

An Introduction to Establishing and Managing Butterfly Gardens

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A butterfly garden serves as a concentrated habitat in which diverse butterfly species can coexist in healthy numbers. Ideally, such a garden functions as a microcosm of the surrounding native forest ecosystem, featuring a diversified assemblage of plants to recreate the natural habitat and support local butterfly biodiversity (gardeningsolutions; Huang et al., 2024). The environment is made as conducive as possible for the butterflies found in the area. To set up a new butterfly garden, we need a suitable piece of land in the right location, sufficient manpower, a working knowledge of landscaping, a good understanding of

butterflies and their requirements, plant knowledge, and sufficient finances to run the garden.

This article seeks to provide a concise overview of the fundamentals of butterfly gardening in India, addressing many of the common queries people have on the subject.

Indian Wildlife Protection Law & Butterflies

Under the Indian Wildlife Protection Act (1972), butterflies are classified as wild animals, making it illegal to keep them in captivity or enclosures. However, no official permission is required to establish an open butterfly garden or park, which is often created and maintained on private land.

Some Popular Butterfly Gardens of India

Popular Butterfly Gardens in India				
Sr. No.	Name of Garden	Location	Agroclimatic Zone of the location	No. of species
1.	Butterfly Park in Bannerghatta Biological Park	Bannerghatta National Park, Banglore, Karnataka	Eastern Dry Zone	48 (as of 2023)
2.	Ovalekar Wadi Butterfly Garden	Thane, Maharashtra	North Konkan Coastal Zone	400 (as of 2023)
3.	Butterfly Park (Asola Bhatti Wildlife Sanctuary)	Shooting Range Road, Tughlakabad, Delhi	Agro-ecological Subregion 4.1	86 (as of 2024)
4.	Butterfly Conservatory of Goa	Ponda, South Goa, Goa	West Coast Plains and Ghat Region	144 (as of 2024)
5.	Butterfly Park at Lucknow Zoo	Nawab Wazid Ali Shah Zoological Garden, Hazratganj, Lucknow	Central Plain Zone	28
6.	Butterfly Garden, Narmada	Kevadiya, Narmada, Gujarat	Gujarat Plains and Hills agro-climatic zone	70

(Table source: Antil, et al., 2025)

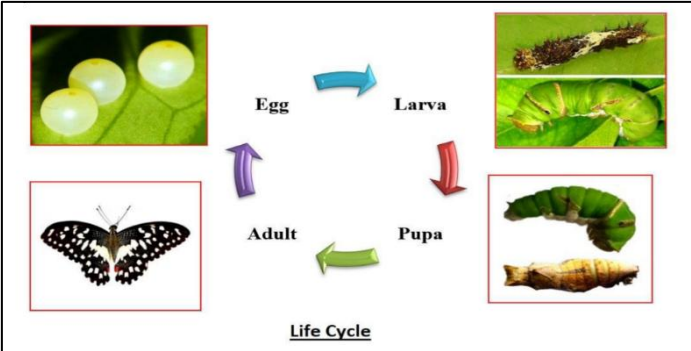


Fig.1: Life Cycle of a Lime Butterfly (Source: Kumar et al., 2022)

Life Cycle of Butterflies

The butterfly life cycle consists of four stages: egg, larva, pupa, and adult. Their transformation through these stages, known as metamorphosis, is regulated by genetic mechanisms. Specific groups of genes govern the developmental changes that occur within the egg, larval, and pupal (chrysalis) stages (Walter, 1997).

Landscape Requirements for Butterfly Gardening

Once suitable land is identified—preferably adjacent to existing plantations or forested areas—the following parameters should be assessed before establishing a butterfly garden:

Sr. No.	Parameter	Essential Requirement	Preferred Condition
1	Ground	Arable soil of good quality	Minimal competing ground vegetation
2	Habitat	Open sunny area with partial shade	Proximity to natural wilderness
3	Water	Reliable water supply	Presence of a natural water body or nearby connection
4	Accessibility	Convenient for maintenance and visitor access	—

Attracting Butterflies to the established Garden

Once land is secured and the requirements of butterflies at each stage of their life cycle are understood, these needs can be systematically met to attract butterflies and sustain their presence by providing continuous resources.

