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Symposium Evening Presentation

# *Saving woodland birds isn't that hard, right?*

**Dean Ingwersen**

Woodland Birds Program Leader, BirdLife Australia

*Transcript edited by Dr Peter Mitchell and Ann McGregor, Biolinks Alliance. Photos provided by Birdlife Australia.*

## Summary

*Most woodlands in south-eastern Australia have been lost and the species that rely on them are threatened or extinct. Regent Honeyeaters used to be seen in vast numbers but are down to about 500 wild birds due to loss and degradation of habitat. The Regent Honeyeater Recovery Plan has four broad strategies. Habitat restoration and revegetation is creating a lot of new habitat. But behavioural studies show that Regent Honeyeaters are very mobile and use resources over wide areas, often on private land in the richer country. Big community programs at Capertee Valley, Chiltern. the Lurg Hills and elsewhere have revegetated around 1500ha of habitat and an additional 3,000 ha have been protected. Birds are just starting to use the 20 year-old plantings. Noisy Miners are a big issue and more honeyeaters use habitat where the miners have been culled. Noisy Miners also decline as habitat matures. Captive release has successfully re-introduced birds but they have failed to breed. Monitoring has demonstrated nest predation by many species including endangered Squirrel Gliders. A variety of techniques are being tried to limit this predation. In summary, habitat restoration is beneficial, but it is essential to monitor the effectiveness of the work and identify issues. Although it's frustrating and hard work and with targets a long way off. But this doesn't mean we shouldn't have a go.*

Thank you for having me along. It's great to be here.

As was mentioned, I manage our Woodland Bird Program at BirdLife Australia. I've got nine staff spread from Mount Gambier in South Australia to Newcastle, working on a range of threatened and declining woodland bird projects. I'm also the national Regent Honeyeater recovery coordinator, and I work with Swift Parrots and a bunch of other things.

I want to talk to you about restoration from the perspective of trying to save a critically endangered bird with the tongue-in-cheek title *Saving Woodland Birds isn't that hard, right?*. From all of the things that you've seen and learnt today, surely you've got ideas about how we can save this guild of birds. I'll go through some of the things that we work on.

## Woodlands across the landscape

As I drive around the landscape, "woodlands" is a word that pops up all over the place. I try and take as many selfies as I can whenever I see a property or a street or a road named "woodlands'.

A quick recap: people here will know this story, but our woodlands are really part of our natural heritage. They are a very uniquely Australian sort of landscape. It was once possible to walk through almost continuous woodland from Melbourne to Sydney, like the guy that rode his horse there to see the Sydney Harbour bridge open.

We've certainly made modifications. Since European settlement, 85% of our temperate woodlands in this part of the world has been taken away. So not surprisingly we've had flow-on effects to the species which occur and depend on these woodlands. It is a precious but heavily exploited system.

What did it look like before Europeans arrived, what does it look like now? If you look at the estimates of the different habitats (using EVC modelling) from 1750 then move forward to the present, lots of the habitats disappear from the map. Human beings are industrious little turds when we want to be. We've made big modifications.

And if you look at a national scale going back a few years, what has happened to the vegetation? How much has it changed since Europeans decided that we turn it all into farmland? Not surprisingly, where we have the greatest amount of human beings settled is where we've got the greatest level of modification. There are big changes being wrought on this landscape.

Plant more trees, habitat restoration, that's the way we're going to do it. If you consider even going back 18 years, 27 million hectares of habitat had been lost from the woodlands, at least. That's a minimum. It's a big number. And we are still legally logging some of the really important sites for Swift Parrots, Regent Honeyeaters and a range of other species. So the destruction isn't finished yet, even though we're working really hard to restore as much as we can. Quite a preppy talk, isn't it?

Most of the woodlands are gone, particularly and preferentially those on the lowland really fertile soils that grow us the best crops, that give us the fattest cows and the fattest sheep. That's where agriculture has happened. What is left, as we see driving around, and in our work, is often really degraded. It's ringbarked by stock, the understorey is trashed. Tree cover-wise, it still registers as woodland, but as a functional piece of the landscape it probably isn't. They're now amongst some of the most threatened ecosystems in the country.

