

Bird Fauna of Flat Rock, Porters Hill and Egg Islands Reserves



By Dr Sally Bryant for the ABBRS Bush Blitz Program 2010

Summary

Bird information was compiled for three regional reserves all situated within close proximity to Hobart. This project was undertaken as part of the 2010 National Bush Blitz Program coordinated by the Tasmanian Museum and Art Gallery, Flat Rock Reserve is part of the Chauncy Vale Alpha Pinnacle Reserve complex near Bagdad, north of Hobart. Egg Islands are located in the Huon River opposite the township of Franklin and are an inshore island complex subject to tidal fluctuations and mainland influences. Porter Hill is part of the Hobart City Council's Bicentennial Park complex in the Mt Nelson Hills south of Hobart. A wide range of bird species are known from these three reserves and all are representative of the vegetation communities and habitats found there. As part of this program, specific surveys were undertaken for three conservation significant bird species: Forty-spotted Pardalote Pardalotus guadragintus, Swift Parrot Lathamus discolour and the Australasian Bittern Botaurus poiciloptilus. These three species are either nationally endangered (Swift Parrot, Forty-spotted Pardalote) or globally in decline (Australasian Bittern) and any information obtained is important for future management of these reserves. Swift Parrot were detected on two reserves but no Forty-spotted Pardalote or Australasian Bittern were observed during the survey. Bird lists were compiled from existing sources generated over a longer period of time and from new information gathered more widely. In total these three reserves protect over 600 ha of land and contribute important bird conservation values in the Southern Natural Management Region.

All are recognised nationally as a high priority for conservation and should continue to be managed for this purpose.

Table of Contents

Summary	
Acknowledgements	1
Introduction	2
Survey Methods	6
Survey Locations	7
Results	8
Discussion	12
References	13
Appendix A Birds Australia Bittern Survey Guide	14
Appendix B A Sound Idea: Acoustic Monitoring of Bush Birds	17

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1.0 Introduction

Tasmania's avifauna is well known and consists of over 220 resident and migratory bird species (Watts 2002). The distribution of Tasmania's birds is determined largely by its humid climate which ranges from wet and cold in the west to warm and dry in the east. Tasmania's bird habitats follow this climatic gradient underpinned by geology, which in turn regulates broad vegetation complexes and hence food availability. Due to local differences in altitude, rainfall, temperature, aspect, soil type, etc, micro-habitats form which provide a range of niches favoured by certain bird species. Local patterns of distribution can occur in wet gullies, ridgelines, along riparian zones, across open spatial zones such as temperate woodlands, grasslands or high altitude alpine moors, and many species may even be partitioned according to the level of connectedness between habitat patches. As habitats, especially forest communities, undergo succession after major disturbance events, e.g. fire, their bird assemblages change over time (Hingston & Grove 2010) and often the greatest native species-richness occurs in old-aged complexes interspersed with younger succession ages.

The three reserves in this ABBRS Bush Blitz project are a mix of inland, coastal and nearisland environments which typically reflect a diversity of avifauna habitats. All have been regularly visited and their bird fauna has been documented over a long period of time by professional ornithologists, local naturalists and other enthusiasts. Three target species of conservation concern include the Swift Parrot, Forty-spotted Pardalote and Australasian Bittern. The Swift Parrot and Forty-spotted Pardalote are nationally endangered and occur in the dry and wet sclerophyll forests of eastern Tasmania primarily favouring the coasts and near offshore islands. Swift Parrot nest and forage in Blue Gum E. globulus and Black Gum E. ovata forests whereas the pardalote depends on White Gum E. viminalis for the formation of its colonies (Brvant & Jackson 1999). The Australasian Bittern is threatened across its range by loss and degradation of suitable wetlands. This poorly-know species is listed as Endangered at the global level (IUCN Red List), but not currently listed on State or Commonwealth threatened species legislation. The Bittern was formerly widespread in Tasmania and most numerous in the east of the State. Due to prolonged draining and drying of terrestrial wetlands, the species is now absent from most major wetlands and its distribution and status is poorly known.

Reserve Sites

The three survey areas in this report are a subset of sites selected for the ABRS Bush Blitz Survey undertaken in Tasmania during March - April 2010. The three sites are located in southeast Tasmania and comprise a mixture of vegetation communities. Two of the reserves, Flat Rock and Egg Islands are owned and managed as permanent conservation reserves by the Tasmanian Land Conservancy (TLC). Porter Hill is managed by the Hobart City Council.

