug. – Nov.
67.	<i>Portulaca pilosa</i> L. var. pilosa	Penawar	Portulacaceae	Lat. 28.150147 Long. 75.425192	– –	Herb June – Oct.
68.	<i>Prosopis juliflora</i> (Swartz) DC.	Vilayti babool,	Fabaceae	Lat. 28.147424 Long. 75.420456	– –	Shrub June - Nov.
69.	<i>Pupalia lappacea</i> (L.) Juss. (amaranthaceae)	Chiptio bhurat	Amaranthacea e	Lat. 28.149892 Long. 75.424806	– –	Herb June – Oct.
70.	<i>Saccharum bengalense</i> Retz.	Kuncha	Poaceae	Lat. 28.160346 Long. 75.436608	– –	Shrub Oct. - Nov.
71.	<i>Salvadora oleoides</i> Decne.	Jaal	Salvadoraceae	Lat. 28.160424	–	Shrub Mar. – Jun.

				Long. 75.436689	–		
72.	<i>Salvadora persica</i> L.	Jaal, pilu	Salvadoraceae	Lat. 28.160424 Long. 75.436689	–	Shrub	Mar. – Jun.
73.	<i>Sesamum mulayanum</i> Nair	Wild til	Pedaliaceae	Lat. 28.150027 Long. 75.424822	–	Herb	Aug. – Nov.
74.	<i>Sesbania sesban</i> (L.) Merr.	Ekad	Fabaceae	Lat. 28.148356 Long. 75.420176	–	Shrub	Oct. – Nov.
75.	<i>Sida cordifolia</i> L.	Bhara, Kharinti	Malvaceae	Lat. 28.167898 Long. 75.448837	–	Undershru b	June – Oct.
76.	<i>Solanum incanum</i> L.	Dholi ringni	Solanaceae	Lat. 28.159469 Long. 75.430448	–	Shrub	Nov. – Jan.
77.	<i>Solanum indicum</i>	Katali	Solanaceae	Lat. 28.163194 Long. 75.446667	–	Herb	Nov. – Dec.
78.	<i>Solanum virginianum</i> L.	Oonth kantali	Solanaceae	Lat. 28.151236 Long. 75.42361	–	Herb	Nov. – May
79.	<i>Tamarix aphylla</i> (L.) Karst.	Farash	Tamaricaceae	Lat. 28.150135 Long. 75.423533	–	Tree	Nov. – Feb.
80.	<i>Tecomella undulata</i> (Sm.) Seem.	Rohida	Bignoniaceae	Lat. 28.150027 Long. 75.424822	–	Tree	Mar. – Jun.
81.	<i>Tephrosia purpurea</i> (L.) Pers.	Bansa	Fabaceae	Lat. – 28.167114 Long. 75.448771	–	Undershru b	Jul. –Oct.
82.	<i>Tragus racemosus</i> L.	Stalked bur grass	Poaceae	Lat. 28.142407 Long. 75.424826	–	Herb	July – Sept.
83.	<i>Urochloa ramosa</i>	Makra	Poaceae	Lat. 28.150149 Long. 75.425187	–	Herb	July – Sept.
84.	<i>Verbesina encelioides</i> (Cav.) Benth.	Jangli surajmukhi	Asteraceae	Lat. 28.160346 Long. 75.436608	–	Herb	July – Oct.
85.	<i>Withania somnifera</i> (L.) Dunal	Ashwagandh	Solanaceae	Lat. 28.150014 Long.	–	Undershru b	June – Oct.

				75.426646		
86.	<i>Zaleya pentandra</i>	Itsit	Aizoaceae	Lat. 28.152549 Long. 75.443279	–	Herb July - Oct.
87.	<i>Zizyphus mauritiana</i> Lamk.	Bare	Rhamnaceae	Lat. – 28.1642 Long. 75.452502	–	Shrub Oct. - Nov.
88.	<i>Zizyphus nummularia</i> (Burm.f.) Wt.	Bordi	Rhamnaceae	Lat. 28.164168 Long. 75.452808	–	Shrub Oct. - Nov.
89.	<i>Zygophyllum indicum</i> (Burm.f.) Christenh. & Byng	Lunwo	Zygophyllaceae	Lat. 28.157404 Long. 75.429133	–	Herb Oct. - Nov.
90.	<i>Ephedra foliata</i> Boiss. & Kotschy ex Boiss.	Unt phog	Gnetaceae (Gymnosperm)	Lat. 28.164443 Long. 75.44648	–	Climber July - Nov.

