

Faunal biodiversity of native plant nurseries

Urban areas often host exotic and non-native plant species, whether introduced, managed or spontaneous (Zaninotto et al. 2023), many of which enter via the horticulture trade (Reichard & White 2001; Pyšek et al. 2011; La Sorte et al. 2014; van Kleunen et al. 2018) and may subsequently escape into natural areas within and around cities (Alston & Richardson 2006; Gaertner et al. 2017; Tartaglia et al. 2018; Jenerette et al. 2022). Non-native species remain the second most common driver of extinction across all taxa globally (Bellard et al. 2016). In contrast, native plants generally attract greater faunal abundance and richness than non-native plants, with many invertebrate and vertebrate taxa visiting only native species and showing stronger community-level attraction to native flora (Tartaglia & Aronson 2024).

Native plants also provide a myriad of services to biodiversity in urban environments (Tartaglia & Aronson 2024) such as providing food, cover, breeding sites, and other resources that benefit various fauna (Narango et al. 2017), while also contributing to local climate regulation (Espeland & Kettenring 2018), carbon sequestration (Gratani et al. 2016), and support food webs and soil health that enhance the ecological character of cities (Martinson 2020; Smallwood & Wood 2023). Other than being a source of native plants for various purposes, native plant nurseries can also act as small but ecologically valuable biodiversity patches, supporting higher faunal assemblage.

In this context, the Zoo Outreach Organisation maintains two native plant nurseries under the LivelyWaters! programme. One is primarily for terrestrial native plants and the other for aquatic and water-associated native plants in the plains of Coimbatore. In the terrestrial nursery, there are approximately 40 species and 2,500 individuals, whereas the aquatic nursery contains about eight species and 8,500 individuals of plants. The aquatic plant nursery was set up as part of the Nallusamy Wetland Restoration Project to supply both aquatic and terrestrial plants for the restoration of an urban wetland. Since the terrestrial nursery was already operational, the aquatic nursery had to be set up from scratch with native aquatic plants collected from in and around the Coimbatore region.

As there were some species that required minimal water to survive while others needed standing water continuously, pits were dug up, lined with tarpaulin, and filled with water to create temporary pools for plant maintenance. The native plant species of the aquatic nursery are: Giant Reed *Arundo donax*, Taro *Colocasia esculenta*, Jointed Flatsedge *Cyperus articulatus*, Tall Flatsedge *Cyperus exaltatus*, Marsh Barbel *Hygrophila auriculata*, Lemon Grass *Cymbopogon citratus*, Wild Sugarcane *Saccharum spontaneum*, and Vetiver *Chrysopogon zizanioides*.

Since its establishment, the aquatic nursery has progressively been colonized by wildlife using this space and the resources present



a—Spotted Joker *Byblia ilithyia*. © Koshik Rao. | b—Crimson Marsh Glider *Trithemis aurora*. © Koshik Rao. | c—Striped Lynx Spider *Oxyopes salticus*. © P. Kritika | d—Backswimmer Notonectidae sp. . © S. Sushanth.

Table 1. Species list of the fauna observed in the aquatic nursery from March to August 2026.