Flat Rock Reserve

Flat Rock Reserve is located approximately 40 kilometres north of Hobart along the Midlands Highway and 4 kilometres east of Bagdad (Grid RefE522000, N5284000 (AGD66) (Map 1) in the Municipality of the Southern Midlands. Flat Rock Reserve adjoins the Chauncy Vale Wildlife Sanctuary to the north, and is a freehold property of 455 ha

purchased by the TLC in 2006. Flat Rock Reserve forms a continuous link of natural vegetation between the Chauncy Vale Wildlife Sanctuary and the Alpha Pinnacle Conservation Area. Hence its bird fauna is widespread across this corridor.

Low rainfall is typical in this region. Annual precipitation is about 600 mm but has decreased markedly during the previous two decades, averaging approximately 510 mm with high variability. Monthly average temperatures vary from maximums of 22.4°C in February to minimums of 4.1°C in July. There is con siderable micro-climate variation at Flat Rock, due to the steep and incised nature of topography and the presence of permanent water associated with springs and creeks (TLC 2009a).

Eleven vegetation communities occur in the reserve as well as significant karst in the form of above-ground caves. The reserve support large areas of dry sclerophyll forest, including several vegetation communities of conservation significance. These occur in a mosaic pattern intermixed with other dry and wet sclerophyll, or gully, communities. A number of threatened plant and animal species are associated with the dry forests and woodlands of the reserve, including areas containing old growth forest (TLC 2009a).



Map 1 -Flat Rock Reserve, Bagdad.

Egg Islands Reserve

Egg Islands are situated in the Huon River opposite the town of Franklin, 35 minutes drive south of Hobart. The two islands occupy in total 443 ha, 64% of which is publicly-owned land, with the remaining 36% being freehold title (Map 2). Egg Islands experience a maritime climate with winds from the south-west and a mean annual rainfall of 743 mm.

Egg Island Reserve of 136 ha was purchased by the TLC in 2007 to ensure the protection of endangered *Eucalyptus ovata* vegetation communities and vulnerable wetland communities into the future. The reserve protects habitat for the globally declining Australasian Bittern *Botaurus poiciloptilus* and nationally endangered Swift Parrot *Lathamus discolor*, and adjoins the Egg Islands Conservation Area, which is managed by the Tasmanian Parks and Wildlife Service. Historically, the islands have been used for rough cattle grazing, and some small areas were cleared for cropping, but there has been no agricultural activity on the islands since the early 1980's. Six vegetation communities occur on the islands: *Eucalyptus ovata* forest and woodland, Short paperbark swamp, Saline grassland, Saline aquatic herbland, Wetland and Undifferentiated *Restionaceae* rushland. The wetlands or rushlands occur in the more poorly drained areas whereas the Black gum forest and woodland occupies the majority of the north island and most of the top third of the south island (TLC 2009b).



Map 2 – Egg Islands Reserve, Franklin

Porter Hill

In 2006 the Hobart City Council acquired about 40 ha of private land at Porter Hill, on the slopes of Mt Nelson. The land was purchased and subsequently covenanted to form a continuum of reserves across the slopes of Mt Nelson, within the municipality of Hobart. This purchase formed a wooded link across Mt Nelson and almost down to the foreshore of the River Derwent, creating an unbroken natural corridor for wildlife. The area gained prominence for its importance as Swift Parrot *Lathamus discolor* breeding habitat and is largely a vegetation complex of dry sclerophyll forest and woodland. The area is near to known breeding colonies of the nationally endangered Forty-spotted Pardalote *Pardalotus quadragintus* and contains a potential expansion in white gum habitat for this bird species.

Porter Hill is a key link in the chain of existing reserves that includes Bicentennial Park, Cartwright Reserve (Truganini Reserve) and Pearce's Reserve. Together, these reserves total over 160 hectares of Council land which protect a range of important environmental values. Porter Hill's woodland and forest environment provides habitat not only for birds but a range of other native animals like the Eastern-barred Bandicoot, Brown Bandicoot, Long-nosed Potoroo and the Tasmanian Bettong, and is one of the few places in Tasmania where these small marsupials occur together (Hobart City Council 2006). The area has stands of white peppermint, white gum, Tasmanian blue gum and drooping sheoak, as well as tall wallaby grass, which is rare in Tasmania.

Map 3 - Porter Hill, Mt Nelson



Survey Methods

(a) Two hectare search

General bird survey methodology follows that recommended by Birds Australia for the Atlas of Australian Birds project (www.birdsaustralia.com.au) for the two hectare search. Methodology involves recording all bird species identified by sight (using 8 x 32 binoculars) and sound (contact or breeding call) within a 2 hectare area searched over a 20 minute survey period. Birds are only recorded from within the search zone but this can include birds flying over. The recommended search shape is 100 m x 200 m (about 2 ha) and the centre of any two 2 ha search areas should be at least 400 m apart.

(b) Targeted species search

Targeted searches were conducted for:

- Swift Parrot *Lathamus discolor* favors *Eucalyptus globulus* and *E. ovata* forest on Egg Islands and Porter Hill,
- Forty-spotted Pardalote *Pardalotus quadragintus* potentially in *E. viminalis* habitat on Porter Hill, and
- Australian Bittern Botaurus poiciloptilus in swamp and marshland on Egg Islands.

