



CULTIVATING MAGIC: A GUIDE TO CREATING OUR OWN BUTTERFLY GARDEN- WITH REFERENCE TO BUTTERFLY GARDEN OF SREE NARAYANA COLLEGE CAMPUS, ALATHUR, PALAKKAD, KERALA.

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ABSTRACT:

The study carried out at Sree Narayana College, Alathur Campus investigates the ecological intricacies of butterfly gardens, examining their potential as crucial tools for biodiversity enhancement amidst global concerns about declining butterfly populations. In the face of this challenge, the scientific intricacies of establishing and maintaining purpose-built habitats for butterflies become imperative. Combining a thorough literature review with empirical observation, our research seeks to unveil the underlying ecological significance of butterfly gardens and their specific impact on local biodiversity within the intricate web of the food chain. Present study navigates the scientific complexities of garden design, plant selection, and maintenance practices, offering valuable insights into the nuanced relationships between butterflies, plants, and the broader ecosystem.

Keywords: Butterfly gardens, biodiversity conservation, ecological impact.

INTRODUCTION:

In the wake of escalating concerns surrounding global biodiversity loss, the imperative to seek innovative and scientifically informed conservation strategies has become increasingly apparent. Among the myriad of threatened species, butterflies emerge as critical indicators of ecosystem health, acting as both pollinators and prey for a multitude of organisms. This scientific investigation embarks on a journey into the realm of butterfly gardens, meticulously exploring their potential to serve as effective tools for enhancing biodiversity.

Butterfly gardens, purposefully cultivated to attract and sustain these delicate yet ecologically vital insects, present a unique opportunity to bridge the gap between urban landscapes and the preservation of diverse ecosystems. This study adopts a scientific lens to unravel the complex interactions within butterfly gardens, dissecting the intricate web of relationships between butterflies, plants, and the broader environment. As the decline of butterfly populations raises alarms, a rigorous examination of the scientific principles governing the establishment and maintenance of butterfly gardens becomes imperative. By merging a comprehensive literature review with empirical observations, this research aims to uncover the ecological significance of butterfly gardens, shedding light on their potential contributions to biodiversity conservation. Through garden design, plant selection, and maintenance practices, this study seeks to lay the foundation for a systematic and scientifically driven approach to the establishment of butterfly gardens. The ensuing sections delve into the intricacies of butterfly ecology, the design principles that underpin successful gardens, and the empirical evidence supporting their biodiversity-enhancing potential. In doing so, this scientific inquiry not

only advances our understanding of butterfly gardens as vital conservation instruments but also provides practical insights into their role in fostering resilient and diverse ecosystems. The initial phase of this study involved an extensive review of scientific literature pertaining to butterfly ecology, behavior, and the impact of human interventions on butterfly populations. A systematic search of academic databases, including but not limited to PubMed, Craig *et.al.*, (1995), George (1998; 2001a,b and 2011), Sravankumar *et.al.*, (2022) was conducted. Keywords such as "butterfly gardens," "biodiversity conservation," and "ecological impact" were employed to identify relevant peer-reviewed articles, research papers, and conservation reports.

METHODOLOGY:

Tips to create butterfly garden:

1. A butterfly garden should get plenty of morning sunlight; there should not be any tall structure or tree at the east side of a garden.
2. Host plants should be hidden in the background; nectar plants should be exhibited in front for best looks of flowers and hovering butterflies.
3. There should be a tree shade and small water body in the vicinity of the garden.
4. There should be patches for mud puddling and sun basking for butterflies.
5. Apart from flower nectar, butterflies also get minerals from rotten fruits and peels, which can be easily placed in the garden (George, 2001).

Choosing the right location: Selecting the perfect spot for butterfly garden is the first step. Butterflies thrive in sunny, sheltered areas, so choose a location that receives at least six hours of sunlight per day. Shield the garden from strong winds, creating a calm oasis that butterflies will flock to.

Designing a butterfly garden: Include a variety of host plants, where butterflies lay their eggs, and nectar plants to provide sustenance for adult butterflies. Opt for a diverse selection of flowers, trees, and shrubs to attract a spectrum of butterfly species.

