

**BANDED STILT *CLADORHYNCHUS LEUCOCEPHALUS*
RESEARCH IN WESTERN AUSTRALIA IN 1995**

AERIAL SURVEYS CONDUCTED IN 1995

RESEARCH MATERIALS CONSOLIDATION REPORT

**JAK Lane
WA Department of Parks and Wildlife**

January 2014

This **Research Materials Consolidation Report** is a preliminary stage in the preparation of research reports and/or publications on Banded Stilt research in Western Australia in 1995.

The purpose of an RMCR is to consolidate and conserve all of the research materials relating to a research project. The material reproduced here is in its original form, with limited or no reformatting.

FUTURE WORK

The next steps to be taken in finalising this RMCR and then preparing a report or publication based on its contents should be to:

- Tabulate the aerial surveys (dates, personnel, aircraft, lakes surveyed and maybe photos taken and field notes and reports received) documented in this RMCR and then add the Table to this RMCR.
- See yellow highlighted text in the remainder of this RMCR summary for other Future Work needed / desirable.

Photographs

See a separate RMCR(s) (yet to be prepared, in the interim see digital (scanned) images on JL's work PC).for copies of all the photographs that were taken by JL, GBP, ACh, CDTM and possibly others while doing the 1995 BaSt research work.

Field Notes

A separate RMCR of 1995 Field Notes has been prepared containing copies of all the Field Notes made by J Lane, G Pearson, A Clarke, A Chapman in 1995 while undertaking collaborative research with C Minton on Banded Stilts in Western Australia in 1995.

CONTENTS

Note that, in addition to detailed information about the aerial surveys conducted in 1995 (which is the main subject of this RMCR), this RMCR contains some information about some pre and post 1995 aerial surveys, in order to conserve that material, to provide links to that earlier and later work and to provide a larger context for consideration of the 1995 work.

Note also that from early 1995 to the early 2000s, JL (Jim Lane) was based in Busselton and technical officers GBP (Grant Pearson) and ACI (Alan Clarke) were based at Woodvale, Perth – hence the many faxes and emails between JL and GBP + ACI listed below.

This RMCR contains, in chronological order based on dates of documents, the following:

1. A chain of emails (13-19/04/2000) between CDTM, GBP and JL in which, inter alia, JL advises GBP and CDTM that there are now no CALM funds remaining for further BaSt breeding surveys in 1999/2000; GBP advises (on 13/04/2000) that 'I flew Ballard, Barlee, Marmion and Gourly (sic) [Lake Goorly? (which is near Wubin)] **last week** [but see below] and found no breeding. Water levels were mostly lower than expected. I'm in the process of a full report for Jim [JL] and will copy it to you'. CDTM suggests searching further to the south in the Lake Grace / Lake King area or (much) further east. **Find GBP's report**. Confirm Lake Goorly.
2. Faxed (on Fri 17/03/2000; from JL to GBP) copies of a Budget Request and a Science Project Plan for SPP 'Breeding ecology and conservation of Banded Stilt'. The Budget Request refers inter alia to an aerial survey conducted in **April 1999** and proposed future aerial surveys. The Science Project Plan refers inter alia to the aerial survey conducted in **March 1995**, to **subsequent surveys (in 1995)** and to proposed future aerial surveys. Methodologies, etc., are detailed. Fax cover sheet reads 'Re Monday's flight', which suggests flight by GBP was to be conducted on Mon **20th March 2000**, but note that GBP's email of 13/04/2000 (above) implies a later date.
3. File note (16/03/2000) by JL headed 'Calculation of Banded Stilt Funds Available as at 16 March 2000' that inter alia indicates funds are available '... to spend in 1999/2000 on [breeding] BaSt air survey following flooding'.
4. First two pages (or were there only two?) of a document headed 'The Following is the Makings of the 'Water Depth and Quality Section' ...', prepared by JL 22-24/07/1997. There are numerous references to aerial surveys undertaken in 1995. The dates of these were **12/03, 15/03 (helicopter to Lake Ballard colony), 27/04 (by JL), 06/06 (by ACh), 14/07 (ACh) and 22/08/1995 (ACh)**.
5. Note (23/06/1997) from Michelle Handley (spelling?) to JL and photocopies of prints of three aerial photos (JL's photos 3554, 3650, 4155, all subsequently scanned) taken by JL of Lake Ballard (on **15/03/1995** helicopter trip to BaSt breeding colony) and Lake Barlee (on **27/04/1995** aerial survey).
6. Document by JL headed 'Banded Stilt' and beginning 'Aims of Talk (7.10.96)'. Includes the following sentence: 'Program' is to fly lakes after heavy rains to locate [BaSt breeding] colonies, ascertain size and success. Unfunded'.
7. List of slides (photos) used in Banded Stilt talks given by JL to the SHOC at Albany on 07/10/1996 and the RAOU WA Group in Perth on 25(?)09/1996. Nine of these photos were taken during aerial surveys, on **15/03/1995** and **30/03/1995** (Helicopter trip) and ('Guitar Island' photo) on another flight (probably the **27/04/1995** flight by JL).
8. Notice of Seminar to be held at CALM Wildlife Research Centre, Woodvale, on 17/05/1996 with JL presenting 'Banded Stilt Breeding in the Goldfields'. Abstract refers to aerial survey of **12/03/1995**.

9. Hardcopy (16/05/1996) of document 'Banded Stilt *Cladorhynchus leucocephalus* Seminar' '... compiled by JL 14-16 May 1996 in preparation for seminar at Woodvale [CALM's Wildlife Research Centre] on Fri 17 May [1996]. Only pages 1-8, concerning aerial surveys for BaSt in 1995, are reproduced here. See another RMCR, yet to be prepared, for the full document (pages 1-9?).

This document provides fairly detailed descriptions of the data gathered during aerial surveys undertaken on:

<u>12/03/1995</u>	GBP, CDTM [& MReni]	Marmion, Ballard, Barlee.
<u>15/03/1995</u>	GBP, CDTM, MReni, JL	Ballard (helicopter)
<u>??/03/1995</u>	GBP, MLamble	Ballard, Barlee
<u>07/04/1995</u>	<i>RJohnstone, PStone & NKolichis</i>	<i>Barlee, Goongarrie, Marmion, Ballard, Raeside</i>
<u>27/04/1995</u>	JL	Barlee, Ballard
<u>??/05/1995</u>	ACH, MLamble?	Ballard
<u>06/06/1995</u>	ACH, IKealley	Ballard, Marmion
<u>12/06/1995</u>	ACH	Marmion (and ...?)
<u>14/07/1995</u>	ACH	Ballard, Marmion
<u>22/08/1995</u>	ACH and ...	Ballard, Marmion

10. Fax (25/04/1996) from Jeremy Hogarth (formerly with ABC Natural History Unit, now with TVNZ) attaching '... the transcript of Clive's [CDTM's] comments when we were watching the stilts rushes on a film editing machine'. On page 6 CDTM says 'Well, I think they [BaSt] are genuinely paired because when you look at the flock from the aeroplane and out on the water they were all two by two by two by two'.
11. Fax (11/03/1996) from ACh replying to fax (14/11/1995) from JL in which JL asked ACh if he could identify the lakes in a number of aerial photographs. These photos were apparently taken during a flight by ACh and JL to, from and over Lake Boonderoo and Ponton Creek in 1995. ACh identifies one of the photos as being of Hannan's Lake on 23/08/1995 and JL writes '[It was] a good flight!' Note that this was not an aerial search for breeding BaSt. To know more, see JL's papers (and report in prep.) concerning the 1995 – c.2007 research work at Lake Boonderoo.
12. Fax (23/08/1995) from JL to GBP headed 'Banded Stilt Monitoring' that inter alia reads 'Monday's aerial survey **[21? or 22?/08/1995]** by Andy Chapman showed that Lake Marmion will be dry in a week or so and Ballard in the next month or two'. **Day of flight (Mon 21st or Tues 22nd) needs to be checked against other documents in this RMCR.**
13. Report (undated, but must be post 22/08/1995) from ACh to JL with detailed results of aerial surveys conducted by him with others. These surveys were as follows:
- 06/06/1995**: 'Piper Warrior w/- Tony Brandis. Lake Marmion (only)'
- 14/07/1995**: 'Lakes Ballard & Marmion w/- KPJ / GY'
- 22/08/1995**: 'Lakes Ballard & Marmion w/- WR, PB; Piper Warrior'
- Ask ACh for notes taken during his 12/06/1995 flight and the names of KPJ, GY, *et al.***
14. Fax (29/07/1995) from CDTM to JL inter alia stating 'Thanks for message re aerial survey. Is that the end or do you intend to do another? How many birds were seen? Where?'
15. Handwritten notes from JL's phone conversation (15/07/1995) with ACh in which he records ACh's observations during '... flight over Ballard & Marmion on Fri **14/07/1995**' in a Piper Warrior.

16. Notes by JL that record 'advice from ACh 10/7/95' and imply that ACh conducted an aerial survey of Lake Marmion (only) on 12/06/1995 in a 'Piper', and an aerial survey of Lake Ballard plus an aerial 'overview' of Lake Marmion in a Cessna 210 on 06/06/1995.
17. Article titled 'Banded Stilts Complete the Job' (p.3 in 'The Tattler No.4, July 1995) authored by 'Clive Minton, Jim Lane and Grant Pearson'. Inter alia it says 'A further aerial survey is planned for mid July [1995] to see if any further nesting attempts have been made and to log the numbers of adult and juvenile birds still present'. Note that this article was re-printed on pp.16-17 of WA Bird Notes, No.76, December 1995.
18. Faxed (19/06/1995) copy of 17/06/1995 report by GBP for JL, headed 'Report on Survey to Lake Ballard and Lake Marmion 8 June 1995 to 13 June 1995'. Inter alia reads 'Met Andy Chapman in Kalgoorlie on 9/6 and departed for [Lake] Ballard. AChapman had flown the lakes [presumably this refers to ACh's flight on 6th June 1995] and reported no flightless chicks remained on [Lake] Ballard but young chicks found at [Lake] Marmion'. Also '12/6/95: Andy Chapman departed for Kalgoorlie at 0700 [hrs]' [in order to fly the lake that day?], and, under '13/6/95', 'Chapman reports that the eagle was present on the colony at 1400 [hrs] when Chapman flew the area [work out when – on 12/06/1995 (most likely) or 06/06/1995?] and there were no BaSt on the colony at all or in the area'.
19. Notes made by JL that appear to record information from GBP that was communicated to JL by radio telephone on Sun 11/06/1995. Inter alia these notes read 'Andy flight tomorrow [which would make it 12/06/1995]; photo & find island; details to Grant 7pm; me listen on radio'. Ask ACh for copies of 'photo[s]'.
20. Cover sheet of a fax (08/06/1995) from JL to ACh at CALM Kalgoorlie on which JL writes 'Thanks for the "flight report" – very good info collected'. This no doubt refers to ACh's flight of 06/06/1995, see below.
21. A report (06/06/1995) from Andy Chapman (ACh) to JL and GBP headed 'Banded Stilts – Lakes Ballard & Marmion'. This reports details ACh's observations, made during an aerial survey 'today' (6th June 1995), of BaSt numbers, geographic coordinates, flightless chicks (none), current nesting activity (none), water depth (inferred), etc., on Lake Ballard and BaSt numbers, geographic coordinates, flightless chicks, water depth, etc. An attached map by ACh shows the locations of the 'sites with stilt chicks'. JL subsequently mapped ACh's coordinates (locations 1-5) of the 'Banded Stilts main rafts' on Lake Ballard and this map is attached.

ACh comments that 'We did not locate the precise nesting site [on Lake Marmion] – but I believe we could locate if on the ground'.

In relation to Grey Teal numbers on Lake Ballard ACh writes '... were present in 1000s (I have better data)'. Presumably this is a reference to his Field Notes – seek a copy.
22. Notes by JL labelled 'Andy Chapman's verbal report on flight of 6/6/95'. Reports BaSt sightings on Lakes Ballard and Marmion. Seems that a 'Cessna 210' was used to conduct this aerial survey. 'V. Tonkin's station' possibly refers to the owner / manager of the pastoral station at / near Lake Marmion.
23. Fax (02/06/1995) from JL to GBP with a four-page 'Draft Program Lake Ballard June 1995' with instructions for GBP, ACh and ACI regarding survey and other work to be undertaken at Lake Ballard and Lake Marmion from Wed 7th to Wed 14th June 1995. The draft program specifies that on Wed 7th June 1995 [this flight was actually conducted on 06/06/1995, see above], in the morning, 'Andy Chapman + 2nd observer fly Lake Ballard. Telephone or fax Grant Pearson at Woodvale immediately after flight to confirm still chicks on lake' and 'Fly one transect of Lake Marmion on way back to Kalgoorlie to check for nesting and/or chicks. Record appropriate info'. Detailed Objectives, Methodology Equipment and Extra are specified for this aerial survey. There is also a

comment that 'ACh needs to be back in Kalgoorlie on Sun [11th June] night'. Note that ACh actually left Lake Marmion at 0700hrs on 12th June, see GBP's report above.