Swift Parrot – Flowering Blue Gum and Black Gum – 5 minutes survey

Standard census methods for Swift Parrot involve 5 minute surveys in patches of flowering *E. globulus* or *E. ovata* forest where patches contain at least 2 or more old-growth *E. globulus* or *E. ovata* trees (TSS 2009). Data recorded includes:

- Date, GPS coordinate, time, weather (wind / rain)
- Time of first detection within the 5 minute survey period
- No of birds visually detected (distance from survey pt) and their behaviour (perching, foraging, flying)
- No of birds heard but not seen (distance from survey point)
- Flowering intensity for *E. globulus* and *E. ovata* (scale 1 5 % crown flowering)

Forty-spotted Pardalote – White Gum area search

When outside of known breeding colonies, potential habitat for this species is best surveyed by area searching (Bryant 2010). Area searching involves walking slowly through areas of highest white gum concentration especially mature trees, listening for calls and actively scanning all white gum canopies for any sign of pardalote movement. If movement is detected then the species has to be positively identified using binoculars.

Australasian Bittern - Wetland Transect Egg Islands

The Australasian Bittern is usually solitary but sometimes occurs in pairs or loose aggregations. While little is known of its ecology, in areas where its habitat is small and

fragmented, such as Egg Islands, individuals are more likely to disperse after breeding (DEWHA 2010). The species is difficult to detect visually therefore census work hearing their distinct booming calls during spring and early summer at their breeding sites. As this survey was outside the species breeding period it relied on walking through the wetland on Egg Islands to try to flush birds. The protocol for conducting a wetland transect is provided in Appendix A.

(c) Sound Recordings Flat Rock

'A Sound Idea: acoustic monitoring of Tasmania's bush and forest birds' is a project being conducted by Sarah Lloyd and supported by Central North Field Naturalists, Birds Tasmania, the Tasmanian Community Fund, Northeast Bioregional Network, Launceston Field Naturalists Club and Bird Lovers of Black Sugarloaf. All information about the project is at the website: <u>http://www.disjunctnaturalists.com/sound/index.htm</u>. It involves the placing of digital sound recording device (Zoom H2 recorder) at a fixed location for a minimum of 20 minutes. Bird specialists can then listen to the recordings and identify the species present by their call. The data set for Flat Rock obtained using this recording technique was kindly supplied to this project by Sarah Lloyd and June Hilder.

(d) Other Information Collected

In Tasmania, bird surveys are best conducted from August September to December January to more easily detect breeding and migratory species. As this project fell outside this optimal period, many bird species may have already commenced migration. To improve the scope of this work, additional bird information was gathered from historical sources, management plans and more recently conducted projects (e.g. A Sound Idea – see Appendix B).

Survey Locations

Porter Hill

General bird surveys and searches for Swift Parrot and Forty-spotted Pardalote were conducted on Porter Hill on 22 March 2010. Weather conditions were still and sunny. The survey locations are provided in Table 1 and include a short section of the Truganini Reserve track.

Porter Hill Survey Locations	Latitude	Longitude
Track Start (8.30 am)	42°55'50.03	147°21'23.84
Track junction	42°55'49.27	147°21'11.59
Track bend	42°55'43.68	14721'10.68
Allocasuarine open woodland	42°55'35.00	14721'14.6 5
Side track	42°55'37.21	14721'19.14
Below homestead	42°55'30.08	14721'06.38
40-spot search	42°55'35.10	147°21'02.82
Track junction	42°55'48.72	147°21'05.83
40 spot search	42°55'49.00	147°21'04.73
40 spot search	42°55'48.00	14720'58.14
40 spot search (end 1.45 pm)	42°55'46.77	147°22'48. 21

Table 1 Survey locations on Porter Hill 22 March 2010.

Egg Islands

A general bird survey and two wetland transects for Australasian Bittern were undertaken on 23 March 2010. The weather was gale force winds which significantly hampered detection of birds and especially bittern. The location of transects are shown in Table 2 and constitute a total of 3.5 hours survey time for the bittern. One transect was in the reedbeds on the southern tip of the North Island, and the second in the marshland surrounding the old farming site on the northern tip of the South Island.

Egg Islands 23 March 2010	Latitude	Longitude
Wetland transect 1 start	43°04'37.54	14701'28.63
Wetland transect 1 end (total time 2hrs)	43°04'28.5 0	14701'47.41
Wetland transect 2 start	43°04'39.33	14701'39.19
Wetland transect 2 end (total time 1.5hrs)	43°04'44 .52	147℃1'43.66
Swift Parrot Sighting	43°04'30.50	14701'41.55

Table 2 Egg Island wetland transects for Australian Bittern.

