
Australian Wildlife Society

Wildlife Ecology Research Scholarship

This \$5,000 scholarship is awarded each year to University of Technology Sydney postgraduate research students who are undertaking a research project that is of direct relevance to the conservation of Australian native wildlife (flora or fauna).

The scholarship is provided to support operational costs associated with the successful candidate's research project, such as travel associated with the research project, fieldwork expenses, and specialist software and small items of equipment.

The winner for 2017 is Etsy Yanco, who is conducting a scientific research project in Australian wildlife ecology

Foxlights: A tool for coexisting with wildlife on production landscapes

Esty Yanco, MSc.

The inventor of *Foxlights* only wanted to sleep through the night without having to worry about his newborn lambs. He figured if he was able to create something that could mimic the presence of humans, maybe he could rest easy knowing that the foxes would stay out of his paddocks. From this, *Foxlights* was born.

Winner of the People's Choice award on ABC's 'New Inventors' program, *Foxlights* are a novel non-lethal wildlife deterrent used by farmers and ranchers worldwide who are committed to protecting their livestock and the environment. The wildlife-friendly device employs a series of randomly flashing light to protect livestock and poultry from predation at night. Invented in the Central Tablelands of New South Wales, *Foxlights* are now used in a range of livestock enterprises across the world, from the commercial grazing operations in the federal forests of the western USA to the nomadic herds of the Himalayas.

While sheep farmers are concerned about predation on lambs by native and introduced carnivores in Australia, evidence suggests that reducing human pressure on these species can benefit both farmers and wildlife, despite being initially counterintuitive. Likewise, kangaroos are lethally controlled across Australia's



Esty Yanco in the field.

agricultural landscapes to reduce grazing pressure. *Foxlights* can be used as a tool to protect production assets by warding off wildlife, but they can also contribute to conservation goals by reducing reliance on lethal methods of wildlife control, lowering management costs and enabling coexistence with wildlife. Though traditionally used in Australia to keep foxes away, *Foxlights* are also used in non-traditional ways to protect production while reducing lethal pressure on Australia's fauna. Examples include scaring ducks out of rice paddies, keeping flying foxes out of fruit crops and sheds, and deterring kangaroos from grazing in paddocks.

The adoption of non-lethal and wildlife-friendly farming methods is a growing global trend. Only by finding sustainable practices in shared landscapes that promote coexistence can we truly begin to halt the extinction crisis. This starts with reducing lethal pressure on wildlife by using non-lethal deterrents such as *Foxlights*.

The use of *Foxlights* worldwide has increased in response to the vocal support by innovative farmers, but their efficacy has not yet been

scientifically evaluated. Questions outstanding are how efficacy varies for different species and how soon wildlife habituates to the device.

With the generous support of the Australian Wildlife Society Ecology Science Research Scholarship, and in collaboration with the founder and national distributors of *Foxlights*, part of my doctoral research is dedicated to examining these questions.

In an effort to reduce lethal control of Australia's wildlife on food production landscapes, we are interested in testing the response of different species to *Foxlights*, how long responses will last, and whether different species can habituate to the lighting system. We want to understand not only *Foxlights'* effect on predators but also their ability to reduce additional grazing pressure by native fauna. Accordingly, our study utilises non-invasive wildlife monitoring techniques to measure changes in wildlife behaviour in response to the activation of *Foxlights*. Our study design employs motion-sensored cameras to record wildlife activity while *Foxlights* are either activated or deactivated along the fence line of grazing paddocks. The camera trap array has so far captured

over 300,000 images of kangaroos, wallabies, wombats, possums, birds and foxes, which are now being handprocessed for analysis.

Once the data is processed, we will model the relationship between wildlife activity and the presence of the *Foxlights* by comparing the metadata of each image (e.g., species, date, time) to the activation of the light deterrents. In other words, we will examine how the activities of different species change, both in space and time, in response to the presence of *Foxlights*.

Foxlights are part of a suite of non-lethal strategies that have the potential to reduce conflict between wildlife and food production systems – no single strategy works perfectly on its own – but adoption of wildlife-friendly management practices is a major step towards protecting Australia's wildlife. This project will test the efficacy of *Foxlights* on both predators and herbivores, contribute to the conservation and protection of native species and if successful, provide farmers with confidence in using non-lethal management tools to coexist with Australian wildlife.

Further information on *Foxlights* can be found at www.foxlights.com.



Esty Yanco is currently pursuing a PhD in socio-ecology at the Centre for Compassionate Conservation (CfCC) at University of Technology Sydney. Following years of wildlife veterinary training in Israel, Esty shifted her focus from rehabilitating injured wildlife to addressing sources of common wildlife injuries. She received her Masters in Science in Conservation Medicine, an emerging field that approaches wildlife health and conservation issues holistically by integrating all aspects of animal, human and environmental health into a comprehensive discipline, from Tufts University (USA) in 2016. Inspired by her conservation medicine background, Esty's doctoral research uses a holistic approach to analyse a leading example of a livestock farming system striving to be a sustainable agriculture model – wildlife-friendly farming. By reducing lethal control of wildlife and embracing local ecologies, wildlife-friendly farming fosters the improvement of shared health outcomes to achieve long-term food production potential and wildlife conservation goals. As part of the CfCC's goal to test the efficacy and sustainability of wildlife-friendly farming practices, Esty brings her holistic conservation medicine background to the CfCC with a project that explores the ecological, sociological and production benefits of wildlife-friendly farming.