

ESTABLISHING BASELINE DATA TO MONITOR VIABILITY OF THE NEWLY ESTABLISHED BEDDAGANA WETLAND PARK

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Urban wetlands are highly productive ecosystems, which are extremely sensitive to anthropogenic perturbations. This paper presents baseline data on two indicator taxa, the dragonflies and butterflies, which would be useful for monitoring ecosystem health of this newly established man-modified urban wetland prior to its opening for public visitation. Additionally, the status of invasive flora within the wetland is also assessed. The present survey was conducted from June 2015 to February 2016 and used three transects, established along the three existing bund roads. Sampling of dragonflies and butterflies was conducted over a total of 108 transect days which covered morning (0600 – 1000 hrs), afternoon (1200 – 0200 hrs) and evening (1600 – 1800 hrs). The presence and abundance of floral species nationally designated as invasives were also recorded.

A total of 30 dragonfly species representing five families i.e. Coenagrionidae (08 species), Gomphidae (01 species), Libellulidae (19 species), Platynemididae (01 species) and Protoneuridae (01 species) were recorded. Among these were two endemics *Ictinogomphus rapax* and *Prodasineura sita*, three Vulnerable species (*Onychargia atrocyana*, *Aciagrion occidentale* and *Ceriagrion cerinorubellum*), and six Near Threatened species (*Diplacodes nebulosa*, *Hydrobasileus croceus*, *Lathrecista asiatica*, *Orthetrum luzonicum*, *Orthetrum pruinosum* and *Rhodothemis rufa*). The most common species present at the site includes *Neurothemis tullia*, *Urothemis signata* and *Crocothemis servilia* whilst sightings of *Brachydiplax sobrina*, *Hydrobasileus croceus* and *Prodasineura sita* were rare. The number of butterfly species was 42 belonging to five families (Hesperiidae (03), Lycaenidae (06), Nymphalidae (18), Papilionidae (06) and Pieridae (09). This included one endemic (*Appias galane*) and two Vulnerable species (*Ideopsis similis* and *Telicota ancilla*). The most commonly observed butterflies were *Neptis hylas*, *Pachliopta hector* and *Graphium agamemnon* whilst species such as *Euthalia aconthea* and *Telicota ancilla* were observed rarely. The mean species richness of the dragonflies per day was 23 (+3.65) whilst that for butterflies was 25 (+2.45). Potential indicator species for monitoring the wetland park include the dragonflies *Ictinogomphus rapax* and *Lathrecista asiatica* and the butterflies *Ideopsis similis* and *Graphium agamemnon*. The disappearance of any of the threatened species could also be taken to indicate deterioration of the habitat.

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With regard to invasive flora, a total of nine terrestrial, two aquatic and one semi aquatic species were recorded within the wetland along with three potentially invasive species. Although at present, their spread is at a minimum, there is potential for extensive spread of the aquatic weeds such as *Salvinia molesta* and *Eichhornia crassipes* which in turn may threaten the dragonfly populations unless timely action is taken. Also, further spreading of *Annona glabra* (Wel Aattha) in fringes of the wetland and along bunds, streamlets and canals would threaten these indicator groups as it would result in the homogenization of the wetland habitat. Possible indicator species include the dragonflies *Ictinogomphus rapax* and *Lathrecista asiatica* and the butterflies *Ideopsis similis* and *Graphium Agamemnon*. Butterflies since they are inhabitants of terrestrial vegetation, and prefer open sunlit areas colonized by native herbs which serve as host/feeding plants (e.g. *Derris trifoliata*, *Litsea glutinosa* and *Melastoma malabathricum*), would be further affected. The biotic wealth of this wetland park as indicated by the richness of dragonflies and butterflies highlights the importance of such modified urban habitats in serving as critical refuges for displaced animals.