24. A note (05/05/1995) by JL headed 'Banded Stilt Project: Information for Mark [Lamble] and Campbell [Miller] [of ABC Natural History Unit]' that inter alia reads 'Andy Chapman will take my place on the flight – thanks'. On which date in May 1995 was this proposed flight flown? Report prepared? Ask ACh for a copy of his notes.
25. A copy of 'History in the mating: Banded Stilts do it again!' by 'Clive Minton, Grant Pearson and Jim Lane' (pp.13-15 in Wingspan, June 1995) includes inter alia 'Grant Pearson, Clive Minton and Marj Reni of the Victorian Wader Study Group, carried out a 4.5 hour aerial survey from Kalgoorlie on 12 March [1995]. Three large salt lakes [Barlee, Marmion & Ballard] ... were covered'. Summary details of their Banded Stilt observations, including breeding, follow. This article also reads 'A helicopter was available from Kalgoorlie on 15 March [1995] ...' and 'A further aerial survey on March 30 [1995] revealed three new nesting colonies on Lake Ballard (but still no nesting, and fewer birds, on lake Barlee). More details follow.
26. Fax (27/04/1995) from JL to Rob Thomas [CALM Kalgoorlie] which inter alia reads 'Today's flight [therefore 27/04/1995] revealed that there are no longer any Banded Stilt near Camp Island [on Lake Ballard]. The closest breeding colony is now 4 km further west [on Lake Ballard]'.
27. Fax (27/04/1995) from JL (at CALM Kalgoorlie) to CDTM (at BBO) detailing the observations he (JL) made '... this morning (0810-1135hrs)' during an aerial survey [on 27/04/1995] of Lakes Barlee and Ballard.
28. Fax (13/04/1995) from Ron Johnstone (WA Museum) to JL detailing the observations made during an aerial survey for breeding BaSt that he and ... [not specified in fax, but were Phil Stone and Nick Kolichis] made of Lakes Goongarrie [or Raeside? See notes of 11/04/1995 below], Marmion, Ballard and Barlee on ... [date not specified in fax, but was 07/04/1995].
29. Photocopy (2 A4 pages) of six small notepad pages of notes made by JL during phone conversation with Ron Johnstone of WA Museum on 11/04/1995 in which Ron shared details of his aerial survey (with Phil Stone and Nick Kolichis) for breeding BaSt on 07/04/1995 and their subsequent ground visit to Lake Ballard, in kayaks, which JL recorded as being on 12/04/1995 but couldn't have been, given date (11/04) of phone conversation. Notation that '[Ron] Will check his lats & longs & fax me if incorrect'. See above for Ron's fax of 13/04/1994.
30. A list of the 35mm colour positive Films (JL numbered them 1-12) and 35mm cameras ('new' and 'old') that JL used at Lake Ballard in 1995, and the Dates (of film exposure) and the subject material. Film '1' is listed as having been used by GBP (JL lent him a camera?) during the aerial survey of 30/03/1995. Strike-through and notation 'See photocopy of this side (6/6/1995)' suggest there might be a more recent version of this list somewhere.
31. Two pages of handwritten notes by GBP headed '30/3/95' that record some of the observations made by him during an aerial survey of Lake Barlee and Lake Ballard (and possibly one or more other lakes after Lake Ballard?) by Mark Lamble, ... [indecipherable] and GBP on 30/03/1995. The notes begin: '30/3/95, 0725[hrs], Take off C210 [Cessna 210]'. Lake Barlee was reached at 0810hrs. Lake Ballard was reached at 0918hrs. Water levels, geographic coordinates, BaSt numbers, photographs taken, etc., are described. The second (last) page ends with 'Rest of tape was wiped'. This indicates that the notes were based on an audio tape of the survey. Find this tape. Also, prepare a typescript of these (GBP's) notes, with explanatory and amplificatory notes.

32. Fax (20/03/1995) from JL (at CALM Busselton) to Raelene [Hick] (at CALM Woodvale) with corrections (typos) to her typescript of the 'Banded Stilt Research Programme – Lake Ballard, March/April 1995' that CDTM had hand-drafted (see below). This document refers inter alia to the aerial survey of 12/03/1995 and observations made.
 33. Fax (14/03/1995) from CDTM to JL with his (CDTM's) draft manuscript headed 'Banded Stilt Research Programme – Lake Ballard, March/April 1995'. This document refers inter alia to the aerial survey of 12/03/1995 and observations made. See above for draft typescript.
 34. Article 'Banded Stilts Quick off the Mark' by 'Clive Minton, Grant Pearson & Jim Lane' in 'The Tattler, No3, p.3, April 1995, that inter alia reads 'Marj Reni (VWSG), Grant and Clive did a 4.5 hour aerial survey from Kalgoorlie on 12 March [1995]. They covered lakes Marmion, Barlee and Ballard ...'. A summary of observations is given. Also 'We ... visited [Lake Ballard] for 9 hours by helicopter on 15th March [1995]'. Did GBP, CDTM or JL record BaSt observations made during this helicopter flight?
 35. Page of notes by JL headed 'Telephone Discussion with Clive Minton (at Kalgoorlie) on Monday ... February [1995] (\pm 1 day)'. Is February correct? Or was it March? The notes 'all on one egg today?' and '15 days since' suggest this conversation was on the day of the first aerial survey in 1995, i.e. on Sunday 12/03/1995. The notes also make reference to a helicopter 'Jet Ranger' being available all day Wednesday. 15/03/1995 was a Wednesday.
 36. Two pages of handwritten notes by GBP, the first page headed 'Aerial survey of Lake Marmion & Ballard' and the second page headed 'Aerial Survey Lake Barlee 10/3/95' that record observations made during an aerial survey of Lake Marmion, Lake Ballard and Lake Barlee by 'Clive, Marjory, GP, Pilot' [Clive Minton, Marj Reni of VWSG, GBP and pilot]. The notes say the survey was on '10/3/95' but all other reports of this survey indicate that it was conducted on 12th March 1995. Takeoff was at 0917 hrs; Lake Marmion was reached at 0950hrs; Lake Ballard was reached at 1018hrs; it appears that Lake Barlee was reached at 1120hrs, and the survey was ended '... at south end of middle arm [of Lake Barlee]' at 1220hrs. Presumably they then flew direct to Kalgoorlie Airport. Survey height, photos taken, water depths, GPS waypoints (e.g. 'WPT 80'), geographic coordinates, presence/absence of breeding by BaSt, BaSt numbers, 'colony', etc. are described. Perhaps GBP recorded these observations on an audio tape? Look for a tape. Perhaps CDTM also took notes? Ask CDTM. Also, prepare a typescript of these (GBP's) notes, with explanatory and amplificatory notes.
- The reference to 'Breeding Site # 1', at Lake Barlee at 1120hrs, might be a reference to a BaSt breeding site recorded in a previous (i.e. pre 1995) year. GBP, JL, Roger Jaensch and Phil Fuller did some BaSt work at Lake Barlee in the early 1990s / 1980s.
37. Photocopy of an audio cassette tape labelled [in JL's handwriting] '1995 Lake Ballard Tape – keep'. This tape might contain recordings made during the helicopter trip (15/03/1995) and aerial survey (27/04/1995) that JL were on. Might also have observations made by JL on the ground at Lake Ballard in 1995. Listen to tape (but note that there might already be a transcription somewhere).

Aerial Surveys pre 1995

38. Fax (6 pages; 29/05/1992) from GBP to ACh with 'Attached flight path [map] based on NOAA Satellite imagery which indicates presence of suitable water at [Lakes] Ballard, Barlee, a lake north of Barlee near Bulga Downs and possibly [Lakes] Goongarrie and Yindarlgooda. If time permits it may be worthwhile to fly down [Lakes] Raeside and Rebecca'. Information to be recorded is detailed. Also 'It's important to contact Jim [JL] or me [GBP] as soon as possible following any confirmed breeding [by Banded Stilt]'. Was this aerial survey undertaken? Date? Report prepared or field notes made?

39. Handwritten notes (late May 1992) by GBP calculating likely costs of proposed aerial survey by ACh for breeding BaSt on lakes in Eastern Goldfields.
 40. Fax (21/05/1992) from GBP to ACh (at CALM Kalgoorlie) headed 'Re. Banded Stilt Breeding' that reads 'From NOAA imagery it seems lakes Barlee, Ballard, etc., are flooded to an indeterminate depth, i.e. >10cm. An aerial survey appears justified but we need an estimate of costs first'. GBP requests ACh to provide the information that would enable JL to '... work out a flight plan and \$\$ available for you to carry out the survey which should be done as soon as possible'. Fax cover note, fax receipt and undated handwritten notes (by JL) on which fax was based are also here. Some accompanying undated notes written on a manila folder by GBP relate to this fax.
 41. An undated page of handwritten notes that begins with 'Ballard has water' and also refers to lakes Marmion, Rebecca, ... [Cowan?], Moore, Monger, Deborah, Seabrook, Lefroy and 'Miranda 4-5ft Leinster near Agnew'.
 42. A loose collection of undated maps of lakes in the Eastern Goldfields with various annotations by GBP. One map (scanned in two parts) has the date '29/07/1980' on it and perhaps refers to satellite imagery of that date. Another (also scanned in two parts) has '11/07/80 Totally Clouded' on it and perhaps also refers to satellite imagery (of 11/07/1980). A third map (also scanned in two parts – one in colour) has an aerial survey route (proposed or accomplished?) marked on it.
 43. Photocopy an audio cassette tape labelled 'Mon 29/6, Air Survey. Kalgoorlie → Rowles Lagoon → → Ballard' In 1995 the 29th of June was on a Thursday. In 1996 it was on a Saturday. So this tape was not made (recorded) in 1995 or 1996. The 29th June was on a Monday in 1992, so maybe that's when the tape was made.
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A chain of emails (13-19/04/2000) between CDTM, GBP and JL in which, inter alia, JL advises GBP and CDTM that there are now no CALM funds remaining for further BaSt breeding surveys in 1999/2000; GBP advises (on 13/04/2000) that 'I flew Ballard, Barlee, Marmion and Gourly (sic) [Lake Goorly? (which is near Wubin)] last week [but see below] and found no breeding. Water levels were mostly lower than expected. I'm in the process of a full report for Jim [JL] and will copy it to you'. CDTM suggests searching further to the south in the Lake Grace / Lake King area or (much) further east. Find **GBP's report. Confirm Lake Goorly.**

17.

To: iSMTP@CALM.COMO.1@Servers[<mintons@ozemail.com.au>], Jim
Lane@BUSS.SID@CALM
From: Grant Pearson@WOOD.SID@CALM
Cc: Alan Clarke@WOOD.SID@CALM
Subject: re: Various
Attachment:
Date: 19/Apr/2000 11:47 AM

Hi Clive

A couple of things. Thanks for the impressive report on Lake Eyre. We have exhausted all available funds for air surveys for stilts and unless we can find alternative funds we cannot look any further.

Jim would like to know what colour combination did you use at Eyre. No doubt we should keep a look out for flags from Eyre?

We did not take blood from chicks at Ballard or Marmion. We did collect eggs for DNA work and they went to Murdoch Uni. Despite many attempts we were never able to extract any results from Murdoch. We believe they never got round to testing them. In the end we decided we should wait for another breeding effort in WA and collect more, to send to a different DNA lab.

We will continue to monitor for breeding events. Would it not be possible to take samples from a number of adults from , say Rottnest, and determine if there are differences in the adult population or if there are similarities with the SA birds?

Cheers
Grant

Grant Pearson
Department of Conservation and Land Management
WA Wildlife Research Centre
Wildlife Place
Woodvale WA 6026
Tel:(8) 9405 5163, Fax: (8) 9306 1641
Email: grantp@calm.wa.gov.au
----- Original Text -----

From: "Pat and Clive Minton" <mintons@ozemail.com.au>, on 13/04/2000 1:55 PM:

Dear Grant,

Just got down the pile to your 15th March note.

1. Have not had any enquiries yet refereeing your award application.
2. Robin Phillimore would be most welcome. Get her please to contact me urgently. Two people have dropped out recently and I would welcome replacements.

Best wishes,
Clive.

14

To: Grant Pearson@WOOD.SID@CALM
From: Jim Lane@BUSS.SID@CALM
Cc:
Subject: re: fwd: Various
Attachment: BEYOND.RTF
Date: 18/Apr/2000 3:07 PM

Grant

As far as I am aware, no blood samples were taken at Ballard or Marmion in 1995. My recollection is that we decided not to take them, for practical reasons.

We did collect eggs for DNA work and they went to Murdoch Uni. Despite many attempts I was never able to extract any results from Murdoch. I believe they never got round to testing them. In the end I decided we should wait for another breeding effort in WA and collect more, to send to a different DNA lab.

There is a list of yellow tag sightings reported to us in an early 1996 (or thereabouts) issue of WA Bird Notes. There have been a few since but I don't have time to dig them out just now.

Unless you can find money from somewhere, we won't be able to do any more aerial searching for nesting BaSt this financial year. As you know, the \$2,000 of CALM funds that we obtained for this purpose has now been fully spent.

On a different subject, which type of film and filter (if any) did you end up using for the Ramsar extension shots?

When are you thinking of doing your next Vasse-Wonnerup logger download?

Also, which pilot would you now recommend for the gull monitoring (Carnac & Penguin) that Doug Coughran and/or I need to do in mid May (from Jandakot).

Jim

From: Grant Pearson@WOOD.SID@CALM, on 17/Apr/2000 5:37 PM:

Jim

I recall talking about blood samples but not actually taking it. This would have required liquid nitrogen I guess and all sorts of bleeding procedures. Did

Clive take these samples with you or Al or on his own??

Lake King is certainly full and Lake Grace less so.

Do you have a list of recent tag sightings for Clive. My file is with Al.

Pelicans at Peel/Har 17/4

Larger than normal numbers of P but I won't have counts til I look at photos. I got shots of all ramsar wetlands except preston when we ran out of time. The aircraft had to be back for another booking. Will develop and send to you.

Cheers

Grant

Grant Pearson
Department of Conservation and Land Management
WA Wildlife Research Centre
Wildlife Place
Woodvale WA 6026
Tel: (8) 9405 5163, Fax: (8) 9306 1641
Email: grantp@calm.wa.gov.au
----- Original Text -----

From: "Pat and Clive Minton" <mintons@ozemail.com.au>, on 16/04/2000 3:49 PM:
To: Grant Pearson@WOOD.SID@CALM

Dear Grant,

I'm sorry your flight did not reveal any breeding Banded Stilts. I'm sure they must be somewhere. Is it possible to reexamine the detailed rainfall records for other possibilities. Could they be further south in the Lake Gracy/Lake King area? Or much further east in that huge long lake full of islands (whose name I can't remember). It would be great if you could find them and I hope that you may be able to do one more aerial recce.

