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# quest for the DRUMMING COCKATOOS

PHOTOS AND ARTICLE BY CHRISTINA N. ZDENEK

**Imagine living in an abandoned slaughter-house. Now imagine a two-meter Coastal Taipan—the world’s third most venomous land-snake—moving through your quarters during data entry work, or a big old bull snorting and stomping whilst staring you down in the bush. This is researching Palm Cockatoos, and this is the story of the quest to record their rare and extraordinary drumming behaviour in the remote region of Cape York Peninsula.**

**IN AUSTRALIA, IT IS ONLY ON THE TIP OF** Cape York where the magnificent Palm Cockatoo (*Probosciger aterrimus*) resides. Being the heaviest cockatoo in the world (out of 21 species), as well as one of the longest, it also has a massive beak and lengthy crest, which it can raise up and down depending on its mood. As if its physical splendor was not impressive enough, this bird possesses a worldly unique and eccentric habit: it drums.

Fashioning a stick to drum with on a tree is clearly tool-use, but unlike chimpanzees and New Caledonian Crows who use tools to forage, Palm Cockatoos, or

palms, obtain no caloric benefit from the act of drumming. So why do they do it? Ever since its written discovery in 1984, drumming by palms has long been a mystery to science. What does the bizarre behaviour entail? And in what context does it occur? These questions and more have held a long-term fascination for Robert Heinsohn at The Australian National University, but it was not until recently, with the employment of myself, that searching for these answers could finally be a reality. It has now been the focus of The Palm Cockatoo Project for the past three years with some great successes.



**IT WAS JUNE 2012. I GRABBED MY CAMO** bush hat, strapped on my leather boots and set out on an incredible journey to find and record palms drumming.

For six weeks, I trekked, crept, and crawled through the long grass, chasing these elusive cockatoos for kilometers on end in the Lockhart River region. The mornings often left me soaking wet from the waist down from the dew-coated grass, while the afternoons regularly ended by torchlight and GPS. The hottest part of the tropical day was spent doing numerous tree-hollow inspections. With the glaring sun in my eyes, my fatiguing arms struggled to keep a 10-meter extendable pole vertical during windy conditions.

Just as the mounted camera reached the hollow entrance for a prized view inside, hostile Green Ants (*Oecophylla smaragdina*) commence a counter-attack on their intruder (me) via injecting painful amounts of formic acid into my sweaty skin. Clenching my teeth in pain, I tell myself, 'Focus, and finish the job first. Address ant problem later. Mind over matter.'

Needless to say, despite mighty efforts and much to my frustration, the first field season attempt was a disappointing dud. I was sadly unable to record even one drumming sequence that year. In the two years prior during my Masters degree, I had only seen drumming on eight occasions. That is less than once per month, on average, or one per about 130 hours of fieldwork. So I knew how rare drumming is and how notoriously difficult palmies are to study (largely due to their wary nature), but zero in six weeks was

thoroughly disheartening. Fortunately my boss, Rob Heinsohn at The Australian National University, still had faith in me.

'Trying to forget the previous years' frustrations, I gathered my optimism, grabbed my camera gear, and headed for the long grass again. It was an extreme three months and, true to the Australian bush, it was boom and bust out there, with ebbs and flows, ups and downs. Some weeks were completely fruitless, while others left my volunteers and I unable to keep up with all the data entry, memory-card clearing, battery-charging, and backing up of precious data. On one occasion, I was slowly approaching frequently calling birds, when suddenly I heard the distinct sound of drumming. Knock...knock, knock, knock. Hardwood against hardwood. My heart immediately began racing.

In desperation to obtain line of sight without disturbing the discernibly excited subjects, I cautiously performed slow and steady yoga-like moves over large logs and around dried, crackly leaves.

I caught my breath and peered through a small opening through the foliage. There! Drumming! It felt like a mini-miracle when I finally hit the record button and captured it all on film. With the bird cheek-blushing, crest flicking, body rocking, and feather raising, it is hard to avoid anthropomorphising its behaviour into seemingly human emotions.

Much to my supervisor's and my pleasant surprise, it was a groundbreaking field season. Warranted persistence—as well as a bit of luck—led to a whopping 13 drumming events video recorded.



## **Palm Cockatoo**

*Probosciger aterrimus*

### **Where found:**

N Australia, New Guinea and adjacent islands

### **Ecology:**

Conspicuous, lordly in behaviour. Non-flocking species that travels singly, in pairs, or in family groups of three. Calling begins at sunrise. Males display intensely in their territorial behaviour.

**IUCN/CITES Status:** Least Concern / Appendix I

**Wild population:** Known to be declining in the eastern part of its Australian range, but no research has been done on the western part of its Australian range where bauxite mining is prevalent.

Admittedly, this was still short of the sample size and statistical power we needed to properly analyse our data. But fortunately, this unexpected yet remarkable success sparked the interest of further financial support—this time from the Herman Slade Foundation—enabling us to fund a third field season of our quest to capture drumming on film.

As June 2014 approached, ‘work smarter, not harder’ was my mindful theme going into a seemingly impossible task: beat last year’s record.

After a two-day drive full of corrugated dirt roads and countless river crossings, I arrived to Lockhart River again for my fifth field season studying palms. I looked across the beautifully mosaicked landscape of rainforest and woodland, and it felt like a task as big as climbing Mt. Everest stood before me. I took a deep breath. ‘One by one,’ I told myself.

And I dove in.

With UHF radios in hand, my volunteer (Lachlan Hall) and I tag-teamed active palmie sites like well-trained combat soldiers closing in on a target. “Lachlan, do you have a copy? I have the female at Elusive Hollow, but I can’t see the male. Where are you?” “I’m at Upset Hollow, heading your way.” “Roger that. Hurry up. I think I hear him making a drumstick nearby.”

