Bush Stone Curlews: an email exchange

For a number of years the Kowree Farm Tree Group dabbled in the conservation of Bush Stone Curlews.

In the area around Apsley and across the border to Hynam there is a trace population, which we tried to boost by identifying nest sites and erecting fox-proof electric fences around them. We did this on four sites and were successful in allowing pairs to successfully hatch and fledge chicks on two of the sites. What happened to the fledged chicks when they left, we do not know.

As progress was too slow using this approach we employed Sue Close to thoroughly investigate other options for Bush Stone Curlew conservation. She spent a year doing this, and the best option looked like captive breeding and release. However the complexity, the cost and most importantly the inability to adequately control foxes prevented us from going further.

So, in order to salvage something from our efforts, we wrote a report on our findings and gathered together all the information into a package, so that others who want to attempt this work can use it as a resource. A series of enquiries have trickled in, but a few months ago one of these enquiries led to a lengthy, but extremely interesting email discussion.

The largely unedited discussion occupies 13 pages below.

The participants in the discussion are:

Kate Grarock, Sanctuary Ecologist, Mulligans Flat Woodland Sanctuary, ACT

Andrew Bradey, President, Kowree Farm Tree Group, Vic

Mark Bachmann, Manager, Nature Glenelg Trust, SA

David Baker-Gabbe, Consultant (on matters ornithological), Vic

Jody Gates, DEWNR, Adelaide

Dan Harley, Threatened Species Biologist, Zoos Victoria.

Happy reading!

…..And if you get to the end and still want more on this topic, please let me know.

Andrew Bradey: (kowreeftg@bigpond.com)

Bush Stone Curlews: an email exchange

Dear Andrew,

I am the Ecologist at Mulligans Flat Woodland Sanctuary and I would love to have a chat to you or one of your staff about bush stone-curlews. We are looking to do an introduction into our sanctuary and any information you could provide would be most helpful. Specifically we are interested in possible tracking solutions and problems with foxes. Our Sanctuary has a fox proof fence but the curlews may move outside the fence and we are interested to hear more from people about fox control methods and if curlews can tolerate low fox numbers. It would also be great to just hear about some of the day to day management issues you may have encountered.

Thanks for your time

Kate

Kate,

We did a lot of research on how to go about this, and reluctantly decided not to proceed.
However, we bundled up all the information we had gleaned to pass on to people, such as you, who may want to make use of it.
The number one hurdle is foxes. In our view, the population density of foxes in southern Australia is too high to allow Bush Stone Curlews to successfully rear young. However there are plenty of Bush Stone Curlews around Brisbane (and also Nth Stradbroke Island where I holidayed for a few days last year) and apparently there are some foxes around. So low population densities MAY be OK. How low is OK? That is a good question.
If you send me your postal address I can send all the stuff put together on a CD. You are also welcome to ring me, after 8pm would be best,
I have CC'd two other people in our group (Bill Wallace & Sue Close) who worked on this project and also Mark Bachmann who is contemplating setting up a re-introduction project at Bangham in the SE of S Aust. Details of other Bush Stone Curlew programs, past & present, are in our literature.

Andrew Bradey

Andrew,

Brilliant thanks very much for the information. It would be most helpful to look at the information you have gathered. Yes the question of how low is low enough has troubled us also.

Mark, great news about Bangham, keep me posted on your progress. I grew up in Naracoorte and visit regularly.

Cheers

Kate

Bush Stone Curlews: an email exchange

Hi Kate,

For your information, I had some previous involvement in the project Dan Harley (Cc'd above) and then Michelle Le Duff ran in the Upper SE several years ago, when they worked in the team I managed with DEWNR, based out of Mt Gambier. Dan is now based at Healesville Sanctuary, and would be a good person to talk to – but like all of us, he is pretty busy! Jody Gates (Cc'd) did a lot of work on the species on Kangaroo Island many years ago (where there are no foxes) – and would be worth talking to as well.

David Baker-Gabb (also Cc'd) wrote the attached feasibility report, after being contracted by the then DENR. With Michelle's departure from the region a few years ago (the last edition [I think?] of the newsletter produced by the project is also attached), the project went into hibernation – although I did try (unsuccessfully) to get some funding for a supplementation trial in 2011 (also attached), just before I left the Dept to start up NGT.