## Fauna of the woodlands

We now have an incomplete flora and fauna in our woodlands in this part of the world. We've lost some of the most amazing species. They occurred nowhere else on the planet and we've done a great job of getting rid of them forever. Rabbit-rats, hare-wallabies are gone from this part of the landscape. Pig-footed Bandicoots, those sorts of things, we won't see them again.

Others have declined significantly. Bush Stone-curlews in Victoria were once a relatively common bird. It's now a notable event to find a Bush Stone-curlew, and a lot of people are working really hard to get them back into the landscape. It's fabled stuff, it's our folklore, how we treated the land when we arrived here. It was full of virgin stuff that we could cut down and convert into agriculture for us to thrive.

I drive around the landscape and I see some of these really big trees. I like to spot the big trees in the landscape. What would it have looked like when they were all that big or close to that big? It would have been incredible to drive through a Yellow Box plain with really large trees as the standard size.

I work a lot with Regent Honeyeaters (*Anthochaera phrygia*), which I'll talk endlessly about tonight. You can find some phenomenal-sized Mugga Ironbark, and they're unique. Most of the ironbark country, particularly in this part of the world in northeast Victoria around Chiltern where I've been working, it's post-gold mining regrowth. It looks like forest, but it's all a monoculture, it's not what it would have originally looked like.

## Regent Honeyeaters

Hands up, who's seen a Regent Honeyeater? All right, so I can't tell too many lies, some people know what's going on. Hands down, these are the coolest birds on the planet. I'm a little bit biased, but they are pretty high on my excitement list, and for most birders. When the heart rate really gets going is when you find an adult feeding a juvenile bird straight out of the nest. A lot of what I do in my work and my day-to-day job is trying to create events like this. This is the way we save Regent Honeyeaters and I'll talk more about that in a little while.

### Abundance

So how do we save them? We know that the species has declined and it has declined substantially. They're now functionally extinct in South Australia, there hasn't been a record there for decades, and in western Victoria to a degree. Queensland threw us some curveballs last year where we had records, the northernmost records in 50 years, we think in response to a really bad flowering last year in their key posts.

But if we consider all Regent Honeyeater records ever, what does it look like in comparison with a contemporary map? John Gould, who painted all the amazing wildlife, had a pair nesting outside his hotel window in Adelaide. It's a different landscape these days for Regent Honeyeaters. They were once described enthusiastically as occurring in thousands, massive flocks, the most common bird you could hear in a season. They would flood into areas when there was big flowering.

Their numbers are really hard to estimate because at times they're cryptic. We have times of the year where they vanish on us. But when I started as recovery coordinator a bit over a decade ago, our national population estimate was about 1,500 birds, and in Victoria maybe up to 100. We think these days it's at least at 500 as a cap, probably a little bit lower and 50 is probably the estimate for the Victorian population. So not great.

### Decline

Why the decline? Habitat loss and reduction in quality. That's the theme of today and the sort of work that you've been talking about. We've lost a lot of stuff for firewood, historical cut down of Mugga Ironbark for strainer posts, for housing in early settlement days. We have continuing decline of trees and in key spots we now have die-off of large areas of

mistletoe in response to environmental stress. We've got competition with Noisy Miners, and I'll talk about them later.

And then the change in climate. Species like Regent Honeyeaters and Swift Parrots are entirely dependent on the nectar that comes out of eucalypts, and that is entirely dependent on the water that they get at their feet. Without that water there's no nectar. So there's a real flow-on and these species are really in the crosshairs with climate change. Happy stuff, isn't it?

### Regent Honeyeater Recovery Plan

What are we doing to try and save them? We've got four broad strategies around trying to save Regent Honeyeaters listed in our Recovery Plan.

> Improve the extent and the quality of the habitat. We're not going to put 27 million hectares back in the landscape. We can start, but it will take a while. I won't finish it. But we need to get that back out there.
>
> Do captive releases to try and hold the line, get birds back in the landscape until that restoration work takes hold and all the other recovery actions we're putting into place work.
>
> Fill in the many knowledge gaps. What's happening with the population? How do they move around the landscape? Are there important areas that they use that we have no idea about?
>
> Get community involved in it. Get people involved in the work that we're doing and understanding the plight of the species and woodlands in general.