You did not mention in your response to my last email whether you would be able to prepare the requested list of all yellow leg flag sightings.

I have still heard nothing from the bulletin about my Eastern Curlew slide. I suggest you talk to the editor as ~~the editor has not been going to do anything.~~

I spoke to John Stotes at Anna Plains this morning and learned that he is currently surrounded by water with the beach access road invisible under half metre deep water. It is touch and go whether we will even be able to get down to the beach in our visit in May. But the marsh and bush birds should be fantastic!

We collected some blood samples from the Banded Stilt chicks at Lake Eyre and these have already been sent to Canada for use by Alan Baker in his classification work. He has agreed also, at his expense, to see whether there are any differences yet developed in DNA characteristics between the south Australian and west Australian Banded Stilt populations. Where are the blood samples which we collected in 1995 at Lake Ballard? Would it be possible to spare 5 of these, please? If so could you send them to Alan Baker or alternatively get them to me for forwarding please?

That's all for now,
Best wishes,
Clive.

Grant

Grant Pearson
Department of Conservation and Land Management
WA Wildlife Research Centre
Wildlife Place
Woodvale WA 6026
Tel: (8) 9405 5163, Fax: (8) 9306 1641
Email: grantp@calm.wa.gov.au
----- Original Text -----

176

From: "Pat and Clive Minton" <mintons@ozemail.com.au>, on 16/04/2000 3:49 PM:
To: Grant Pearson@WOOD.SID@CALM

Dear Grant,

I'm sorry your flight did not reveal any breeding Banded Stilts. I'm sure they must be somewhere. Is it possible to reexamine the detailed rainfall records for other possibilities. Could they be further south in the Lake Grace/Lake King area? Or much further east in that huge long lake full of islands (whose name I can't remember). It would be great if you could find them and I hope that you may be able to do one more aerial recce.

You did not mention in your response to my last email whether you would be able to prepare the requested list of all yellow leg flag sightings.

I have still heard nothing from the bulletin about my Eastern Curlew slide. I suggest you talk to the editor as ~~the bulletin is going to be published~~

I spoke to John Stotes at Anna Plains this morning and learned that he is currently surrounded by water with the beach access road invisible under half metre deep water. It is touch and go whether we will even be able to get down to the beach in our visit in May. But the marsh and bush birds should be fantastic!

We collected some blood samples from the Banded Stilt chicks at Lake Eyre and these have already been sent to Canada for use by Alan Baker in his classification work. He has agreed also, at his expense, to see whether there are any differences yet developed in DNA characteristics between the south Australian and west Australian Banded Stilt populations. Where are the blood samples which we collected in 1995 at Lake Ballard? Would it be possible to spare 5 of these, please? If so could you send them to Alan Baker or alternatively get them to me for forwarding please?

That's all for now,
Best wishes,
Clive.

To: iSMTP@CALM.COMO.1@Servers[<mintons@ozemail.com.au>], Jim
Lane@BUSS.SID@CALM

From: Grant Pearson@WOOD.SID@CALM

Cc:

Subject: re: Banded Stilts

Attachment:

Date: 13/Apr/2000 3:20 PM

Hi Clive.

Good news about the yellow flag indeed. I flew Ballard, Barlee, Marmion and Gourly last week and found no breeding. Water levels were mostly lower than expected. I'm in the process of a full report for Jim and will copy it to you.

Cheers

Grant

Grant Pearson
Department of Conservation and Land Management
WA Wildlife Research Centre
Wildlife Place
Woodvale WA 6026
Tel: (8) 9405 5163, Fax: (8) 9306 1641
Email: grantp@calm.wa.gov.au
----- Original Text -----

From: "Pat and Clive Minton" <mintons@ozemail.com.au>, on 13/04/2000 1:55 PM:

Dear Grant and Allan,

1. Thankyou allan for getting the metal bands and yellow leg flags so promptly. As it happened we were not able to band any chicks from the last nine thousand nests, only 322 chicks survived the silver gull predation onslaught!

I am pleased that the SA authorities are most receptive to the recommendation for drastic silver gull control in the environs of future Banded Stilt colonies.

2. Great surprise! A yellow flag adult Banded Stilt nesting in the Lake Eyre colony. This is the first example of the intermixing of the WA and SA populations.

Would it be possible for you to prepare please, in the near future, a consolidated list of all yellow flag sightings?

3. Have you managed to carry out an aerial recce yet over the Guld fields saltlakes?

Best wishes to you both,
Clive.

P.S. Shall I return the metal bands/yellow leg flags immediately or hold them here until we see what transpires over the next few weeks (eg. a new nesting attempt at Lake Eyre when the Queensland water arrives in early May)?

Here to be from our
1995 Silver Banded
+ Marmion fledgling
offspring.

details? when?

17/4/00

Faxed (on Fri 17/03/2000; from JL to GBP) copies of a Budget Request and a Science Project Plan for SPP 'Breeding ecology and conservation of Banded Stilt'. The Budget Request refers inter alia to an aerial survey conducted in April 1999 and proposed future aerial surveys. The Science Project Plan refers inter alia to the aerial survey conducted in March 1995, to subsequent surveys (in 1995) and to proposed future aerial surveys. Methodologies, etc., are detailed. Fax cover sheet reads 'Re Monday's flight', which suggests flight by GBP was to be conducted on Mon 20th March 2000, but note that GBP's email of 13/04/2000 (above) implies a later date.

10

**DEPARTMENT OF CONSERVATION AND LAND
MANAGEMENT**

14 QUEEN STREET, BUSSELTON WA 6280
PHONE - (08) 9752 1677 FAX - (08) 9752 1432



FAXED



FACSIMILE TRANSMITTAL SHEET

TO: Grant Pearson

FROM: Jim L.

COMPANY:

DATE: 17/3/00

FAX NUMBER:

TOTAL NO. OF PAGES INCLUDING COVER: (9)

PHONE NUMBER:

SENDER'S REFERENCE NUMBER:

RE:

YOUR REFERENCE NUMBER:

NOTES/COMMENTS:

Re Monday's flyto

a) CF (including ED / NC Division) allocation: \$5,000

b) External allocation and source: Support to value of \$2,000 provided by mining industry.

6. **PLANNED ACHIEVEMENTS FOR 1999/2000 (5-6 dot points):**

- Sorting, identification and quantification of aquatic invertebrate sweep samples from 1995 breeding event at Lake Ballard.
- Identification and quantification of Banded Stilt oesophagus contents from 1995 breeding at Ballard.
- Egg laying, incubation and hatching success data to be extracted from daily photographic monitoring of quadrats established in 1995 Ballard breeding colonies.
- Data and observations from 1995 Ballard breeding event to be prepared for publication in "Emu".
- *In the event that suitable rainfall occurs, aerial surveys are proposed to determine Banded Stilt breeding locations, colony size, colony site characteristics, breeding success, etc.*
- *In the event that suitable rainfall occurs and breeding is successful, banding and flagging of Stilt chicks is proposed to determine movements, longevity, etc.*

7. **1999/2000 CF BUDGET REQUEST:**

184

BIODIVERSITY CONSERVATION GROUP

CF BUDGET REQUESTS1999 / 2000

1. SPP TITLE: Breeding ecology and conservation of Banded Stilt
2. SPP NUMBER: Req. No. WD/0023
3. SCIENTIST: J.A.K. Lane
4. ACHIEVEMENTS IN 1998/9 (5-6 dot points):

- Aerial survey of limited number of known and potential breeding sites in Eastern Goldfields conducted in April 1999 following rainfalls from ex-tropical cyclones Elaine and Vance.
- Effectiveness of March-April 1999 rainfall in providing suitable conditions for breeding activity by Banded Stilt on Lakes Ballard, Goongarrie, Marmion and Carey determined.
- Precise location of new breeding site on Goongarrie identified.
- Mining industry support obtained for CALM Banded Stilt research.
- Potentially useful contacts established with mining industry.

5. 1998/9 BUDGET ALLOCATION:

- a) CF (including ED / NC Division) allocation: \$5,000
- b) External allocation and source: Support to value of \$2,000 provided by mining industry.

6. PLANNED ACHIEVEMENTS FOR 1999/2000 (5-6 dot points):

- Sorting, identification and quantification of aquatic invertebrate sweep samples from 1995 breeding event at Lake Ballard.
- Identification and quantification of Banded Stilt oesophagus contents from 1995 breeding at Ballard.
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- *In the event that suitable rainfall occurs and breeding is successful, banding and flagging of Stilt chicks is proposed to determine movements, longevity, etc.*

7. 1999/2000 CF BUDGET REQUEST:

a) Operating (including requests for ED / NC Division funding):
\$3,000 See special note at Item 10 below.

b) Chemistry Centre:
\$0

8. EXTERNAL FUNDING RECEIVED OR EXPECTED TO RECEIVE, AND SOURCE:

There is a strong possibility of significant, external, in-kind support (\$1,000s) being provided by the mining industry and/or other sources in the event that suitable rainfall occurs in 1999/2000 or subsequent years.

9. COMPLETION DATE FOR THIS WORK (mm/yy):

Depends upon timing of rainfall events and level of funding and in-kind support obtained. Rainfall events suitable for successful breeding appear to occur once in 3-10 years.

10. ANY OTHER INFORMATION RELEVANT TO BUDGET REQUEST:

CALMScience funding (\$3,000) is being sought for 1999/2000 to enable a *rapid response* in the event (<50% probability) that a potentially-suitable rainfall event occurs. These funds would be used for an initial aerial survey. External funds would be sought to support follow-up work in the event that breeding colonies with a high likelihood of success are located.

11. ENDORSEMENT BY PROJECT LEADER:

Department of Conservation and Land Management
CALMScience Division
Science Project Plan

(Page 1)

Important: Refer to the *Explanatory Notes* (Staff Guideline No. 7) when preparing an SPP.

PART A Title and Location

SPP Number: [allocated by D/AA]
 Request No: [allocated by WASPP]
 Concept Plan No: [allocated by D/AA]

WD/0023

1. Project Title: Breeding ecology and conservation of the Banded Stilt
2. CALMScience Group: Biodiversity Conservation Project Team: Aquatic Ecosystems
3. Staff [Names and estimates of percentage of time]:

Supervising Scientist:	J. Lane (15% in 1999/00)
Other Scientists:	G. Pearson (2% in 1999/00)
Technical Officers:	A. Clarke (10% in 1999/00)
External Collaborators:	Dr C. Minton (Australian Wader Study Group)
Volunteer(s):	A. Chapman
4. a) Departmental Program(s): Nature Conservation
 - b) Land Tenure(s): Vacant crown land, pastoral lease, CALM-managed land.
 - c) CALM Region(s): Goldfields, Wheatbelt, Pilbara
 - d) CALM District(s): All within above regions.
 - e) Location of plots/transects [Name] : Not applicable
5. Related SPPs: WD/0024 (*A Directory of Important Wetlands In Australia*)
6. Proposed commencement date: Phase 1: 1995 Phase 2: 1999
7. Proposed completion dates: Phase 1: 2001 Phase 2: 2005
8. Date of submission of this Plan and signature of Supervising Scientist:

(180)

(Page 2)

PART B Endorsements

9. List the relevant District Manager(s), Business Unit Manager(s), and/or Regional Manager(s) whom you have consulted about the SPP. If the SPP relates to all Regions, you should confer with the Director of Regional Services:

Goldfields Regional Manager (Ian Keally)

10. Biometrician:
Return comments to D/AA

11. Animal Ethics Committee:
Return comments to D/AA

12. Project Team Leader:
Return comments to D/AA

13. Group Manager:
Science Group Manager to forward to D/AA

14. Divisional Administrative Assistant (D/AA):
Divisional Admin. Assistant to manage approval process, load approved SPP on WASPP, arrange filing at SOHQ, publish in CALMScience News, send photocopy of completed SPP to Supervising Scientist and notify Biometrician of SPP No., copy cover sheet to Regional Manager, District Manager and relevant Program Manager (for their information)

(Page 3)

PART C Relevance and Outcomes

15. **Background:** The Banded Stilt *Cladorhynchus leucocephalus* is an Australian endemic. It nests in large colonies (up to 100,000+ pairs) on small islands (about 1-5 ha) on huge (100+ km²) claypan lakes of inland Western (mainly) and South Australia following exceptional rainfall events (c. 3-7 year intervals). Its breeding biology has been little studied, due mainly to the difficulty of finding and gaining access to breeding colonies. Nesting attempts fail spectacularly if lakes dry prematurely during breeding attempts. Few known nesting locations are within conservation reserves, and these only partly. The mining industry is showing substantial interest in mining the beds of claypan lakes and utilising them for storage / disposal of wastes and for water supply. Without an improved knowledge of Banded Stilt breeding biology and environmental requirements, CALM is not well placed to ensure conservation of the species.
16. **Project aims:**
- Determine the principal breeding locations of Banded Stilt in Western Australia and their relative importance.
 - Develop an improved understanding of their breeding biology.
 - Quantify key environmental factors (e.g. hydrological regime, salinity) governing breeding success;
 - Identify any significant human-induced threats to nesting colonies and habitats.
 - Obtain and disseminate knowledge needed to ensure conservation of the species.
17. **Anticipated project outcome(s):** Scientific and other publications that will provide information necessary to ensure that the principal breeding sites and habitats of the Banded Stilt can be adequately conserved and wisely managed.
18. **Anticipated users of the knowledge to be gained and technology transfer strategy:** CALM, Department of Environmental Protection, Environmental Protection Authority, Department of Minerals & Energy, mining and tourism industries, conservation groups. Results of Phase 1 have been transferred through articles in the media, popular and ornithological magazines, an ABC television documentary, presentation at Southern Hemisphere Ornithological Conference. Scientific publication is also proposed.
19. **Milestones [Describe tasks and when they will be completed]:**
- | Phase 1: (1995-2000) | |
|---|----------|
| • Aerial survey to locate Banded Stilt breeding colonies in Eastern Goldfields following passage of Cyclone Bobby. | Mar 1995 |
| • Establishment of base camp to study Lake Ballard breeding colony | Apr 1995 |
| • Collection of data on breeding colony characteristics, timing of nesting, clutch size, incubation period, hatching & fledging success, fledging period, lake filling / drying cycle, water chemistry. | Jun 1995 |
| • Collection of stilt adults and chicks for gut content analysis. | Jun 1995 |
| • Leg banding and flagging of chicks on Lakes Ballard and Marmion. | Jun 1995 |
| • Sorting, identification and quantification of macroinvertebrate sweep samples and stilt gut contents. | Dec 1999 |
| • Extraction of clutch size, incubation period, hatching success data from photographic monitoring of 1995 Ballard nesting event. | Dec 1999 |
| • Preparation and write-up of 1995 breeding event data and observations for scientific publication. | Apr 2000 |
| • Publication of 1995 breeding event results in journal <i>Emu</i> . | 2001 |
| Phase 2: (1999-2005) | |
| • Monitor rainfall reports from Eastern Goldfields and Wheatbelt. | 2004 |
| • In the event that exceptional rainfall occurs (annual probability low), conduct aerial surveys to locate and photograph breeding colonies. | 2004 |