The current investigation of the conservation reserve's Phyto-diversity and phenology offers important new information about the area's floral composition, seasonal growth patterns, and ecological dynamics. The results demonstrate the reserve's significance as a vital habitat for biodiversity protection by revealing a rich diversity of plant species. The phenological measurements show distinct seasonal differences in flowering and fruiting patterns, which are impacted by weather variables like photoperiod, temperature, and precipitation. The study highlights the necessity of long-term conservation and monitoring efforts to safeguard the delicate ecosystem against climate change, habitat fragmentation, and human pressures.

Table 2: Represent of different forms of plants

Form of Plants	No. of Sp. and Varieties	% Representation
Herbs	47	52.22%
Undershrub	6	6.66%
Shrubs	19	21.11%
Vines	1	1.11%
Climbers	7	7.77%
Trees	10	11.11%

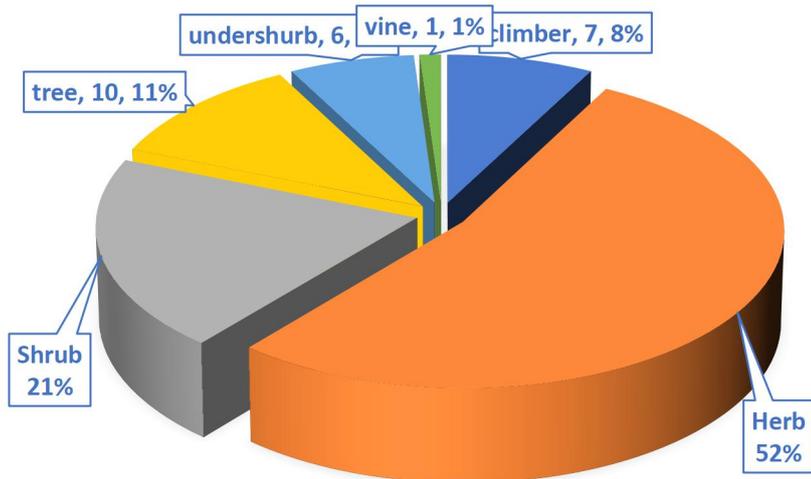
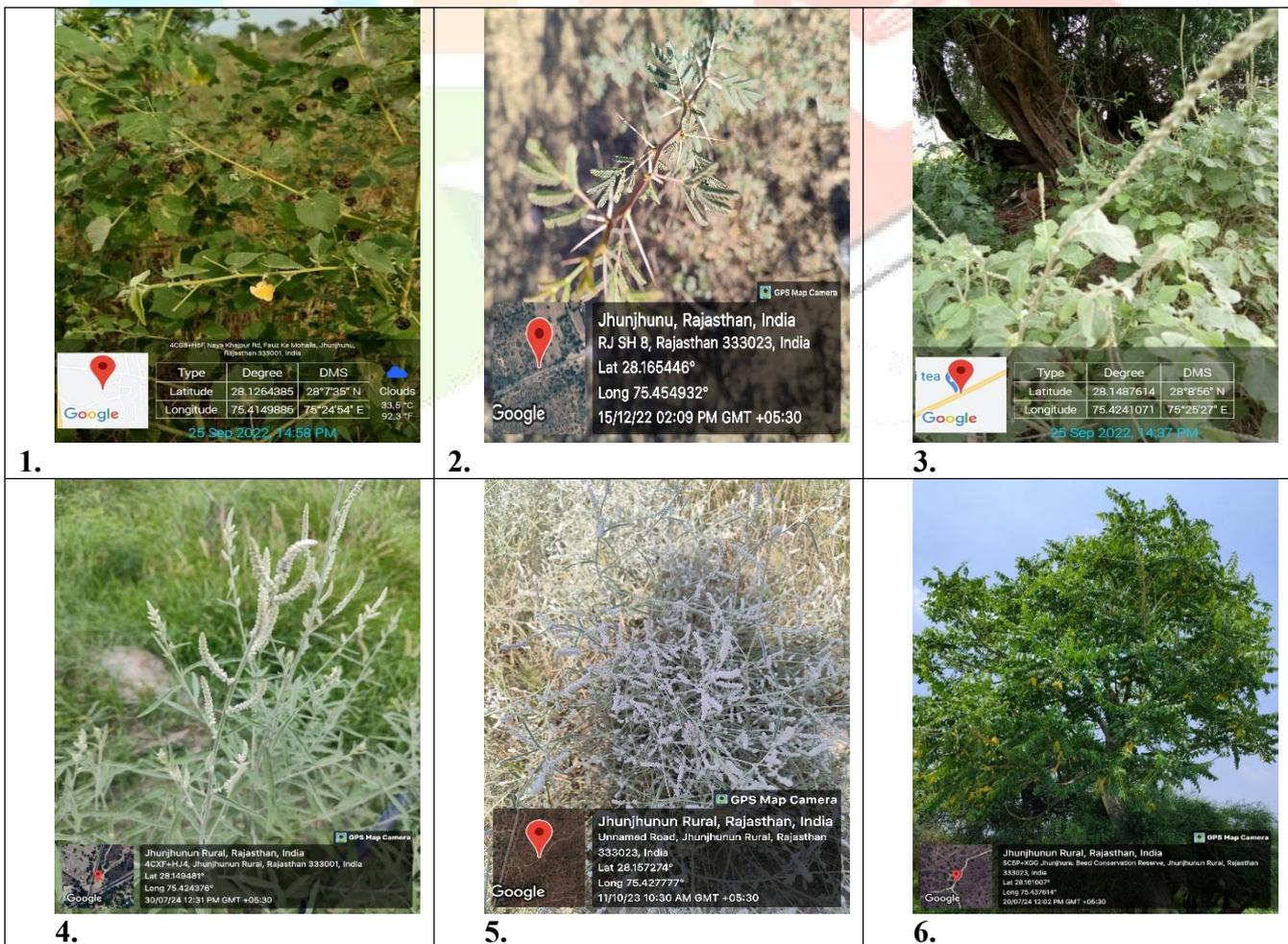