## Improving the habitat

I'll focus on habitat for a little while.

Why is private land conservation important for Regent Honeyeaters? Well, 65% of the records from 2000 to 2010 were on private land. We can't save the species without restoration and conservation work on private property. It simply won't happen. The reserve network doesn't do enough for this species.

You want to improve the habitat? Which option do you choose for something like a Regent Honeyeater? Do you want to do a restoration planting, which we've seen lots of discussed today? That's an option we do. Can we protect the remnants that are already there? Rather than planting stuff, can we actually just make sure that what we've got that is still functional stays functional, and remains there in the long run? So we work a lot trying to covenant properties.

We can enhance remnants a number of ways. We can fence them and keep stock out. We can let them naturally regenerate. We can control weeds. We can put fire through it, as we discussed today. Or we can get dirty and shoot Noisy Miners - that's something that we're

looking at as a recovery team, as a method which we can use to enhance habitat for a species like Regent Honeyeater and other woodland birds.

I'll start with the restoration plantings. For the last couple of years we've had funding out of the Federal Government's Threatened Species Recovery Fund and we've done 15 hectares of in-fill plantings. For people who know Chiltern-Mt Pilot National Park, the old Barnawartha sewage treatment plant has been decommissioned and is no longer used. We replanted habitat in there and also on an adjacent site over the other side of the park, trying to buffer what exists already within the national park. It was a pretty cool exercise. Unfortunately, I couldn't be there. But they shipped in this thing called 'the Beast' - a big mechanical machine to try and make planting easy. They knocked over that planting I think in a day and a bit. Really impressive stuff, lots of trees back in the ground.

We do the work on Regent Honeyeaters at Chiltern - we restore some habitat. Awesome. But does the species like it? Well, we don't know because the habitat is not old enough yet.

## Studies of behaviour

We also have to have an eye on what the species does in general in terms of restoration.

Here's a story of a bunch of Regent Honeyeaters that were present at Chiltern-Mt Pilot National Park in June 2006. 20 years ago, you'd get a flock of 60 or 70 birds. Over time that's dropped, even though we've been doing releases. But in 2006, 16 Regent Honeyeaters turned up and the recovery team decided to catch and band as many as they could and do a small radio tracking project. 11 of the 16 were captured and banded. Here's a story of three of them.

In June 2006 they were captured and banded and let go. We don't see them again for three years. The first one of these we see, I had literally driven from Melbourne to the Capertee Valley with a colleague, Chris Tzaros, to do some fieldwork. And the first site we got out of the car and looked in a tree, there's one of those birds in flowering White Box. So Mugga Ironbark in Chiltern in 2006, then about 250-300km north to a flowering White Box.

A month later we went to Rushworth State Forest in central Victoria to run a banding demonstration day for a Bendigo TAFE group. Let's stop at that Yellow Gum that's flowering. And we found another one. So Mugga Ironbark, White Box, Yellow Gum. And they've gone in opposite directions. The following year, one of our colleagues found one of these birds at Killawarra in the Warby-Ovens National Park.

Welcome to Regent Honeyeater habitat restoration where you've got try and work on a species across that sort of range. It's a tough gig.

The longest movement we have was a male and female that bred in 2009 at Eagle Point, on the banks of the Mitchell River in eastern Victoria, in a flowering Spotted Gum in someone's front yard. I rang Chris at the time and said that, if this is critical Regent Honeyeater habitat, we're stuffed, because there's no way I'm going to work out where these things are. But

anyway, they bred successfully. We captured and banded them. The adult male was seen feeding a juvenile in some tea-tree. He turned up 20 months later in the Capertee Valley, 580km from where we originally captured and banded him.

