

Native forest habitats promote pollinators and fruit production of Açaí palm in the Amazon river delta

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Inside a floodplain forest being intensively-managed for açaí palm production (no other tree species) in Abaetetuba, Brazil. Credit: Alistair J Campbell, Embrapa

Low-impact farming methods benefit both pollinators and açai fruit production, scientists from Embrapa and other Brazilian institutions have found. In a new study published in the *Journal of Applied Ecology*, they show that diverse forest habitats provide safe havens for important pollinators and contribute to the environmental sustainability of this native Amazonian crop.

Dr. Alistair Campbell, a post-doctorate researcher based at Embrapa and the Federal University of Pará (UFPA), and colleagues investigated the impacts of the rapid expansion in açai palm cultivation in the Eastern Brazilian Amazon on pollinating insects and fruit production.

They found that pollinators were essential for high fruit yield (four times lower when pollinators were excluded), and fruit production was 25 percent higher in areas with diverse pollinator communities (high number of different pollinator species) compared to farms with low pollinator diversity.

Pollinator communities were studied in nine floodplain forests under differing levels of management ('extensive' or 'intensive'—based on the number of açai trees per ha) and nine plantations in cleared upland habitats (18 areas in total). The researchers found that pollinator diversity was highest in extensively-managed forests, intermediate in plantations, and lowest in forest areas under intensive management.

The study also found that bees, which accounted for one third of all pollinator species, were more abundant in forested landscapes. The authors conclude that forest losses, through the conversion of native floodplains into 'açai forests' and wider deforestation, had negative impacts on pollinators and açai [fruit production](#). These findings highlight the need to protect Amazon forest habitats not only to protect

biodiversity, but also human wellbeing.

The açáí palm tree (*Euterpe oleracea* Mart.) is native to the [floodplain forests](#) of the Amazon river delta, where it is naturally abundant. Its dark purple, anti-oxidant rich fruits have long been a staple food of traditional Amazon communities but are now exported and sold throughout the world. To keep up with demand, over 1 million tonnes of [fruit](#) are produced annually in the Brazilian state of Pará, generating US\$ 150 million for the local economy. This has been achieved by transforming native floodplain habitats into simplified açáí forests and its cultivation in previously cleared upland areas.

The research published in the *Journal of Applied Ecology* states that:

- Açáí palm is pollinated by over 100 different types of insect, including bees, beetles, flies and
- wasps
- Fruit production was 25 percent higher in areas with high diversity of pollinators
- Floodplains under extensive management (mixed [forest](#) stands) supported the most diverse pollinator communities
- Bees are more dependent on forests than other [pollinators](#)

More information: Campbell AJ, Carvalheiro LG, Maués, MM, et al. Anthropogenic disturbance of tropical forests threatens pollination services to açáí palm in the Amazon river delta. *J Appl Ecol.* 2018;00:1–12. doi.org/10.1111/1365-2664.13086

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