Chart 1 : Habit form of Phytodiversity

1. Phytodiversity photo plate number with Geo-tag :





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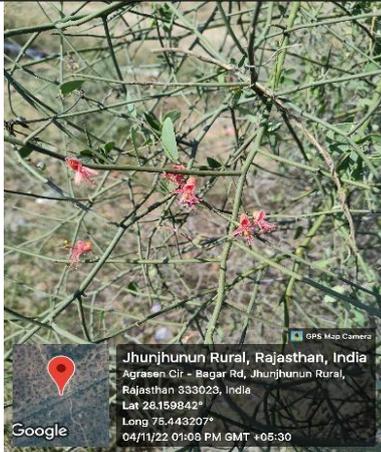
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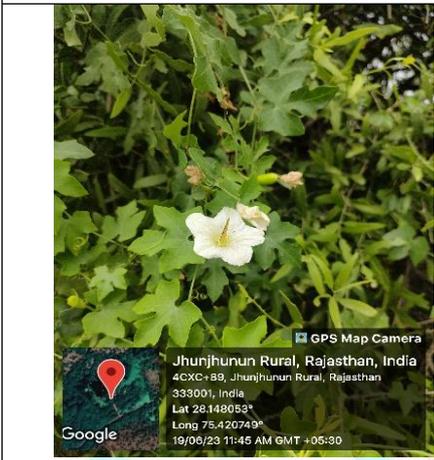
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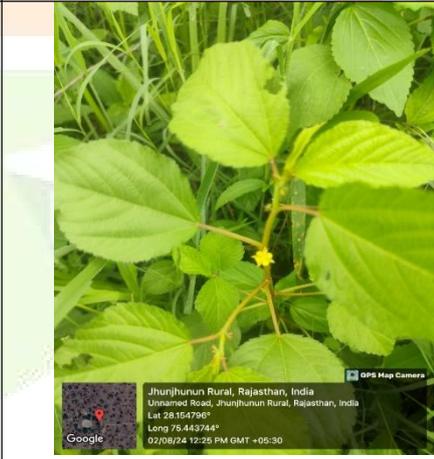
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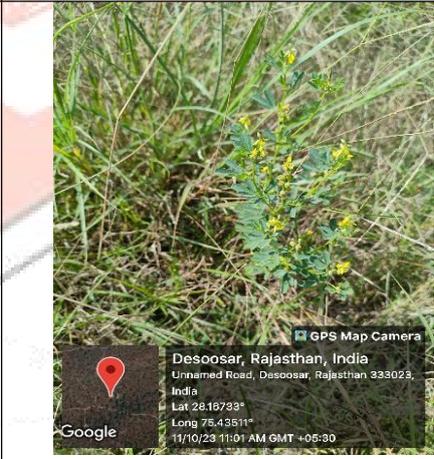
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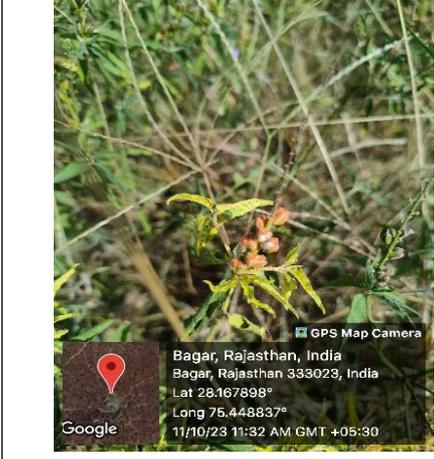
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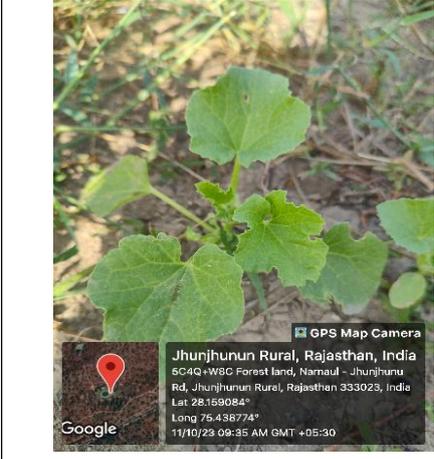
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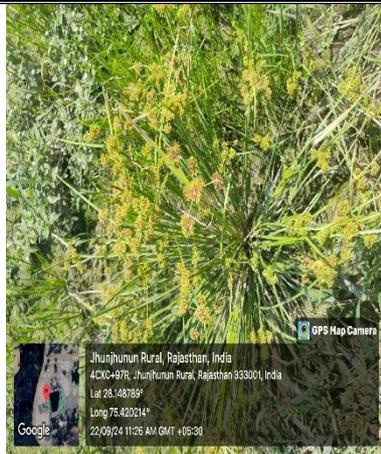
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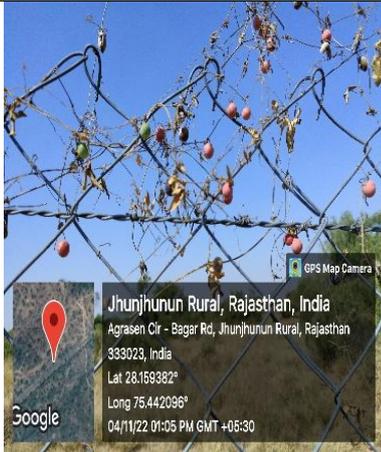
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43. Bagar, Rajasthan, India
Bagar, Rajasthan 333023, India
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Long 75.448925°
20/07/24 11:33 AM GMT +05:30



44.



