

“Birds in Fragmented Landscapes” Project

Newsletter Number 2

Winter 2008

Field Work

Nearly 10 months of field work in the box-ironbark forests of central Victoria has passed! Thus far we have conducted 16 field trips, sampled 21 sites and visited all of our 10 study landscapes. We have visited nine sites twice, first during November-January, and again during May-August with some surprisingly high recapture rates of some of our banded friends during second visits. Brown Treecreepers appear especially faithful: we re-trapped from 13% to 83% of the treecreepers banded in fragmented landscapes (but none of 5 birds banded in continuous landscape!). This might be an early indication of unwillingness of brown treecreepers to leave their native patch to cross non-forested matrix. Moreover, some of the more mobile species also appear to remain at the same site for a long time: for example, 8 of 10 White-plumed Honeyeaters banded at one of the Tunstalls sites were re-captured on the same site half a year later! Here are the recapture statistics for each target species at sites we have visited twice: Brown Treecreeper 42.2% (30 of 71 banded birds were recaptured), White-plumed Honeyeater 24.4% (5 of 41), Grey Shrike-thrush 14% (1 of 7), Fuscus Honeyeater only 3.6% (4 of 111), Superb Fairy-wren 35.7% (5 of 14), Yellow-tufted Honeyeater 6.8% (5 of 74), Eastern Yellow Robin 25% (1 of 4). We didn't catch any of our 17 banded Brown-headed Honeyeaters, 3 Striated pardalotes or 1 Weebill.



Male Spotted Pardalote, Speckled Warbler, Male Scarlet Robin, Brown falcon

During our next six trips, which are planned for August 18-22, September 1-5, September 22-26, October 6-10, October 27-31, we will finish re-visiting all sampled sites and move to the new ones. We are looking forward seeing our banded birds move to the new sites!

To date, we have obtained an excellent number of unique genetic samples from several of our target species: Brown Treecreeper (162 individuals), Fuscus Honeyeater (262), Yellow-tufted Honeyeater (181) and White-plumed Honeyeater (358). Our other target species, Superb Fairy-wren (42 individuals), Grey Shrike-thrush (16) and Striated Pardalote (43), and back-up species, Eastern Yellow Robin (15), Brown-headed Honeyeater (65), and Weebill (13) remain challenging. We even managed to catch 3 White-winged Choughs, but this was rather an unexpected surprise. Increasing capture rates of sedentary species (especially Grey Shrike-thrush and Striated Pardalote) will be our highest priority, therefore starting from next trip we will supplement mist-nets with traps. Hopefully, spring will allow to also increase our capture rates using call playbacks. We also have made some decoy birds (see picture) which we'll use to try to fool the real birds. All this work is done under wildlife-, banding- and ethics permissions.



Naoko with Yellow-tufted Honeyeater, female Spotted Pardalote, Alan with Crested Bellbird, Yellow Robin

Most of the hard work in the cold, windy and sometimes rainy bush from April to August has been done by Alan Lill, Naoko Takeuchi and Shandiya Balasubramaniam, but they were rewarded by excellent bird-catching and bird-watching treats including seeing Emus passing by one of the Rushworth sites. Many people helped Alan, Naoko and Shandiya in the field including Paul Sunnucks, Nevil Amos, Meagan Price, Adrian Martins (our NCCMA collaborator), Julie Whitfield, Linda Grootendorst, Fiona Bowie, and even Paul's family, Andrea, Alice and Ruby, came to help one day. Thank you all for dedicating your time and spirit to our project!



Brown Thornbill, Yellow-faced Honeyeater, male Crested Shrike-tit, Varied Sitella

Catching success varied as expected. There were days with nice calm weather and lots of bird activity, when all target species went in hiding (there were White-throated Treecreepers but not Brown, Spotted Pardalotes but not Striated, many Yellow-faced Honeyeaters but not Fuscous etc). On May 6th when birds were seen actively foraging in the trees a mixture of birds species were caught in one net on several occasions (up to 17 birds of 6 target species in one net!). On the next trip, 29th of May, 23birds were caught in one net.

Playback success

Despite being out of the breeding season, some birds responded positively to call playback, and not necessarily to the calls of conspecifics. For example, on 23rd of April, Superb Fairy-wren playback attracted not only Superb Fairy-wren but also a Weebill. Another net with Fuscous Honeyeater song playback caught Weebill, Spotted Pardalote, and Yellow-faced Honeyeater. In most cases birds were responsive to the playback but didn't fly low enough to be caught in the net.

Interesting observations

On 24th of April 2008 Alan found a nest of the White-eared Honeyeater with two eggs, one of which had just hatched- a very late (or early?) season breeding record.

We have recorded three subspecies of Striated Pardalote in the Box-ironbark area: *P. s. substriatus* (red wing spot, broad wing strips), which is a breeding resident; *P. s. ornatus* (orange wing spot, narrow wing stripe), a winter migrant from more southern breeding range, and *P.s.striatus* (yellow wing spot, narrow wing stripe) non-breeding migrant from Tasmania and southern Victoria. We will use molecular methods to test if these three subspecies interbreed.



