

How Can A Secret Forest Save Possums?

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*Abstract: As part of its move to become a leading zoo-based conservation organisation, Zoos Victoria has committed to preventing the extinction of twenty local species. To achieve this agenda, the three Melbourne-based zoos recognise that engaging visitors to care and act in support of these species is vital. In an exhibit showcasing the Leadbeater's Possum (*Gymnobelideus leadbeateri*), zoo visitors were encouraged to consider the threats to the species such as deforestation and asked to choose Forest Stewardship Council (FSC) product options as a way to help. To test the effectiveness of the exhibit at influencing visitors' behaviour, an experience was set up where visitors were given a choice between choosing cheaper non-FSC and more expensive FSC postcards. Results showed that those visiting the exhibit were significantly more likely to choose the FSC option, suggesting that the exhibit was effective at influencing the short term behaviour of zoo visitors.*

Twenty species in need of help

If you asked a member of the public visiting an Australian zoo to name an endangered species, the majority of answers are likely to be iconic, international species facing extinction and in need of help. Yet Australia has the highest mammalian extinction rate in the world (Flannery, 2012) and some of the most unique fauna on the planet. As a result, Zoos Victoria (ZV) has strengthened its focus on the prevention of extinction of local endangered species.

As part of a Wildlife Conservation strategy, a review of local wildlife identified twenty species that, without intervention, were at risk of extinction within a decade. Zoos Victoria therefore made a commitment to ensure that these twenty locals do not go extinct. From previous campaign successes, once people are connected to an animal and see the link between simple choices and big changes, the numbers of those taking action for wildlife can increase dramatically. A key challenge for this initiative was that many of the twenty species were unknown, so before we could ask people to help save these animals, they needed to know and care about them and the issues they face.

Shining a light on Leadbeater's Possums

The flagship species within the group of twenty endangered species is Victoria's faunal emblem, the Leadbeater's Possum (*Gymnobelideus leadbeateri*), a small marsupial that relies on old tree hollows for survival (Harley et al., 2005). Healesville Sanctuary (one of three Zoos Victoria campuses) was tasked with the mission of helping visitors to connect with this species and understand the importance of protecting local forests. There were three key challenges to overcome:

- Leadbeater's Possums were unlikely to be seen by the public when visiting Healesville Sanctuary for at least a year;
- Children were the key target audience; and



- A suitable conservation action needed to be identified so visitors could help alleviate the threats to this species.

Engaging fun-seeking little animal lovers

Inspired by the wonder of popular children's stories such as Possum Magic and Harry Potter, the Healesville Sanctuary team created an interactive 'Secret Forest' to encourage children to venture into the world of the nocturnal possum led by a central character called 'Lunar Leadbeater'.

An old theatrette in the centre of the Sanctuary was transformed to house an immersive twilight forest setting and an interactive animation on a central screen. Through the animation, children were invited by Lunar to go on a 'magical torchlight adventure' – a 'stagwatch' – to find hidden Leadbeater's Possums in the Secret Forest. Children use 'torches' made from Wii-motes which interacted with the animated Lunar, as she guides them through the forest, discovering families of Leadbeater's Possums and finding out how possums need old trees and hollows to survive.

Lunar's Secret Forest - an immersive twilight forest setting and an interactive animation on a central screen



As described by ThinkOTS, the design team who put the experience together, the Secret Forest “takes advantage of digital interfaces that kids’ use every day to instantly engage the audience. A world first technology especially designed for a group experience using cutting edge interactive technology.”

Being able to interact with Lunar Leadbeater allowed visitors to engage with the ecology of the Leadbeater’s Possums and connect with the species without seeing one. Activity tables further highlighted other aspects of the possums’ behaviour and homes and provided children with the opportunity to publicly declare their love for Leadbeater’s Possums – by writing their promise to love possums on a recycled paper gum leaf and placing it on the forest branches, thereby symbolising their help to ‘regenerate’

Lunar’s Secret Forest. In the first months after the Secret Forest opened, more than 7,000 leaves with messages to Lunar were left on the trees.

Testing visitor behaviour onsite

Leadbeater’s Possums are threatened by the loss of habitat, and the combination of logging and catastrophic fire events has had huge impacts on the species survival (Lindenmayer, 2012). Using the Connect-Understand-Act delivery model*, it was identified that an effective way visitors could help reduce the threat of habitat loss was to purchase timber and paper products that were certified as being sustainably produced. As part of the onsite experience, visitors would be asked to look out for timber and paper products that carried the Forest Stewardship Council® logo on them. Forest Stewardship Council® (FSC®) is an internationally recognised, non-profit organisation that undertakes third-party certification for products and practises involved in forest management. The logo is easily recognisable on products, reducing the barriers for visitors to undertake this behaviour.

A short video was created to highlight the work that Healesville Sanctuary was doing to help save Leadbeater’s Possums and featured one of the key possum experts, Dr Dan Harley, asking visitors to look out for the FSC® logo. This was played regularly on two monitors at the back of Lunar’s Secret Forest, an area where adults were encouraged to sit down and rest whilst their children were engaged in the interactive screen.

