

BATS!

SUMMARY OF A COFFEE FIELD PRE AND POST
DISTURBANCE

COCKPIT COUNTRY

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Main Points

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1. Bats are not cute no matter how much we love them
 2. Bats can be a little pregnant!
 3. Windsor has bat super highways
 4. Some bats are harder to detect than others
 5. Insects are loud
 6. Bats are good indicators
 7. Bat activity varies: the lunar cycle; weather; time of night; who knows what else



BAT ID

The more you do it the easier its supposed to get

- Ghost-faced, leaf nose bats!
- Fruit Bats
- Fishing Bats
- One of the worlds Smallest Bats
- Whispering Bats!

BATS OF JAMAICA				
Mormoopidae (Mustached & ghost-faced bats)				
	Parnell's Mustached Bat	Insectivore-aerial	Fmax (Hz)	
	<i>Pteronotus parnellii</i>	Sound-scape	FPeak	
	PTPA		FMin	
	Macleay's Mustached Bat	Insectivore-aerial	FMax	
	<i>Pteronotus macleayi</i>	Sound-scape	FPeak	
	PTMA	<i>Cluttered</i>	FMin	
	Sooty Mustached Bat	Insectivore-aerial	FMax	
	<i>Pteronotus quadridens</i>	Sound-scape	FPeak	
	PTQA PTQU	<i>Uncluttered</i>	FMin	
	Antillean Ghost-faced Bat	Insectivore-aerial	FMax	
	<i>Mormoops blainvillii</i>	Sound-scape	FPeak	
	MOBL		FMin	
Noctilionidae (fisherman / bulldog bats)				
	Fishing Bat	Piscivore	FMax	
	<i>Noctilio leporinus</i>	Sound-scape	FPeak	
	NOLE		FMin	

The Coffee Field

- Two separate surveys were conducted at the Windsor coffee field.
 - Data recording was conducted more frequently for the initial survey
 - Analysis of the first minute of every 5 minutes (15 minutes of data per hour).

Coffee Field with a top predator



Coffee Field Pre-clearing

- PRE-DISTURBANCE Initial survey -February 21, 2015
- 2 days before the new moon
- Start 17:53 Stop 06:47
- Habitat Structure
 - Coffee farm
 - Cedar and Coconut Trees
 - Approx. 15% canopy cover
 - Densely cluttered understory