Flat Rock – 2 sites, 3 collection periods

Bird survey information for Flat Rock was supplied by 'A Sound Idea' at two sites.

(a) South facing wet sclerophyll site Latitude 423 6'4.36 Longitude 14797'1.63

Collection dates = 02/09/2009, 18/11/2009, 25/02/2010

(b) North facing dry sclerophyll site Latitude 423 6'1.07 Longitude14795'43.67

Collection dates = 19/08/2009, 13/12/2009, 02/02/2010

This information was combined with the species list from the management plan (TLC 2009a) and sightings made by other naturalists visiting the area (Table 3).

Results

Targeted Species Surveys

Swift Parrots

Two sightings of Swift Parrot were obtained, one at Porter Hill and the other on Egg Islands. Swift Parrot were heard flying over Porter Hill at Lat 4255'35.00 and Long 14721'14.65 while searching the Allocasuarina fore st on 22 March 2010. Approximately 3 birds flew rapidly overhead toward the Sandy Bay area at 10.25 am. They were calling noisily. There was no evidence of any eucalypt species flowering in the surrounding vegetation although the Reserve contains substantial old growth E. *globulus* and *E. ovata* and is likely to be a key foraging and potential breeding site in the summer. Weather was still and sunny.

Five individual Swift Parrots were observed foraging in *E. ovata* forest on 23 March 2010. The forest was located on the fringe of marshland on the southerly tip of North Egg Island at Latitude 43°04'30.50 Longitude 147°0141.55. The birds foraged for about 30 seconds then flew off in a northerly direction, calling loudly. There was no evidence of flowering in the E. *ovata* canopy or in any other Eucalypts present. No other individual Swift Parrots were detected.

Forty-spotted Pardalote

Searches of over-mature white gum in four locations throughout Porter Hill and Truganini Reserve were made on 22 March 20101. Despite no birds being detected by sight or call, the white gum was extensive in gullies and looked in good condition with mature spreading canopies, suitable to hold several pairs of birds. This location looks ideal for the species and as there potential sightings are made on a regular basis, the area warrants more frequent and widespread searching, especially during the breeding season August to December.

Australasian Bittern

Two wetland transects over a 3.5 hour period were insufficient to detect this cryptic species on Egg Island at this time of year. The windy weather was unsuitable for listening for calls and therefore the likelihood of flushing a low number of birds, by one person walking transects, was unlikely to yield results for this cryptic shy species. It is recommended that surveys are conducted in spring summer with the aid of call play-back to encourage the species to respond vocally.

Scientific Name	Common Name	Status	Flat Rock	Porter Hill	Egg Islands
Coturnix pectoralis	Stubble Quail	B,N	Х		
Coturnix ypsilophora	Brown (Swamp) Quail	B,N	Х		NXM
Pavo cristatus	Indian Peafowl	Ex	Х		
Biziura lobata	Musk Duck	N, B			М
Cygnus atratus	Black Swan	N, B			NXBM
Tadorna tadornoides	Australian Shelduck	N, B, M			М
Chenonetta jubata	Maned (Wood) Duck	N, B	Х		
Anas platyrhynchos	Mallard	Hybrid			Х
Anas superciliosa	Pacific Black Duck	N, B	Х		ХВМ
Anas gracilis	Grey Teal	N, B			М
Anas castanea	Chestnut Teal	N, B			NXM
Tachybaptus novaehollandiae	Australasian Grebe	N, B			М
Poliocephalus poliocephalus	Hoary-headed Grebe	N, B			М
Phalacrocorax melanoleucos	Little Pied Cormorant	N, B	Х		NXBM
Phalacrocorax fuscescens	Black-faced Cormorant	Ν, Β			М
Phalacrocorax varius	Pied Cormorant	Ν, Β			Х
Phalacrocorax sulcirostris	Little Black Cormorant	N, B			NXM

Table 3 Bird species from Flat Rock, Porter Hill and Egg Island Reserves.