As a result of what Dan discovered about our local curlews and David's feasibility report, I have thought about whether there is another way that we could tackle this question… Namely, could we invest more in ramping up curlew recruitment, without taking on the (extra expensive and more daunting) responsibility of managing the wider landscape for foxes (forever!). Under this approach, we would accept that we are going to lose birds to predation, but work on the premise that if the supply outstrips the predation losses, that putting additional adult birds back into the wild population also increases the probability of limited natural recruitment eventually occurring as well. In this way, we treat the exercise purely as a numbers game, where we try to stack the odds back in the birds favour; ie. the fate of any given individual is less important than maintaining/increasing total population numbers.

Under this approach, I have been wondering if we could pick a number of sanctuary locations to set up to become curlew "factories" to replenish and supplement a wider population by "leaking" young adult curlews into the surrounding landscape (a landscape that we choose not to actively manage curlews in, although other fox management may be occurring anyway). This is where the new NGT property at Bangham, that Andrew referred to (see: http://natureglenelg.org.au/current-projects/eaglehawk-waterhole-habitat-restoration-reserve/), could potentially come in and has got me thinking about the possibilities of using the significant area of grassy woodlands at the site for this purpose…

The reasons why I'd like to try this idea?:

1. Curlews are about to be lost in this part of the world unless we do something, and it just so happens that they are the most charismatic "hook" we have for engaging people in grassy woodland conservation and management. Outside of conserving curlews for their own intrinsic value, I think that this is a legitimate social objective on its own.
2. Although some are being taken by predators, we know that adult curlews can and do persist in the presence of foxes, and that somehow they also occasionally rear young under those conditions. After all, the majority of species (think small mammals) that were driven to rapid extinction by foxes in south-eastern SA haven't hung on this long! This is a bird that clearly must have been adapted to some level of predation before foxes arrived – our problem is that foxes are just way too efficient compared to the previous suite of predators… and that population suppression has been occurring for so long now that they are eventually losing out on the numbers game.
3. Curlews can live for a long time, and this (along with point 2.) has probably masked the true trajectory of the population decline in many districts.
4. Dan's work showed that the key problem we have locally is getting chicks reared to independence, and the number of adult pairs left in the landscape.

Bush Stone Curlews: an email exchange

5. Dan's work also showed the difficulties of trying to protect/manage breeding pairs in the wild, in real time, with small scale electra-net fencing – there were lots of logistical challenges with trying to "manage" free-ranging birds at this micro-scale.
6. We know from references to flocking behaviour outside of breeding times, that curlews move short distances around the landscape. Could we encourage more distant migration events by "saturating" habitats in the vicinity of our curlew nursery sites?
7. After decades of low natural recruitment and natural attrition of the few surviving "street-wise" adults, it is clearly past the point of no return in this region, unless we try something different…

Given all of the above, your sanctuary idea for your local area and your thoughts about what should/could happen outside the fence sound really interesting!

Some early challenges that come to mind if we were to consider the concept I have described above over here are:

- ☐ How big to go for a fox-free enclosure in a bushland setting, knowing that increasing size = exponential increase in cost? I take it you already have an exclosure so I assume this is already decided for you…
- ☐ How many birds could be "kept" in a semi-wild enclosure, without compromising their ability to learn natural (particularly feeding) behaviours? I am aware that food recognition was a problem in captive reared birds in a release they did on Eyre Peninsula over 10 years ago. I'm not sure if that was ever written up though…
- ☐ How would we allow the "leakage" process to occur (when you can fly, you can leave?), and how do we keep our core breeding stock on this inside (wing feather clipping – or does that make birds vulnerable in other ways?)? Have you thought about this?
- ☐ How to attract resources for a species that hasn't been prioritised for funding in southern Australia, even though it is an icon of a nationally threatened (grassy woodlands) veg community?
- ☐ Finding the cheapest possible model for setting this up, and then offering to help set it up for people in the community (in the right places) who would be willing to run their local "curlew factory" as a volunteer.
- ☐ Having satisfactory monitoring in place to see and understand what ends up happening on the inside and outside of the fence.