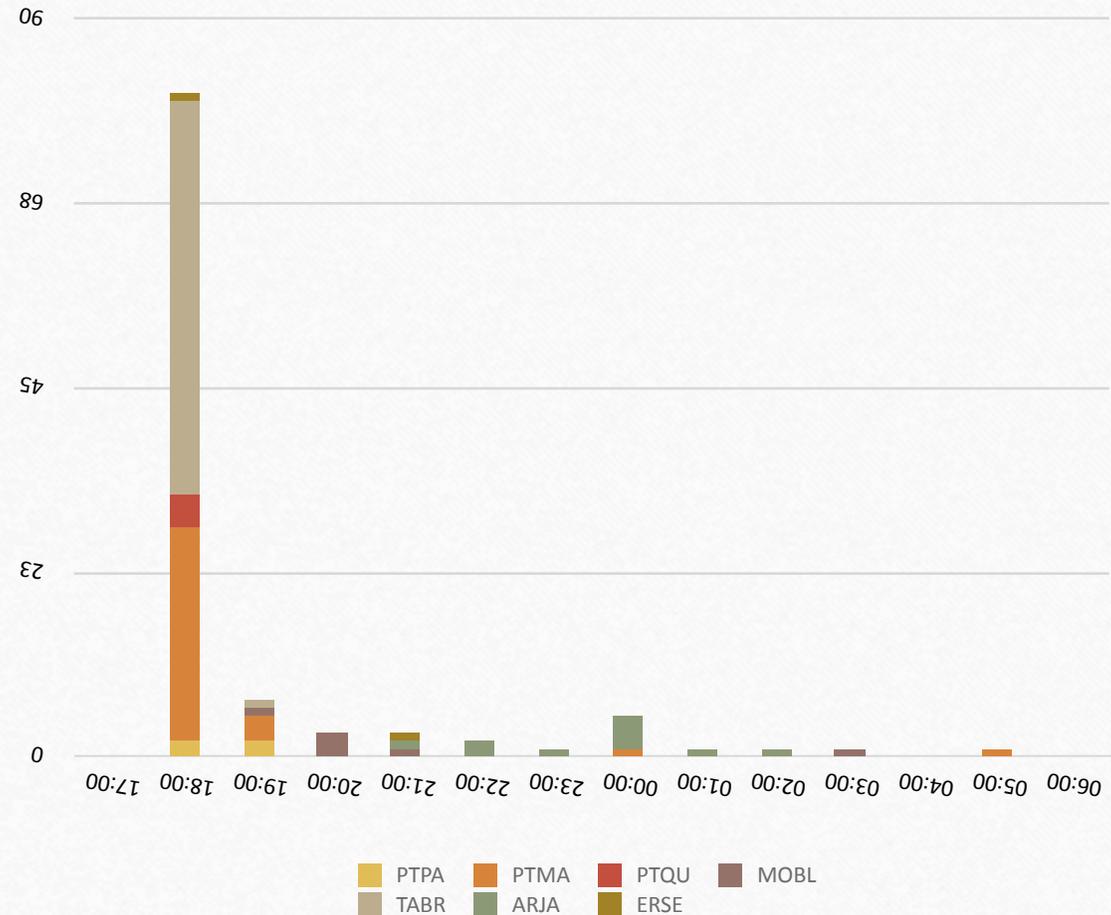
Bat Activity

- Most activity – 18:00
- Followed by 19:00 and then a general decrease
- Activity Spike -00.00
- Most Common Species-*Tadarida brasiliensis* and *Pteronotus macleayii* both insectivores
- 1 Frugivore *Artibeus jamaicensis* and 1 Nectarivore *Erophylla sezekorni*

Bat Activity

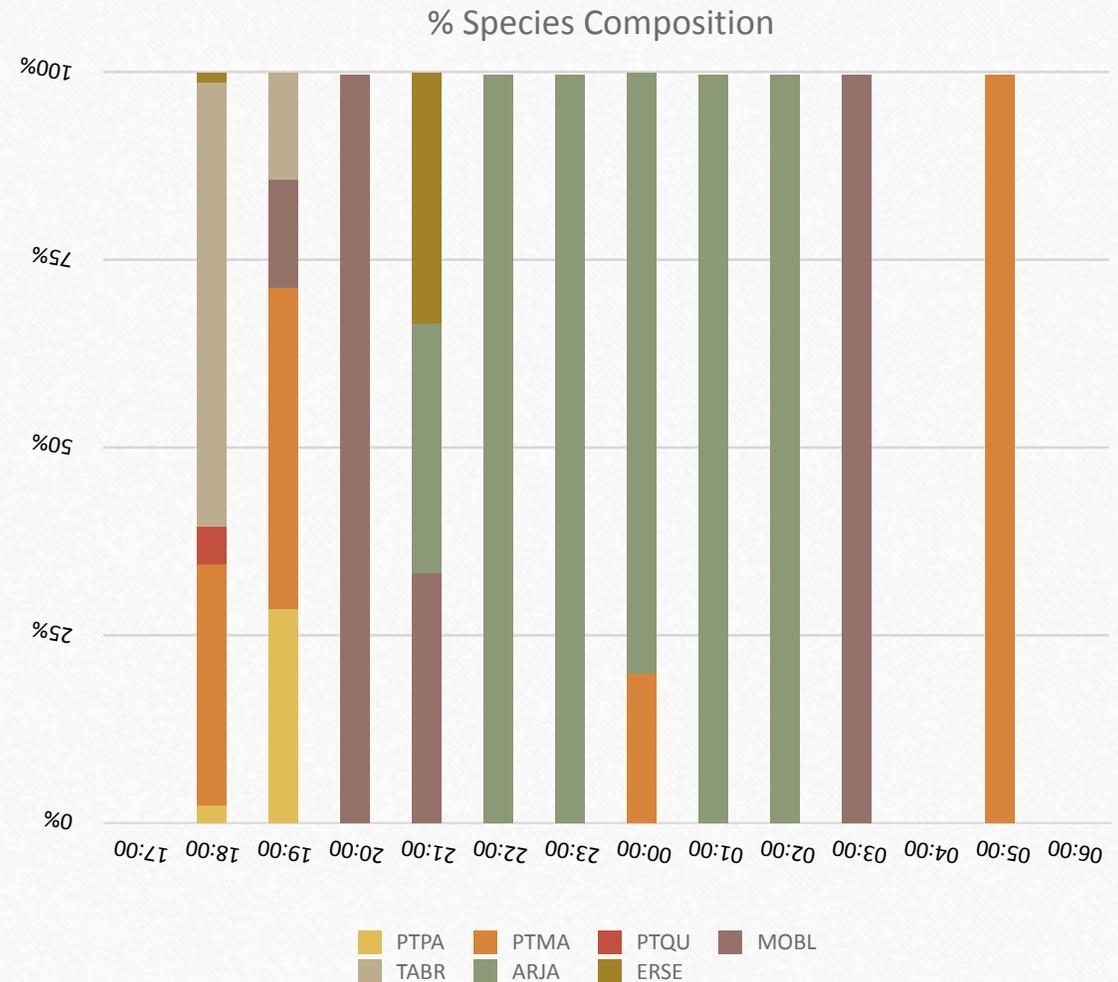
- A total 106 bat passes no hunting buzzes
- 7 Species, mostly Insectivores
- Most activity – 18:00
- Followed by decrease
- Activity Spike -00:00
- Most Common Species- (TABR) *Tadarida brasiliensis* and (TMA) *Pteronotus macleayii* both insectivores
- 1 Frugivore (ARJA) *Artibeus jamaicensis* and 1 Nectarivore (ERSE) *Erophylla sezekorni*

