

**Status of the endangered Forty-spotted  
Pardalote *Pardalotus quadragintus* on  
Flinders Island, 2012.**



**Report to the Hamish Saunders Memorial Trust and DPIPWE**

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## **Hamish Saunders Memorial Trust Flinders Island Survey 2012**

### **Status of the endangered Forty-spotted Pardalote *Pardalotus quadragintus* on Flinders Island, 2012.**

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#### **Background**

The distribution and status of the forty-spotted pardalote *Pardalotus quadragintus* on Flinders Island has been poorly known since the species was first identified there in 1901 (LeSouf 1902; Green 1969, 1971). The species was probably reasonably widespread based on the historical distribution of *Eucalyptus viminalis* habitat across the island. By the 1970s the species had obviously declined and could only be found in a small localized patch of white gum forest at Bob Smiths Gully in the Mileara Valley (Milledge 1980). In 1985, after extensive surveys across the island, a colony containing 10 to 15 pairs of birds was found between Walkers Lookout and Lucks Hill, in the Darling Range (Brown 1986). In 1994 another site containing two more colonies was found, 7 km to the east of Walkers Lookout in the Broughams Sugarloaf area (Bryant 1997). By this time the Bob Smiths Gully colony could no longer be detected and In 1997 the status of the species on Flinders Island was estimated at 70 birds in 3 colonies occupying 300 ha (Bryant 1997).

Severe wildfires swept across central Flinders Island in 2002 -03 and post fire surveys failed to detect the forty-spotted pardalote in either the Darling Range or Broughams Sugarloaf area (Bryant 2005). It was noted at the time that small patches of white gum habitat remained intact and that these could have provided some refuge. Due to growing concern about the species precarious status, surveys were undertaken in 2010 and 2011 to once again systematically survey all areas containing *Eucalyptus viminalis* habitat and revisit the colony sites. Despite best efforts no birds were identified in the Darling Range, Broughams Sugarloaf, Bob Smiths Gully or areas searched previously by Brown in 1985. Fortunately, in 2010 one small colony was found on a sweeping bend intersecting Costers Gully and Fannings Creek, in the Strzelecki National Park (Bryant *et al.* 2012). The colony was estimated to contain less than 20 birds and was confirmed again in 2011. This site is approximately 3 km to the south of Bobs Smiths Gully and is part of a larger area of contiguous habitat extending south into the Big River area. The finding

confirmed that while the species still survives on Flinders Island it was perilously close to extinction and active intervention is urgently needed.

The aim of the HSMT survey was to:

1. Reconfirm the status of the Costers Gully colony
2. Resurvey the Darling Range and Broughams Sugarloaf areas
3. Resurvey the Bob Smiths Gully monitoring sites established in 2010
4. Survey other potential habitat surrounding Costers Gully
5. Record sites with evidence of pig damage
6. Make recommendations for the species urgent recovery.

## **Methods**

The authors used a combination of survey techniques to improve species detectability. Active searching involved listening for calls while walking transects through areas of suitable White Gum habitat and scanning the canopy for sign of forty-spotted pardalote movement (Bryant 2010).

Stationary call detection was also used within a 10 minute period for repeat site visits. This follows the methodology developed by Webb (2008) for the swift parrot which shows that repeat visits over an extended period can improve detectability and the confidence of population estimates. Call playback was used for 5 minutes during this stationary period to further improve the possibility of detection (Magrath *et al.* 2008).

## **Results**

The surveys were undertaken from 3 to 9 December 2012. The areas listed below were surveyed and their locations are shown in Figure 1 and Figure 2.

- Darling Range – Walkers Gully, Officers Creek and surrounds
- Broughams Sugarloaf area
- Bob Smiths Gully
- Costers Gully colony
- Ridge lines and gullies around Costers Gully
- Costers Gully to Smiths Road via the fire trail
- Gully above Big River Road

The GPS locations and survey findings are provided in Appendix A. This information has been lodged on the DPIPWE Natural Values Atlas database.