- i) Selecting Plants:** The key to a successful butterfly garden lies in the selection of the right plants. Native species are particularly effective, as they have evolved to meet the specific needs of local butterflies. Include a mix of annuals and perennials to ensure a continuous bloom throughout the seasons.
- ii) Butterfly host plants:** These are the plants where eggs are laid, larvae, caterpillars and pupa are formed. These are the plants on which the caterpillars feed on. Butterflies are called first botanists of earth. They recognize host plants by chemical stimuli and lay eggs on a particular group of species only. Few native butterfly host plants are Mast tree, Curry leaves, Custard Apple, Castor, Calotropis, Cassia, Citrus, Bryophyllum, Bamboo, Mussaenda, Cinnamon, Ornamental palm, Guava, Senna, Oleander, Ficus, Cicas, Glycosmis etc.
- iii) Butterfly nectar plants:** These are the flowering plants that attract hovering butterflies for nectar. Butterfly attracting flowers are mostly colorful, small in size and many in number. Nectar plants can be perennials or annuals. Kufia, Marigold, Cosmos, Hibiscus, Ixora, Crotolaria, Oleander, Jasmine, Clerodendron, Zinnia.

Creating Butterfly-Friendly Features: Enhance garden's appeal by incorporating butterfly-friendly features. Puddling areas, comprised of shallow dishes filled with water and soil, provide essential minerals for butterflies. Add rocks and logs for basking, creating warm resting spots for these delicate insects.

Caring for Butterfly Garden: Maintaining a butterfly shelter does not has to be complicated. Water garden regularly, but avoid waterlogged soil, which can be detrimental to butterfly larvae. Embrace organic gardening practices to ensure a pesticide-free environment, allowing butterflies to thrive.

Educational and Interactive Elements: Transform our butterfly garden into a learning space. Introduce informative signage detailing the life cycles of butterflies and the importance of these gardens in conservation efforts. Consider organizing workshops or guided tours to engage community.

Results and discussion:

As a result of the introduction of host plants and habitat management, 65 species of butterflies belonging to 14 sub families and 5 families were recorded in 18 months observation. These included one species that are endemic to the Western Ghats (Raju, 2016) and 10 species having a protected status under the Indian Wildlife Act, 1970.

Common Butterfly Species observed

Family	Sub family	Sl. No.	Scientific name	Common name	Remarks
Nymphalidae	Bibilidinae	1	<i>Ariadne merione</i> (Cramer)	Common castor	C
		2	<i>Euthalia aconthea</i> (Cramer)	Common baron	VR
	Limenitidinae	3	<i>Neptis soma</i> (Moore)	Sullied sailor	C
		4	<i>Parthenos sylvia</i> (Cramer)	Clipper	R
	Nymphalinae	5	<i>Hypolimnys bolina</i> (Linnaeus)	Great egg fly	C
		6	<i>H. misippus</i> (Linnaeus)	Danaid egg fly	C
		7	<i>Junonia almana</i> (Linnaeus)	Peacock pansy	VC
		8	<i>J. atlites</i> (Linnaeus)	Grey Pansy	C
		9	<i>J. iphita</i> (Cramer)	Chocolate pansy	C
		10	<i>J. lemonias</i> (Linnaeus)	lemon pansy	VC
		11	<i>J. hierta</i> (Linnaeus)	Yellow pansy	C
	Danainae	12	<i>Danaus chrysippus</i> (Linnaeus)	Plain tiger	VC
		13	<i>D. genutia</i> (Cramer)	Striped or common tiger	VC
		14	<i>Euploea core</i> (Cramer)	Common Indian crow	VC
		15	<i>E. klugii</i> (Moore)IV	Brown king crow	VC
		16	<i>Parantica aglea</i> (Stoll)	Glassy tiger	C
		17	<i>Phalanta phalanta</i> (Drury)	Common leopard	C
		18	<i>Tirumala limniace</i> (Gmelin)	Blue tiger	VC
	Satyrinae	19	<i>Melanitis leda ismnenne</i> (Linnaeus)	Common evening brown	VC
		20	<i>Orsotrioena medus</i> (Fabricius)	Nigger	R
		21	<i>Ypthima huebneri</i> (Kirby)	Common four ring	O
	Heliconinae	22	<i>Acraea terpsicore</i> (Fabricius)	Tawny coster	VC
Papilionidae	Papilioninae	23	<i>Atrophaneura aristolochiae</i> (Fabricius)	Common rose	R
		24	<i>Graphium agamemnon</i> (Linnaeus)	Tailed Jay	R
		25	<i>G. sarpedon</i> (Linnaeus)	Common blue bottle	R
		26	<i>Papilio bootes</i> (West wood)	Tailed Red breasted	C
		27	<i>P. clythea</i> (Linnaeus)	Swallow tail	C
		28	<i>P. demoleus</i> (Linnaeus)	Lime butterfly	VC
		29	<i>P. hector</i> (Linnaeus)	Crimson rose	C
		30	<i>P. helenus</i>	Red Helen	C
		31	<i>P. memnon</i> (Linnaeus)	Great mormon	VC
		32	<i>P. polymnester</i> (Cramer)	Blue mormon	C
		33	<i>P. polytes</i> (Linnaeus)	Common mormon	C
		34	<i>Pachliopta aristolochiae</i> (Evans)	Common rose	VC
		35	<i>Troides minos</i> (Cramer)	Southern birdwing (E)	C
Pieridae	Pyrinae	36	<i>Belenois aurota</i> (Fabricius)	Pioneer or Caper white	O
		37	<i>Delias eucharis</i> (Drury)	Common Jezebel	C
		38	<i>Hebomoia glaucippe</i> (Linnaeus)	Great orange tip	R