Activity and Species Composition Over Time



Who is Around?

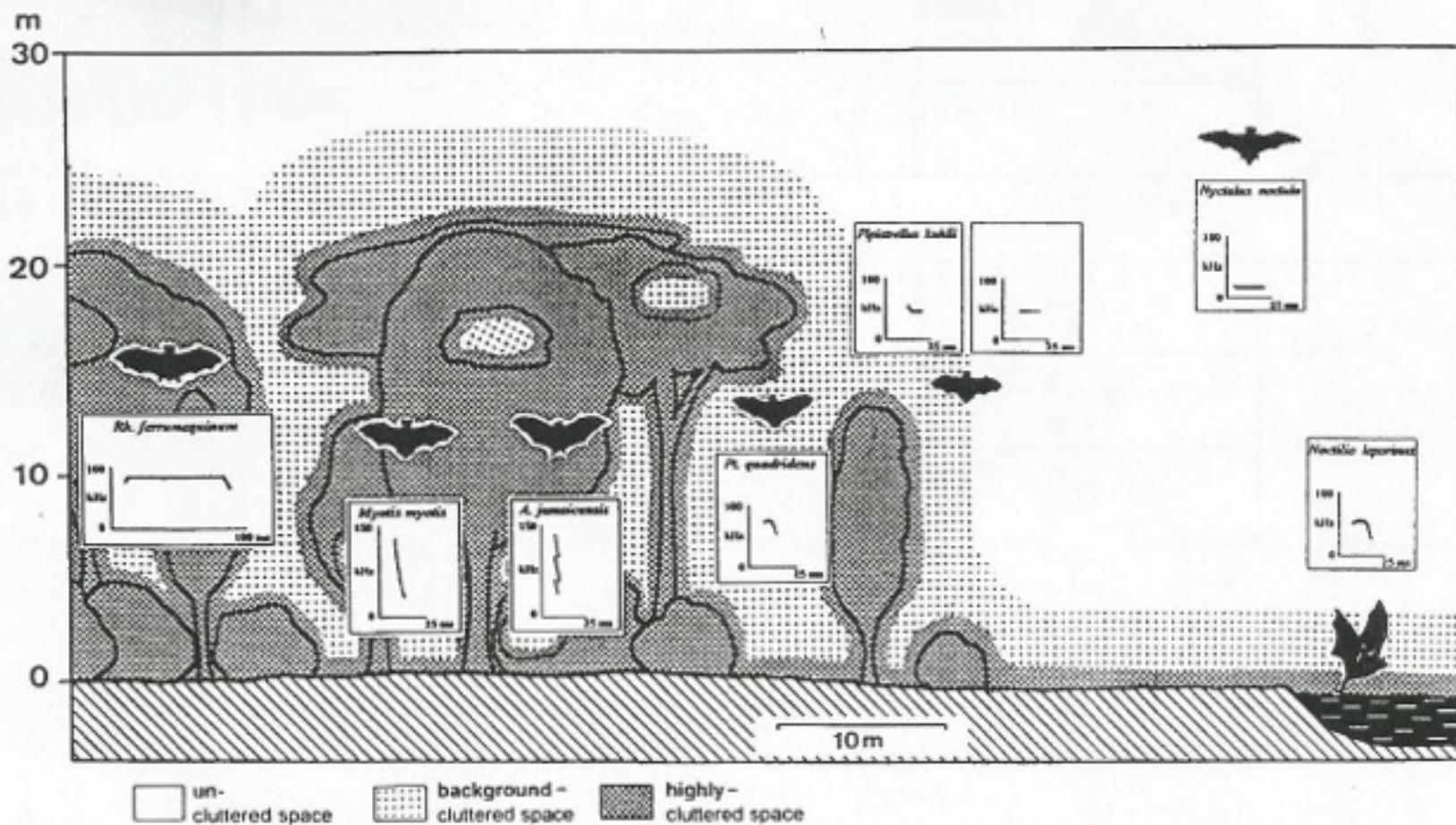
- 18:00 -5 species present PTPA, PTMA, PTQU, TABR, (insectivores) and ERSE (nectarivore)
- ARJA appears at 21:00 and dominates till 02:00.
- MOBL makes a brief appearance between 20:00-21:00 and again at 03:00
- PTMA appears throughout the night while PTQU was only recorded at 18:00



General Indicators

- This area is used by various bats families- most likely just as a flight path
- No hunting buzzes by the insectivores were detected - unlikely that they are feeding
- Different species utilize this area at different times of night—they may be using different sections of the canopy or understory
- These guys like cluttered spaces
- Peak activity is a few hours after sunset

The Sound-scape of Bat Acoustics



Coffee Field post



Coffee Field Post Disturbance

- Post disturbance survey was conducted March 25, 2015.
- 5 days before the new moon ~ 2 weeks after the coffee trees were cut.
- Start 17:46 Stop 06:21
- Habitat Structure
 - Coffee cut-back to stumps
 - Cedar and Coconut trees remain
 - Approx. 15% canopy cover (similar to pre-disturbance)
 - No cluttered understory

Bat Activity

- A total 75 bat passes, and 5 hunting buzzes
- Identical species composition (7 species) with the possible addition of an 8th; *Macrotus waterhousii*
- Similar activity Spike between -00:00- 01:0. Major spike at 05:00
- Most Common Species -(TABR) *Tadarida brasiliensis* and (PTMA) *Pteronotus macleayii* similar to pre-disturbance scenario however the total numbers were lower.
- Activity also included several hunting buzzes by a few species- not observed in the previous survey

General Indicators

- This area continues to be used by various bat families- however appears to be a decrease in bat activity
- Hunting buzzes, a less clumped distribution and lower numbers suggest that the insectivores are now hunting in this area and may even be attracting other species.
 - The insect community is likely to be different
- This area is likely still a flight path for some species- those which require a less cluttered forest
- A time niche still exists but there is more overlap between species.
- These results can also be a reflection of differences in time of the lunar cycle.

Just be happy that we don't have this bat!





Ask Susan!