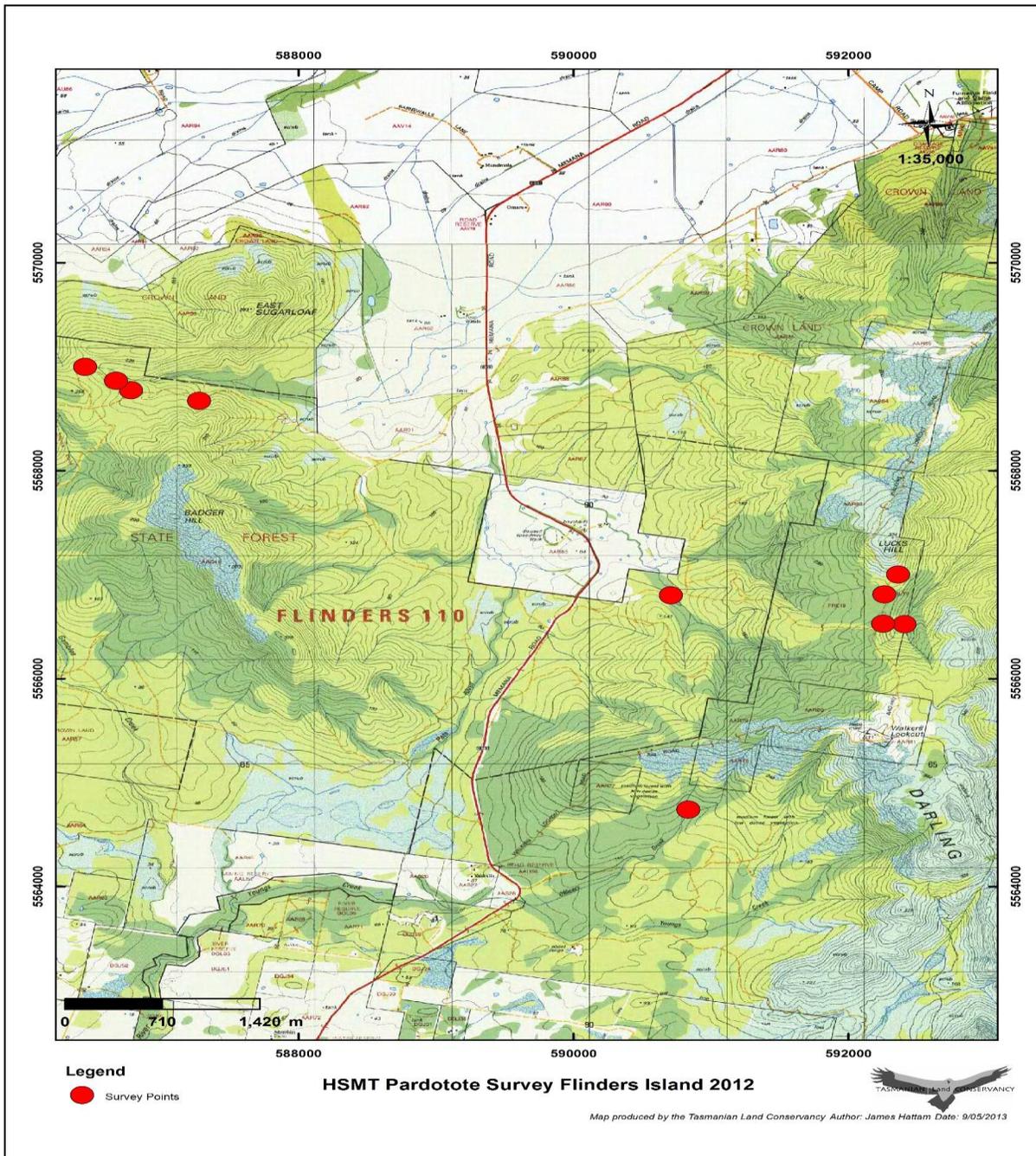


Figure 1 Forty-spotted pardalote survey sites in the Darling Range and Broughams Sugarloaf areas.