(179)

- In the event that exceptional rainfall occurs and breeding colonies become established, conduct aerial (& possibly ground) monitoring to determine colony success and major limiting factors. 2004
- In the event that successful fledging of chicks appears probable, 2004 conduct banding and leg flagging of chicks.
- Prepare and write-up of data and observations for publication. end 2004
- Publish in *Emu* or other scientific journal. 2005

PART D Study Design

20. Method [including statistical analysis]:
- Phase 1 (1995-2000):** Conduct aerial survey of Lakes Barlee & Ballard following Cyclone Bobby (Feb 1995) to locate breeding colonies. Establish base camp on Lake Ballard. Establish quadrats in nesting areas for daily monitoring (photographs) to determine laying rate, clutch size, incubation period and hatching success. Collect adults and chicks to determine diet. Conduct macro-invertebrate (standardised sweeps) to monitor food availability. Install continuous recorder to monitor lake water level. Sample water chemistry. Develop safe method of catching chicks. Band / leg flag chicks. Conduct additional aerial surveys to monitor fledging success. Analyse results. Prepare for publication. Publish.
- Phase 2 (1999-2005):** Rainfall in the main breeding range of the Banded Stilt (in WA) will be monitored using daily rainfall data obtained by the Bureau of Meteorology. Following exceptional rainfall events (approx 3-7 year intervals) and reports of flooding, aerial surveys will be conducted to locate and monitor breeding colonies. Colonies will be photographed from the air and, if feasible, visited on the ground to determine number of breeding pairs, nesting and fledging success, water depths, water chemistry and food availability. Chicks will be banded and leg-flagged to obtain information on movements and longevity. Standard statistical techniques will be used where appropriate.

PART E Data Management and Budget

21. Voucher specimens [how many are anticipated to be collected and where will they be lodged?]: Voucher specimens (at least) from macroinvertebrate samples will be retained and curated at CALMScience Woodvale.
22. Data management [how and where are data being archived/maintained?]: The original data (field note books, other papers) and nest monitoring photographs are held by J.Lane at CALM Busselton. Data from a continuous water level recorder (Lake Ballard 1995) are on disk in a datasafe in JL's office. The 1995 macroinvertebrate samples are held and curated by A.Clarke at CALMScience Woodvale. Data to be collected (Phase 2) will be held by JL at Busselton.
23. Budget Estimate [anticipated expenditure]:

Consolidated Funds (CALM)

	Year 1 (94/95)	Year 5 (98/99)	Year 6 (99/00)
FTEs - Scientist	0.2	0.02	0.15
FTEs - Technical	0.5	0.03	0.12
Equipment	0	0	200
Vehicle	0	0	500
Travel	0	0	500
Other	0	5 000	1 800
TOTAL	0	5 000	3 000*

178

	Years 7 to 10 (00/01 to 03/04)	Year 11 (2004/05)	
FTEs - Scientist	0.05	0.1	
FTEs - Technical	0.1	0.05	
Equipment	200	200	
Vehicle	500		
Travel	500		
Other	1 800	800	
TOTAL	3 000*	1 000	

External Funds

	Year 1 (94/95)	Year 5 (98/99)	Year 6 (99/00)
Salaries/Wages/Overtime			
Overheads			
Equipment			
Vehicle			
Travel			
Other			**
TOTAL	10 000**	1 200**	**

	Years 7 to 10 (00/01 to 03/04)	Year 11 (2004/05)	
Salaries/Wages/Overtime			
Overheads			
Equipment			
Vehicle			
Travel			
Other			
TOTAL	**	**	

* CALMScience funding (\$3,000 each year) is being sought from 1999/00 to 2003/04 to enable a *rapid response* in the event (<50% probability) that potentially-suitable rainfall events occur. These funds will be used for aerial surveys. External funds will be sought to support follow-up work in the event that breeding colonies with a high likelihood of success are located. In years when potentially-suitable rains do not occur (by end of April), the funds could be reallocated to other projects.

** There is a strong possibility of significant, external, in-kind support (\$1,000s) being provided (as occurred in 1994/95 & 1998/99) to this project by the mining industry and other sources in the event that suitable rainfall events occur in 1999/2000 and subsequent years.

24 Budget Actual [to be updated at the end of each financial year by D/AA and local AA]:

Consolidated Funds (CALM)

	Year 1 (94/95)	Year 5 (98/99)	Year 6 (99/00)
FTEs - Scientist	0.2	0.02	
FTEs - Technical	0.5	0.03	
Equipment	0	0	

(171)

Vehicle	0	0	
Travel	0	0	
Other	0	0	
TOTAL	0	0	

	Years 7 to 10 (00/01 to 03/04)	Year 11 (2004/05)	
FTEs - Scientist			
FTEs - Technical			
Equipment			
Vehicle			
Travel			
Other			
TOTAL			

External Funds

	Year 1 (94/95)	Year 5 (98/99)	Year 6 (99/00)
Salaries/Wages/Overtime			
Overheads			
Equipment			
Vehicle			
Travel			
Other			
TOTAL	10 000**	2 000**	

	Years 7 to 10 (00/01 to 03/04)	Year 11 (2004/05)	
Salaries/Wages/Overtime			
Overheads			
Equipment			
Vehicle			
Travel			
Other			
TOTAL	**	**	

25 Account code(s) for this SPP [allocated by Group AA]:

26 Latitude and longitude of plots/transects: Not applicable (no permanent plots/transects)

File note (16/03/2000) by JL headed 'Calculation of Banded Stilt Funds Available as at 16 March 2000' that inter alia indicates funds are available '... to spend in 1999/2000 on [breeding] BaSt air survey following flooding'.

CALCULATION OF BANDED STILT FUNDS AVAILABLE AS AT 16 MARCH 2000

1. On 26 Nov 1998 Keith Morris sent me an email (v4 f16) saying he would provide \$5,000 to enable me to employ an assistant to analyse the banded Stilt samples and that he would put the funds in my RAOU account.
2. On 28 Nov 1998 Keith Morris emailed (v3 f...) to Rod Mell (copied to me) a request to transfer \$5,000 from one of his accounts to my RAOU account for analysing BaSt samples.
3. External Funds summary provided by Rod Mell on 5 March 1999 (v3 f...) says (as at Fri 5 March 1999)

L29	RAOU Trip	Opening Balance	Expenditure	Revenue	Closing Balance
		105.80	27.00	0.00	78.80
4. I calculated cost of BaSt air survey at \$2,068 around 30 April 1999 (v3 f...)
5. On 13 May 1999, following my appraisal in Nov 1998, I sent an email (v4 f17) to Rod Mell saying that the \$5,000 promised by Keith Morris for banded Stilt work had not appeared in Job L29 (RAOU Trip) report of 2 March 1999 and asking if it had been transferred since. No reply (until 21 May, see below).
6. On 21 May 1999, I sent an e-mail to Keith Morris saying he had agreed to "transfer \$5,000 into my RAOU account (Job L29) to enable me to employ a consultant to analyse the banded Stilt samples" but that the transfer had not happened yet (v4 f18, 30, 58). Folios 30, 59 have discussion of what would be done and reason for holdup. Keith emailed on 22 May 1999 (f59) indicating the \$5,000 would be transferred "this financial year" (1998/99).
7. On 21 May 1999 Rod Mell emailed me (v4 f31) saying he had processed the paperwork for the transfer but it would take a few days to be processed..

8. 1999/2000 CRF budget allocation summary page (v4 f133, 131) indicates as follows:

SPP No.	Account	Project	Request	Received 99/00	Alloc. 99/00
(WD/0023)	535AE516M	Breeding ecology and conservation of BaStilt	3,000	5,000	2,000

The \$2,000 for 99/00 was allocated to 535AE516M by 20 Sep 1999 (see v4 f127).
 Which account did the \$5,000 allocated in 98/99 go in to? It went into Trust Account L29 (see v4 f143; this folio shows a credit (negative expenditure) of \$4,973 for 98/99, this was the credit of \$5,000 minus the expenditure in 98/99 of \$27).

9. (as at Tues 16 November 2000) (v4 f172)

L29	RAOU Trip	Opening Balance	Expenditure	Revenue	Closing Balance
		5,078.80	0.00	0.00	5,078.80

Note that \$5,078.80 was also the balance at the end of the 1998/99 financial year (v4 f143 & 142).
 Note that Job L29 has account codes 535GL29M etc.

10. (as at Tues 7 March 2000)

WASPP 99/0013	535AE516M	Materials - Breeding ecology and conservation of the Banded Stilt	Budget	Expend	Availabl
			2,000	10.75	1,989.25

 (Note that nothing had been spent from this account as at)

CONCLUSIONS

1. There is \$1,989.25 available in CRF account 535AE516M to spend in 1999/2000 on BaST air survey following flooding.
2. There is still \$5,078.80 available in Trust Account L29 to spend on analysing the BaST invertebrate samples.

J. Lane
 16 March 2000

First two pages (or were there only two?) of a document headed ‘The Following is the Makings of the ‘Water Depth and Quality Section’ ...’, prepared by JL 22-24/07/1997. There are numerous references to aerial surveys undertaken in 1995. The dates of these were 12/03, 15/03 (helicopter to Lake Ballard colony), 27/04 (by JL), 06/06 (by ACh), 14/07 (ACh) and 22/08/1995 (ACh).

THE FOLLOWING IS THE MAKINGS OF THE "WATER DEPTH AND QUALITY SECTION" OF THE FINAL PUBLICATION ON THE 1995 BANDED STILT WORK

PREPARED 22-24/7/97

Final 24/7/97

The following is a compilation of all data and observations relevant to this section of the report. When this has been completed, prepare a draft of the text for publication.

Water Depth of Ballard (observations in chronological order)

- Lake Ballard was dry when rain began to fall on 25 February (check) (JDay 56) 1995.
- Judging by rainfall records for (locations), Lake Ballard had been dry since at least (month/year).
- Rain from Cyclone Bobby began to fall on (date), and fell continuously for .. days, by which time a total of .. mm had fallen.
- Rain between then and 15 March (time of first ground visit (by helicopter) to lake) was ... mm.
- I could use my photos (ground) to estimate the maximum flood level (as well as the water level at the time of the photos (e.g. 12 & 15 /3/95), which should be evident on the islands.
- An article by CM, GP & JL in The Tattler (April 95) says "Marj Reni, Grant and Clive did a 4.5 hour aerial survey from Kalgoorlie on 12 March. They covered lakes Marmion, Barlee and Ballard ... All of the lakes were full ..."
- Photos were presumably taken by GP and CM which could be used to estimate water level at time of first aerial inspection (12 March) (J_Day 71)..
- A stick with tape around it was used (by JL, GP & CM) to mark the water's edge (shoreline) on the south side of Camp Island on Wed 15 March (J_Day 74).
- If no further observations were made of water level in relation to stick (above) I could use my photos (need to go through my slides, and the prints in the BaSt box) from this day and subsequent days to calculate water level of 15/3. I took air photos of colony on 15/3 (see folios 14-16 of VI for tracings), did I take photos of colony on subsequent air survey?
- Some "rough jottings" made (when?) in preparation for talk at SHOC held on 7/10/96 say water depth "estimate c. 50cm - on 15/3". Source? This may have been (probably was) an estimate by me at the time of doing the jottings, based on the other depths I jotted on same sheet.
- On 15 March photos were taken (by JL at least) on the ground and from the helicopter) that could be used to estimate water level at that time.
- Grant installed a continuous water level recorder on 1 April 95 (JDay 91) (date by deduction from logger records).
- A "stake" (wooden stake - see my notebook entry (2nd) of 28/4/95) was installed on N side of Camp Island on .. (date - on or before 28/4). *← it was 1 post by GP*
- The first Wingspan article (June 1995, p15) says "And, who knows, a further round of the breeding cycle may be aided by an unexpected 70 mm "top up" of rainfall on 10 April (J_Day 100), which restored the gradually drying lake almost to its maximum level". Can Clive supply supporting data?
- My rough notes on file (folio 80) have CM telling me by telephone on .. April 95 (after he was on the island - calling from Broome Bird Observatory) that "rain added 13 cm (51 cm water depth at stake on .. 4 days after rain)". Folio 88 (see below) indicates the missing date was 14/4/95. Therefore the water level before the rain was $51 - 13 = 38$ cm on 10/4/95 (prior to the rain on 10/4).
- CM's fax to JL on 24 April 95 (folio 88) says "Water depth at marker beside island. 4pm 14/4/95 (JDay 104). 51cm (depth of water)"
- JL flew Ballard on 27/4/95 and observed (folio 97) "Many family parties ... all the way to the W end of the lake. Water appears too shallow for outboards here and access difficult"
- Folio 106 (photocopy from ACI notebook) says "28/4/95 (JDay 118) 8.30 (am). depth top -> water 0.89m. bottom to top of water 0.54" (also gives pH and temp readings). This data collected at gauge post on N side of Camp Island.

