

THE ARJUNA, A KEYSTONE TREE IN CAUVERY'S RIVER-FORESTS

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The arjuna tree (*Terminalia arjuna*) may be best known for its medicinal properties and its importance to the charismatic grizzled giant squirrel, but it plays a special role in the river-forests of Karnataka's Cauvery Wildlife Sanctuary too. A higher number of trees specific to riverine habitats thrive under the canopies of old arjuna trees. The soil under these trees' enormous canopies is also more moist and higher in organic carbon. This makes a case to recognize it as a keystone species — one that plays a crucial role in the landscape — and conserve large, old trees, say scientists.

The arjuna is a large, buttressed tree that usually grows along river banks. With its interlocking roots and large canopy, does the tree influence the composition of plant communities under it? To find out, scientists at Bangalore University noted the plant species growing under the canopy of arjuna trees, as well as in areas without the trees. This revealed a higher species diversity (44 species; some like the mahua tree *Madhuca latifolia* grew only under the canopy of arjuna trees) under these trees, while similar riverine areas without arjuna trees housed only 26 species. Areas devoid of the trees also had more species that were not native to riverine stretches.

The team also sampled soil properties under the trees as well as in areas without them. This revealed that soil in areas under the canopy of the tree had higher organic carbon and moisture contents, probably due to the presence of the large canopy. Put together, these factors prove that the arjuna is a crucial tree in the landscape, claim the authors.

“We therefore recommend that the tree be recognized as a keystone species,” said B.C. Nagaraja, assistant professor (Bangalore University), who led the research published in Landscape Research.

Interestingly, the proposed Mokedatu project — that aims to provide drinking water to Bengaluru — could result in the submergence of numerous old arjuna trees, said Dr. Nagaraja. Given that the regeneration of the species is very low (there are very few young arjuna trees or its saplings in the area), this could be a cause for worry, he warned.

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