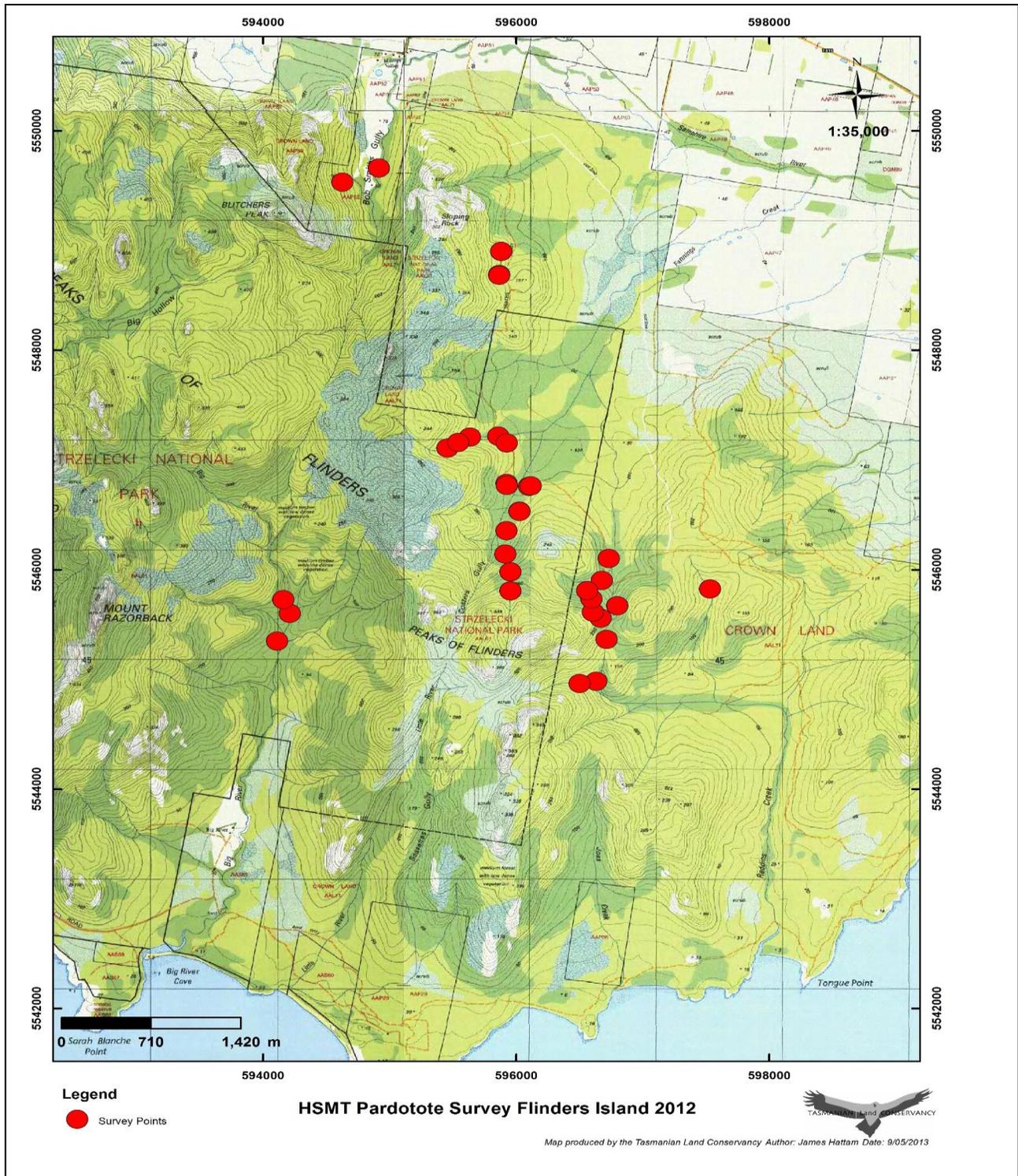


Figure 2 Forty-spotted pardalote survey sites in the Strezlecki Range area.