89
54
143 cm

38
+ 98
136 cm

• 1st April 95 - water at stake was 38 cm deep and 98 cm exposed (GP notebook)

• 2/4/95 - water level - 161 mm from bottom of red tape at 0807 hrs. (GP notebook) (Jday 92.338)

- ACI says means 2nd breeding island
- Depths taken by ACI on 2/5/95 (J_Day 122) when he, JL and ACh shot adults and chicks were
 - "1st shoot. 10.30am. 1km south of 2nd island. Depth 0.47m"
 - "Adult 2. 11.45am. Depth 0.48m"
 - "Adult 3. 12.10am. Depth 0.49m"
 - "Adult 4. 1.50pm. Depth 0.33m"
 - "Adult 5. 2.20pm. Depth 0.31m"
 - (folio 109; photocopy from ACI ? notebook) 4/5/95 (JDay 124) 0.97 depth top of stick to water. 0.44 depth from bottom to water level of stick (temp and pH also read)
 - Mark Lamble and Cam were further west (see map on folio 129 - also shows boat limit due to too shallow) on 16th & 17th May (folio 131). They filmed chicks "Birds marched E during day & west at night. 2-3cm depth. Chicks were wading not swimming (folio 119)."
 - ACh flew Ballard on 6/6/95, five rafts of flight-capable stilt there, "Most of the larger rafts were in the NW sector .. and would be inaccessible to dinghy with outboard" (folios 138-140a). Definitely no flightless chicks or signs of further nesting. Grey Teal in 1000s, Shel in 100s.
 - Grant downloaded logger data on 9 June 95 (J_Day 160) and "reset to record every hour and average every 6 hours" (folio 154). "Water levels varied from 398 (units) to 689 for the 70 days it was in place".
 - GP's memo (folio 154) says "Camp Isd (9 June 95, JDay 160) .. Depth 775mm".
 - ACh flew over Ballard (and Marmion) on Fri 14/7/95. "He did 4 passes over Ballard - 6-7000 BaSt all flying - no further nesting" (folio .. V2). See later folios for full report. The traverses were all E to W or W to E.
 - ACh also flew over Ballard (and Marmion) on 22/8/95. Did four traverses. "western end of lake - dry". Counted 11,000 BaSt. Also Grey Teal, Shelduck, Avocet. Flock of 1,500 BaSt at "eastern end of lake". Some avocet and teal were around camp Island.
 - JL memo of 23/8/95 to GP says "Monday's air survey by Andy Chapman showed that Lake Marmion will be dry in a week or so and Ballard in the next month or two". (folio .. V2).
 - JL memo of 29/8/95 to GP says "Your suggestion that you go to Kal and Ballard is a good one .. As well as retrieving the logger, I would like you to go (walk?) out to Camp Island and do standard sweeps, water samples etc, as before". (folio .. , V2).
 - GP retrieved water level recorder on 14 Sep 95 (J_Day 257). Depth of water at the logger was 315mm (i.e. still high!). He didn't go out to Camp Island.
 - Did Andy C or anyone else from Kalgoorlie fly over Ballard subsequently and see it dry? When? Get satellite imagery to work out when dried (on 23/7/97 I asked GP to get Ballard "quick looks" for Jan 95 or pre 25th Feb 95, and Sep - Dec 95). Get evaporation rate data for individual months Sep to Dec (actual for 95?) (also get Feb-April data to provide another method of estimating maximum flood level in March 1995). Use with rainfall data for same period. Did Clive Minton walk out to the colony at Camp Island at end of June 1996 (as he suggested he might)?

Water Temperature of Ballard

- Folio 106 (photocopy from GP or AC notebook) says "28/4/95 8.30. ... Temp top 19.0. Bottom 19.0 (also gives depth and pH data). This data collected at gauge post on N side of Camp Island.
- Folio 109 (photocopy from ACI notebook) says "4/5/95. ... temp top 12.6 bottom 12.6" This data collected at gauge post on N side of Camp Island.
- GP's memo (folio 154) says "Camp Isd (9 June).. Temp?NA" But hand note by me says "yet, (Alan has)".

Water pH of Ballard

- Folio 106 (photocopy from GP or AC notebook) says "28/4/95 8.30. ... pH Top 7.89. Calibration - Solution 7.01 read 6.95. Solution 10.01 read 9.78. Tried to calibrate, meter read E4". This data collected at gauge post on N side of Camp Island.
- Folio 109 (photocopy from ACI notebook) says "4/5/95. ... Standardisation - buffer 7.01 read 6.99, buffer 10.01 read 9.75. pH at surface 7.78". This data collected at gauge post on N side of Camp Island.

Note (23/06/1997) from Michelle Handley (spelling?) to JL and photocopies of prints of three aerial photos (JL's photos 3554, 3650, 4155, all subsequently scanned) taken by JL of Lake Ballard (on 15/03/1995 helicopter trip to BaSt breeding colony) and Lake Barlee (on 27/04/1995 aerial survey).



WWF World Wide Fund
For Nature Australia

ACN 001 594 074

56.
Level 3
79 Stirling St, Perth, WA
GPO Box U1946
Perth WA 6845
Telephone: (09) 228 3227
(09) 220 0678
Fax: (09) 228 3227
Email: wwfpert@ozemail.com.au

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forward it to you. It's for cost of photo duplicates
eprints made & for postage. I will send prints
to you shortly.
Cheers,
Michelle
23/6/97
With Compliments

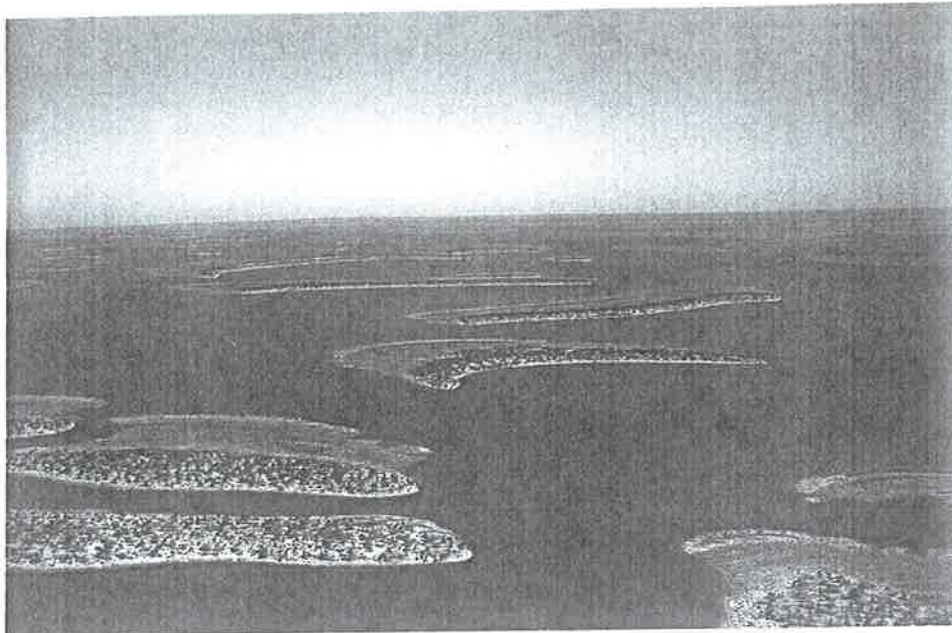


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Lake Ballant

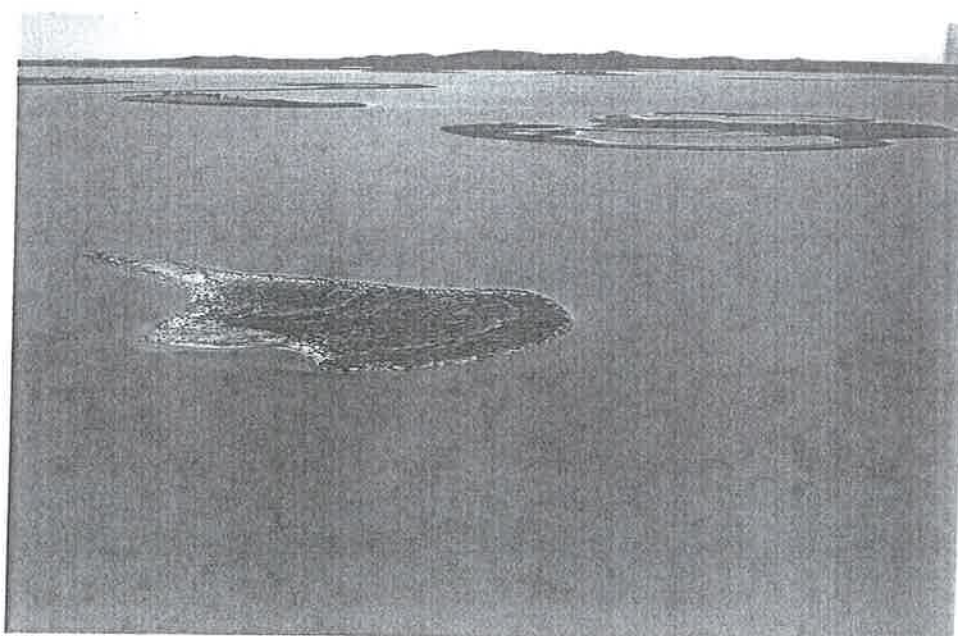
JL's
photo
No.
3554



Lake Ballant

JL's
photo
No.
3650

"Camp Island"
and Bass
breeding colony



Lake Ballant

JL's
photo
no.
4155
"Cracker Island"

[Signature]
21/01/2014

From slide 22

Lebre Ballard 15.3.95

Photo by J. Lane — Plse return *

Photo No 3554

From Photo 06 Box 22

Lebre Ballard 15.3.95

Photo by J. Lane — Plse return *

Photo No 3650

From slide 03

Lebre Barlee 1995

Photo by J. Lane ..
— Plse return *

Photo N° 4155 in JLB
slide collection (examined)
Taken on 27/04/1995

J 21/01/2014

Document by JL headed 'Banded Stilt' and beginning 'Aims of Talk (7.10.96)'. Includes the following sentence: 'Program' is to fly lakes after heavy rains to locate [BaSt breeding] colonies, ascertain size and success. Unfunded'.

BANDED STILT

Aims of Talk (7.10.96)

- describe breeding event of Feb-.. last year.
- comment on conservation aspects
- get you looking for leg-flagged Stilt

Banded Stilt is .. only found in Australia SLIDE OF STILT

Habitat is .. salt lakes, estuaries SLIDE OF HABITAT

Distribution is ..OVERHEAD

First described in 1816 by Vieillot in *Nouv. Dict. Hist. nat* 3:103--"Terres Australes"

Breeding unrecorded until 1930 when ..

Since then, breeding has been recorded as follows:

old eggshells
abandoned colonies
fightless chicks
active colonies

Breeding sites and behaviour a mystery for over 100 years because breeds only on small islands on large lakes, remote areas, few people, irregularly, difficult access following rain.

Rainfall: On 2/10/96 I flipped thru monthly weather reviews from Jan 1985 to Mar 1994 inclusive and picked out months when substantial (>75mm) occurred in the Ballard Barlee area. These are as follows:

- June 1986: band of high rainfall from Onslow to Kalgoorlie (75mm). Menzies had 113mm (previous highest in 88 years was 105mm). This rain caused by moist tropical air moving across the State. Cashmere Downs 86mm, Diemals 74mm, Kalgoorlie 74mm, Yundamindra 109mm
- * January 1987: Cyclone Connie produced heavy falls (>100mm) from Port Hedland thru Menzies to Balladonia. Use rainfall map and cyclone track and cyclone description. Cashmere Downs 107mm, Diemals 60mm, Kalgoorlie 110mm, Menzies 145mm, Yundamindra 101mm.
- * December 1988: Cyclone Ilona produced falls of 50-100 mm in three patches from Port Hedland to near Balladonia. Many highest ever December falls. Cashmere Downs 45mm, Diemals 62mm, Kalgoorlie 89mm, Menzies 68mm, Yundamindra 124mm
- January 1990: a tropical low intensified to a deep complex monsoonal depression and brought heavy rains (>100mm) from Exmouth to Wiluna. Cashmere Downs 58mm, Diemals 63mm, Kalgoorlie 39mm, Yundamindra 70mm.
- December 1991: severe thunderstorms caused heavy falls and flooding in goldfields. Isolated localities had c 100mm. Cashmere Downs 20mm, Diemals 22mm, Menzies 36mm, Yundamindra 94mm.
- ** March 1992: middle level disturbance and deepening trough caused widespread rains and thunderstorms in goldfields and surrounding areas between 19 and 23 March. Menzies 154mm (highest March for 94 years. Kalgoorlie 103mm. Cashmere Downs 151mm, Diemals 128mm, Yundamindra 101mm. Band >100mm from Cue to Balladonia.
- April 1992: Troughs and northwest (mid-level) cloud bands and combination with one cold front caused widespread heavy rain between Pilbara and Eucla. Most to north of Barlee, Ballard etc. Kalgoorlie 75mm, Cashmere Downs 20mm, Diemals 23mm, Menzies 60mm.
- * August 1992: cold fronts brought very much above average rain to SW and goldfields. Kalgoorlie 73mm, Diemals 93mm, Cashmere Downs 78mm, Menzies 106mm, Yundamindra 65mm.
- Feb 1994: a tropical ("monsoonal") low brought above to very much above rain to areas south to Murchison. Kalgoorlie 71mm, Cashmere Downs 60mm
- CHECK APRIL 1994 ONWARDS.
- ***Feb 1995: Tropical cyclone Bobby brought >300mm rain to Barlee(?), Ballard area.

Grant Pearson and I have had interest in locating Banded Stilt breeding sites since 1980 when Phil Fuller and I located ... on Lake Barlee during aerial survey of lakes of eastern goldfields. Grant & Phil subsequently visited this colony and found.. See Burbidge & Fuller (1982).