Phalacrocorax carbo	Great Cormorant	N, B			М
Pelecanus conspicillatus	Australian Pelican	N, B			М
Egretta novaehollandiae	White-faced Heron	N, M	Х		NBM
Ardea alba	Great Egret	N, M			М
Ardea ibis	Cattle Egret	N, M			М
Botaurus poiciloptilus	Australasian Bittern	N, B, M,T			ХМ
Haliaeetus leucogaster	White-bellied Sea-Eagle	N, B, T			NXM
Circus approximans	Swamp Harrier	N, B, M			ΝM
Accipiter fasciatus	Brown Goshawk	N, B	Ν		М
Accipiter novaehollandiae	Grey Goshawk	N, B, T	Х		ХМ
Accipiter cirrhocephalus	Collared Sparrowhawk	N, B	Х		М
Aquila audax	Wedge-tailed Eagle	N, B, T	ΧN		ХМ
Falco berigora	Brown Falcon	N, B	ΧN		ΜB
Falco longipennis	Australian Hobby	N, B			М
Falco peregrinus	Peregrine Falcon	N, B	ΧN		М
Porzana tabuensis	Spotless Crake	N, B			NXB
Porphyrio porphyrio	Purple Swamphen	Ν, Β			М
Gallinula mortierii	Tasmanian Native-hen	N, B, E	Х		NXM
Fulica atra	Eurasian Coot	N, B			М
Gallinago hardwickii	Latham's Snipe	N, M			ХМ
Haematopus longirostris	Pied Oystercatcher	N, B			М
Vanellus miles	Masked Lapwing	N, B	Х		ХМВ
Larus pacificus	Pacific Gull	Ν, Β		В	ХM
Larus dominicanus	Kelp Gull	N, B			ΝM
Larus novaehollandiae	Silver Gull	N, B		В	NXMB
Sterna caspia	Caspian Tern	N, B			М
Phaps chalcoptera	Common Bronzewing	N, B	Х		М
Phaps elegans	Brush Bronzewing	Ν, Β	S	В	ΝM
Calyptorhynchus funereus	Yellow-tailed B-Cockatoo	Ν, Β	ΧN		NMB
Cacatua galerita	Sulphur-crested Cockatoo	N, B	XSN		М
Glossopsitta concinna	Musk Lorikeet	N, B	Х	В	
Platycercus caledonicus	Green Rosella	N, B, E	XSN	В	NXM
Platycercus eximius	Eastern Rosella	N, B		В	
Lathamus discolor	Swift Parrot	N, B, M, T	Х	В	ХМВ
Pezoporus wallicus	Ground Parrot	N, B			M*
Cuculus pallidus	Pallid Cuckoo	N, B, M	Х		М
Cacomantis flabelliformis	Fan-tailed Cuckoo	N, B, M	XSN		ХM
Chrysococcyx basalis	Horsfield's Bronze-Cuckoo	N, B, M	Х		
Chrysococcyx lucidus	Shining Bronze-Cuckoo	N, B, M	XS		М
Ninox novaeseelandiae	Southern Boobook	N, B	Х		ΝM
Tyto novaehollandiae	Masked Owl	N, B, T	ΧN		
Podargus strigoides	Tawny Frogmouth	N, B	Х		М
Aegotheles cristatus	Australian Owlet-nightjar	N, B	Х		
Hirundapus caudacutus	White-throated Needletail	N, M	Х		М
Dacelo novaeguineae	Laughing Kookaburra	Introd, B	ΧN	В	ХМ
Malurus cyaneus	Superb Fairy-wren	N, B	XS	В	BNXM
Stipiturus malachurus	Southern Emu-wren	N, B			X
			VON	D	V M

Pardalotus striatus	Striated Pardalote	N, B, M	XSN	В	ΧM
Sericornis humilis	Tasmanian Scrubwren	N, B, E	XS	В	NXM
Acanthiza pusilla	Brown Thornbill	N, B	ΧN	В	М
Acanthiza ewingii	Tasmanian Thornbill	N, B, E	XS	В	
Acanthiza chrysorrhoa	Yellow-rumped Thornbill	N, B	ΧN		М
Anthocaera paradoxa	Yellow Wattlebird	N, B, E	SN	В	NXM
Anthocaera chrysoptera	Little Wattlebird	N, B	S	В	
Manorina melanocephala	Noisy Miner	N, B	Х		
Lichenostomus flavicollis	Yellow-throated Honeyeater	N, B, E	XSN	В	BNXM
Melithreptus validirostris	Strong-billed Honeyeater	N, B, E	XS	В	ХM
Melithreptus affinis	Black-headed Honeyeater	N, B, E	XSN	В	NXM
Phylidonyris pyrrhoptera	Crescent Honeyeater	N, B	XSN	В	BNXM
Phylidonyris novaehollandiae	New Holland Honeyeater	Ν, Β	Х		ХМ
Acanthorhynchus tenuirostris	Eastern Spinebill	N, B	XS	В	ХМ
Petroica multicolor	Scarlet Robin	N, B	XSN	В	М
Petroica phoenicea	Flame Robin	N, B, M	XS		
Petroica rodinogaster	Pink Robin	N, B	XS	В	
Melanodryas vittata	Dusky Robin	N, B, E	ΧN		NM
Cinclosoma punctatum	Spotted Quail-thrush	N, B	Х		
Pachycephala olivacea	Olive Whistler	N, B	XS	В	NXM
Pachycephala pectoralis	Golden Whistler	N, B	XS	В	М
Colluricincla harmonica	Grey Shrike-thrush	N, B	XSN		ΧM
Myiagra cyanoleuca	Satin Flycatcher	N, B, M	Х		М
Rhipidura fuliginosa	Grey Fantail	Ν, Β	XSN	В	ХM
Coracina novaehollandiae	Black-faced Cuckoo-shrike	N, B, M	ΧN		М
Artamus cyanopterus	Dusky Woodswallow	N, B, M	Х	В	NM
Cracticus torquatus	Grey Butcherbird	N, B, M	XSN		NM
Gymnorhina tibicen	Australian Magpie	N, B	ΧN		
Strepera fuliginosa	Black Currawong	N, B, E	XSN		М
Strepera versicolor	Grey Currawong	N, B	XS	В	М
Corvus tasmanicus	Forest Raven	Ν, Β	XSN	В	BNXM
Alauda arvensis	Skylark	Ex	Х		
Passer domesticus	House Sparrow	Ex	ΧN		Х
Stagonopleura bella	Beautiful Firetail	N, B	Х		NM
Carduelis chloris	European Greenfinch	Ex	ΧN	В	М
Carduelis carduelis	European Goldfinch	Ex	ΧN	В	М
Hirundo neoxena	Welcome Swallow	N, B, M	ΧN		М
Hirundo nigricans	Tree Martin	N, B, M	ΧN		NM
Megalurus gramineus	Little Grassbird	N, B			М
Zosterops lateralis	Silvereye	N, B, M	XSN	В	М
Zoothera lunulata	Bassian Thrush	Ν, Β		В	
Turdus merula	English Blackbird	Ex	ΧN	В	NM
Sturnus vulgaris	Common Starling	Ex	XN		М
Status N native E endemic Ex exotic M migratory B breeding T threatened, hybrid_introduced					