**Crack, crack, crunch.** My heartrate accelerated, but I remained motionless. If I flushed the female, the male would leave, too, and their behaviour would be spoiled. Luckily though, Lachlan is a quick runner. “I can hear him drumming. Do you have him? I repeat: do you have him?” In exhaustion from the run, he replies, “Yes, I got it. I’m filming. He’s drumming.” I wiped the sweat from my eyebrows. Phew. One down.

For six weeks straight, we didn’t see the morning light at my bush-camp. After seven terabytes of hard-drives and a whirlwind of fieldwork and data entry, the unimaginable became reality. I had more than doubled last year’s already impressive record, including having recorded the most remarkable, tight-frame and pin-sharp footage of drumming I have yet to date (to be released soon!).

Totaling 681 man-hours spent in the bush on the quest for drumming in 2014, the final figure was a staggering 34 drumming events successfully video recorded.

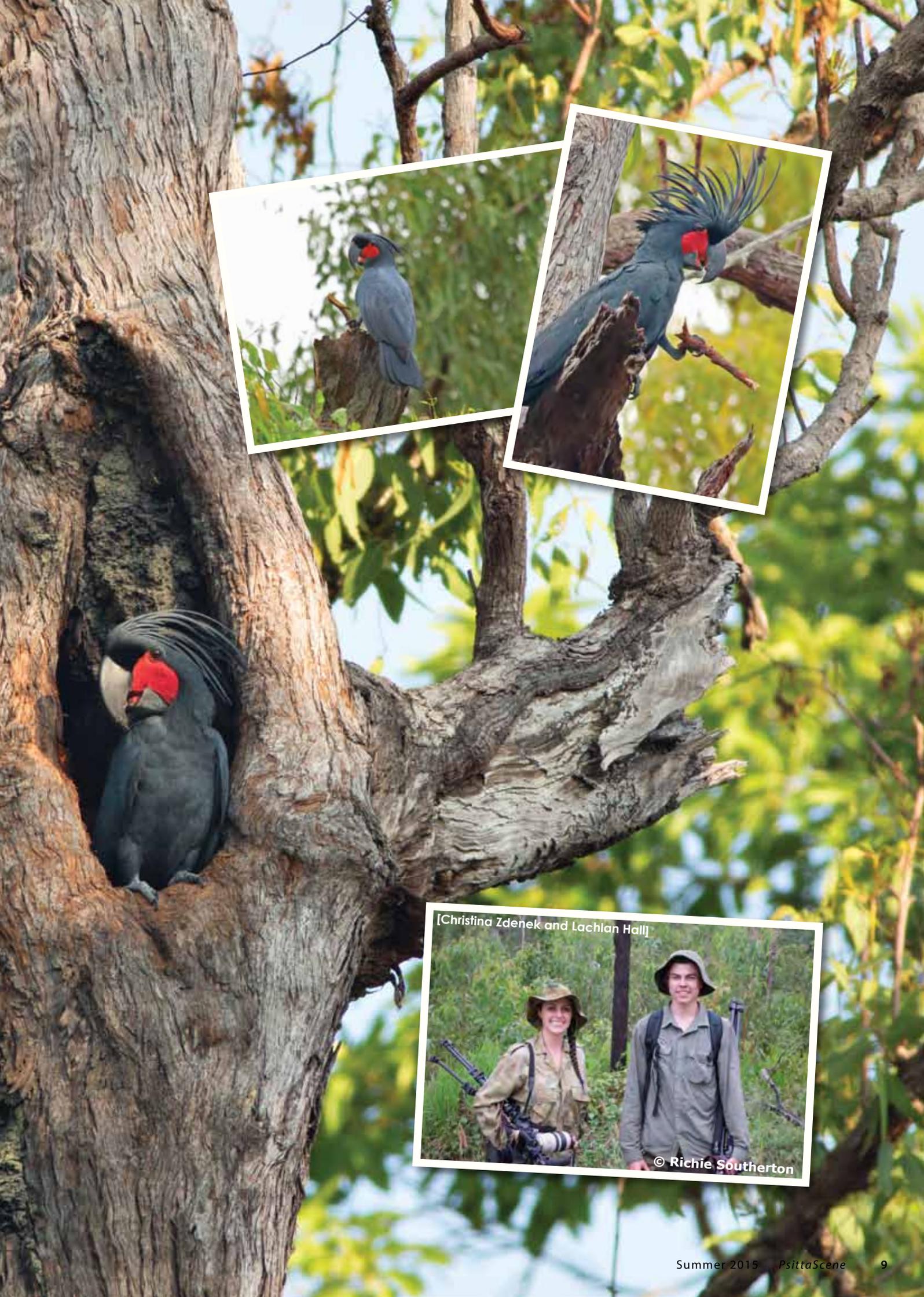
Overall, it has been a 9 ½ month-long journey in the field across three years on Rob’s and my quest. Now, we finally have enough data to analyse and describe this breathtaking and exceptional behaviour. Although we cannot reveal our results until they are fully analysed and published in scientific journals, I *can* say that Palm Cockatoos continue to amaze us in the complexity of their behaviour. ▣



#### About the Author:

Prior to moving to Australia in 2008, Christina Zdenek attained a Bachelor’s of Biological Sciences degree at the University of California, Irvine. Since completing a two-year Masters degree in 2009 on a Fulbright Fellowship, she has been seasonally employed by The Australian National University (ANU) as a Conservation Officer for The Palm Cockatoo Project for the past three years.





[Christina Zdenek and Lachlan Hall]

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