## **Darling Range and Broughams Sugarloaf**

Surveys undertaken above, in and below the Walkers Gully colony did not find birds (Figure 1). The habitat along Officers Creek surveyed in 2010 and 2011 was rechecked, but no birds were found. A small patch of white gum in a gully off Memana Road was surveyed but did not contain birds. Significant stands of white gum occur in this area and the habitat appears in good condition with many mature trees supporting large spreading canopies. No pig damage was observed. Forty-spotted pardalote have not been recorded in this region since 1997 and it is likely this colony is now locally extinct.

The two Broughams Sugarloaf colonies that were identified in 1994 were resurveyed, but no birds were found (Figure 1). The white gum habitat throughout this area is thinly scattered and trees are generally in poor condition. Large mature or senescing white gums are scarce and the area still appears degraded after the 2002 wildfire. No pig damage was seen. Forty-spotted pardalote have not been seen in the Broughams Sugarloaf area since the late 1990s and it is likely that these colonies are now locally extinct.

## **Bob Smiths Gully**

In 2010 two monitoring sites were established at the head of Bob Smiths Gully, one on the edge of a large patch of white gum forest and the second along the creek line to the west (Figure 2). These areas were rechecked and searching extended up into the gully. No birds were detected. The habitat was extensive and appeared in excellent condition. White gum comprising up to 100% of forest composition in many areas and a significant number of mature and mixed age stands were present. Recent signs of pig damage were numerous throughout the area (diggings and droppings) and a small herd was seen at the site. Forty-spotted pardalote have not been detected in this region since the 1970s.

## **Costers Gully area**

The Costers Gully colony which was identified in 2010, active in 2011, remained active during this survey period. One nest was found with two parent birds in attendance feeding chicks (Figure 3a). The nest was approximately 15m high in a small hollow in a branch elbow of an *E. viminalis* (Figure 3b). The nest was visited during consecutive days of the survey period and the birds remained in attendance and undisturbed.



Figure 3. (a) Adult forty-spotted pardalote at the nest, and (b) location of the nest in the white gum shown by arrow.

One short contact call of a third individual forty-spotted pardalote was heard in the Costers Gully area, making a total of three birds detected. Recent signs of pig damage were extensive throughout the gully and in many areas the soil had been completely dug over on the forest floor.

Several ridge lines and gullies around Costers Gully were surveyed as well as the monitoring sites established along the fire trail back to Smiths Road. After three days of intensive searching, a total of four individual birds were identified in the gullies 1 to 2 kms from the nest site. These birds were detected by sight and call, although calling was in short bursts and of short duration. No birds were identified at any of the monitoring sites along the fire trail despite repeated survey each day during entry and exit from the site.

Extensive white gum habitat occurs throughout this area with most stands being even aged with only a small scattering of over-mature and senescing trees. This may be due to an historic fire event that destroyed much of the habitat 60+ years ago. The habitat appears in excellent condition with abundant foliage and contains a diverse forest bird fauna. Recent signs of pig damage were numerous throughout the entire area. Watering points including small water holes and creek lines showed an abundance of foot prints, tree rubs, browsing damage, droppings and extensive diggings. In many areas the soil substrate had been completely dug over.

### **Big River Gully**

A gully extending above the last homestead on Big River Road was searched and a small localised patch of white gum habitat was identified about 2 kms above the homestead (Figure 2). Two individual birds were located in this area and they were both identified by calling. The habitat is thinly scattered along the creek line and forms a natural corridor linking to Costers Gully. It is likely that birds use this area permanently and seasonally as a dispersal site. No evidence of pig damage was noted.

