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# *Cyperus surinamensis*: New distributional record for West Bengal

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**ABSTRACT**

This paper presents the first report of *Cyperus surinamensis*, a newly naturalized sedge species, from the Gangetic plains of West Bengal, marking its second record in India. Initially documented in 2013 from the coastal regions of Kerala in India, the species is native to the New World. Its occurrence in West Bengal highlights the expanding range of this species within the Indian subcontinent. The paper provides a comprehensive description of the plant's morphological characteristics along with a map and field photographs to facilitate identification.

## INTRODUCTION

West Bengal, located on the eastern part of India, stretches from the Himalayas in the north to the Bay of Bengal in the south. Geographically, the state is primarily divided into two regions: the North Himalayan and the South alluvial Gangetic Plains. Recorded forest area of state is 13.38% of its total geographical area (FSI, 2019). Wetlands within these greenwashed areas account for about 32.68%, highlighting the importance of aquatic ecosystems in maintaining the state's biodiversity. Wetland flora of the state mostly of the lentic, marine, and brackish ecosystem is well studied over time. Still, it lacks sufficient data on floristic diversity found in Lotic ecosystems. Damodar River, an important interstate river in the lower Ganga basin, originates from Khamarpat Hill at the junction of Palamu, Ranchi, and Hazaribagh districts in Jharkhand. It flows ca. 541 kilometres before merging with the Hooghly estuary at Shyampur, West Bengal.

*Cyperus surinamensis* commonly called as tropical flat sedge is native to the New World region including countries like Brazil, Bahamas, Colombia, Costa Rica, Ecuador, Mexico etc. Chen et al. (2009) reported this from Taiwan, which was first occurrence report of the species in Old World region. Later, Dai Lunkai (2010) reported the same from China and Indonesia. The species was first documented in India by Viji, Tandyekkal, and Pandurangan (2013) from the coastal regions of Alappuzha and Kollam districts in Kerala. Subsequently, Bhat (2013) recorded its occurrence in Mangalore, located in the Dakshina Kannada district of Karnataka.

During a biodiversity assessment survey in February 2024 along the river Damodar (West Bengal), authors encountered notable populations of a sedge. Upon examination in the field, it was observed that the surface of the stems and leaves were scabrid. Few specimens were collected for identification and after consultation of relevant literature (Chen, Weng & Wu, 2009; Dai Lunkai, 2010; Viji, Tandyekkal & Pandurangan, 2013, Bhat, 2013) plant was identified as *Cyperus surinamensis* Rottbøll. This paper serves as a new distribution record for *Cyperus surinamensis* from Gangetic plains of West Bengal state. A brief description, location map and field photographs are provided for the identification of the species. Herbarium specimen is deposited in the herbarium of Wildlife Institute of India (WII), Dehradun Uttarakhand.

### Taxonomic Description

*Cyperus surinamensis* Rottb., Descr. Pl. Progr. 20. 1772; Wunderlin, Guid. Vasc. Pl. Florida 157. 1998; Tucker, Cyperus in Berry et al., Fl. Venez. Guayana 4: 533. f. 432. 1998; Tucker et al., Cyperus in Fl. N. Amer. Ed. Comm., Fl. N. Amer. 23: 153. 2002; Govaerts et al., World Checklist of Cyperaceae

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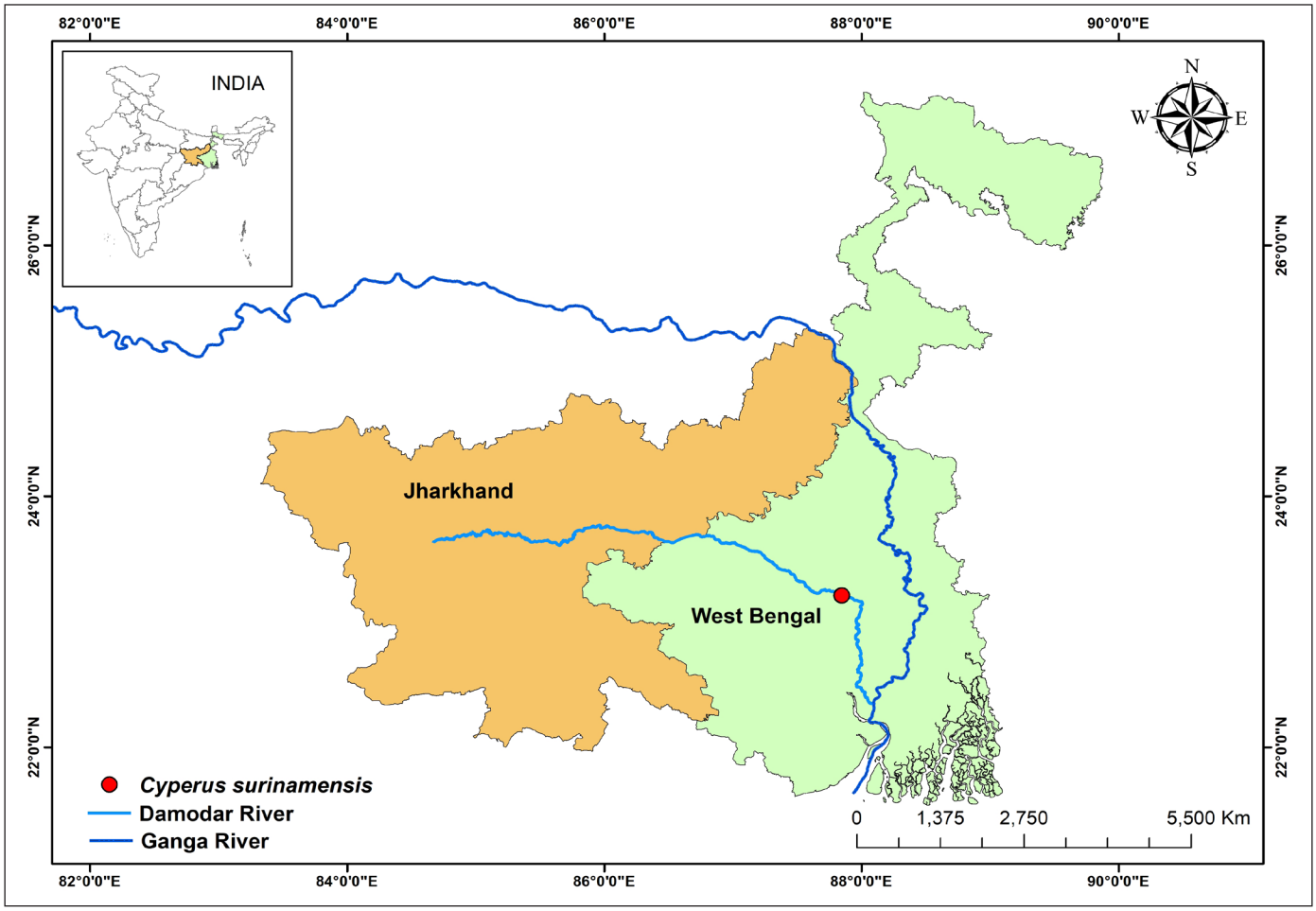