This is way more than I intended to write, but has turned into a bit of a brain dump – so I hope I haven't lost or overwhelmed you!

David, Jody and Dan, I would be interested in your thoughts on this also for obvious reasons. If you think the stand-alone "curlew factory" idea is crazy – then please say so!

Looking forward to comparing ideas with everyone.

Thanks – Mark.

Mark Bachmann

Bush Stone Curlews: an email exchange

Mark

Thanks for the quick and detailed response. I have Cc'd one of my bosses Don Fletcher who is currently on leave but will play a key role in our project. Don may be better placed to provide insight into some of the questions you are considering. Your project sounds really interesting I love the "curlew factory" idea. From what I have heard elsewhere people become very involved once they see and hear curlews in the area so hopefully volunteers will really easy for you to find. I have also heard of some projects on private property that have had relatively small enclosures. Additionally, utilising pre existing fencing could reduce costs, such as defence land or other significantly fenced government property.

We are looking to release the birds within a predator proof Sanctuary that is just under 500 ha. To try and keep them in the Sanctuary we are building a soft release aviary. They will stay in this aviary for at least 3 months. This will hopefully help them form group bonds and "learn" that the Sanctuary is free from predators. Apparently they are a very intelligent bird. We will then open the aviary when insect numbers are highest to encourage them to stay in the area. At this stage we are avoiding wing clipping as apparently it can make them more susceptible to avian predators. However, just thinking outside the square (and this not something we plan on doing) but perhaps having a pair that were left in an aviary (unable to leave the area) could help root the rest of the flock to the site??

We aim to start with 16 birds but this will depend on breeding success. We will predominately feed the birds in the aviary on live insects and continue to provide food in the aviary after it is opened. Resourcing is a difficult one and we hope to attract donations once we have the birds to recoup the costs. We are also in the fortunate position of already having a predator proof Sanctuary, thus significantly reducing initial coasts. Yes monitoring can be difficult we are working with The Australian National University to ensure we successfully monitor the curlews and can hopefully learn from this reintroduction. We are looking at some form of tracking for the birds but trying to trouble shoot the tradeoffs between detection distances, battery life, weight, mounting type etc

Anyway thanks very much for the email and lets stay in touch. I am sure Don will have a lot of insight into things when he is back in email contact.

Thanks

Kate

Bush Stone Curlews: an email exchange

Kate

Thanks for your reply Kate and for sharing some really useful insights into your local circumstances.

It will be interesting to see whether you can successfully "imprint" site fidelity in the way you describe. Also, with such a large predator free sanctuary, it would be very interesting to properly test whether wing-clipping would impact on survivorship inside your fence (if – as I am assuming – this actually hasn't been tested anywhere yet).

So… if, for example, you had half of the birds you release wing-clipped and half not, then you could track them all to see who stays and who leaves, and whether survivorship (through avian predation inside your fence) is actually impacted by wing clipping. If it turns out that it isn't, and this becomes a way to guarantee the numbers you can keep in a core breeding population (without the risk that they fly over the fence at any time), then you might find that before you know it you have the makings of your own curlew factory to help regularly leak birds into the surrounding landscape… Wouldn't that be great!

I look forward to hearing from Don when he can respond.

Cheers – Mark.

Mark,

Yes this is a good idea. I believe a trial (wing clipping) may have been conducted on a similar species (I can't remember which one or where) but not the curlew itself.

Cheers

Kate

HI folks

I do <u>not</u> think that wing clipping is likely to be a good idea if you merely want to keep birds in your location. It would make them too vulnerable to predators and they need to be able to commute (fly) substantial distances to and from different foraging areas as the seasons change. The best way to keep them on site initially is via a soft release program, and subsequently through having the best available habitat for them. Territorial requirements will dictate that some birds will have to leave eventually if the breeding program is successful.

Regards

David BG

Bush Stone Curlews: an email exchange

Hi all,

Interesting discussion – thanks for linking me in.