So this is a really mobile species. It's not local patch scale stuff that's going to save them, it's a broad network of sites that we're trying to work out and trying to make a difference over. We capture and band as many as we can and see where they go. When you look at where we've got our band re-sightings, it's like a spiderweb. Habitat restoration for a species like Regent Honeyeaters is challenging. It's not local reserve scale, as for things that are very sedentary - it's a very mobile bird.

## Planting programs

But that doesn't mean we don't try. For the last 20 plus years in the Capertee Valley, we've had twice-yearly plantings on private property, trying to restore habitat. We have 100 to 150 volunteers come out and we replant three to four hectares over a weekend. Very beautiful part of the world, lots of work. Over the life of that project, 120,000 trees in the ground.

If we talk about the Lurg Hills project. Ray Thomas had the foresight to start this amazing project a couple of decades ago. It's been an enormous success; 750,000 plus trees in the ground now, 30,000 plus people involved in it. This is a big conservation initiative. If we could clone people we'd be cloning Ray and planting him all over the landscape so that we do more of this sort of stuff.

Combined over the journey, 1,400-1,500-ish hectares planted. 27 million have been lost. So we're up 1,500 hectares. It's not a wasted effort but, as someone touched on today, this takes time. We're trying to reverse 200 plus years of loss, it's going to take time.

To give you some good news - I don't want to give you pessimistic stuff - one of the planting sites in the Capertee Valley in 2003 is now quite mature habitat in 2017. And we've got patches of Box Mistletoe. At least at a canopy level, it's starting to act like a functional piece of habitat. Another property in the Capertee Valley was first planted in 2004 and is looking good 15 years later. We work really hard - as Ray and now Andy Guerin do - to make sure the understorey is looked after as well. It's not just planting monocultures of overstorey - White Box and stuff.

So at the local patch scale we're making a difference. You can see the change. If anyone wants to kill an afternoon or a morning, drive around the Lurg Hills and look at all the properties there that have got Regent Honeyeater signs on their fences.

But have Regent Honeyeaters used these sites? Just. The problem is they generally like the bigger, older stuff. The revegetation habitat is still youngish for a Regent Honeyeater. But we've had a handful of records in recent years, particularly in the Capertee Valley, where we've got Regent Honeyeaters actually using the vegetation we've put back. Of note is one of them pulling nesting material out of a planting site to build a nest in a big Yellow Box next

door. So, again, functional parts of the landscape going back in for this species. I'll talk more about co-benefits a little bit later.

**Protection of habitat**

So we've done some habitat restoration. What about protecting what's already there? Can we do that? We've been working since 2009 across Victoria and New South Wales and in the early years in Tasmania. In that time, we've covenanted nearly 3,000 hectares of high-quality woodland bird habitat. Regents and Swifties have been seen from all but one of those. We're conserving really important foraging and nesting sites.

From little things, big things grow. One of those sites is a 47 hectare property strategically targeted for a covenant. It has had Regent Honeyeaters present in 8 of the last 12 years. A flock of 50 Regent Honeyeaters was there a couple of years ago, and 20 plus Swift Parrots at one time. Conservation on private property - it's effectively a national parks gold standard level habitat now conserved in perpetuity on title.

So we're getting as many wins as we can. Another site in the Capertee Valley is 120 hectares in size. Again, a breeding site for the species, but also really important for Painted Honeyeaters - they turn up most years to at least forage and often to breed as well.

As I told you, I drive around the landscape and I find these signs and I act like an idiot. I'm on my own there, I don't know what anyone would think if they drove past and saw me doing that.

## Enhancing remnants

What about enhancing remnants?

What do we do with Noisy Miners? I'm reporting on a newish body of work. We've known for a long time that Noisy Miners have an impact on small woodland birds. Back in the 70s and 80s there were researchers recording them actually pinning down and killing honeyeaters, Willie Wagtails, other birds, and competing for resources with them.

We had to go through a process to be able to do this. Noisy Miners are a native species and they're protected. So myself and some colleagues went through the paperwork and had them listed as a key threatening process. One of the reasons I've listed is that we've seen them not only suppressing the number of woodland birds at a site, but also actively pulling apart Regent Honeyeater nests and chasing them out of areas. So they have an impact when Regent Honeyeaters are at their most vulnerable.