In the previous Wipe for Wildlife campaign, behaviour change tools were used to encourage visitors to switch to 100% recycled toilet paper. Indeed, many of the behaviours ZV attempts to influence occur once



a visitor has left the site, so it is difficult to measure success. In campaigns like Wipe for Wildlife, ZV has previously relied on the use of public commitments or pledges as an intermediate measure and followed up periodically through post-visit surveying. For Lunar's Secret Forest and purchasing FSC®, a new approach for zoos was trialled: providing the purchase choice behaviour onsite in the retail stores.

Zoo gift shops helping conservation?

Two types of postcards with Leadbeater's Possum designs were offered for sale to Sanctuary visitors over four months. Identical designs were printed on both unlabelled 100% recycled card and labelled FSC® Recycled card. The FSC® Recycled postcards were priced at A\$1.50, whilst the unlabelled recycled postcards were A\$1.00. Both postcard types sat side-by-side in a retail stand at the gift store register. When visitors purchased these cards, retail staff asked the visitor if they had visited Lunar's Secret Forest during their visit and kept records of their responses along with numbers of sales. At the halfway point through the trial, postcards were swapped over in the retail stand to limit the effect of any right hand/left hand bias from visitors.

At the conclusion of the trial, 452 postcards had been sold with 59% of those sales coming from the higher priced FSC® labelled versions.

- Of the unlabelled postcards sold, 84% of visitors purchasing them had NOT visited Lunar's Secret Forest and 16% had.
- Of the FSC® labelled postcards sold, 52% had visited Lunar's Secret Forest and 48% had not.

Chi Square tests (with continuity correction) revealed a significant relationship between attending the Lunar's Secret Forest exhibit and purchasing an FSC® postcard ($\chi^2(1, 452) = 59.29, p = 0.00, \phi = 0.00$) as well as a relationship between left side FSC® postcards and purchase ($\chi^2(1, 452) = 7.91, p = 0.01, \phi = 0.14$). However, regression revealed that the effect of which side the FSC® postcard was placed

was non-significant when visiting the Lunar's Secret Forest exhibit was simultaneously considered as a predictor of purchasing behaviour. In other words, visiting Lunar's Secret Forest is a significant predictor of purchasing FSC® postcards, but the placement of the card is not (when factoring whether visitors attended the Lunar exhibit). Those who did not visit Lunar's Secret Forest appeared to be more likely to purchase the cheaper, unlabelled postcards.

As a note of caution, the model only explained 14% of the variance in why people purchased FSC® postcards, meaning there are many other factors which influence why people did or did not buy them which were not measured as part of this study. It is reasonable to accept that some of those visitors purchasing the labelled FSC® postcards may already be familiar with that trademark, and therefore visiting Lunar's Secret Forest may not make any difference, i.e. they would have purchased the FSC® labelled cards anyway.

As a zoo wanting to push the boundaries in behaviour change and assess its own success, this result indicated the value of the retail stores in creating a holistic conservation experience across the entire site.

As many of the visitors queried the price difference, retail staff had to be able to simply explain the difference between an FSC® product and one unlabelled. They were also able to provide more information and factsheets on sustainable forestry and FSC® upon visitor request. Zoos Victoria is continuing to integrate its community conservation campaigns and



wildlife conservation stories into the retail experience, so that all aspects of the zoo visit are working hard towards tangible conservation outcomes. This result showed that Sanctuary visitors were willing to pay more for an ethically labelled product and were more likely to do that as a result of the onsite visitor experiences – i.e. Lunar's Secret Forest.

Conclusion

This is one of the first occasions known of where a zoo has offered the visitor a choice in purchasing an endorsed product alongside an unmarked (and seemingly less endorsed) product. Many zoos who advocate for ethical purchasing only stock ethically produced items (i.e. "practise what they preach"). Whilst the unlabelled postcards were made from 100% recycled paper, visitors did not know this and instead saw a difference in visible certification and associated difference in price. This trial allowed the effectiveness of the onsite message to be assessed and also allowed the visitor to practise the desired behaviour before leaving. By practising the purchasing decision onsite, it is likely that they will be better placed to remember which product to choose once they are at the supermarket.

Using animation and technology, a child-based interactive experience was created, addressing the challenge of not having animals on display.

The 7000 plus 'possum promises' left behind to grow Lunar's forest indicates the high level of engagement visitors had with the Leadbeater's Possum. Whilst the chosen call-to-action (i.e. "Look for FSC") did not saturate the interactive experience, it did clearly highlight the utility of the CUA model* on encouraging behaviour change and the value of integrating the retail store into community conservation initiatives.

Testing the visitor behaviour whilst they are onsite is a brave move for many parks and zoos, as there is always the chance that an experience like this is not effective in changing behaviour and/or that visitors chastise the organisation for selling a seemingly 'bad' product. However, doing so enables us to test our methods, continually improve our behaviour change practises and better our chances for achieving real change in our communities – for both people and possums' sakes.

Connect – Understand – Act delivery model

Since 2005, Zoos Victoria has been trialling an education model that combines contemporary learning theories with behaviour change tools – establishing the Connect-Understand-Act conservation education model (Lowry, 2009). This model helps to engage visitors hearts (connect), minds (understand) and galvanise action (act) (Killeen, 2010).

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