The cacophony of calls that rang out across the landscape on western KI was extraordinary at times, with birds clearly responding to each other. Aside from 'territorial' pairs, there were also a lot of other birds floating around. I think there's a lot in this in terms of social structure/organisation and potential densities that you may need to aim for to mimic what occurs with a 'healthy' population. I wonder what goes through a BSc's head when a landscape sounds 'empty'.

So I think the idea of a curlew factory has merit – but my hunch is you need to start with as many birds as possible, and hope not too many of them just go wandering off – i.e. you may need some sort of critical mass.

One way to try and improve fidelity to the release site could be to trial randomly playing calls around the release site post-release??? Obviously not too frequently as to constantly disrupt the birds…. just to indicate a presence.

Cheers,
Jody

Bush Stone Curlews: an email exchange

Hi David (and others),

Further to the ideas shared by you and Jody, I'm still not sure we should dismiss the idea of a wing-clipping trial so quickly… I'm certainly not advocating that we do it to all birds under the various scenarios we have already discussed, but treated as a trial at Mulligans Flat we might learn some very important things that can be applied elsewhere.

I know it feels like a higher level of intervention, but if our goal is to see if there is a way to create a resident "core" population that can be "kept" in a fox free environment, without compromising the ability of other birds – including their young – to come and go, it might be the only way to really test what is possible. As good as Jody's idea for call playback sounds to mimic some of this function, wouldn't it be great to know a resident breeding population could actually be "kept" in the wild setting? It would take some of the unpredictability out of trying to establish a curlew "factory".

We could learn things like:

- Is the avian predation threat really significant enough to prevent us from successfully "grounding and keeping" a sub-set of birds within a large, 500 ha area? – They do have great camouflage…
- Is a 500 ha area enough to sustain (a given number of) resident birds that are made to forage for wild foods on the inside, throughout the seasons?
- Will wing-clipped birds attempt to breed and successfully rear chicks on the inside?
- Where do any young produced in this way end up? – they will have the choice to stay or go..
- Does having a core number of grounded birds inside the fence do enough to create a critical mass for encouraging what hopefully will eventually be a larger "free-ranging" population to use the site, or stay in the immediate vicinity?

Also, have we considered that an intact bird that hops the fence and doesn't yet have its street smarts (having been captive reared, then soft-released), may be more vulnerable to ground mammal predation in the first instance, than a bird with its wings clipped on the inside is to avian predation? If the goal is to have and maintain a core breeding population inside the fence, then don't we need to test this idea?

Finally, what do we really have to lose? As a species that (relatively speaking) can be reliably accessed and bred in captivity, I think we also have the added advantage of knowing that the supply of birds for trials such as this is not the problem it would be for other species.

If Kate is started with say 16 banded birds, then wing-clipped half of them prior to release – we get to watch and learn from what happens next…

I agree this is not a conventional conservation idea – compromising the flying ability of a bird – but what if it worked? After all, if the conventional ideas were working, we wouldn't be having this discussion!

Cheers – Mark.

Bush Stone Curlews: an email exchange

Hi Kate,

David has quite rightly suggested that picking the brains of Peter Redfearn (or others in the Nature Conservation Working Group, NSW) would be an extremely valuable idea.

I don't know if you have already been to see him, or others in this group, but if you haven't and you decide to go there for a look before starting your program – that would give me a good excuse to come along! (if I can fit it in). It would be great to run some of the ideas we've been discussing past them given their level of working experience with the bird. We're in no hurry to do anything yet, but I see this as a valuable process for working up a concept that we might be able to push to seek funding in the future.

Finally, for your information, I came across this article (attached) that summarises the program they have been running in NSW, up until autumn last year – 55 captive reared birds released and high survivorship rates. Thankfully for all their efforts, they have had really positive results.

Cheers – Mark.

Bush Stone Curlews: an email exchange

Hi all,

I think the speed of everyone's response highlights our enthusiasm for the topic! (and reflects the potential of BSCs as ambassadors for woodland conservation)

Some quick thoughts detailed below (on a fairly broad range of topics…hopefully most of it makes sense)

Comments on the South East of SA

Mark has provided a great synopsis of the South East situation in his first email.