For the last couple of years, we've been trialling culls, particularly in the Capertee Valley. The Capertee Valley is about an hour north of Bathurst on the inland side of the Dividing Range. We compared the properties or the boundaries that we treated in 2016 with the sites where Regent Honeyeaters occurred that year. The birds didn't use the treated sites - they didn't see what we were doing, they didn't understand the effort we were putting in. But nonetheless, we did the work to see what happens with Noisy Miners being removed from the landscape.

The following year we went back to Bogee and the Regents did the right thing, they turned up on the site for us. So could we test what was happening? Is there a response when we're able to remove that Noisy Miner aggressive competitive pressure from nesting Regent Honeyeaters? At Bogee in 2016, the first time we went there, we removed 218 Noisy Miners from a small reserve and the neighbouring property. When we went back the following year, there were none there. Woo-hoo, it's worked, we got rid of them all! But of course, birds flux in and out of different parts of the landscape. When Regent Honeyeaters turned up to breed, there were at least 28 Noisy Miners back in there, so we went and removed them.

This is not fun. It's a weird concept to someone who's a bird lover and has spent one's career trying to save birds, to rock up and then willingly kill all these things. It feels weird. But there's a real reason for it. And that year the real reason was shown straight away.

Breeding success for Regents at the moment is really low but, by enhancing this habitat by taking Noisy Miners out of it, we had eight successful nests and only two that failed. And we had other birds turn up that would have nested successfully somewhere else and we missed them. 13 fledglings that year just from that site. For a total population of 400 birds, it's a pretty decent return for pulling some Noisy Miners out of that landscape.

We're trialling it at other locations and also still in the Capertee Valley. We got to watch adults and juvenile Regent Honeyeaters foraging - I won't say free of competition, because honeyeaters are nutcases, they all fight with each other - but Noisy Miners are particularly aggressive and dominate these remnants. They didn't have that influence at cull sites.

Last year was a really bad year for Regent Honeyeaters inland of the Divide. Many Regent Honeyeaters were dropping in, realising there was no food, and taking off again.

We culled the Home Hills property and the Capertee National Park last year. This area is one the most important sites in the Valley. Those two properties are now essentially Noisy Miner free because we've had an integrated program with the Parks Service. So we've got another really neat site that's now free from this pressure at the moment.

What happens to the other birds? It's not just Regents, there's other birds that will benefit. So we've done surveys on all of these properties *before and after culling*. In most cases you get a response from the species that use these sites. More species were present after Noisy Miners were removed.

That was 2016. If we look at 2018, there's a really big change at some sites. Three or four species are present pre-cull, 15 - 21 species present post-cull. It's having a noticeable difference on the ability of these woodland birds to use this landscape.

## Co-benefits of habitat restoration – Grey-crowned Babblers

What about other co-benefits? How do we see it in actual population change, not just individuals or species diversity on a site?

Doug Robinson touched on Grey-crowned Babblers. The Lurg restoration project started around 1992, I think, Ray (Thomas), around that time, for Regent Honeyeaters - putting habitat back in the ground for Regent Honeyeaters. We haven't had a Regent Honeyeater that we know of use one of those planting sites. We're only there a couple of times a year, so conceivably they've used those sites and we don't know about it. But there's not many Regent Honeyeater records in that part of the world.

But what's happened to the local Grey-crowned Babblers in response? Pre-1900s we estimate that Grey-crowned Babblers were widespread in Victoria. They were on the Mornington Peninsula, the Bellarine Peninsula. Melbourne Museum's full of skins collected in Essendon and Keilor and all these amazing places, now complete and utter suburbia.

In the 1960s, they'd contracted. Small splintered populations in the Western District and retreating north at a rapid rate of knots. By 2000s it's fractured even more. Enter Doug and co doing their work. Northeast Victoria and up along the Murray corridor I guess is where they were still relatively common within the State. Parts of northeast and northwest Victoria still supported large populations, but they were still declining due to ongoing local extinction debt, the ongoing loss of critical resources, functional elements out of the landscape, and again pressure from hyper-aggressive Noisy Miners. Noisy Miners love to bash the daylights out of Grey-crowned Babblers. The poor things.

