

# Tracking the Mauritius Fruit Bat: A Tribute to the Late Christiane Howey

Vikash Tatayah is the Conservation Director of the Mauritian Wildlife Foundation, a Mauritian conservation non-governmental organization of global repute. He has been at the forefront of initiatives to better understand the importance of bats, increase public awareness, and find non-lethal solutions to the human-fruit bat conflict.



Links between the Howeys and Mauritius span several decades through personal connections with Mauritian Wildlife Foundation (MWF) staff and the fact that the late Christiane Howey was of Mauritian origin. Paul and Christiane visited us in 2008 to give a powerpoint presentation on Microwave Telemetry and share with us some small company gifts! At this time, they also promised to use MTT's technology to help with projects requiring telemetry.



Photo by Jacques de Speville

Mauritius Fruit Bat in flight.

This offer did not fall on deaf ears. Since the early 2000s, there has been a growing human-Mauritius Fruit Bat (*Pteropus niger*) conflict, arising from the increasing bat population and furthered development that has brought humans in closer proximity to bat populations, leading to unsubstantiated claims that bats are causing exaggerated lychee and mango losses. The Mauritius Fruit Bat is an endemic species to the island. This species once occupied Réunion, a nearby French island, but is now considered extinct there (ca. 1800). While often viewed as pests, fruit bats play a critical role in the pollination and seed dispersal necessary for helping to maintain the population of fruit trees on which they are considered to vex.

As the calls for culling bats were getting more insistent, the MWF realized that it had to bring in good science to offset violent actions being taken against these valuable players in the ecosystem. One key piece of information necessary for this was determining how widely the bats travelled on the island and exploited the commercial fruits as opposed to feeding in native forests. Paul spoke to us about the brand new GPS/GSM tag that he was developing, as well as Microwave Telemetry's annual award to start-up projects, and how he hoped Mauritius could benefit. Considering these tags are simply the most high-tech of their kind on the market at the moment, the offer was gladly accepted!

During a visit to Mauritius in 2013, Paul, Russell, Lucy, and Lance (who all work at Microwave Telemetry) tested some of the tags and attachments on captive Mauritius Fruit Bats on Ile Aux Aigrettes, a small island that the MWF was given full control of in 1987. Isolated from the mainland by 800 m, it represents the only remaining example of a dry

coastal forest in Mauritius. Captive fruit bats are held on the island for educational purposes, and many Mauritian school children, including Lucy and Russell's cousins, have visited the island to learn about nature. The captive bats presented the perfect opportunity to test the attachment and observe how the species would react to the device.

After observing the fruit bats, Paul and Russell made some more tweaks at MTT's headquarters in the USA. Microwave Telemetry then provided 10 tags to the project. The first tags were deployed by a MWF post-doctoral student, and since then, bat movements have been tracked on Mauritius, giving insights into the formidable daily evening dispersals of fruit bats on the island (see maps below for displacements). These bats are capable of flying from one end of Mauritius (45 x 65 km) to another and back to their daytime roosts during their nightly feeding trips.



Photo by Vikash Tatayah

Mauritius Fruit Bat with a specially modified GSM transmitter weighing roughly 35 grams.

The tracking of fruit bats started in 2014, but unfortunately, the information gathered through this technology was not sufficient to prevent an official cull of 20,000 bats by the army along with the illegal cull of thousands more in parallel in 2015. The Mauritius Fruit Bat has come to the forefront of the Mauritian Wildlife Foundation's priority projects due to this highly controversial action of slaughtering bats to mitigate unsubstantiated levels of damage to fruiting trees. The project continues to gather valuable data on the bats' movements that will help identify their food resources and, ultimately, improve our understanding of bat feeding behaviour. Such knowledge will allow

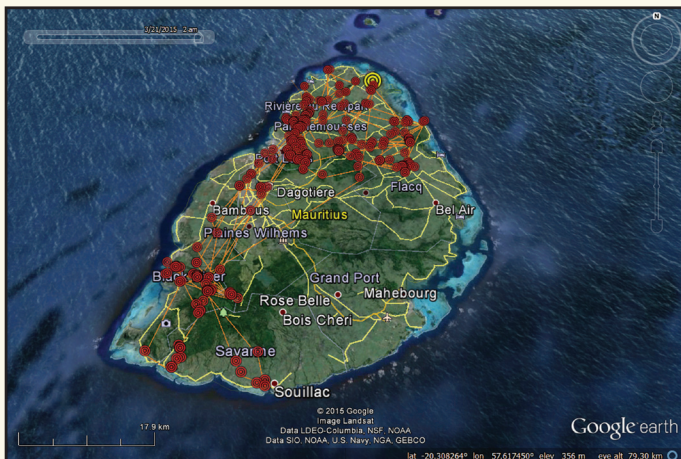
us to advise on ways to reduce damage caused by bats in a non-lethal manner and determine means of future forest restoration that is mindful of bats.

The Mauritian Wildlife Foundation is grateful to Microwave Telemetry for not just a simple project that seeks to understand the habits of a species, but one that will probably help to save tens of thousands of bats that are vital in maintaining Mauritius' biodiversity. I am sure that Christiane would have liked this thought.

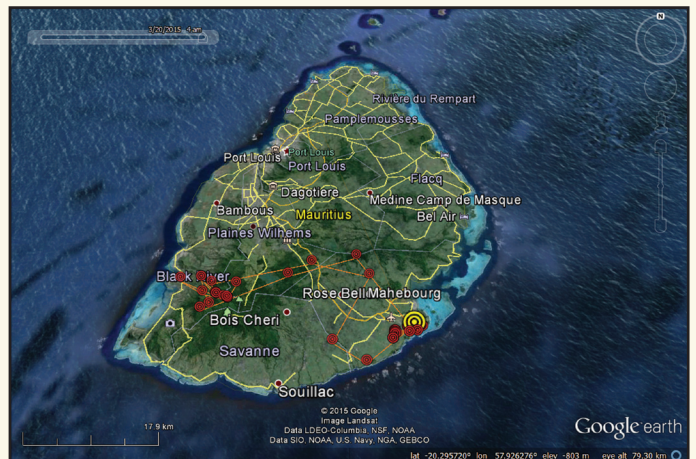


Photo by Vikash Tatayah

Tatayah with a recently tagged Mauritius Fruit Bat.



A bat tagged in Pamplemousses (north) that flew to Black River (southwest) and Souillac (south) before returning to the north. The bat also explored northeast Mauritius.



Female bat tagged near an airport (southeast Mauritius), stayed there for a while, went to the southwest coast for a few days, and moved back to the southeast.