Sources

B = Bryant survey conducted Porter Hill 22 March 2010, Egg Islands marsh land 23 March 2010 M = Peter Marmion bird list for Egg Islands 1991 – 2010, * Ground parrot reported in 1994 on Southern Egg Is by local duck shooter

N = Nick Mooney bird list for Chauncy Vale & Flat Rock 31 August 2008, North and South Egg Islands TLC land on March – April 2010

S = sound recordings for Flat Rock collected by June Hilder analysed by Sarah Lloyd for Sound Idea Project X = Tasmanian Land Conservancy Management Plans (TLC 2009a, b)

Discussion

The birds identified in Table 3 reflect the diversity of species found across each of the reserves and the range of habitats they contain. A total of 108 bird species have been identified either during this project or from information collated from recent times. Of these species, 10 are endemic plus an additional one (Swift Parrot) is a breeding endemic in Tasmania. Five species are listed on State or Commonwealth threatened species legislation (Swift Parrot, Wedge-tailed Eagle, White-bellied Seaeagle, Grey Goshawk, Masked Owl) plus one the Australasian Bittern is on IUCN criteria as declining internationally. This suggests that the three reserves are important reservoirs for Tasmania's unique and conservation significant species and offer a range of opportunities as long-term monitoring sites.

A large portion of Tasmania's land and coastal bird species exhibit seasonal movements, many undertaking trans-Bass Strait migration during autumn, returning to Tasmania in spring to breed. Some e.g. honeyeaters, undertake seasonal altitudinal migration, travelling down from the high country in late spring and autumn to spend the cooler winter months in coastal lowlands where food is more plentiful. With expanding urban development, Tasmania's avifauna are experiencing the same pressures and fragmentation as species on mainland Australia, whereby larger more aggressive species are expanding and displacing smaller, sedentary species. Introduced birds such as Common Starling, House Sparrow and English Blackbird are commonplace across the Tasmanian landscape, so to are European Goldfinch, Greenfinch and Skylark, all able to capitalise on weed species and disturbed ground. Nine exotic or introduced species are widespread across the reserves; however, this number is to be expected as all reserves are close to disturbed rural and urban environments.

Each of the reserves favours a distinct bird fauna due to its location and habitat availability. Flat Rock Reserve supports a wide range of raptors due to its old growth forests, caves, rocky gullies and close proximity to farmland. Porter Hill contains a mosaic of seabirds and bush birds due to its coastal location whereas Egg Island predominates with waterbirds, marine birds and bushland birds due to its near-shore island conditions.

Despite key species like the Forty-spotted Pardalote and Australasian Bittern not being detected during this survey, both are shy and cryptic and repeated visits over a longer period of time are recommended. Specific reserves contain habitat suitable for each of these species and therefore vegetation mapping and more intensive searching in the future is warranted.