Three subspecies of Striated Pardalote (once have been caught in the same net): *Pardalotus striatus substriatus*, *P. s. ornatus*, and *P. s. striatus*

By-catch species

During our April-August field work, we have added a few non-target bird species to our list, pictures of some are presented in this newsletter. We even had a Nankeen Kestrel in the net once at one of the riparian sites: the kestrel was hanging in the net by one foot, and managed to get out seconds before we got there! The full by-catch list (April to August) includes: Black-chinned Honeyeater, Brown Thornbill, Brown Falcon, Buff-rumped Thornbill, Crested Bellbird, Crested Shrike-tit, Dusky Woodswallow, Flame Robin, Golden Whistler, Grey Fantail, Hooded Robin, Jacky Winter, Noisy Friarbird, Pacific Black Duck, Pied Currawong, Red Wattlebird, Red-capped Robin, Red Wattlebird, Scarlet Robin, Silvereye, Speckled Warbler, Spotted Pardalote, Striated Thornbill, Swift Parrot, Varied Sitella, White-eared Honeyeater, White-naped Honeyeater, White-throated Treecreeper, Willie Wagtail, Yellow-faced Honeyeater, Yellow-rumped Thornbill and Yellow Thornbill.



Male Crested Bellbird, male Red-capped Robin, Noisy Friarbird, Swift Parrot

Future trip schedule

The next six field trips have been scheduled for the following dates:

August 18-22, September 1-5, September 22-26, October 6-10, October 27-3.

Please contact Naoko naoko.takeuchi@sci.monash.edu.au (naopi35@hotmail.com) or Sasha alexandra.pavlova@sci.monash.edu.au if you are interested in coming along.

We will increase the frequency of the field trips in summer months, so please let us know if you would like to join in for one or more of the future trips.

A typical day in the field involves getting up before dawn and spending most of the day checking or shifting nets and processing birds. We wrap up close to dusk to get in time for dinner in local restaurants. All meals and accommodations are paid by the Project. You need to bring a sleeping bag or a blanket, towel, linen, hat, sunscreen, walking shoes, sweater. We are looking forward to sharing hard, but fun and rewarding fieldwork with you!



Female Crested Bellbird, Willie-Wagtail, Pacific Black Duck, Black-chinned Honeyeater, decoy White-Winged Chough in a real nest, Olive-backed Oriole

New Collaborations

We are very excited that Birds Australia found our project goals reflecting its interests in restoring landscape scale population connectivity and now supports our project in many different ways! Apart from logistical support, BA will provide data to look at the seasonal dynamics of the bird community by organising volunteers to do regular bird surveys in our landscapes. Special thanks to Chris Tzaros, who provides us with records for playback calls, information on playback systems and his beautiful photos! There are other opportunities for collaboration to explore.



Shandiya with Yellow Robin, Fuscous Honeyeater, Paul extracting DNA from feathers (can be done easily in the field or field accommodation), Red Wattlebird

Lab work

A simple DNA sexing protocol has been created for all target species. A couple of mysterious cases were revealed, in one of which an individual identified as male fairy wren in the field was shown to be a female by molecular sexing, and in the second the female-looking superb fairy-wren has proved to be a male by molecular sexing. Both cases highlighted the necessity of taking pictures of banded birds (and the difficulty in sexing “brown” fairy-wrens).

It turns out that few freshly lost breast feathers put in 4% Chelex solution and boiled for 10 minutes the same evening (see picture of Paul extracting DNA in the field accommodation) yield enough DNA to perform molecular sexing! We successfully sexed 4 out of 5 White-plumed Honeyeaters from feather samples collected during the peak time instead of blood samples. Unfortunately, DNA quality worsens if extractions are performed few days later, whereas only large (not small) feather shafts collected in ethanol weeks before extraction yield enough DNA for molecular sexing. The good news is that Chelex DNA extractions are so simple, that anyone could do them in the field!

For most of the target species, from 7 to 15 polymorphic nuclear microsatellite markers are now available and more are being tested for polymorphism. To genotype large number of individuals quickly and cheaply for multiple markers, multiplexing strategies (many markers screened simultaneously) are being developed.

Welcome our new team members:



Linda Grootendorst (Honours, Monash University, pictured left) will explore whether habitat fragmentation affects chronic stress in woodland birds.

Nevil Amos (PhD, Monash University and support from Birds Australia, pictured right) will work on incorporation of genetic data into landscape models of bird dispersal and habitat connectivity.



Rebecca Bray (Honours, Museum Victoria) will study the effect of habitat fragmentation of genetic diversity of immune system genes of a suite of woodland birds.

Our website

We have developed Project website which we intend to upgrade regularly:
<http://www.biolsci.monash.edu.au/research/acb/genes.html>

Our Partners and Supporting Organisations

Department of Sustainability & Environment, Museum of Victoria, Department of Primary Industries, Parks Victoria, Northern Catchment Management Authority, Goulburn Broken Catchment Management Authority, Birds Australia, Australian National Wildlife Collection