### **Discussion**

The findings of this survey are significant. They confirm the critically low population level of forty-spotted pardalote on Flinders Island, the local extinction of Darling Range and Broughams Sugarloaf colonies and the need to now undertake recovery actions if the species is to survive on the island long term. A total of 9 individual forty-spotted Pardalote including one active nest were detected after 6 days of targeted survey. This total included 7 birds in the general Costers Gully area, 2 of which were attending a nest, and 2 individual birds in the Big River Valley. It is likely that the species is moving

through the corridors of habitat stretching from Bob Smiths Gully through the Strzelecki area to Big River and that these birds are few in number and widely dispersed. It may be that this area has contained birds for decades but due to its remoteness and the small population present, the species has been difficult to detect. The white gum habitat throughout this region is largely even aged stands but visually appears in excellent condition so the reason for the species decline is problematic and may involve a variety of factors. These include historical loss of habitat leading to a fragmented landscape, a naturally isolated and restricted population which has become genetically limited, and increasing competition from other bird species for limited resources such as breeding hollows.

Pig damage was widespread throughout the Strzelecki Range area in the form of significant soil disturbance, loss of understory species and a lack of regeneration of *E. viminalis* and other tree species. The forty-spotted pardalote is totally reliant on *E. viminalis*, especially mixed age stands, for colony formation hence it is critical for the species long-term survival. In addition, any loss of understory plant species reduces the diversity and density of invertebrates which form a major component of the diet of this bird species.

## **Recommendations**

1. A management plan including translocation protocol is needed to enable the Flinders Island population to be supplement with mainland birds. This should be progressed urgently despite the lack of genetic information on the species. A prioritized set of recovery actions including genetic investigation, ranking areas for release and more frequent monitoring need to be detailed.
2. Nest boxes and cameras should be installed immediately in the Costers Gully area to enable more detailed investigation of the existing colony to help determine which resources are limiting.
3. Protect the area from fire including any control or hazard reduction burns that have the potential to destroy white gum habitat. PWS management planning should identify these areas as high priority for protection.
4. Support the control and eradication of feral pigs from Flinders Island to help support vegetation regeneration.
5. Continue to map and survey the Strzelecki Range area for other areas of potential habitat and colonies.
6. Encourage involvement and ownership by the local Flinders Island community to ensure this program can be sustained longterm.

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## Appendix A GPS locations and survey findings

Date	Location	East GDA	North GDA	Survey Mins	Birds heard	Birds seen	Notes
3/12/2012	Broughams Sugarloaf	587278	5568672	15	0	0	Junction of track, 5 min playback
3/12/2012	Broughams Sugarloaf	586783	5568774	40	0	0	Sentinel white gums, 2+ swift parrots, 5 min layback, striated pardalotes breeding in trees
3/12/2012	Broughams Sugarloaf	586450	5568998	15	0	0	top track on ridgeline, swift parrots calling, 5 min playback
3/12/2012	Broughams Sugarloaf	586673	5568866	10	0	0	Just above sentinel white gums
4/12/2012	Bob Smiths Gully Site 138	594915	5549660	10	0	0	End of paddock near pig lure site, 5 min playback site 138
4/12/2012	Bob Smiths Gully Site 141	594628	5549531	10	0	0	Fenceline above creek, 5 min playback site 141
5/12/2012	Fire Trail Site 5	595883	5548901	10	0	0	Fire Trail to Costers, first vim stand at track bend, 5 min playback
5/12/2012	Costers Gully 40spot Nest	596799	5545672	20	2	2	* 2 adults feeding chicks in nest in vim hollow on elbow 15 m above ground. Two short contact calls.
6/12/2012	Fire Trail Site 5	595866	5548689	10	0	0	Flame Robin, BHH, Striated P all nesting at this site, 3 pics taken
6/12/2012	Fire Trail to Costers	595861	5547218	10	0	0	Pig enclosure fence, burrowing crayfish on creekline, green rosellas nesting, 3 pics taken
6/12/2012	Fire Trail to Costers	595925	5546787	10	0	0	5 min playback. Pics of pig damage
6/12/2012	Fire Trail Site 4	596103	5546760	15	0	0	3 pics, 5 mins playback, old lunch spot site
6/12/2012	Fire Trail to Costers	596733	5546102	10	0	0	3 pics taken, 5 min playback
6/12/2012	Costers Gully Site 3	596677	5545902	10	0	0	3 pics taken, 5 min playback
6/12/2012	Costers Gully 40spot Nest	596799	5545672	10	0	2	* 2 adults still attending nest. Foraging close by, no calling.
6/12/2012	Costers Gully Mapped Site A	596669	5545558	10	0	0	Extensive pig damage entire gully floor
6/12/2012	Costers Gully Mapped Site B	596606	5545614	10	0	0	100% vim beautiful condition, 5 min playback
6/12/2012	Costers Gully Mapped Site C	596596	5545733	10	1	0	* 1 bird made 2 contact calls, no response to playback
6/12/2012	Costers Gully Mapped Site D	596562	5545808	10	0	0	5 min playback. Swift parrots begging calls and flying through canopy
7/12/2012	Costers Gully 40spot Nest	596799	5545672	10	0	2	* 2 adults still feeding chicks 1 min intervals, no calls. Tim Rudman Pics
7/12/2012	Matts GPS Site 15	596502	5544963	10	0	0	5 mins playback
7/12/2012	Matts GPS Site 28	595956	5545979	10	0	0	5 mins playback
7/12/2012	Matts GPS Site 31	595956	5545806	10	0	0	Pics of Slender Tree Fern.
7/12/2012	Matts GPS Site 33	596715	5545364	10	0	0	5 min playback, no birds

