

How to save giant tropical fruit bats: Work with local hunters who use bat teeth as money

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Flying fox teeth strung into a necklace and used as currency on the island of Makira. Credit: Tyrone Lavery, The Field Museum

Bats often get the short end of the stick—when you look around in October, they're featured in Halloween decorations right up there with

unsavory characters like monsters and ghosts. But these animals are key to their environments as pollinators, dispersers of seeds, and insect-eaters. Plus, in the case of flying fox fruit bats, they have faces that even a bat-hating chiroptrophobe could love—they look like German shepherd puppies with wings.

A new study out of The Field Museum and the University of Queensland, published in the conservation journal *Oryx*, delves into bat conservation on the Solomon Islands, where flying foxes play an important role in local tradition: the [bats' teeth](#) are used as [currency](#).

"Island flying foxes are a diverse group of bats, and they're nearly all in trouble. Many species are endangered or extinct from some [islands](#)," says lead author Tyrone Lavery of The Field Museum. In other Pacific islands outside of the Solomons, hunting has led to drastic reductions of flying fox populations. So, when Lavery learned about the custom of using flying fox teeth as currency on one of the islands making up the Solomons, Makira, he was curious how the practice played into locals' hunting habits. "Many island flying foxes are endangered, but the effects of using their teeth as currency hasn't been studied before," he notes.

Lavery and his co-author John Fasi, a University of Queensland scientist originally from Makira, Solomon Islands, surveyed 197 Makira residents to learn about their use of flying fox teeth. The scientists wanted to know how the teeth were being used, whether the teeth were a driving factor in hunting, and how hunters might play a role in conservation of the flying foxes.

"Doing this study was fun—people think you are crazy to be asking about bats," says Fasi. "They see how abundant the bats are in the wild and have no knowledge that they are threatened."



Flying fox fruit bat (*Pteropus tonganus*) from the Solomon Islands. Credit: Tyrone Lavery, The Field Museum

Through the survey, the scientists learned that of the two types of flying foxes on Makira, the larger Pacific flying fox (*Pteropus tonganus*) and the smaller Makira flying fox (*Pteropus cognatus*), people were primarily hunting the big ones. Pacific flying foxes have a three-foot wingspan, and their teeth are big enough for people to drill holes in and make necklaces to use as currency. However, more important than their tooth size is their body mass overall: the primary reason these bats are hunted, Lavery and Fasi learned, is their meat, an important source of protein for Makira's residents.

But while the bats' teeth aren't the primary reason why people hunt them, the teeth are put to important use: Makira locals use them as currency for important traditional transactions, like paying for weddings. Lavery and Fasi also learned that while Makirans of all ages engaged in bat hunting, younger generations thought that the practice of using bat teeth as currency would wane.

"It is becoming evident that modern currency is slowly taking over the use of traditional currency," says Fasi. "However, we see that the use of bats as food is still going on. But conserving bats involves a number of fronts, like protecting their habitats, forests and mangroves, from destruction. Perhaps balancing between the number of bats killed for traditional practices and the need to conserve some will continue to keep the population of bats intact."

The authors note that the answer to protecting the bats doesn't simply lie

in forbidding Makirans from hunting them.

"The practice of hunting bats shouldn't necessarily be stopped, it needs to be managed sustainably. The continuing use of traditional currency is something to be celebrated" says Lavery. "It's important for scientists to communicate with local hunters and say, these bats are important to your culture, but they're also vulnerable." The bats' important role in Makiran traditions makes a good argument for preserving them as a species, says Lavery: "It's a positive, not a negative, that their teeth are so culturally valuable."



Girl on Makira wearing a bat tooth necklace. Credit: Tyrone Lavery, The Field Museum

"We would not discourage people from using bat teeth because it is an important custom, and people don't hunt for teeth only. But at the same time, we encourage people to hunt sustainably," says Fasi. "Conservation work must always get the support of local communities if it is to work."

These conservation efforts could include suggesting that hunters avoid targeting bat roosts and setting aside protected areas in regions of Makira that already have low hunting. Additionally, as bats are one of the few sources of protein on the island, finding new protein sources could lessen dependence on bat bushmeat.

Lavery notes the importance of the study for its role in protecting flying foxes, which, by extension, protects the island's environment overall.

"The bats are hugely important for health of Makira's whole ecosystem. The Pacific islands are exposed to hurricanes, which can destroy forests—fruit bats spread seeds that help forests regenerate."

And, remarks Lavery, "It's pretty amazing when it's getting towards dusk and you're sitting next to the shore and you see these massive bats come gliding over the ocean. It's just fascinating—you don't know where they're going or where they're coming from, and it makes you really marvel and wonder at them."

Provided by Field Museum

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