BSCs have been lost from the best woodland remnants in the South East and persisted in parkland associated with the towns of Bordertown and Mundulla.
Presumably the fox, cat, dog predation pressure is different in towns vs woodland remnants/farms.
Also, food availability is likely to differ, as many of the town sites were watered on a regular basis which may increase invertebrate availability???
(but much less leaf litter & fallen timber for invertebrates in towns)

When I was working in the South East we essentially had 4 BSC pairs in Bordertown and 3 pairs in Mundulla. Plus a very small number of unpaired birds

The pattern very clear – reasonable number of breeding attempts each year. Few problems with the incubation period - eggs would hatch.
However the chicks would get predated, in many cases within a few days of hatching.

So reproductive attempts & hatching success were not the limiting factors (albeit we had a small pool of pairs). Chick mortality was the problem.
Some data re. this is summarized in the attached papers.

No data collected re. which predator(s) were responsible for the chick mortality.

Nesting success/recruitment rates might be naturally low for BSCs given they are long-lived, can have high pop densities, multiple clutches per season.
In the mid 2000s there was little data available from tropics where foxes are absent, but some anecdotal info from Magnetic Island suggested nesting success was quite low there.

So potentially we are trying to switch a species evolved for high densities and low nesting success to a low density, high nesting success situation. So it might be a tad trickier than just eliminating foxes.

Incidentally, a few years ago I spent a few weeks in Southern Africa and was stunned at the diversity of ground-dwelling birds (curlews, small bustards, francolins etc) in a system pumping with predators of all shapes and sizes…figured there may be some learnings to be had.

We colour banded some individuals at Bordertown and there was higher adult turnover than I expected (off the top of my head within a 12 month period 2 resident adults were lost and replaced).
[Colour bands at the ankle were very difficult to observe – they had to be above the knee]

Small portable electric fencing compounds (Electranet) of approx. 300 m perimeter to protect chicks were ineffective as adults would lead the chicks out of the compounds.

Bill Wallace established a permanent fence around a nesting site at Apsley with some short-term success. But there was some luck re. whether birds would nest within the compound each year.

Bush Stone Curlews: an email exchange

On this basis, I suspect small fenced compounds will always be problematic (in the absence of wing-clipping).

It always struck me that large compound encompassing multiple pairs is likely to be far more effective that establishing small compounds on a pair by pair basis.

Re. dispersal, I started to suspect that birds may be dispersing looking for mates rather than vacant real estate….hence, particular remnants may have a resident pair for many years, but when one, and then both eventually die, the likelihood of recolonization becomes very low (see attached representation of possible pop dynamics).

So the key to keeping territories active in the long-term was to have a constant supply of surplus birds that could gap fill quickly following the loss of a breeding resident. Under this scenario a small percentage of young will play a critical role in replacing the resident adults when they die. So the population may not expand, but could be kept stable through the process of rapid replacement.

For the South East of SA, I totally agree with Mark, that boosting recruitment is the way to go.
This approach is essentially a source-sink model to achieve population persistence rather than expansion/recovery i.e. accepting that the wider landscape will remain a sink due to the high effort to effectively reduce fox densities.

In this scenario, a clear definition of the recovery objective is very important i.e. prevention of local extinction vs promoting population recovery

I agree with Mark's summation of the numbers game and tipping the recruitment-mortality relationship in favour of BSC. In essence, create some core breeding areas to offset the mortality sinks in the wider landscape where young will be lost. Mark and I have spent much time discussing this, and so not surprisingly there are some similar themes to our thoughts.

An alternative approach to Mark's method of increasing recruitment would be to take the wild eggs, hatch them & rear young in captivity to an age where they can dodge foxes more effectively and then re-release (as they do with kiwi in NZ). This approach assumes that you are interested in maintaining the local genetics. Otherwise you could just release captive-bred birds without the need to grab eggs.

Maremma dogs is another really interesting idea. We are currently considering whether they may have any value in reducing fox activity to sufficient levels for Eastern Barred Bandicoots (acknowledging that this is quite a different application to protecting a conspicuous flock of sheep). The response of BSC's to the dogs might be an important consideration.

