Project Update: September 2014

I've just arrived back in Matale District, Sri Lanka for my second PhD field season, investigating the potential of beehive fencing as a deterrent for crop-raiding Asian elephants. In collaboration with Save the Elephants, and the Sri Lanka Wildlife Conservation Society, I am establishing a research site of 10 beehive fences in a village experiencing high levels of crop raiding. We aim to evaluate if beehive fencing will prove as useful to farmers in Sri Lanka, struggling to protect their homes and crops from elephant damage, as it has in Africa where Dr Lucy King first designed and implemented the technique.

I will also be investigating elephant social behaviour, personality traits and genetic relatedness in areas elephants are known to frequent – farms, peripheral community areas such as water tanks, and within Wasgamuwa National Park boundaries. This information will be analysed in the context of what it might reveal about the propensity of certain elephants to crop raid, and how this may relate to the effectiveness of crop-raiding mitigation techniques.

Figure 1 - A community meeting in Dewagiriya Village held by Chandima Fernando (SLWCS) and myself, to discuss plans for the beehive fence project.

I am in the process of deciding which specific homes/farms are the most suitable locations to establish the beehive fences – where they will be of most benefit to the farmers, and where is most effective to test their deterrent effect. Earlier this year, I met with farmers from Dewagiriya Village, who experience huge problems with crop-raiding elephants and receives little to no outside assistance. Like many rural villages in Sri Lanka, people have little money and rely on their crops as their primary source of income. With vast paddy fields bordering water tanks and areas of forest, it's perfect habitat for elephants. Of further concern is the tendency of elephants to come right up to people's homes, destroying fruit trees and damaging houses to reached harvests stored inside. While very few people in this village have prior experience with beekeeping, people seem interested to learn and desperately want help protecting their crops and homes. To ensure as much of the community as possible can benefit from the beekeeping project, we have decided to provide all farmers helping with data collection and beehive fence building with a bee box and the opportunity to attend beekeeping training days.

Following on from last field seasons communication with Dewagiriya, Chandima (SLWCS), Supun (field assistant) and I held a community meeting to re-cap the beehive fence plans and decide the next steps of action. I spoke about the benefits of beekeeping – particularly pollination services and the health and economic benefits of honey and wax. I also re-capped the beehive fence elephant deterrent concept, being careful to emphasise that we don't know if this will have the same deterrent effect as in Africa, but that combined with the benefits beekeeping can bring to individuals, it's an idea well worth trying. Presently, people are scaring elephants by making noise, shooting at elephants (although this is not

readily admitted, we constantly see elephants with wounds and abscesses caused by gunshot), and throwing things – stones, fire crackers and fire sticks. These methods appear to be increasing the aggressive behaviour of elephants towards people, and a vicious cycle ensues. If beehive fencing proves to be a successful deterrent, it could replace or reduce other more aggressive methods of scaring elephants, keeping both the people and the elephants safer.

Figure 2 - Mr and Mrs A.G. Ariyadasa standing outside their home. The crack in the wall was caused by elephants trying to break in to steal sacks of rice stored inside, Mrs Ariyadasa was inside at the time this incident occurred.

We asked the community to compile a list of the families most affected by crop-raiding who met certain criteria for establishing a beehive fence – most importantly that they live on their properties year-round, have a 1 – 2 acre size field/home garden, and an interest in learning beekeeping. Supun and I have begun visiting these farms, asking more about the problems people are experiencing, and walking with farmers around their home and garden areas, and also looking at their paddy fields. I was shown cracks in house walls just above where people were sleeping caused by elephants trying to get to bags of rice inside, I saw trees knocked down and ripped apart as elephants gorged on bananas and coconuts, and footprints traipsed through paddy fields. The biggest problems occur on properties that border water tanks or forest areas, where the elephants reside during the day before entering human-inhabited areas by night.

Figure 3 - A family of elephants leaves the forest cover to drink at Weheragala tank - a water source commonly used by both people and elephants.

To properly understand the scope of the issues, I will use a translator proficient in both Sinhalese and English to conduct structured one-on-one interviews. Setting up the beehive fence trial site is probably the most important aspect of this project – the need to select the locations most suited to effectively testing the fences deterrent capabilities is imperative to ascertaining what role beehive fencing may play in reducing crop-raiding in Asian elephant range countries. And while I'm keen to get building the fences as soon as possible, building relationships with the community and getting to know individual farmers is equally important.

Overall, this field season is off to a busy and productive start and I look forward to the challenges and learning curves ahead as we begin building beehive fences, teaching beekeeping and monitoring the activity and social behaviour of the elephants. I also look

forward to keeping everyone up to date as the project progresses. For further information on the project, please contact me on Kylie.M.Butler@uon.edu.au.

I extend a huge thankyou to the Rufford Small Grants for Nature Foundation, Chester Zoo and Elephant Action League for their financial support, without which this project would not be possible. Sincerest thanks also go to collaborating partners The Sri Lanka Wildlife Conservation Society, Save the Elephants and Professor M. Wijayagunawardane (University of Peradeniya) for all of their valuable input and assistance.