**Figure 1.** Location map of *Cyperus surinamensis* Rottbøll, West Bengal, India.

362. 2007; Shih-Huei Chen et al., *Cyperus surinamensis* Rottb., A Newly Naturalized Sedge Species in Taiwania, 54(4): 399-402, 2009. Viji et al., *Cyperus surinamensis* Rottbøll: A new record for India. In Taprobanica, 5:01.67-68.2013. Bhat, *Cyperus surinamensis* Rottb. (Cyperaceae): A new record for India in Indian Journal of Forestry, 36(3): 365-366, 2013.

Perennial, tufted sedge with short, brown rhizomes, roots fibrous. Culms dark green, up to 80-100 cm tall, trigonous, with minute, retrorse prickles. Leaves shorter than the culms, 3-5, linear, antrorse prickles in the marginal region, V-shaped up to 12 cm long. Inflorescence compound to decompound anthela, lateral flowers longer than the central ones; 3-6 leafy bracts, unequal, spreading, scabrous with retrorse prickles. Spikelets 15-40 arranged in globose, clustered head, ovate-lanceolate, 5-10 mm, 1.5-2 mm; rachilla zig-zag having 14-30 flowers. Glumes ovate, 1.1-1.6 mm long, 0.4-0.5 mm wide pale green; keel green, mucronulate apically. Ovary light green in colour, 0.4-0.5 mm long, style brown; stigmas 3, pale brown. Nuts trigonous, narrow, ellipsoid; 0.5-0.8 mm long, 0.3-0.4 mm wide; slightly stipitate, acute and apiculate, reddish brown reticulate with papillae on surfaces.

*Flowering and Fruiting:* December to March.

*Habitat:* Grows in shallow ditches along wet sandy banks (semi-aquatic) of River Damodar, also grows as marginal vegetation along the main flowing channel. Associated with *Cyperus polystachyos* Rottb., *Cyperus difformis* L., *Cyperus rotundus* L., *Typha angustifolia* L. *Sagittaria trifolia* L. and *Cynodon dactylon* (L.) Pers.

*Distribution:* Common in New World regions, in the Old World found only in China, Indonesia, Taiwan, and India (Kerala, Karnataka and now from West Bengal).

## Specimens examined

India, West Bengal, Purba Bardhaman district, Bardhaman (Damodar River), Lat. 23°12'34.28" N & Long. 87°50'46.02" E, 51 m, 25-02-2024, Revan Chaudhari and Umama Khan 14969; Lat. 23°12'33.62" N & Long. 87°50'47.88" E, 51 m, 25-02-2024, Revan Chaudhari and Umama Khan 14968 (WII).

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**Figure 2.** *Cyperus surinamensis* Rottb. A, B, C. Habit; D, E. Inflorescense: F. Retrorse prickles on stem; G. Spikelets; H, I. Spikelet closeup with densely arranged flowers and zig zag rachilla; J, K. Achenes.

Ganga Rejuvenation" (No.B-02/2015-16/1259/NMCG-WII-PROPOSAL) and "Planning & Management for Aquatic Species Conservation and Maintenance of Ecosystem Services in the Ganga River Basin" (No. B-03/2015-16/1077/NMCG–NEW PROPOSAL). Additional financial support was provided through the grant-in-aid fund of the Wildlife Institute of India (WII), Dehradun.

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