My principle interest is in conservation aspects, e.g. where are the main breeding sites (which lakes and which islands) and are there any threats or conservation measures necessary at these breeding localities. "Program" is to fly lakes after heavy rains to locate colonies, ascertain size and success. Unfunded.

In February last year (1995) tropical Cyclone Bobby crossed the coast near Onslow and headed inland, became rain bearing depression

List of slides (photos) used in Banded Stilt talks given by JL to the SHOC at Albany on 07/10/1996 and the RAOU WA Group in Perth on 25(?)/09/1996. Nine of these photos were taken during aerial surveys, on 15/03/1995 and 30/03/1995 (Helicopter trip) and ('Guitar Island' photo) on another flight (probably the 27/04/1995 flight by JL).

(Solid bly)

+ sequence

(2)

Slides used for Banded Still talks
to Sth. Mem. Orr. Congress 7/10/96

(1)

Slides used for Banded Still talks (45 mins)
to RAON Perth Monday 25 (?) September 1996

(1)

Sequence	Photo ID	Subject		(2)
1	486	Still	✓	1
2	"22"	lake Banded aerial (15/3/95)	✓	2
3	"09"	" " " - 2 still (15/3/95)	✓	3
4	"06"	" " " 1st colony (15/3/95)	✓	4
5	"21"	helicopter at Kal (15/3)	X	
6	"25"	Camp Island aerial (15/3)	✓	5
7	"34"	helicopter on Camp Island (15/3)	✓	6
8	"37"	GDP carrying camera case (15/3)	X	
9	"05"	GDP + CDTM approaching island (15/3)	✓	7
10	"07"	" " " + Maj Rani next to nesting birds (15/3)	X	
11	12 "18"	nesting still (4/95)	✓	10
12	"33"	still take off ^{nesting} island (15/3)	✓	8
13	"30"	still return to nests (15/3)	✓	9
14	"10"	GDP + CDTM photograph nesting birds (15/3)	X	
15	"09"	working / preening / drinking still (15/3)	X	
16	"17"	2 still ^{back} feathers up, in water (15/3)	✓	11
17	"22"	2 still drinking (15/3)	✓	12
18	"25"	2 still copulating in water (15/3)	✓	13
19	"26"	" " " " " " "	X	
20	"19"	" " " " " " "	✓	14
21	"29"	" " " " " " "	✓	15
22	"20"	" " " " " " " on land "	✓	16
23	"13"	live + Maj Rani mark out quadrats (15/3)	X	
24	"22"	pink taped quadrat of nests + eggs (15/3)	✓	17
25	"31"	eggs (numbered) in nests + peg (15/3)	✓	18
26	4 "04"	Trailer 2 pinto + Argo + Grant (4/95) (29/3)	X	
27	1 "36"	composite nest to Crooner Lake (4/95) (31/3)	X	
28	3 "04"	pinto with gear entering Crooner Lake (31/3)	X	
29	blanks	pinto of gear crossing " " (31/3)	X	
30	3 "05"	loading pinto onto trailer (31/3)	X	

More Land photo X

Sequence	Sequence	Photo ID	Subject
(2)			
✓ 19	31	3 "08"	Argo putting part out of Crooner Lobe - (31/3) ✓
X	32	3 "23"	" " " between lobes (31/3) X
✓ 20	33	3 "11"	Argo launching part into Lobe Bellard. (31/3)
✓ 21	34	3 "28"	Walking parts of gear into " " (31/3)
X	35	blank	unloaded gear at Camp Island - Mark Lambie photo
X	36	3 "25"	viewing 1st colony from Camp Island (31/3)
X	37	11 "04"	Mark Lambie filming ^{nesting birds} " (4/95)
X	38	11 "32"	Campbell - sound recording (4/95)
X	39	-	Mark + Campbell breakfast at fire (4/95)
X	40	12 "04"	Mark sleeping outside tent (4/95)
✓ 22	41	Box 2 "19"	Quadrat NOUT - eggs in nests - (1/4)
X	42	Box 6 "04"	Quadrat 13 14 15 16 - 1 in frame - eggs (4/4) 2nd colony.
X	43	"09"	3 eggs + meadowlarks (collected) - (8/4)
X	44	"05"	Chickens of 3 + 4 eggs (") - (8/4)
✓ 23	45	Box 6 "19"	Quadrat NOUT - eggs in nests - (4/4) - a few chicks?
✓ 24	46	Box 6 "20"	" " - eggs + chicks <u>closup</u> (4/4)
X	47	Box 6 "21"	" " - " " " (4/4)
✓ 25	48	Box 7 "28"	" " - nearly chicks in nests (5/4)
X	49	"04"	Closup of <u>chicks</u> + eggs in ¹ nest (5.95)
X	50	"09"	" " - 1 chick + 3 eggs " - (5.95)
✓ 26	51	"14"	" " - 3 chicks in 1 nest (5.95)
X	52	Blank	Closup of Adult + 1 chick in nests (Mark Lambie)
X	53	11 "22"	Adult leading chicks towards shore (4/95)
✓ 27	54	11 "24"	" " " " " " (4/95)
✓ 28	55	11 "25"	" depending chicks at shoreline (4/95)
✓ 29	56	11 "19"	" pushing another chick away " (4/95)
✓ 30	57	11 "09"	" leading 2 chicks into water (4/95)
✓ 31	58	9 "01"	2 adults + 7 chicks on water (7/4)
X	59	9 "04"	move " " " " (7/4)
X	60	9 "05"	1 straggling chick behind family on water (7/4)

Sequence (2)	① Sequence	Photo ID	Subject
X	61	"01"	creche of large chicks - Lake Barlee (from air)
X	62	"08"	Alen Clive standing in punt - search for chicks
X	63	"11"	" " speeding in punt - " " "
X	64	"25"	" " slow in shallow water " " "
✓ 32	65	"28"	scouring chicks up with plankton net -
✓ 33	66	"32"	" " " " " " " " " " " "
✓ 34	67	"33"	" " " " " " " " " " " "
X	68	"24"	" " into punt " " " "
✓ 35	69	"26"	chicks in holding tub in punt .
X	70	"04"	me holding / banding chicks (in punt) .
X	71	"25"	me banding chicks " " "
✓ 36	72	"21"	Alen hand holding flagged / banded chicks .
X	73	"01"	cloud cover (5.95)
X	74	"31"	nests washed away (5.95)
X	75	"	"Gunter Island" from air .
X	76	1 "17"	another nesting island from air (30/3)
X	77	1 "09"	yet " " " " " (30/3)
X	78	1 "11"	" " " " " (30/3)
X	79	∴ "14"	air photo of tractor on bed of lake .

**Notice of Seminar to be held at CALM Wildlife Research Centre,
Woodvale, on 17/05/1996 with JL presenting 'Banded Stilt Breeding in
the Goldfields'. Abstract refers to aerial survey of 12/03/1995.**

204.

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT
Science and Information Division



SEMINAR

17 May 1996

presented by Jim Lane

BANDED STILT BREEDING IN THE GOLDFIELDS

Banded Stilts *Cladorhynchus leucocephalus* are endemic to Australia and unique among the 214 species of wading bird in the world in that they nest colonially, have white downy chicks and raise their young in creches. Breeding is confined to recently flooded saline lakes of the arid interior. Here the birds nest in the tens of thousands and feed on a super-abundance of brine shrimps *Parartemia*. Because of the considerable difficulty of finding and gaining access to nesting islets, Banded Stilt breeding has been infrequently observed and little studied.

In February 1995, Cyclone Bobby dumped 380 mm of rain to the north of Kalgoorlie in four days of continuous downpour. An aerial survey on 12 March revealed a colony of Banded Stilt on an islet in the 60 000 ha Lake Ballard. During ensuing months this breeding event was followed by CALM scientific and management staff, Clive Minton of the Australasian Wader Study Group and a film crew from the ABC TV Natural History Unit. Preliminary results of this work will be presented.

Venue:

Wildlife Research Centre
Ocean Reef Rd (near Joondalup Drive)
Woodvale

Time: 3:00 pm

Contact for Seminar: C Farrell 405 5146

Hardcopy (16/05/1996) of document ‘Banded Stilt Cladorhynchus leucocephalus Seminar’ ‘... compiled by JL 14-16 May 1996 in preparation for seminar at Woodvale [CALM’s Wildlife Research Centre] on Fri 17 May [1996]. Only pages 1-8, concerning aerial surveys for BaSt in 1995, are reproduced here. See another RMCR, yet to be prepared, for the full document (pages 1-9?).

This document provides fairly detailed descriptions of the data gathered during aerial surveys undertaken on:

<u>12/03/1995</u>	GBP, CDTM [& MReni]	Marmion, Ballard, Barlee.
<u>15/03/1995</u>	GBP, CDTM, MReni, JL	Ballard (helicopter)
<u>??/03/1995</u>	GBP, MLamble	Ballard, Barlee
<u>07/04/1995</u>	<i>RJohnstone, PStone & NKolichis</i>	<i>Barlee, Goongarrie, Marmion, Ballard, Raeside</i>
<u>27/04/1995</u>	JL	Barlee, Ballard
<u>??/05/1995</u>	ACH, MLamble?	Ballard
<u>06/06/1995</u>	ACH, IKealley	Ballard, Marmion
<u>12/06/1995</u>	ACH	Marmion (and ...?)
<u>14/07/1995</u>	ACH	Ballard, Marmion
<u>22/08/1995</u>	ACH and ...	Ballard, Marmion

This printout appears to be of "STILTSEM"
(Date Modified 16/05/1996 5:12 PM) 10/01/2014

BANDED STILT CLADORHYNCHUS LEUCOCEPHALUS SEMINAR

This material compiled 14-16 May 1996 in preparation for seminar at Woodvale on Fri 17 May.

- Info in this document has been drawn from my BaSt files (Vol 1 gone thru carefully, Vol 2 less so, stoping just before reaching transcript of Clive comments while viewing uncut stilt footage from Ballard), also from the 2 Wingspan articles (Vol 5 Nos. 2&3), also my work diary.
- Still need to: redo Vol 2, go thru my notebooks, get data that Grant, Alan and Andy have yet to give me, get water analysis results, do sweep and gut contents, do photos of nest quadrats, data from logger (I think Grant has sent it to me).

The Banded Stilt is : *Cladorhynchus leucocephalus* Slide of stilt description?

only found in Australia, monospecific genus, member of .. family distribution, numbers

first discovered in 18.. by .. at ..

breeding a mystery until 1930 when recorded at .. by .. colony size ..

since then, breeding recorded at .. (sites, distribution) Only about 20 nesting events ever recorded (3 in SA and rest in WA). Most nesting attempts only found when chicks mobile or breeding over (deserted colonies).

breeding actually witnessed on few occasions, due to difficulty of finding and gaining access to colonies Chicks on road at Menzies. (1400 walked thru town?, 500 killed on road?)

Grant and I have taken an interest in locating breeding sites since 19.. when he and Phil Fuller found .. at Lake Barlee.

Since then we have:

Barlee in 19.. with Roger Jaensch and found ..

Primary interest is in identifying significant breeding sites and any threats, conservation needs

In Feb 95, Tropical Cyclone Bobby dumped 385 mm of rain to north of Kalgoorlie in 4 days (25-28th) of continuous rain.

Stilts left coastal sites e.g. Creery lagoon.

We planned an air survey of .. for

Clive Minton contacted us. He was passing thru Kalgoorlie on .. and interested in flying with us sharing costs.

Jeremy Hogarth of ABCTV Natural history (who Grant had met on Broome wader expedition) also contacted us to see what we were doing 'cause they wanted to film Banded Stilts nesting (waiting for .. years since meeting Clive?).

Grant flew to Kal on .. to join Clive for flight.

Sun 12 March Air survey

Grant & Clive flew Barlee, Ballard and Marmion Lakes (previous nesting locations) 150-250 km N of Kal on Sunday 12 March, 16 days after 4 days rain started. 4.5 hrs searching.

Marmion: no birds.

Barlee: 20 000, all seemingly paired but no sign of colony. Had the least water of the three lakes. 1345 "end survey" (lost?)

Ballard: All birds on water were paired. 10 000 birds, half (5000) at colony (1st) of around 2000 nests. At core of colony incubation appeared to have begun.

Not equipped to gain access to colony.

Luck. Found a Jet Ranger helicopter in Kalgoorlie with a spare day. Agreed to share heli cost with Clive 50:50. (Pilot + 3 or 4 + hide; \$695/hr; 1hr each way). Clive rang me to convince of value. On Tues 14th he faxed me a draft research program.

Wed 15 March 1995, Clive Minton, Marij Reni, Grant, me. Helicopter to Lake Ballard

"Photo 6 at the north end of Marmion" between 1004 hrs + 1014 hrs.
"Photo 8 flooded station" between 1014 + 1018 hrs.
"Photo 9 East end of Ballard" between 1018 + (say) 1025 hrs.

2

I flew to Kalgoorlie from Perth 0615 hrs on Wed 15 March for **helicopter trip** (returned to Perth same evening, (with Grant?)).

Grant, Clive, Marj Reni (VWSG) (staying at Prospector Caravan Park) and I flew to Ballard colony on Wed 15 March 1995.

Perfect island for helicopter adjacent, even shade. We landed 600m away from nesting area without disturbing the birds.

Circled island first for photographs of extent of nest area (see folios 14-16 for map (from my air photos) of nesting area on this day).

Landed, walked, waded to nest island. Found we could sit 10-20m from nesting birds.

Observed plumages, nesting behaviour, eggs, staked out and phot'd (to see how many nests, eggs and eggs/nest) some quadrats to, marked eggs in c250 nests for determination of clutch size, nesting density, hatching success etc .. (We marked every egg in every nest in an area (still laying) outside the quadrats with the number of eggs in that nest), photographed birds.

Colony now 4500 nests (from 2000 in 3 days).

Copulation attempted everywhere, 45 seconds each, up to 20 visible at one time.