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Appendix A

Birds Australia Bittern Survey Guide

Guidelines for surveying Australasian and Australian Little Bitterns



From current information in Birds Australia's Atlas of Australian Birds, expert opinion, and anecdotal evidence from birdwatchers the field, the population of Australasian Bitterns seems to be declining and its range contracting. Though this is especially the case in south-western Western Australia, birders in the eastern states are also reporting a decline in the number of birds seen, and this is possibly due to a combination of prolonged drought over much of southern Australia and the decrease in the amount suitable habitat available, particularly those natural swamps in the Murray-Darling Basin that no longer function due to cessation or decline in floodplain inundation, mainly due to irrigation.

In order to understand the current status of both the Australasian and the elusive and undoubtedly under-recorded Australian Little Bittern, a survey program has been established, beginning in the 2008–9 breeding season. It is hoped that information can be collected about the number of breeding and non-breeding birds, as well as data about the wetlands in which they are recorded.

The aim of the survey is to (a) obtain data that will inform development of an estimate of population size in the longer term; (b) record the number of sites where 'booming' males are heard as well as the number of individuals calling.

Since Volume 1 (Part B) of the *Handbook of Australian, New Zealand and Antarctic Birds* was published in 1990, no formal studies have been carried out on the breeding ecology of Australasian Bitterns. Our knowledge of the species is scant, but it is known that breeding occurs between October and February, and that the territory of a pair is 40–50 hectares on large wetlands and one pair per swamp on smaller ones. Data gathered on the closely related Great Bittern during surveys in Britain in 2007 suggests that there is a good correlation between the start of 'booming' by Bitterns in a wetland and when females begin to lay their eggs; this time is estimated at about 50 days with an incubation period of 26 days. Though not pertaining to Australasian Bitterns, this information could, nevertheless, be useful as the basis for understanding the breeding biology of Australasian Bitterns.

Where possible, historical information will be collected, particularly from the periods (a) before the establishment of irrigated crops in the Murray–Darling Basin, and (b) before the drought and resulting increase of salinity in the past decade or so.

GENERAL METHODS FOR SURVEYS AND SIGHTINGS.

- Surveys at suitable wetlands should begin in mid-October and continue through until the end of March.
- Information should be recorded on the Bittern Survey Forms provided (extra forms are available from the Birds Australia website).
- In addition to the Bittern Survey Form, Birds Australia Atlas surveys should be conducted and lodged for each site visit, providing details of all bird species seen and their numbers.
- Studies of Australasian Bitterns in New Zealand have revealed that the best time to hear 'booming' males is in the 2 hours around dawn, with the peak of calling about 30 minutes before sunrise.

- The next-best time to hear 'booming' males is in the 2 hours around sunset. Bitterns often call at night.
- Weather conditions are known to affect 'booming', with optimum conditions on warm, calm conditions; cold or windy conditions reduce the amount of calling and make it more difficult to hear.
- The water level of a wetland is important during the breeding period. Bitterns are said to prefer fresh water typically 30 cm deep, and a combination of tall reeds or similar wetland vegetation for shelter with shorter vegetation into which foraging birds may venture.
- During the breeding season (October–February), females can be seen at any time of day especially when young are being fed.
- There is almost nothing known of the courtship, breeding and other social behavior of the Australasian Bittern. Any information that can be collected is important.

INTENSIVE LISTENING SURVEY AT A WETLAND

- Optimum information will be gained from fortnightly visits to your wetland between late October and late March, especially if the water level is declining late in the season.
- Before you conduct your survey, try to pinpoint the best listening and watching positions in suitable habitat, Record or mark these sites so that you can use them again during follow-up surveys.
- After you arrive at your wetland, allow a little time for the Bitterns to become less wary of you, as they may 'freeze' for up to 10 minutes if they perceive a threat.
- At night, various animals, especially frogs and other birds, can sound like a calling Bitterns. If possible, become familiar with Bittern calls before beginning a survey.
- Listening surveys should last for a minimum of 30 minutes, as the quiet period between calls could be 10 minutes or more, and you should listen for 1½ hours per survey, if time permits.
- During surveys, if more than one Bittern is recorded, so that you can distinguish between different individual birds, record the compass direction and distance from the observation point to the bird. Also record the number of calls in each calling sequence, as this may sometimes help further to differentiate between individual calling birds.
- If more than one person is participating in a survey at a wetland, standing some distance apart can help determine the number of birds calling. If the exact time of the call, the compass bearing, the estimated distance to the bird, and the call sequence (see above) are recorded by each person, the information can be compared.
- The effectiveness of call play-back is unclear. If you choose to use call playback, please record your results and only use in moderation to avoid distressing breeding bitterns.
- If no birds are seen or heard at a wetland with suitable habitat, a survey form should still be completed.
- It is recommended that a minimum of two people work together to ensure safety, as in darker conditions visibility is poor and hazards such as snakes, tripping and falling in holes is more concerning.