45. Jhunjhunun Rural, Rajasthan, India
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Lat 28.14823°
Long 75.420568°
24/01/24 02:41 PM GMT +05:30



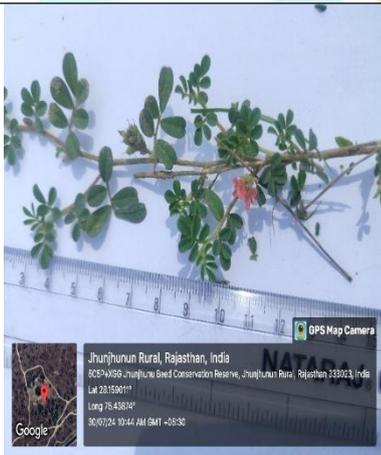
46. Jhunjhunun Rural, Rajasthan, India
Loharu - Sikar Rd., Jhunjhunun Rural, Rajasthan 333023, India
Lat 28.151145°
Long 75.427641°
20/07/24 10:55 AM GMT +05:30



47. Jhunjhunun Rural, Rajasthan, India
4CXF+97R, Jhunjhunun Rural, Rajasthan 333001, India
Lat 28.149118°
Long 75.421132°
22/09/24 11:53 AM GMT +05:30



48. Jhunjhunun Rural, Rajasthan, India
4CXF+HJ4, Jhunjhunun Rural, Rajasthan 333001, India
Lat 28.149109°
Long 75.424257°
30/07/24 12:37 PM GMT +05:30



49. Jhunjhunun Rural, Rajasthan, India
6CE+V9G, Jhunjhuni Seed Conservation Reserve, Jhunjhunun Rural, Rajasthan 333023, India
Lat 28.159017°
Long 75.43817°
30/07/24 10:44 AM GMT +05:30



50. Jhunjhunun Rural, Rajasthan, India
6CP+X0G, Jhunjhuni Seed Conservation Reserve, Jhunjhunun Rural, Rajasthan 333023, India
Lat 28.169354°
Long 75.438289°
30/09/24 10:32 AM GMT +05:30



51. Jhunjhunun Rural, Rajasthan, India
4CXF+69, Jhunjhunun Rural, Rajasthan 333001, India
Lat 28.147779°
Long 75.420996°
22/09/24 11:58 AM GMT +05:30



52. Jhunjhunun Rural, Rajasthan, India
4CXF+HJ4, Jhunjhunun Rural, Rajasthan 333001, India
Lat 28.148406°
Long 75.424345°
21/11/22 02:22 PM GMT +05:30



53. Jhunjhunun Rural, Rajasthan, India
4CXF+69, Jhunjhunun Rural, Rajasthan 333001, India
Lat 28.147489°
Long 75.420996°
22/09/24 11:57 AM GMT +05:30



54. Jhunjhunun Rural, Rajasthan, India
6Q2H+7V4, Jhunjhunun Rural, Rajasthan 333001, India
Lat 28.157402°
Long 75.425133°
23/11/24 01:19 PM GMT +05:30



55.



56.



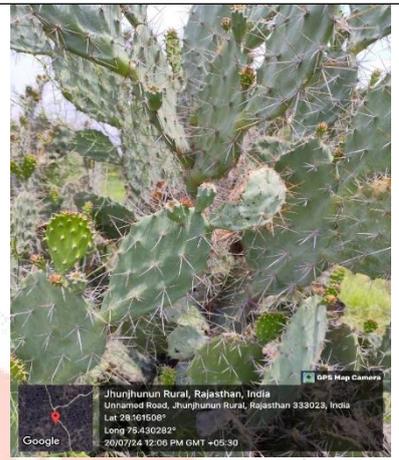
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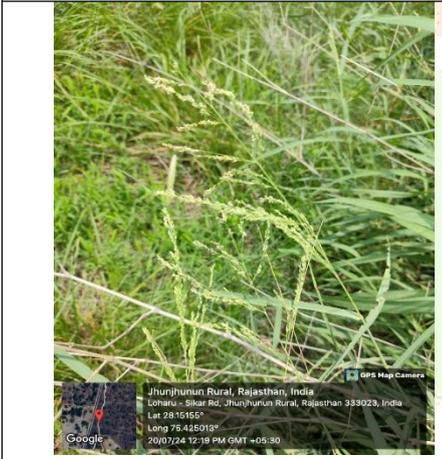
58.