7/12/2012	Matts Site 34	596633	5544983	10	1	1	* 2 birds in total. Both responded to playback. 1 bird no call, 2nd bird high pitch contact call twice, had manna in beak.
7/12/2012		595916	5546143	10	1	0	* 1 bird breeding call, no response to playback
7/12/2012		595924	5546356	10	1	0	*1 breeding call once, no response to playback
7/12/2012	Towards Costers	596027	5546534	10	0	0	5 min playback. Near main track intersection
7/12/2012	Fire Trail 2	596115	5546765	10	0	0	5 min playback, no birds
7/12/2012	Fire Trail 3	595928	5546768	10	0	0	5 min playback, no birds
7/12/2012	Fire Trail 4	595928	5547154	10	0	0	5 min playback, no birds
7/12/2012	Fire Trail 5	595866	5548683	10	0	0	5 min playback, no birds
8/12/2012	Costers Valley	596026	5546531	10	0	0	5 min playback, no birds
8/12/2012	Costers Valley	597533	5545824	10	0	0	5 min playback, no birds
8/12/2012	Costers Valley	595636	5547208	10	0	0	5 min playback, no birds. Crayfish Creek 200m up from track, Striated family group
8/12/2012	Costers Valley	595458	5547109	10	0	0	5 min playback, no birds
8/12/2012	Costers Valley	595542	5547160	10	0	0	5 min playback, no birds
9/12/2012	Big River Valley	594112	5545348	10	0	0	Top of gully, vims emergent in creekline
9/12/2012	Big River Valley	594213	5545603	10	1	0	* 1 bird breeding call made twice, pics of slender tree fern
9/12/2012	Big River Valley	594161	5545726	10	1	0	* 1 bird breeding call, 5 mins playback
9/12/2012	Walkers Hill – roadside entry Gaffneys tip	590709	5566802	10	0	0	5 mins playback, nice vims
10/12/2012	Darling Range Officers Creek	590837	5564740	10	0	0	5 mins playback, no birds
10/12/2012	Darling Range colony	592409	5566525	10	0	0	5 mins playback, no birds
10/12/2012	Darling Range colony	592409	5566525	10	0	0	5 mins playback, no birds
10/12/2012	Darling Range low site	592262	5566810	10	0	0	5 mins playback, no birds
10/12/2012	Darling Range low site	592361	5567003	10	0	0	5 mins playback, no birds