		39	<i>Ixias mariane</i> (Cramer)	White orange tip	R
		40	<i>Leptosia nina</i> (Fabricius)	Psyche	C
		41	<i>Pieris brassicae</i> (Linnaeus)	Cabbage white	C
		42	<i>Prioneris sita</i> (Felder) IV	Painted saw tooth	O
	Coliadinae	43	<i>Catopsila pomona</i> (Fabricius)	Common emigrant	C
		44	<i>C. pyranthe</i> (Linnaeus)	Mottled emigrant	C
		45	<i>Eurema hecabe</i> (Linnaeus)	Common Grass Yellow	C
Lycaenidae	Theclinae	46	<i>Tajuria cippus</i> (Fabricius)	Peacock royal	C
	Miletinae	47	<i>Spalagis epeus</i> (West wood)	Ape fly	O
	Polyommatae	48	<i>Castalius rosimon</i> (Fabricius)	Common Pierrot	C
		49	<i>Catochrysops strabo</i> (Fabricius)	Forget-me -not	VC
		50	<i>Euchrysops cnejus</i> (Fabricius)	Gram blue	VC
		51	<i>Jamides alecto</i> (Fruhstorfer)	Metallic cerulean	R
		52	<i>J.bochus</i> (Stoll)	Dark cerulean	VC
		53	<i>J. celeno</i> (Cramer)	Common cerulean	VC
		54	<i>Lampides boeticus</i> (Linnaeus)	Pea blue	VC
		55	<i>Prosotas dubiosa indica</i> (West wood)	Tailless lime blue	O
		56	<i>Pseudozizeeria maha</i> (Kollar)	Pale grass blue	C
		57	<i>Zizeeria karsandra</i> (Moore)	Dark grass blue	O
		58	<i>Zizina otis</i> (Fabricius)	Lesser Grass Blue	C
		59	<i>Zizula hylax</i>	Tiny grass blue	C
	Lycaninae	60	<i>Heliophorus epicles</i> (Godart)	Purple sapphire	R
Hesperiidae	Hesperiinae	61	<i>Borbo cinnara</i> (Wallace)	Rice swift	C
		62	<i>Pelopidas mathias</i> ((Fabricius)	Small banded swift	C
		63	<i>Potanthus omaha</i> (Edwards)	Lesser dart	O
		64	<i>Telicota colon</i> (Evans)	Pale palm dart	O
		65	<i>Udaspes folus</i> (Cramer)	Grass demon	O

(C: Common, R: Rare, O: Occassional, VC: Very common, VR: Very rare)

In cultivating a butterfly garden, we are not just creating a picturesque retreat; but contributing to the conservation of these vital pollinators. While embarking on this journey, remember that every flower planted and every puddle provided is a step towards preserving the magic of butterflies for generations to come. Start small, dream big, and let the wings of change take flight in your own backyard.

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