The distribution and abundance of insect herbivores, including butterflies, are closely linked to the availability of suitable host plants. Larval host plants are particularly critical, as caterpillars are primarily herbivorous and often restricted to a limited range of plants that meet their nutritional and chemical needs (Kasambe, 2014). Therefore, careful documentation and cultivation of larval host plants are essential for both butterfly conservation and ecological research.

Many plants in India can attract butterflies, including larval host plants that sustain different species currypata (*Murraya koenigii*), bryophyllum (*Kalanchoe pinnata*), ashoka tree (*Saraca asoca*), acanthus spp., Mussaenda or dhobi tree (*Mussaenda frondosa*), acacia spp., Lantana weed (*Lantana camara*), crown flower (*Calotropis gigantea*), amaltas, and golden shower tree (*Cassia fistula*) are the native larval host plants that can be planted on which different butterfly species complete their life cycle.

As adults, butterflies eat mostly nectar from a variety of plants, while some species continue to be oligophagous. Planting native plants can contribute to the restoration of the local ecology and enhance the availability of food for butterflies, both of which will boost butterfly populations.

Many nectar plants can attract butterflies. Some of the important nectar plants are China rose (*Hibiscus rosa-sinensis*), crown flower (*Calotropis gigantea*), red ixora (*Ixora*

coccinea), Golden shower tree (*Cassia Fistula*), Mango tree (*Mangifera indica*), paper flower *Bougainvillea*, false ashok (*Polyalthia longifolia*), Wild sage (*Lantana camara*), common guava (*Psidium guajava*), and wild mussaenda (*Mussaenda frondosa*).

The following criteria for plants need to be looked at before starting a butterfly garden:

Sr. No.	Criteria	Specification
1	Category	Host plants, nectar plants, and alkaloid plants
2	Hardiness	Drought-tolerant, fast-regenerating, and low-maintenance
3	Type	Perennial, non-invasive species of small trees, shrubs, climbers, and creepers
4	Propagation	Capable of regenerating from seeds, roots, or cuttings
5	Availability	Readily available in local nurseries or the wild
6	Size	Small trees (1–2 m), shrubs (up to 1 m), and herbs (up to 15 cm)

Trees, shrubs, and herbs should be planted at distances of 80cm, 30cm, and 15cm, respectively. Additional Considerations for Effective Butterfly Garden Management

Mud Puddling: Providing Mud puddling space, which provides nutrients that are critical for reproduction, and males often transfer them to females during mating, enhancing egg viability. **Seasonal Planting:** The optimal period for establishing host plants is during the monsoon to post-monsoon months.

Habitat Features: Provide essential elements such as sunlit basking spots, sheltered areas, and moisture sources to support thermoregulation, feeding, and reproduction across all life stages.

Plant Selection: Use pesticide-free native plant species to ensure sustainable nectar and host resources while reducing harmful chemical exposure.

Reference:

- Antil, J., Bhat, C. G., Tripathi, P., & Kanaujia, A. (2025). Butterflies and their contribution in agro-forestry. *Int. J. Adv. Res.* 13(02), 1203-1213, ISSN: 2320-5407
- <https://dwr.virginia.gov/blog/sustaining-butterflies-with-habitats-at-home/>

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| 3. https://gardeningsolutions.ifas.ufl.edu/design/types-of-gardens/butterfly-gardens | of Citrus Butterfly (<i>Papilio demoleus</i> Linnaeus). <i>Agriculture & Food</i> , 4(12), 32-26, E-ISSN-2581-8317 |
| 4. Huang, S., Lin, Y., Dong, J., Lin, Y., Su, Z., Li, J., ... & Fu, W. (2024). Relationship between Plant Habitat Types and Butterfly Diversity in Urban Mountain Parks. <i>Forests</i> , 15(8), 1390. | 6. Walter, M. (1997). The life cycle of moths and butterflies. |
| 5. Kumar, A., Kumar, P., Mishra, P.K., Aman, A.S., Tripathi, A. Integrated Approach for Management | 7. Kasambe, R. (2014). Butterfly Gardening in India: An Introduction. |