75% of Babbler groups are using roadsides. So really important, that network of road corridors and adjacent private land. And as Doug touched on, where you do some active management and some well-integrated management, you can make a difference. In areas where there's no active management they are tending to decline still.

We've talked a bit about Lurg. There's been lots of effort there to put trees in the ground. Over 1,000 hectares restored across that landscape, either through planting or fencing. But, as I touched on, not many Regent Honeyeaters have used these sites. So do we pack up and go home? I don't think so. We're still making a difference in the long run, but we're also getting benefits now. Babblers have been the bycatch of this project and it's been amazing to watch the response. Over a few years, or since 2001, assessments have been done. Initially the population fluctuated between 50 and 70 birds and in 2011 it just took off, the population responded. And since that time, it's remained at a high peak with some ups and downs.

From surveys that are done every year in that district for Grey-crowned Babblers by Mick Moyler and previously by Nigel, we've effectively got a doubling of that local population size. The plan was to save Regent Honeyeaters, but in the interim we're saving other things as well. So habitat restoration will still work even if you don't get it quite right.

Why the surge? Lots and lots of these groups are using the planting sites. Trees back in the ground - sometimes it's as simple as that, as Doug touched on, with the right context and the right linkage network. They're using these replanted areas for movement, some of them as young as six years old. So the response can be quite quick.

One family group shifted 3km from the scungy hilly stuff straight down to a lowland fertile soil. More productive, better breeding results, better outcomes for the species. And that family group increased from four to six birds. So there's been a bounce. It's been really nice to watch and an affirmation. We might not have Regent Honeyeaters back as a response, but we've got other stuff responding.

Concerted strategic action can make a difference at a local scale. Agricultural landscapes, when they're managed right, will put functional elements back in. It's as simple as that and I can't stress enough again how private landholders and those lowland highly fertile sites are really important.

We know from the monitoring we've been doing that a whole range of other species are benefiting as well, it's not just Grey-crowned Babblers.

The interesting thing about Ray's plantings in particular is that the way that they've done. Over time as they mature, they become less favoured by Noisy Miners. A student a few years ago looked at what's the response in zero to two years old, three to five, six to nine, ten to 13, as the habitat matures and becomes better. Bigger, more mature plantings - Noisy Miners are in those replantings less and less. So there's a configuration element to take in too.

## Captive breeding and releases

How does restoration tie into other actions? We know it takes a long time to get from here to here. So what we're going to try and do is buy time in the interim. Regent Honeyeaters aren't using restoration sites in big numbers yet, so what else are we doing? We're buying time while that habitat matures.

We're doing captive releases. That's a pretty cool sight, to put birds back into a landscape. So captive releases are all around at the moment, trying to see whether it works - putting birds into the landscape to keep them there while things like habitat restoration take hold.

But when we release them, they try to breed - and they fail. We've had lots and lots of nests where they've failed at the nest stage. Something's going on. And what we kept finding was a Regent Honeyeater nest and a smashed egg in it. We had no idea what was happening but, with release after release, we had a handful of nests succeeding and the rest were failing. In 2015 we got savvy and thought, well, let's do some monitoring. So we did some monitoring.

The first nest that we monitored in 2015 showed a Regent Honeyeater sitting on a nest, and a Sugar Glider. The Glider tries to catch the adult, then turns around and comes straight back to a meal of eggs. The interesting thing with that nest and another nest is the females sat on the nest the next day, almost like a period of mourning. If we weren't monitoring like this, we'd have suspected that they are raided by avian predators during the day. But clearly mammalian predators.

Another example, with the cousin, a Squirrel Glider. The Regent Honeyeater is sitting on the nest. The Glider comes up the tree trunk. Exactly the same scenario, where it first tries to catch the adult and misses, and goes back and helps itself to eggs.

So we're realising it's not just about trees back in the ground, we've got some other challenges we've got to try and address at the same time.

