Mauritius Research and Innovation Council

Intelligent Bat Deterrent Controller (IBDC)

Presentation shown during InnovTech 2019

August 2019

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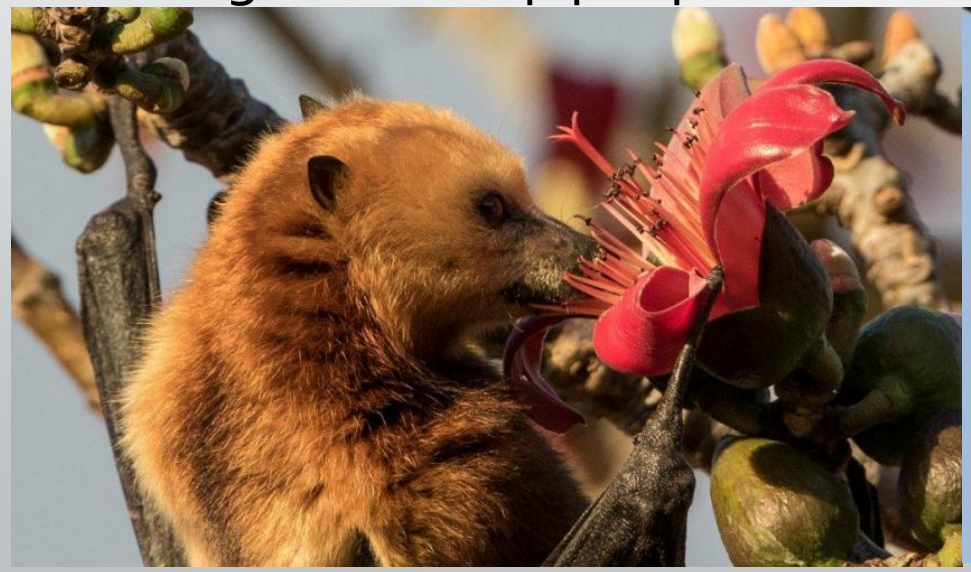
Intelligent Bat Deterrent Controller (IBDC)

Ecosystem Restoration Alliance Indian Ocean and Generation Plus

Background

- Mauritius has one fruit bat species (*Pteropus niger*) which is endemic and Endangered
- Increase in bat population causes loss to local farmers especially on mango and lychee plantations
- National cull was introduced in Mauritius to decrees the population of bats but that doesn't reduce bat damage
- IBDC was designed to help people deter the bats without harming them