We have a version of Mark's 'curlew factory' in operation for another threatened species in Vic – the Helmeted Honeyeater. The birds are free-ranging, and we have used supplementary feeding to create a high density nesting population from which we can harvest young for translocation to other localities. We are calling it an *in situ* 'bird farm' – so chick production in the wild rather than captivity (we are also breeding the species for release in captivity).

Re. wing clipping, I checked with our Senior Vet and he sees no major welfare issues associated with it (other than that it restricts the options available for the bird re. habitat utilization, predator avoidance etc).
Depending on BSC moult frequency (which will be listed in HANZAB), wing clipping would need to be conducted once or twice per year. I suspect reliably re-capturing individuals would be very difficult. They are wary & learn fast.

Bush Stone Curlews: an email exchange

I totally support Mark's sentiment that to make significant progress with these programs we need to be willing to test some bold ideas, and accept short-term failures as minor set backs necessary to achieve longer-term success.

Re. Kate's project at Mulligans Flat

I have always suspected that BSC would do very well in the situation you are describing at Mulligans Flat i.e. establishing multiple pairs within a large fenced compound with high quality habitat

Close to Melbourne, there are two 300 – 400 ha fenced sites (Mt Rothwell & Woodlands Historic Park) where there has been some passing discussion about BSC releases, which pretty much mirrors the thinking embedded within your project.

I would love to see a release group size of 30-40 birds in an attempt to get > 10 pairs established.
Release programs for some other species in Vic have suffered from releasing ≤ 15 individuals, half of which die/disappear prior to the next release…so it becomes one step forward two steps back as the small release groups never create a critical mass.

I really like the idea of trying to create site fidelity, and had assumed soft release enclosures may be the way to go, coupled with highly compatible birds being paired pre-release.

Getting the right pairings seems very important with this species (reflected in highly variable breeding success in captivity). So allowing mate choice to occur is likely to be important.

Having a large release group within one soft release enclosure, lends itself to active dispersal upon release, potentially outside your compound.

It always struck me that rather than releasing a large flock, it might be better to undertake some mate choice and get compatible birds paired ahead of the release. Each pair could then be released in a discrete territory (using soft release enclosures) within calling distance of neighbours. This works on the premise that they disperse looking for other birds (rather than suitable habitat). So the best way to achieve site fidelity is to eliminate any need to search for a suitable mate.
But this is a high effort approach.

Adrian Manning presented an overview of the Mulligans Flat project at the Aust Wildlife Management Society conference in NZ last November. I was most impressed.

At the same conference, Leah Kemp from AWC presented some results of a recent BSC release at Yookamurra (& they have also released at Scotia). My recollection is that starvation was an issue at Yookamurra, as it was in the release on Eyre Peninsula in SA. These are <u>much</u> drier release sites than Mulligans Flat, and I wouldn't expect food availability to be a major limiting factor for you.

Radio-tracking, greatly improves the quality of monitoring data, but is high effort.
Elisa Tack radio-tracked BSC during her PhD at Charles Sturt University. Leah from AWC radio-tracked birds at Yookamurra.
I monitored birds through sighting data (i.e. visiting established territories), and there were many occasions when I could not locate individuals, creating some knowledge gaps.
So radio-tracking is definitely the way to go for post-release monitoring. Colour banding is valuable for longer-tern monitoring.

A few have highlighted that the more recent work in northern Vic/southern NSW which will be important additional sources of information.

Good to be thinking all things curlew again; All the best, Dan (Harley)

Bush Stone Curlews: an email exchange

Hi Dan

When I was working in the Bangham district last year I was chatting with Walt Michelsen and the topic of Bush Stone-curlews came up. Walt has a bush block in the Bangham district but now lives in Bordertown. He mentioned seeing on at least one occasion a semi-tame Kookaburra taking a Bush Stone-curlew chick in Bordertown.