Nests contained 1-5 (mostly ..) eggs, colony still growing. Assuming laying rate of 1 per day, the first eggs (i.e. of the nests containing 5 eggs, and also assuming they were all laid by one bird) were laid around 8 March, 12 days after 4 days rain started and only 8 days after it finished! *3 eggs one born → 10/3 = 14 days*

Frenzied activity - pairing, fighting, copulating.

One third of birds did not have complete plumage. 10% had no band at all. Yet doing everything including copulating (both males and females) and incubating.

Back plumes.

Predators?

Incubating adults dunking belly feathers in water and having drink before returning to nest (hot day).

Spent 8 or 9 hrs (check notebooks) at island then flew back to Kal.

I flew back to Perth at 1940 hrs (with Grant?).

This was the earliest stage at which a nesting colony had been visited by anyone (not true for early scrapes).

Planning

Discussion with Clive and Jeremy. Opportunity for the first time to follow breeding event from go to whoa.

Information on how soon after lake fills does nesting start, clutch size and laying rate, incubation period, how long for chicks to fledge, diet, salinity, role sharing, nesting behaviour, hatching success, fledging success, predators, dispersal. Also band and leg flag for first time - dispersal, movements, survival. I had particular interest in seeing what threats might be, any conservation needs.

ABCTV would join us. We would make logistically possible (Argo, boats, radios, camp, etc) and ABC would pay for air surveys including first and helicopter flight.

Did literature searches with Romeny Lynch's help re colonial nesting studies, DNA, Banded Stilt.

Planned to return on ground on .. (me booked to fly to Kal on evening of 22 March and do air survey 23/3) but delayed 1 week (?) due to ill camera man (bitten in Qld, hospitalised) and need to find replacement.

Sun 26 March - Fri 7 April. Me, Grant (most of time), ABC TV, on Lake Ballard, at Camp Island

Grant and I drove to Kalgoorlie with trailer, 2 punts (10', 12'), outboards, Argo, Argo trailer, etc (SLIDE) on (Sun 26 March, meeting ABCTV Nat Hist crew (Mark Lamble and Campbell ..) at Kal airport around 7.15 pm).

Next day, Grant and Mark (?) did **air survey** of Ballard and Barlee. Found fewer birds and no nesting on Barlee, but now 3-4 (how many seen on flight, only 3 and not including colony 3.5 km west of Camp Island?) nesting colonies on Ballard.

After lunch, Grant, I (our vehicle) and ABC team (with hired Toyota personnel carrier) drove to Jeedamya Station (leaseholder/manager is John Finlayson) and then to Crossover Lake. Ferried some gear across Crossover Lake by punt, then camped on N side for the night. Next morning (29/3), ferried rest of gear across lake, then to shore of Ballard (by Argo + Argo trailer) then ferried gear by punts (1 8hp outboard, 1 electric) out to Camp Island. Established camp there (water, fuel, generator, tents, tarps, fridge, 25 watt portable HF radio with selcall, hand radios. Water .. deep. Camped there for .. days.

Is the following air survey data or ground data?

Now 1st colony grown to 20 000 nests (10 per sq metre).

Second colony of 15 000 found 3.5 km west.

Also two other, smaller colonies (seen by Mark and Grant further west during air survey) on Ballard.

Observed ... numbers in and out of colony, colony size, new quadrats to determine laying rate - photographed these daily. Photographed quadrats established on previous visit daily - most interested in when hatching would occur (incubation period) (from incomplete catches of 15/3 plus knowledge of final clutch size and laying rate and date hatched).. Stopped photographing these when first chicks appeared because of concern about mortality (Mark Lambell had observed aggressive behaviour of adults to chicks on nest. Established 4? new quadrats in area where laying still occurring (nests contained 1 preferably or two eggs) using 20mm PVC pipe and elbows, and phot'd each day to determine laying rate.

Established automatic water level recorder, took water samples for salinity and nutrient (P & N?) analysis, sweep samples (50um or 110um nets?) near camp island for invertebrates. Water and air temps taken. ult feeding areas to collect adults and sweeps for diet analysis.

Hatching began on 3 April (peeping on 2/4?), .. approx .. days after....

Mark and Campbell .. boated off to west and found a second colony of .. pairs, .. km distant. Filmed frenetic behaviour. Reported new nests being formed and eggs laid, so next day I went there and established ten .. quadrats to determine laying rate and subsequently size of colony hatching success and hopefully incubation period

Predators observed were ..

Banding, colour marking and flagging approved by ANCA on 23/3).

Had bands (initially 490 (issued 23/3), size 8, incoloy) on this trip. Used this trip? by Clive?.

I tried catching adults on nest to individually colour mark (20 bands of each colour). Too disturbing. Then tried individual recognition by plumage. Too time consuming.

I collected 30? eggs of .. clutches (SLIDES or prints?) for DNA testing to see if all laid by same female. Show also SLIDES of clutches in nest?

Recorded waterfowl breeding at Crossover Lake for comparison.

Ron Johnstone, Phil Stone, Nick Kolichis's air survey on Fri 7 April (and 1 day ground visit on Sat 8th).

They flew (air survey) Barlee (central arm & northern portion), Goongarrie, Marmion, Ballard and Raeside (central) on 7 April (flew over me at 1st colony) and found:

- Marmion: 500-1000 stilt (no colony seen),
- Ballard: 1st colony 3-5000 pairs, 2nd colony 2-3000 pairs, at 29 23'S 120 51'E colony of 500-1000 pairs, western end possibly 500-1000 pair colony
- Barlee: 1000 pair colony (my Guitar I.)

On 8/4 they paddled kayaks out to both colonies (met our team). Phil Stone took "viewCAM". Took photos. Rain, cold squalls. On 2nd colony they did/saw:

- collected 10-12 incubating adults ranging from 0-100% chest band.
- collected 4 chicks
- took stomach samples
- collected small series of eggs
- Saw creches of 50-100 birds
- hoard of crows came off the island

- Wedge-t Eagle

Ron J. also said "John Darnell, Port Hedland 50-60 000 birds, 80% inactive"

Grant returned to Perth on .. for a few days (left vehicle in Kal?) to do Peel-Harvey on 5/4 and for private reasons, but did his back in (so Alan Clarke and Raelene did P-H on 6/4 instead). I left Ballard on Fri 7 April, Cam gave me a lift in ABC vehicle back to Kal for the night. Grant returned (flew) to Kal on Fri 7 April and had late dinner (valium) with me and Cam in Kal. Next morning I flew to Perth and Grant and Cam returned to Ballard, meeting Clive at Jeedamya (he had driven down from Broome) and taking him out too.

I took stilt eggs to John Weatherall at Murdoch Uni on Sat 8 for DNA analysis (what requested?)

Sat 8 April Clive joins, Grant rejoins, ABC TV team on Lake Ballard at Camp Island (I left previous day). Grant and ABC leave .. April, Clive leaves 15 April

Grant had returned to Perth on .. for a few days. He returned (flew) to Kal on Fri 7 April and met (late dinner) me and Cam in Kal. Next morning Grant and Cam returned to Ballard (I flew to Perth), meeting Clive at Jeedamya and taking him out too.

Clive and Grant did the following.

- collected with Grant 3 males and 1 female with chicks

Much rain. Clive's vehicle bogged at Crossover Lake.

Grant and ABC left on .. Gear left in ABC tent and under green tarp on Camp I.

Clive stayed on his own for three days until Sat 15/4, when he left.

Clive did the following.

1st colony

- photo'd the 15 quadrats (on 15/4?)
- counted addled eggs, dead chick, active nests
- guessed 20 000 nests

2nd colony

- measured approx as $80 \times (20 - 5) = 1200 \text{sq m} = 12-15000 \text{ nests}$

General

- 9-10 AM (12/4), incubation changeovers observed. .. PM (9/4) birds left nest, drank etc, returned to unoccupied (except eggs) nests to resume incubation. Unclear how frequently changeover occurs and in what proportion of nests.
- 1 parent with chicks when leave island
- rain added 13cm to Ballard. Water depth 51cm at 4pm on 14/4, four days after rain (at stake on N side of Camp I.)
- didn't band in colony.
- caught broods going to water for measurement purposes. Footprints trap chicks, fill them in.
- by boat & plankton net, Clive (alone) banded, flagged, weighed, measured 10 chicks (4 families) in 2hrs, don't catch all at once.
- expects high survival
- on some mornings Clive saw up to 2000 chicks leaving 1st breeding island in just a couple of hours.
- recorded brood sizes
- families were closely associated on water, but no true creching at this stage at least.
- lack of predation. Compare with Lake Torrens in 1989 where Silver Gulls totally destroyed last part of colony and took many eggs and some chicks throughout the breeding event. No gulls yet (I saw 1 later, not at colony).
- Little Crows mainly took dead chicks, often failed to take live chicks, only succeeded twice.
- Wt Eagle snatched chick from group of adults and chicks crossing island.
- 70mm of rain fell on 10 April, topping up the lake almost back to its maximum level..
- parents don't do distraction displays, unlike other waders.

Incubation period:

- hatching commenced 3 April, 22 days after first air survey of 12 March, therefore incubation at least 23 days (counting 12/3 and 3/4). Note that I said hatching started 3/4, but I actually heard cheeping in 2/4 (check), which gives incubation period of **at least 22 days**.
- 2nd method of calculation [from general area where we marked (on 15/3) eggs of incomplete (1-2 egg) clutches, and Mark Lamble's advice that most here hatched 6, 7, 8th April, i.e. 23 days after 15/3, assuming they became 3-4 egg clutches] gives 21-23 days (counting 12/3 and 7/4) ($23-2+1$ = incubation period of **22 +/- 1 day**)
- 3rd method [Clive's visit on 9/4 to area of eggs marked on 15/3 and observation of a nest with 4 eggs, one of which was marked "1" (i.e. only one egg in this nest on 15/3), with 3 of these chipping on 9/4] ($25-3+1$ =**23 days**) (includes day of hatching). Also 2 nests with marked eggs, some chipping and 1 or 2 chicks in nest. One is consistent with 23 day max incubation period, the other calculates to **23 day period**.
- Most other eggs in marked eggs area visited on 9/4 had hatched (some addled) therefore the above three calculations probably at upper end of range of incubation period, **therefore average incubation period probably 21-23 days**.
- Note that all three methods assume incubation commences after laying of last egg of clutch. It probably commences after 2nd last egg so add 1 day to each of above, gives incubation period of **22-24 days**.

Hatching success

Clive photo'd and counted eggs etc in the 15 quadrats on 14 April at completion of nesting.

Weights

Egg weights: within week of hatching (2 chipping): 28-45gm (average c **37.5gm**). Note that Clive wrote in Wingspan that "clutch of eggs weighs almost as much as female itself". **CHECK CLUTCH SIZES AND WEIGHTS.**

Chicks caught as leaving colony (before reaching water) on 12 April: 22-31gm (average **27.6gm**, n=11)

Chicks banded & flagged c1km west of colony: 23-31gm (average **27.4gm**; n=10)

Chicks (1-2 days after leaving nest) collected 1-2km W of colony on 11/4: 23-28.5gm (average **25.8gm**; n=14; c1/8 of adults).

Adults collected with 1-2 day old broods: 4 male 203, 209, 210, 241gm; 1 fem 197gm. (average **212gm**)

All had active large double brood patches.

<u>Brood sizes</u>	as leaving the colony			on water 1-3km from colony (1-2 days after leaving)	
	9/4	12/4	14/4	11/4	
Average	2.9	2.7	2.6	2.4	
Mode	3	3	3	2	
broods (n)	60	131	153	81	->425

Crossover lake records.

Grant went to PNG from Sun 23 April to .. so unavailable for next Ballard trip.

26 April - 4 May ?, Alan Clarke, Rob Thomas (1 night) and me, joined by Andy Chapman, Lake Ballard, at Camp Island.

Alan and I drove up from Perth in 4Runner with punt and outboard (SLIDE) on Wed 26 April. Now have 2 petrol outboards(.. and 8hp) plus electric.

I did air survey of Barlee and Ballard on Th 27 April AM.

- Barlee: Found breeding island (empty), I creche of 50 large chicks + 10 adults. W-t Eagle swooping. Also c3000 adults".
- Ballard: Found no stilt on 1st island, but still stilt sitting on 2nd. No other breeding sites found. Many creches (to 50) to west and north of 2nd island. Chicks in 1000s, not 10 000s (underestimate?).

Mon 01 May 1995
22/12/13
6.

27 April PM, Alan, Rob and I drove (2 vehicles to Jeedamya and then out to Camp Island in the dark on compass bearing).

Next day (Fri 28/4), 1st breeding island already deserted (SLIDES). Counted chicks coming off 2nd island. Rain.

Rob left for Kal that afternoon (Fri), wet track out. Pissed down overnight?

Andy Chapman joined us for 3 days (picked him up at Crossover Lake) on PM of ... (Sun or Mon).

Andy, Alan and I took water samples, measurements, Collected parents and chicks for diet, sexing. Caught (SLIDES), banded .. and leg flagged (SLIDES and EXHIBIT) on tibia (above "knee"). 500 flags made by VWSG (Mike Barter, need to thank) Why yellow?

Flagged 170 chicks. .. by boat (SLIDES), ranging .. km west of 2nd nesting island. We shot, collected, swept.

Brine shrimp abundant.

Water depth, quality:

28/4: water 0.54m deep at stake next to Camp island (0.89m from top of stake down to water surface), pH 7.9, Temp 19.0 (8.30hrs. am?). (V1, folio 106)

2/5: depths at sites of collection of adults and chicks, 0.47, 0.48, 0.49, 0.33, 0.31m. (V1, folios 108-9).

4/5: 0.44m deep at stake (0.97 down from top of stake), pH 7.8, temp 12.6 (time?)

Measured 1st nesting area on 4 May (when 2nd?) and used triangular tessilation method to compare later.

Alan and I left on 4 May, driving 4Runner back to Perth (Northam).