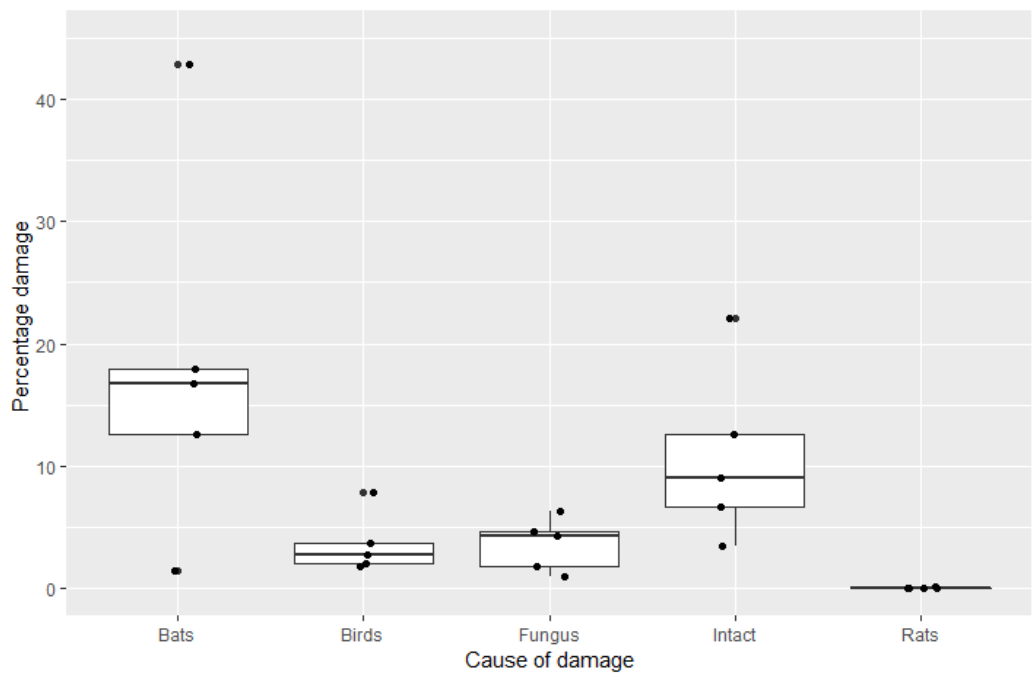


IBDC

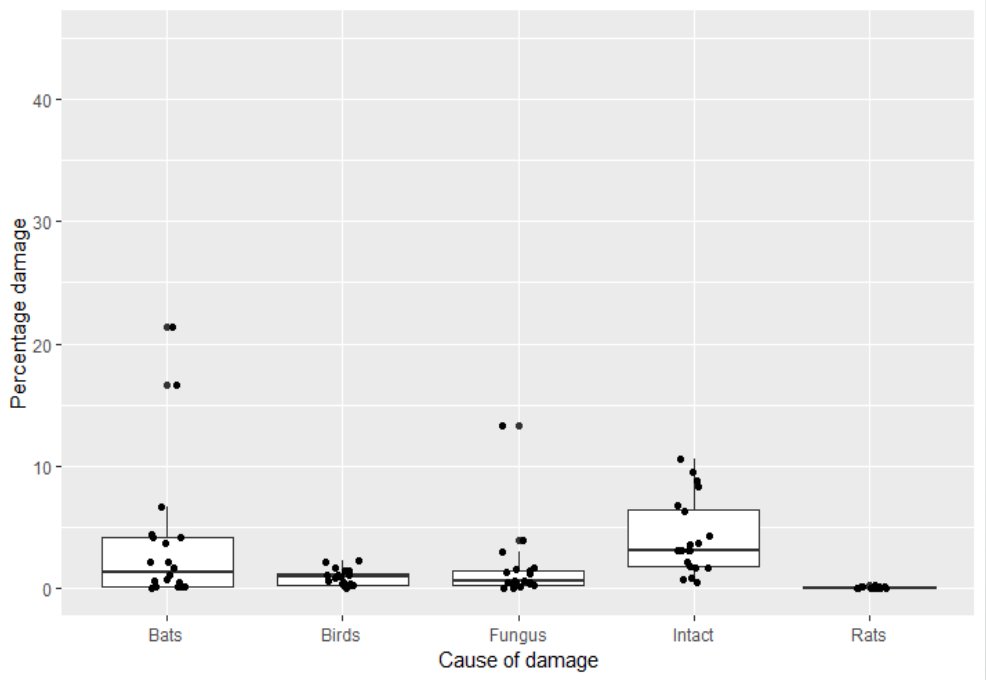
- IBDC is composed of a mother board to which speakers and lights are connected (we used 5 speakers and 4 lights but more can be connected) which covered 20 trees at once
- The board is operated wirelessly and has uploaded sound (we used 80 different sounds) such as shotgun, firecrackers, distress bat sound, sirens, predator calls etc.
- The sound is played randomly from different speakers at different time intervals meaning the bats cannot get used to the sound as the time it plays and the intervals are totally random