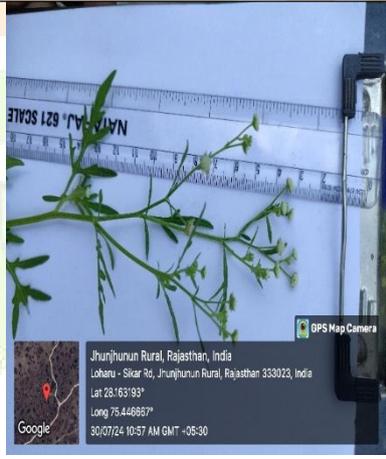
59.



60.



61.



62.



63.



64.



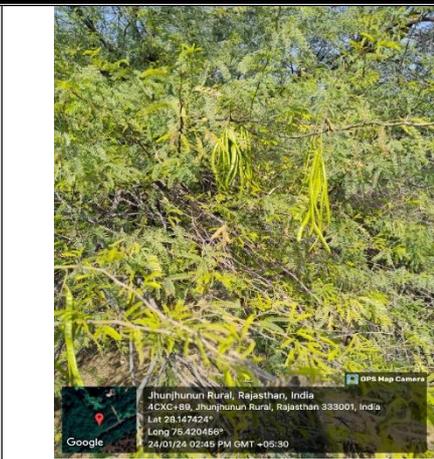
65.



66.



67.



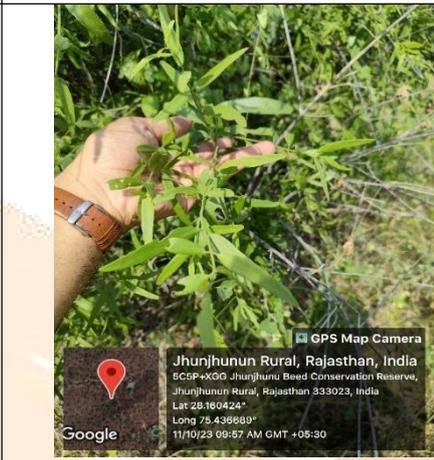
68.



69.



70.



71.



72.



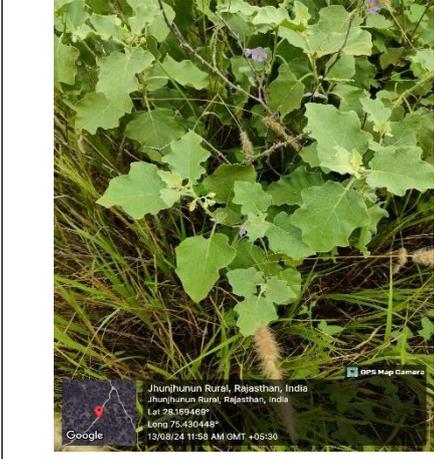
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74.



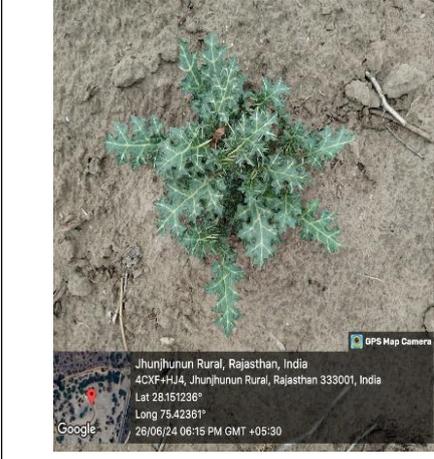
75.



76.



77.



78.