INTENSIVE TRANSECT SURVEY AT A WETLAND

- Surveys along transects at your wetland should be repeated at regular intervals throughout the breeding period.
- Bitterns usually forage along the edges of tall vegetation, such as *Phragmites* and *Typha*, or in shorter vegetation, such as *Baumea, Juncus* or *Bolboschoenus*, in shallow water up to 30 cm deep. If possible, walk in the water close to the edge of the vegetation; if this is not possible, walk along the edge of the wetland.
- Bitterns are most likely to be seen when they flush, usually from within 10 metres of the observer. All information about flushed Bitterns should be recorded on the Bittern Survey Form.
- Habitat conditions along the length of each transect should be recorded and monitored for change.
- During the breeding season, walking through a wetland may disturb breeding waterbirds. Modify your transect to avoid unnecessary disturbance if nests are found or suspected.

- It is recommended that you should not actively look for Bittern nests as this could cause considerable disturbance to wetland nesting birds and possibly lead predators to their nests. However, if you do come across the nest of a Bittern, please collect as much information as possible without disturbing the birds. Details on nest construction, laying dates, clutch size, incubation period and success rates are all important.
- Walking a transect through any wetland can be dangerous due to unexpected deep holes, hidden objects and tiger snakes and should not be attempted alone. A wise plan is to work in pairs, one observer walking through the water, with the other watching from the bank.

Appendix B

A Sound Idea: acoustic monitoring of Tasmania's bush and forest birds by Sarah Lloyd

A sound idea is a project that takes a different approach to monitoring bush and forest birds by using digital sound recording devices. These devices (e.g. Zoom H2) are to sound recordists what compact digital cameras are to home photographers. They are relatively inexpensive, small, robust and have good quality inbuilt microphones. They require no technical expertise other than the ability to press a few buttons.

Firstly, the simultaneous singing of many different birds means that differentiating the species at a particularly rich site can be extremely difficult. The presence of some birds, most notably Silvereyes and Blackbirds, exacerbates the problem. Silvereyes sing relentlessly at dawn and have a tendency to imitate other species. Blackbirds can also dominate the dawn singing and are also accomplished mimics. With this in mind the recordings should be done between 0600 and 1000 depending on prevailing weather conditions.

Back at 'the lab' (i.e. my home at Black Sugarloaf) I listen to the recordings, and make an audio CD and compile locality lists to send to each participant.

Acoustic monitoring has several advantages over conventional bird surveys. Firstly, there is a permanent record of the survey site. If needs be the recording can be listened to repeatedly; this is valuable if there's a quiet bird or one that only vocalises once. Secondly, more than one person can listen to the recordings to verify species identification and thirdly there is no need for skilled observers to be in the field.

Ideally all sound files will be available to anyone who wants to do further studies on distribution or bird vocalisations. Already I've found it interesting to hear the regional variations in the calls of birds from different locations (The Yellow-throated Honeyeater at St Helens, for example, sounds quite different to the one at Birralee). The study of regional variations in songs (sometimes referred to as dialects) is little studied in Australia, but is a growing area of interest overseas, especially in the US.

Several trial recordings have been done at the Blue Tier and Skyline Tier in northeast Tasmania with impressive results. Vocal species (e.g. Grey Shrike-thrushes and Golden Whistlers) tended to dominate the recordings but birds with quieter songs such as Black-faced Cuckoo-shrikes and Beautiful Firetails were also detected. The recording device is about as sensitive as the human ear (which varies considerably from person to person). Non-vocal species or species that call sporadically (e.g. raptors) are not recorded, but these birds are not likely to be picked up during conventional field surveys.

This is a really exciting new project that has the potential to involve many people keen to find out what birds occur in their area and to assist in bird monitoring.

Already several stories indicate that this project is about much more than just birds. When two women were moving the recording device away from dogs and mowers to a quieter location they found a colony of the exquisite Gunn's tree orchid (*Sarcochilus australis*) growing on a blanketleaf (*Bedfordia salicina*) unfortunately just inside the boundary of an area destined for logging. Another woman, who apparently never gets out of bed before 9 am, has at last discovered that dawn is the best time of the day – she was up at 6 am to place the recorder outside!

This project will result in an aural record of Tasmania's environment. Now that it's begun I lament the fact that it didn't happen years ago. How wonderful it would be to have an aural record of Tasmania from years, decades or even centuries ago. Unfortunately the technology was not available then. Now that it is, let's make the most of it!

Anyone wishing to participate please contact Sarah Lloyd by email

[sarahlloyd@iprimus.com.au].This project is supported by the Central North Field Naturalists, Birds Tasmania, the Tasmanian Community Fund, Northeast Bioregional Network, Launceston Field Naturalists Club and Bird Lovers of Black Sugarloaf.

All information about the project is at the website:

http://www.disjunctnaturalists.com/sound/index.htm

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