Regarding the rather different African scenario with their predators and many ground-nesting birds, we in Australia have some small ground-nesting birds such as quail, button-quail etc that are still doing ok. It is our medium-sized ones, just like our medium-sized mammals (critical weight range) that are doing very badly in the presence of a medium-sized mammalian predator, the Fox, for whom they fall into the optimum prey weight range. In the absence of a larger predator, the Dingo, for whom Bush Stone-curlew chicks are probably well below the optimum prey target size, Fox population densities and predation pressure are abnormally high. Hence my suggestion for the use of Maremma dogs as a benign (to sheep) Dingo alternative. By the way, there are 3-4 Maremma dogs successfully guarding a lot of Angora goats on Border Park c.2.5km north-east of Eaglehawk Waterhole. I wonder what their Fox population is like; maybe some remote cameras with lure stations would reveal a lot?

On the topic of quick/random thoughts: the reintroduction of a top predator, the wolf, to Yellowstone NP brought about cascading ecological changes: a reduction in deer numbers and grazing impacts, a 90+% reduction in Coyote numbers, a big increase in Beavers due to more food and less Coyote predation, and a re-establishment of Beaver dams that kept more water in the landscape. I don't suggest that Maremma dogs can do anything remotely like this, but I think that it is no accident that Bush Stone-curlews can hang on in areas where there are plenty of dogs such as around some farm houses and in country towns where there is still suitable habitat.

The NSW community/landholder approach to Bush Stone-curlew recovery shows how to take advantage of the latest funding trends (another reason to visit them).

Tooraloo

DBG

Bush Stone Curlews: an email exchange

Mark,
The little package of documents I'm about to send to Kate has quite a bit about the Riverina project, including a video clip.
Sue Close (working for the Kowree Farm Tree Group) paid them a visit about 18 months ago. Yes, they are the front-runners in this Bush Stone Curlew business at present.
Do you want me to send you this little package also?
Any-one else like to have one?
Andrew Bradey

HI Andrew

I would like to have a copy thanks; not least because I can then send it to others who might make inquiries.

Regards, David BG

David,
It adds up to 1GB, so if you can give me your address I'll post you a DVD.
Andrew Bradey

Hi Andrew

The DVD arrived thank you. I will look forward to going through it in the next day or so.

Regards, David BG

Bush Stone Curlews: an email exchange

Hi Andrew

I was very interested in the conclusions of the Kowree Tree Group not to proceed with a Bush Stone-curlew translocation project on the grounds that it was unlikely to be successful in the ongoing presence of Foxes that would be very difficult/impossible to control. I wonder if the situation/prognosis is really as dire as the Group concluded and I offer some comments below.

Back in the 1980s there was some regular Fox control because their skins were worth reasonable money, but there were still plenty of Foxes around. At this time Glen Johnson and I found that: *"about half of 55 breeding pairs managed to raise one young to independence in 1984/85 in north-eastern Victoria (Johnson and Baker-Gabb 1994). While this breeding success might seem adequate for survival of the species, there are no data on recruitment into the adult breeding population. Moreover, with declining habitat availability and quality on farms, ongoing drought, and pressure from Foxes, there may be few opportunities for the young birds that were reared to find a safe, vacant territory. Birds without access to a high quality territory are likely to be more vulnerable to predators.*

On reaching adulthood, Bush Stone-curlews can live for over 20 years with the same territories occupied for 10-30 years (McGilp 1947, Johnson and Baker-Gabb 1994). The persistence of long-lived adult birds may mask poor recruitment into the population for decades, and then a population crash can occur when most of the old birds die in a few years. If a pair of breeding Bush Stone-curlews is to replace itself in its lifetime then it needs to get just two chicks through into the breeding population in c.20 years. Hence, we should expect most young birds to die. The evidence from north-eastern Victoria would indicate that replacement/recruitment levels have been inadequate in the 30 years since we studied them in 1984/85 because the population has continued to decline, but still the Bush Stone-curlews persist there to this day and they continue to breed. Many chicks <u>must</u> have made it through into the breeding population there (and elsewhere) <u>despite</u> the presence of many Foxes. Hence I suggest that it may well not be an 'all or nothing' situation, and that what the Bush Stone-curlew population probably needs to persist is population supplementation and a fair measure of ongoing Fox control, along with habitat (=food and shelter) enhancement. How much of each of these elements is required is something that will vary between regions, and is difficult to answer with certainty. What we do know is that despite everything that has gone against them the birds are still out there, but if we do nothing then that long downward trend will continue to regional extinction".

Regards

David BG

FINIS