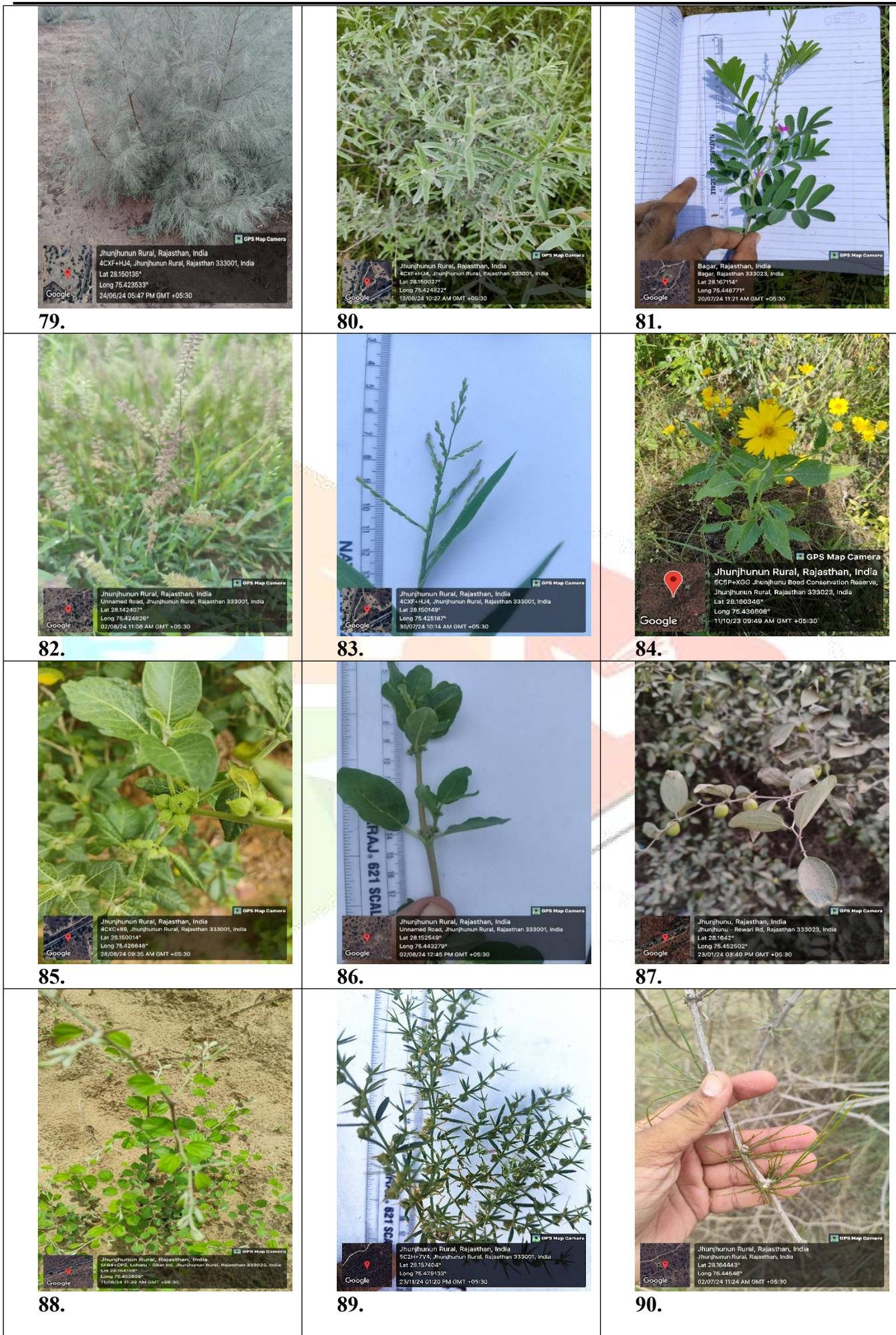


Figure 2: photo plates of phytodiversity with Geo-tagging

The study concluded that many herb plant species with economic values (forage, edible, medicinal, and rare) were dominant in the study area. This study concludes by highlighting the importance of conservation reserves in sustaining ecological stability and Phytodiversity. Enhancing conservation efforts will promote related faunal populations, ecosystem services, and long-term ecological resilience in addition to protecting plant biodiversity.

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