Results Lychee

Control Trees



IBDC system

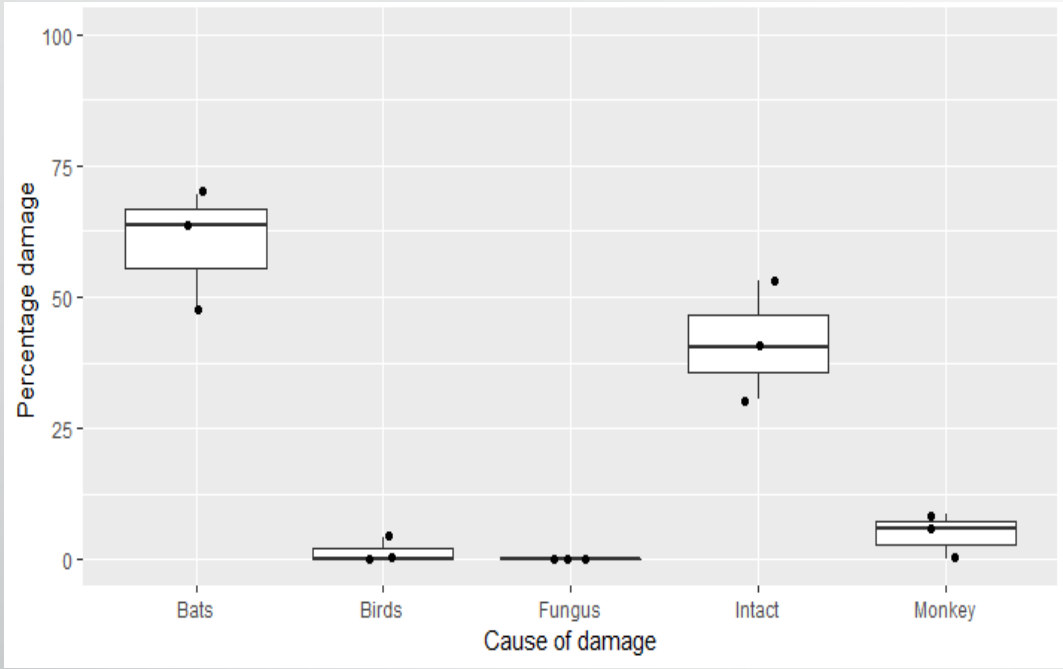


Damaged caused by bats decreased from **18%** to **3.5%**

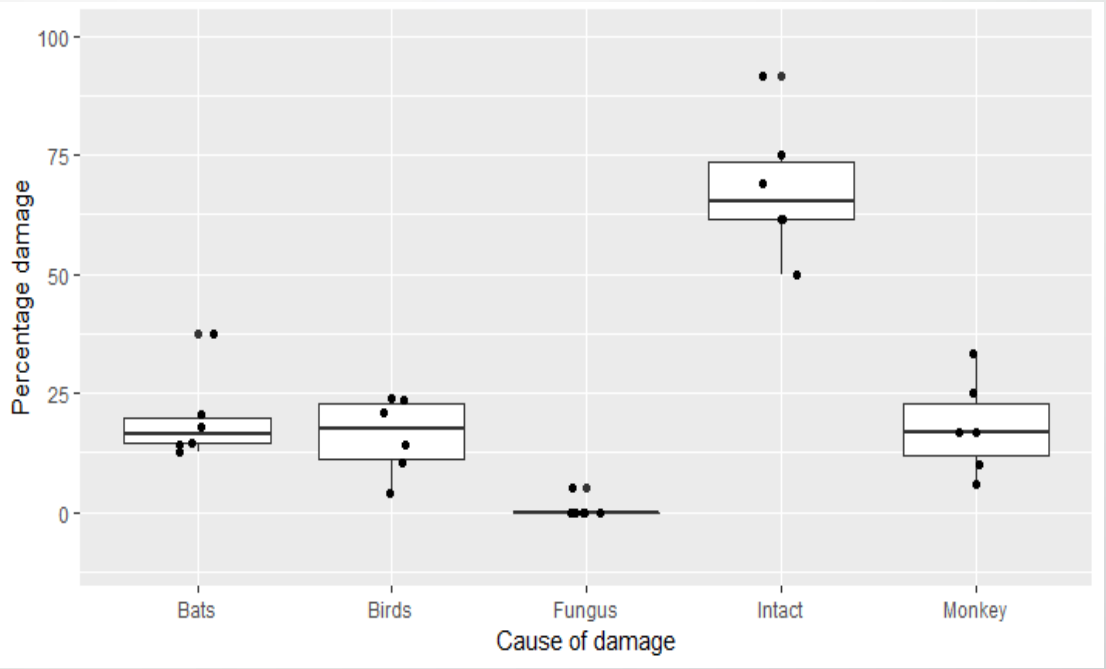
(Over **80%** decrease in damage)

Results Mango

Control Trees



IBDC system



Damaged caused by bats decreased from **60%** to **19.5%**

(Over **67%** decrease in damage)

Conclusion

- IBDC was successful in its application despite several technical issues experienced during the tests
- With small improvements to avoid technical issues the system can be even more efficient and decrease the damage further