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# MWLR WEBINAR

Our Land and Our Future – Tō tātau whenua, mō āpōpō

## Exploiting fear for non-lethal cat management

The following questions were asked during our live webinar with Sze-Wing Yiu but due to time restrictions, we were unable to answer these in the session.

### **Did you observe whether these sounds resulted in being a deterrent for native bird species?**

We unfortunately do not have the animal ethics permit to test the behavioural responses of native birds to the sounds.

We are aware that the sounds could potentially influence birds. In order to mitigate the potential impact, the speakers will be set at least 100m away from the core bird activity area, aiming to defend a large area at the entry point of cats, instead of protecting the specific bird breeding/feeding sites.

### **Could the Cricket sound be more of an attractant to the Cats rather than just a neutral control? Thanks.**

That is possible, if the cats are interested in hunting crickets. When we tested it on the feral cats, they did not show any attraction to the sounds. But it was observed quite a few times during the garden trial on domestic cats. We shall be able to understand better after the upcoming field trials in urban reserves.

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### **Is there a way to overcome habituation?**

Yes, through maximising the number of audio files we use for each type of sounds and randomizing the playing order of the sounds. When the method is tested to be effective, it should also be employed only during the most critical period of time (e.g., breeding season of birds), instead of throughout the year. And the locations of the devices could change constantly to make them unpredictable.

**Could test between feral and household, their behaviour will be a little different - could help protect different zones?**

We had tested the method in people's gardens in the city and can confirm that both domestic and feral cats show similar responses to the sounds.

**If the cats were hungry enough, presumably they would start taking higher risks, and the effect would diminish more rapidly?**

Yes indeed. However, this method is developed to protect urban reserves (where other types of cat control method if not possible) and is therefore mostly targeting domestic cats. We suspect domestic cats are often well fed (as shown in their lack of interest to food scent lure during our garden trial).

**Have you looked at these results in relation to cat density? I.e., greater abundance of cats = bolder behaviour?**

We haven't looked at this factor since the experiment was designed to test individual cat responses. But we could incorporate this aspect in our up-coming field trial.

**Have you taken the question of additional noise pollution into account when considering the feasibility of using sound in an urban environment?**

We have tested the sound level in the urban area. At 10m from the sound source, sound level has reduced to 50dB, which is similar to background noise level in the city. When we were in the city, there was also a case when someone walked past us about 10m away and was completely unaware of the sounds when we talked to her after playing the sounds. So we are confident it won't create any noise pollution for people.

**I wonder how stoats would react.**

Our colleagues have been conducting a behavioural trial on stoats' responses to sounds. However, it is focusing on sound lures instead of sound deterrents. There shall be some results to share in the coming year.

**Recent research in NZ has found that sound playback is associated with fewer forest bird calls and bat calls. Some of the sites you will be trialing this in have these species. How will you balance the effect on non-target species with the potential benefit of reducing cat time in the area?**

We unfortunately do not have the animal ethics permit to test the behavioural responses of native birds to the sounds. We are aware that the sounds could potentially influence birds. In order to mitigate the potential impact, the speakers will be set at least 100m away from the core bird activity area, aiming to defend a large area at the entry point of cats, instead of protecting the specific bird breeding/feeding sites.

One of our sites are important NZ dotterels breeding area, and breeding success has been extremely low in the last 10 years (<10%) and cats have been found visiting the nests. In such area, it would be worth to trial the method despite the potential effects on the birds. However, we will still try to minimise the disturbances by setting the speakers well away from nests, at the low-tide entrance point of the predator-proof fence that is >100m away from core bird areas. When we tested sound levels in the field, the sounds were not audible to human ears at 100m, so the potential disturbance to birds should be low.

**Wonder if that has use to act as a substitute 'fence' for unfenced conservation sites.**

Yes. That's the idea of the project, to create a virtual barrier to protect unfenced ecologically sensitive area.

**Especially if the camera tech can get the playback audio only occurring when a cat is ID'd, rather than any motion.**

We have been testing and exploring the use of AI thermal cameras, but the accuracy of the AI is not high enough at the moment. We will continue to explore that option, and that should be the way to go once the AI accuracy is improved.

**Is there a risk that scaring feral cats will move them away from urban areas into natural areas where they pose a greater risk to native species? How to manage this risk?**

This method is developed to protect urban reserves, where other cat control methods are not possible. Therefore, in the upcoming field trial, the devices will actually be set in these reserves, trying to re-direct cat movement away from these urban natural areas. Since these reserves are in the middle of the cities, we predict that the cats might be pushed back towards the direction of their home, instead of into any rural areas.

**Do the sounds have an impact on the native wildlife?**

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