

Food security, cultural reinforcement and sustainable management of tracajá, the yellow spotted river turtle – *Podocnemis unifilis* – in the Xingu Indigenous Park

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When considering the quality of food in a traditional community, not only should aspects of food security be dealt with, but also the sustainability of this resource and its context in reinforcing the community's culture. The Indians of the Xingu Indigenous Park, in Brazil's Mato Grosso state, have traditional eating habits based mainly on agricultural and fishing products. Among these, the tracajá (yellow spotted river turtle - *Podocnemis unifilis*) stands out. This turtle is found throughout the Amazon basin, and the Upper Xingu is its meridional distribution limit. The tracajá is an important component of the diet of these peoples, who eat its eggs, young and adults.

This species is closely intertwined with the whole cultural context of the Upper Xingu peoples, playing a role in their rites, myths, legends and artistic representations. Furthermore, in nutritional terms, it is an important source of protein. According to their beliefs, tracajá is one of the few foods "authorized" to be eaten in certain situations (during menstruation, pregnancy and post-partum), making it also culturally essential to guarantee this food for the traditional community.

In recent decades, with the steady increase of the indigenous population inside the park, along with intense deforestation on its outskirts and "better" capture techniques, pressure on tracajá populations has caused a sharp drop in numbers. This scarcity of tracajás along the Xingu River and its tributaries within the park has been felt in practice by the Indians.

Concerned that this species would disappear locally and the possible loss of this food source in the future, Indians from the Kamayurá-Morená village took the initiative to recover the tracajá population. At first they protected some beaches on the Xingu River against human and animal predation. To make the work viable in the long term they sought technical and financial help from governmental institutions and universities like Embrapa, ICMBio/RAN (Goiânia –Goiás state), Centro Universitario Vila Velha (Vila Velha –Espírito Santo state) and support from Funai. A multidisciplinary and inter-institutional team was set up, with the direct and effective participation of the local community in managing the tracajá.

The work aims to recover the tracajá population in the Xingu Indigenous Park and to develop a system of sustainable management for the species, to guarantee this important traditional food and cultural resource for current and future generations in the region. To do this, the tracajá nests are protected and monitored on nine beaches of the Xingu River. After hatching, the young are released in an area that is more protected from predation, increasing their chance of survival. A population study has started to evaluate the population's viability in the long term under current management methods. The population data will be used to model the population dynamics to define management strategies to make this resource sustainable.

In parallel, work to raise awareness and carry out environmental education has started with various leaders in the park. This work aims to inform the various ethnic groups about the objectives and results of the project, in order to win their support and achieve greater outcomes from the actions. Conservation activities will be boosted for other ethnic groups and villages, with a view to increasing the number of young tracajás returning to the population.

Until now the work has led to a reduction in human and natural predation of tracajás in the Xingu Indigenous Park and a greater influx of individuals into the population during their first year of life. The fact that the project has been accepted and that communities of the park are engaged in conserving the species, a result of environmental education and awareness-raising activities, has helped to reduce human predation, as well as maintaining the cultural tradition and the consumption of the product with a direct impact on food security. In the year 2010, 930 tracajá nests were protected on nine beaches of the Xingu River, and 10,200 hatchlings were released.

Publicizing the work in spontaneous media with national impact has led to the wish for this project to spread to other regions of the tracajá's area of distribution, and also to support for national public policies.