Welcome to real-world conservation, where you get a habitat restoration project and you say you're going to put nest boxes back in. I'm not saying don't put nest boxes back in. But this is the real-world challenge of conservation where you've got Squirrel Gliders, a threatened species, eating eggs of a critically endangered species. It's a complex world out there in conservation.

I can't believe anything breeds to be honest. Nearly every nest we looked at failed in some way, shape or form. We had weird things like magpies taking chicks out of nests, we had kookaburras, we had goannas, we had all sorts of stuff raiding nests.

While we were working on our released birds down here, Ross Crates from ANU was looking at wild Regent Honeyeater nests. There's public enemy number one, Noisy Miner smashing eggs in a nest. And Sugar Gliders, Brush-tailed Possums, Brown Treecreepers. Just because. Just smashing eggs. We would never have guessed, but you catch it on video, it's pretty conclusive. So it's a challenge to try and keep these birds in the landscape.

And what Ross has done over the last couple of the years off the back of this work is look at as many nests as he could find across New South Wales. 119 nests, nest success on average 0.31, down from 0.45 in the 90s. So there's a big drop in breeding success and one in six males has got no partner. There's a big change going on.

In another study, 38% to 46% nesting success in the 90s, 9.3% and 33.7% in two regions in the last couple of years. And again, the number of fledglings per nest has dropped from 2.8 to 2.1-ish. So a change in the number of nests that succeed, and when they do succeed there's a drop in the number of birds coming out of those nests.

What it did show though, was that once birds survived this juvenile fledgling period of two weeks, survival is really high. The nest stage and the egg stage in particular are the critical bits to try and save Regent Honeyeaters and improve their breeding success.

### Managing nest predation

What do we do? Well, let's try and work on mammals first. We don't want to kill them all, because, one, it would be hard to get ethics approvals and, two, they're threatened as well in some cases.

So let's trial physical barriers. Can we adopt what's put in parks and gardens to stop access? Let's say it's a work in progress. We have recorded a Sugar Glider running straight across one of our barriers. The best-laid plans of mice and men will create a barrier. They'll never get across this. And they just laughed at us and went straight over. But in some instances we did get some benefit and certainly in 2017 we didn't have any reported mammalian predation where we did this work. But we've got to fine-tune it.

While we've been doing this work, again, we're monitoring outcomes. We're putting cameras on nests. In one example, we put a guard on a trunk to try and prevent access. This was a solo tree in a paddock, so relatively easy to try and keep things out of it. Or so we thought. There's the female sitting on the nest and everything was going really well. Enter stage left: Australian Raven who waited until the two chicks were just plump enough to give him a good feed, and in the space of six seconds they're gone.

It's heart-breaking. I said we should have counselling built into our project budgets. The sort of work that we do and you just watch all of this unfold - it's a tough gig sometimes.

## Summary

In summary, it's easy to say we're going to do habitat restoration and it's going to be beneficial. The process of planting trees is generally pretty easy, though we know conditions will change; some will survive, some won't. The responses of what you're aiming to achieve can vary quite wildly, from what happens when you put habitat back in the ground to all of these other factors.

It's really important to constantly monitor. Without the monitoring we've been doing, for example, we'd be guessing at what's happening to these nests, we'd be guessing at what's happening with our Noisy Miner control. And, without monitoring the tree plantings, we really wouldn't know whether we're making a difference or not. Planting might not be for Regents, but we know it's making a difference for other things.

Again, you need to be really clear on what your goal and your target is for this restoration - or any works that you're doing. And at times, as you've seen from the talk, it's frustrating and hard work and it's a slog. And at times you really feel like you're up against it. But one of my favourite quotes of all time, which I'll leave you with, is this: "We put men on the

moon not because it was easy, but because it was hard". So just because something's hard and complicated and looks like it's a long way off, doesn't mean we shouldn't have a go at it because we can achieve things in the interim.

The work that I've just talked about is an enormous collaboration across multiple agencies, universities, non-government organisations, philanthropists and so on. It's really a big, integrated program now for Regent Honeyeater conservation. And that's enough from me. Thanks for listening.