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Native Shrub Species of South Gujarat Region in Landscaping for Enhancing Ecological Value and Utility

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Abstract:

Native landscaping, which utilises indigenous plant species, offers a resilient and cost-effective alternative to conventional landscaping that often relies on exotic species. This study investigates the native shrub species of South Gujarat, highlighting their potential for use in sustainable landscaping to enhance ecological value and utility. Extensive field surveys were conducted across forested and rural areas of the Dangs, Jambughoda, Vansda National Park, Shoolpaneshwar Wildlife Sanctuary, and a few bordering villages like Waghai, Chikhli, and Unai. Data on botanical names, vernacular names, habitats, and ecological significance were gathered through field identification, literature review, and local knowledge via community interviews and individual questionnaires. A total of 50 shrub species were documented, many of which possess significant ecological functions such as soil stabilisation, pollinator support, nitrogen fixation, and ethnomedicinal uses. The findings underscore the vital role these native shrubs play in maintaining local biodiversity and ecosystem services. Incorporating such species in modern landscape design not only supports conservation but also promotes sustainability, climate resilience, and cultural relevance in ecological planning.

Keywords:
Native shrubs, South Gujarat, ecological landscaping, biodiversity conservation, sustainable landscaping, ethnobotany, ecosystem services

1. Introduction:

Landscaping is the science of reshaping the outdoor areas into attractive and practical spaces. It is a complex blend of art and science (Burud, A. *et al*., 2023). Landscaping extends beyond the simple decorations and artwork. It aims to design outdoor environments that are harmonious, sustainable, and meaningful, ultimately improving the overall quality of life. Landscaping is an evolving field that demands a thorough knowledge of ecological systems, a keen artistic sense, and attention to practical factors (Burud, A. *et al*., 2023). It is of utmost importance not to exploit exotic plant species in the name of landscaping and aesthetics. Landscaping should be sustainable. Thus, native landscaping plays a key role. It is a type of landscaping in which native plant species that are locally found in the area are utilised. Native landscaping has emerged as a holistic, environmentally superior alternative to traditional landscaping, as it integrates the functions of local ecosystems and significantly reduces capital expenditure (Kermath, B., 2007).

This study has been carried out to understand and gain a deeper knowledge of the native shrub species of the South Gujarat region.

2. Materials and Methodology:

The survey work took place in various localities of rural as well as forest areas in South Gujarat. The study was carried out through the areas of the Dangs, Jambughoda, Vansda National Park, Shoolpaneshwar Wildlife Sanctuary, and a few bordering villages like Waghai, Chikhli, and Unai. The collected plant species were identified by the Gujarat State flora (Shah, 1978). Local or vernacular names, basic usages, and importance were reported by surveying the local communities. A model questionnaire was prepared to collect data from the locals of the respective areas. Several individual interviews with the local tribal community of *Kochariyo Badavo* were conducted, along with personal observations to gather information. After an extensive survey and collection tours, many native shrub species were identified and collected. The data thus collected were cross-referenced with relevant research and authenticated publications on the biodiversity of Saurashtra and native shrub species in Gujarat and India.

A list was prepared in alphabetical order, consisting of information like the botanical and local names of the species, family, habitat, and biodiversity value for efficient use in modern landscaping.

3. Results and Discussion:

From the above survey, 25 shrub species were recorded, which are found to have major biodiversity significance along with medicinal and ethnobotanical values.

Table 1: Habitat and Biodiversity Value of Various Native Shrubs of South Gujarat

Sr.	Botanical Name	Local Name	Family	Habitat	Biodiversity Value
1	*Abutilon indicum*	Khapat	Malvaceae	Dry open ground, roadsides	Medicinal; nectar for bees
2	*Barleria prionitis*	Vajradanti	Acanthaceae	Forest edges, dry scrub	Spiny structure provides habitat; used medicinally.
3	*Calotropis gigantea*	Rui	Apocynaceae	Wastelands, scrub	Larval host for monarchs; medicinal
4	*Calotropis procera*	Akado	Apocynaceae	Barren, arid lands	Host plant for butterflies; drought-tolerant
5	*Capparis sepiaria*	Kapu	Capparaceae	Thorn scrub, field margins	Flowers and fruits feed bees and birds.
6	*Capparis zeylanica*	Katira	Capparaceae	Rocky, dry deciduous areas	Climbing shrub; nectar for bees

7	*Carissa carandas*	Karonda	Apocynaceae	Scrubland, open forest	Edible berries for wildlife; good as hedges.
8	*Cassia auriculata*	Aaval	Fabaceae	Dry forests, rocky soils	Nectar source; erosion control
9	*Clerodendrum serratum*	Bharangi	Lamiaceae	Moist undergrowth	Medicinal shrub; larval host for butterflies
10	*Datura metel*	Dhaturo	Solanaceae	Scrublands, wasteland	Bat-pollinated; toxic but culturally important
11	*Evolvulus alsinoides*	Shankhpushpi	Convolvulaceae	Open fields, grasslands	Groundcover supports pollinators
12	*Flemingia strobilifera*	Wild Hops	Fabaceae	Dry deciduous forest	Medicinal and a source of nectar for insects
13	*Grewia abutilifolia*	Phalsa/Phalsi	Malvaceae	Dry deciduous forest	Edible fruits and medicinally important
14	*Grewia asiatica*	Phalsa	Malvaceae	Dry deciduous forest	Edible fruits and medicinally important
15	*Helicteres isora*	Marorphali	Malvaceae	Moist to dry forest zones	Fruit for birds; traditional medicine
16	*Hibiscus cannabinus*	Wild Hibiscus	Malvaceae	Dry Deciduous forests	Ornamental and pollinator plant
17	*Hibiscus rosa-sinensis*	Jasud	Malvaceae	Gardens, forest edges	Pollinator host; nectar-rich flowers
18	*Homonoia riparia*	Streamside Purge	Euphorbiaceae	Riverbanks, moist places	Medicinal and Stream bank stabiliser
19	*Justicia adhatoda*	Ardusi	Acanthaceae	Shady slopes, forest edges	Nectar-rich; medicinal; supports pollinators
20	*Lawsonia inermis*	Mehndi	Lythraceae	Semi-arid shrublands	Pollinators and birds; dye-yielding plant
21	*Maytenus emarginata*	Vikola	Celastraceae	Dry Deciduous forests	Traditional medicine for gastrointestinal disorders
22	*Vitex negundo*	Nagod	Verbenaceae	Dry deciduous forest	Attracts pollinators; soil stabiliser; medicinal.
23	*Woodfordia fruticosa*	Dhataki	Lythraceae	Dry Deciduous forests	Ayurvedic medicinal shrub

24	*Ziziphus oenoplia*	Bordi	Rhamnaceae	Dry deciduous forest, hedges	Thorny shrub; fruit for birds; good for hedgerows
25	*Zizyphus numularia*	Chani Bor	Rhamnaceae	Dry deciduous forest	Thorny shrub; edible fruits

4. Conclusion:

With this study, we aim that the exploitation of exotic species can be checked. This study shall also become an instrument in finding out the native species to utilise appropriately while planning a landscape which promotes sustainability as well as acknowledges the importance of these native plants. Using native plants for landscaping will be economical, sustainable, as well as a unique way of preserving the native biodiversity.

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