	Common name	Genus/Scientific name	Family
Invertebrates			
1	Orb weaver spider	<i>Araneus</i> sp.	Araneidae
2	Pygmy Dartlet	<i>Argiocnemis pygmaea</i>	Coenagrionidae
3	Common Castor	<i>Ariadne merione</i>	Nymphalidae
4	Spotted Joker	<i>Byblia ilithyia</i>	Nymphalidae
5	Coromandel Marsh Dart	<i>Ceriagrion coromandelianum</i>	Coenagrionidae
6	Mayfly	<i>Cloeon</i> sp.	Baetidae
7	Common Tiger Butterfly	<i>Danaus genutia</i>	Nymphalidae
8	Hawk moth	<i>Daphnis</i> sp.	Sphingidae
9	Jumping spider	<i>Dendryphantes</i> sp.	Salticidae
10	Jumping spider	<i>Dexippus</i> sp.	Salticidae
11	Fishing spider	<i>Dolomedes</i> sp.	Dolomedidae
12	Common Gesonula	<i>Gesonula mundata</i>	Acrididae
13	House cricket	<i>Grylloides</i> sp.	Gryllidae
14	Common Bluetail	<i>Ischnura senegalensis</i>	Coenagrionidae
15	Small Water Strider	<i>Microvelia</i> sp.	Veliidae
16	Flower bug	<i>Orius</i> sp.	Anthocoridae
17	Lynx Spider	<i>Oxyopes</i> sp.	Oxyopidae
18	Armyworm	<i>Spodoptera</i> sp.	Noctuidae
19	Paper wasp	<i>Polistes</i> sp.	Vespidae
20	Soldier fly	Stratiomyidae sp.	Stratiomyidae
21	Two-striped Jumping Spider	<i>Telamonia dimidiata</i>	Salticidae
22	Long-jawed orb weaver	<i>Tetragnatha</i> sp.	Tetragnathidae
23	Orb weaver	<i>Tetragnatha</i> sp.	Tetragnathidae
24	Flower crab spider	<i>Thomisus</i> sp.	Thomisidae
25	Crimson Marsh Glider	<i>Trithemis aurora</i>	Libellulidae
26	Parthenium Beetle	<i>Zygogramma bicolorata</i>	Chrysomelidae
27	Ladybird Beetle	<i>Cycloneda sanguinea</i>	Coccinellidae
28	Wolf spider	-	Lycosidae
29	Pond snail	-	Lymnaeidae
30	Backswimmer	-	Notonectidae
31	Beetle	-	Scirtidae
32	Marsh Beetles	-	Scirtidae
Vertebrates			
1	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Rallidae
2	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae
3	Garden Lizard	<i>Calotes versicolor</i>	Agamidae
4	Common Indian Toad	<i>Duttaphrynus melanostictus</i>	Bufonidae
5	Peninsular Toad	<i>Firouzophrynus peninsularis</i>	Bufonidae
6	Grey Francolin	<i>Ortygornis pondicerianus</i>	Phasianidae
7	Marbled Balloon Frog	<i>Uperodon systoma</i>	Microhylidae

A total of 39 species were recorded from March to August 2026 (each identified at least to family level), comprising 32 invertebrates. In these, spiders were among the most diverse groups recorded, including jumping spiders (*Telamonia dimidiata*), lynx spiders (*Oxyopes* sp.), wolf spiders (Lycosidae sp.), long-jawed orb weavers (*Tetragnatha* sp.), orb weavers (*Araneus* sp.), fishing spider (*Dolomedes* sp.), and flower crab spider (*Thomisus* sp.). All of these are assumed to be making use of the nursery plants and the water presence. A wider range of insects had also settled in, including the Common Gesonula *Gesonula mundata*, armyworms (*Spodoptera* sp.), the invasive Parthenium Beetle *Zygogramma bicolorata*, house crickets (*Grylloides* sp.), paper wasps (*Polistes* sp.), flower bugs (*Orius* sp.), Spotless Lady Beetle *Cycloneda sanguinea*, soldier flies (Stratiomyidae sp.), and marsh beetles (Scirtidae sp.). The pools have also attracted aquatic and semi-aquatic taxa not otherwise observed in the terrestrial nursery, such as small water striders (*Microvelia* sp.), mayflies (*Cloeon* sp.), and pond snails (Lymnaeidae spp.). Overall, the nursery appears to function not only as a source of native plants for restoration, but also as a small habitat patch that supports a range of faunal taxa.

within the place. The presence of pond-like pits and dense aquatic plant growth appears to have created suitable microhabitat for a diverse assemblage of animal species. To date, nearly 40 species have been recorded from the nursery, either as residents or transient visitors. The majority of these are insects. The earliest records were the tadpoles of the Common Indian Toad *Duttaphrynus melanostictus* and Marbled Balloon Frog *Uperodon systoma*, along with the Crimson Marsh Glider Dragonfly *Trithemis aurora*, observed in the nursery, and presumably laying eggs in the pond-like habitats. Over time, mayflies, moths, and butterflies followed, along with increasingly frequent visits from birds.

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