Crossover Lake records (see Vol 1, folios 107, 109).

8hp outboard taken to Kal for servicing, electric outboard left at the Lake.

9 - 17 May, ABC TV team at Ballard on own, Camp Island then drove to West end of Ballard

air survey?

Detailed report at V1 folios 129-33.

Did air survey with Andy Chapman.

All birds had left 2nd island. All creching at W end of Lake.

Mark and Cam left Kal Tues night (9/5) and drove to Crossover Lake. 1-3mm rain o'night.

Wed 10/5 to Camp I. then Mark boated c 15 km W till too shallow. V. strong NW wind flattened tent on Camp I. Rained o'night <5mm.

11/5 looked for tracks to W on mainland.

12/5 filmed Camp I. and 1st deserted colony. 2-3000 adult stilt landed in water near 1st island, then moved up close to it. Attempted copulation on water. Very vocal. Very flighty. They filmed it. The birds left when Wt eagle landed on breeding island.. "over 2.5-3hrs (meaning?).

13-14/5 filmed Camp I. and 2nd deserted colony.

15/5 moved from Camp I. to New Camp.

16/5 filmed chicks on lake.

17/5 filmed chicks, returned to Crossover lake camp.

18/5 returned to Kalgoorlie.

They then drove to west end of lake along N side tracks/fencelines. Camped there. (2 days?). Big sand dune, visibility for c2km. Takes 2hrs towing trailer to drive from Crossover Lake to new camp when have done it once. 60km/hr in good stretch. 3 fences to cross, then camp 500m from lake (good map at V1, folio 129).

Many adults flying back and forth past Camp I while camped there.

Found "hundreds and perhaps thousands of chicks" 30? (not 70) km W of Camp Island. Compare this with statement in Wingspan that Mark reported tens of thousands of well-grown chicks on the western end of Ballard. CHECK.

Fledging on 17 May Mark and Cam saw chicks flying 30-50 cm above water for 10-15 meters. These were the oldest chicks seen. Saw chicks flying only 3 times near New Camp. So if these were the first chicks to hatch, i.e. hatched at 1st island on 3rd April, they **fledged at 44 days** (6 weeks 2days).

No strict creches, loose groups of 3-20, all different ages, adults interspersed and came and went. Adults acted as sentry/alarm birds and lead chicks away from threat. Didn't appear attached to particular chicks. Birds very very flighty to people (1 km or more away). Used Argo as film platform. Half a km from new camp he (Mark) had birds walking past very close.

One person can round them (chicks) up on hard ground.

Conditions changed day to day (wind).

The birds marched E during day and W at night. Chicks are wading, not swimming.

Very few "artemia" in water near new camp, but v. thick around breeding island (estimated 4x as many as previous visit).

Wingspan article says chicks feeding in very shallow water on minute items too small to be brine shrimp, and adults periodically left chicks to fly to deeper water, presumably to feed on brine shrimps.

Bogged the Argo many times in soft spots in mud. It did not fare well..

No predators except uid raptor.

Mark caught one banded chick on 10/5 at 2pm, 3km NW of Camp I. (among 7 chicks and 3 adults). Didn't get number.

Filmed chicks from Argo. Birds came to accept it and was a great filming platform (said it would also be good catching platform).. Cat came down sand dune and birds ran away.

7-14? June 1995. Grant, Alan and Andy Chapman at Ballard, then Marmion Lake

Air survey by Andy Chapman and Ian Kealley in Cessna 210 on Tuesday 6 June of Ballard and Marmion with objectives of .. (V1, folio 123). Not paid for by ABC (agreed). Strong NW wind. (full report at V1 folios 139-40). (Also see V2, folio yy for another full report COMPARE!!)

- Ballard 22 000 stilt. No flightless chicks left. Not one! Therefore all fledged Check against date at which last chicks came off 2nd island. No new nesting activity. GyTI in thousands, Shel in hundreds.
- Marmion: c1500 adults and c600 chicks (about same age as Ballard at beginning of May, i.e. some not long out of nest) in lee of one island. Also another c700 adults Water too shallow for outboard. Din not find nest site but thought could find on ground. GyTI & Shel.. Note that Wingspan article says colony on Marmion was "5000 pairs, with at least 2000 chicks seen in June" and "nesting success probably lower than Ballard due to regular presence of Wt Eagle and a Peregrine Falcon..

My Diary says "advise Grant of Marmion location" (ticked).

Grant and Alan then drove to Kalgoorlie (see full report of this trip at V1 folios 150-154).

Initially they went to Ballard?

Water depth and quality: depth 775 mm (??), pH 8.7. Samples taken, sweeps done. Nesting area of 1st island precisely measured. Depth datalogger downloaded, logger left in place.

All gear withdrawn from Camp Island and Crossover lake campsite.

Crossover Lake records:

Grant, Alan and Andy moved from Ballard (Camp Island) to Lake Marmion on Sat 10 June access via V. Tonkin's station. Have "magic" campsite.

Marmion

Installed staff gauge. Measured water quality., samples, pH 7.4.

Found 10-15 000 adults and 1000 chicks.

On 11/6, banded 200 chicks (all that were issued) on left tibia. Flagged 195 chicks on right tibia. Worked from Argo, towing 3m punt. (Note that extra 20 were flagged but flags removed because thought on wrong leg).

Collected 1 family. Chicks weighed 32, 33, 34, 39, 42 gm. All had large yolk sacs. Adult was male, 221 gm.

Salinity 46 ppt on 11/6 (Andy Chapman), pH was 7.9.

Ostracods and Parartemia.

Depth mainly 10-20cm, too shallow for boat, used Argo.

Capture chicks by driving to creches, chase 20-30, catch, take back to boat, release, adults come back.

Oldest chicks have well developed flight and body feathers, will fly within week. Also chicks 2-4 days old.

Andy left at 0700hrs on 12/6 and flew air "survey" of Marmion (and..?) on Mon 12 June to find nesting site and direct Grant that way (also to Grant via radio in PM).

Banded and flagged chicks. Total flagged = $195 + 260 + 20 = 475$.

Collected more families. Detailed measurements taken.

On 13/6 Grant and Alan visited Marmion nest site (SLIDES??).

Water depth up to 52 cm.

Detailed observations made at colony.

Measurements. Size of colony. Peregrine Falcon and Wt Eagle. Photos & veg samples taken.

Totals of chicks banded and flagged.

Argo and trailer left at Marmion.

Grant and Alan returned to Perth on ..

Air survey by Andy Chapman on Fri 14 July.

(See V2, folio yy for full report)

Ballard: 4 passes over lake. 6-7000 Stilt all flying, no further nesting

Marmion: 20-25 000, include. 10% chicks not flying but "coloured up". He reported gear (trailer + Argo) was OK at Marmion.

Other bird observations made (see V2 folio xx)

Flight was 3hrs, Piper Warrior, \$630 in toto.

Air survey of Ballard and Marmion Andy Chapman and .. on Tues 22 August 1995

Piper Warrior. (See V2, folio yy for full report)

Ballard: 4 traverses of lake. Western end dry. c11 500 stilt "all adults wading and flying"..

Marmion: 7500 stilt, c20 incapable of flight.

10 August 1995 Andy and .. collected Argo and trailer from Marmion

Depth 5cm at sample point near camp. Salinity 63 ppt. Of c200 stilt observed from shore only 5-6% had bands on chests.

.....Sep? , Grant diverted from SW lakes survey (9-17/9) to Ballard to collect water level recorder.

Drove up from Esperance.

Retrieved Water level recorder from Ballard. Observations?

Brought gear back from Marmion (observations?) and Kal?

Tag publicity and sightings

Publicity for tags - Wingspan? WA Bird Notes (see my Vol 1, folio 113), Direct approaches, Mike Bamford. "Tattler"? Clive will do SA and Vic.

Subsequent sightings, by, on, where, implications,

Fax (25/04/1996) from Jeremy Hogarth (formerly with ABC Natural History Unit, now with TVNZ) attaching ‘... the transcript of Clive’s [CDTM’s) comments when we were watching the stilts rushes on a film editing machine’. On page 6 CDTM says ‘Well, I think they [BaSt] are genuinely paired because when you look at the flock from the aeroplane and out on the water they were all two by two by two by two’.

(5).



Television New Zealand Ltd
Te Rōo Tēhaki

8 Dowling Street
PO Box 474
Dunedin, New Zealand
Telephone 64 3 4799799
Facsimile 64 3 4799917

PLEASE DELIVER THE FOLLOWING PAGE(S)

TO: Jim Lane
LOCATION: CALM - Busselton
FAX NO: +61-97-521432
DATE: 25 April, 1996
FROM: Jeremy Hogarth

TOTAL PAGES - 17

Dear Jim,

It was great to talk with you last night.

Thank you for the input you are giving to stilts. I honestly don't know what we can do in the way of any minor picture changes, especially as both you and I were looking at a version that had already changed.

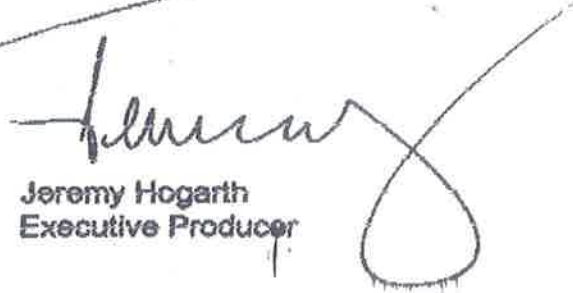
However, the script is another matter entirely.

I also had a long talk to Clive last night in Broome - lucky him. It's not a bad life?

Following this cover page is the transcript of Clive's comments when we were watching the stilts rushes on a film editing machine.

Also thank you in advance for giving me some contact names in Asia for shore birds.

With best wishes,


Jeremy Hogarth
Executive Producer

16
✓ Do
Done

TRANSCRIPTION OF COMMENTS WHILE WATCHING UN-CUT RUSHES OF
BANDED STILTS ON LAKE BALLARD.

PRESENT: Dr Clive Minton, Mark Lample, David Luffman, Jeremy Hogarth,
Recorded at ABC Natural History Unit, 1985.

TAPE START.

Clive Minton:

".....there's a bird trying to mate with an incubating bird - well that is interesting. I saw it happening everywhere but never on an incubating bird.

There's a very good example of a bird in very little breeding plumage a month after the colony started. When we first went there there were 25% of the birds that had not gone into breeding plumage, they were mating, breeding, laying eggs, sitting on eggs even incubating in some cases with no breeding plumage and in other cases with only a bit of it. By the time I was there in early April I didn't see any without full breeding plumage.

What's going on here? Is it attempted copulation? Is it two trying to copulate on one - not very willing co-operation.

Just slightly speeded up like this it [the colony] looks just like the main street of Tokyo.

Jeremy: There's no way you can distinguish the sexes?

Clive: No. You see, there's a beautiful bird there in the middle in terms of plumage, that one there with a solid chest band, but no we tried, ah, we saw birds like that with birds with flecked plumage on top of them and we couldn't tell. The ones that we collected and gutted and sexed I tried to predict what sex they were before we knew and I couldn't get it right.

That's someone wanting to mate, but is it wanting to mate with its mate or someone else's mate? He's still got the urge but I don't think he's trying to take over the incubation or anything like that. Now he's being more gentle perhaps, seeing if that will perhaps work. But will he succeed, we'll have to wait and see. Only Mark will remember.

Now that's copulation actually taking place. Yes, this is very interesting. I never saw any of this [attempted copulation] Mark, attempts to copulate with incubating birds. Now there's a very good example of a male in very poor breeding plumage attempting to mate with a bird in very good plumage.

Jeremy: Are the eggs lying around abandoned?

Clive: Those are just the rubbish of abandoned eggs. In each of those squares [transects] about six hundred eggs were laid and I counted the eggs in those pegged squares afterwards and there were about a hundred on average that hadn't hatched, now that looked awful but it's only about 15%.

Jeremy. How big were the squares?

Clive. five metres by two metres. And there were one hundred and fifty nests in them. So 100 not hatched, that's an 85% success rate. Now you take your Honeyeaters in your garden and their egg hatching rate is probably 20% or 30%, so its really very high [with Banded Stilts] but because its all together it looks disastrous. And that's a mixture of abandoned eggs like those ones you saw and genuine infertile eggs left in the nest after the rest have hatched.

I'm really pleased that you got some super stuff of birds without perfect plumage - is this the first roll you shot? Because when I was there about two weeks after you started I didn't see any birds with anything less than perfect plumage. But some birds will not go into perfect plumage, some birds in breeding plumage are absolutely solid chest black, while other birds are paler and have some white flecking, but they never lose that white flecking it's not as if they are still moulting.

Jeremy. Is that possibly an age difference?

Clive. It may be. I thought it may be a sex thing, but it wasn't. And the thing that we still really don't know is how much of the brooding is done by females and how much is done by males. What we do know is that almost 100% of the accompanying the chicks to the water and the subsequent looking after of the chicks in the water is done by the males.

So at this stage the urge to copulate was so great that it didn't matter if your mate was incubating a full clutch.

Jeremy. Do the males partner with a female, or do they just wander around copulating with whoever they can find?

Clive. Well, I think they are genuinely paired because when you look at the flock from the aeroplane and out on the water they were all two by two by two by two. What was that, it looked like two birds sharing the scrape?

Mark. Yes.

Clive. Have they actually got eggs?

Mark. No, they were just developing the scrape.

Clive. That's really super again.

Jeremy. Are they do you think both male and female digging the same scrape?

Clive. Yes, maybe. Mark didn't get a change-over at the nest. And until I came and tried a different approach, when I was watching birds arriving at the colony rather than watching birds at the nest I found then some genuine nest change-overs.

Jeremy. You've got three happening there, is that possibly a male trying to step in on an established couple?

Fax (11/03/1996) from ACh replying to fax (14/11/1995) from JL in which JL asked ACh if he could identify the lakes in a number of aerial photographs. These photos were apparently taken during a flight by ACh and JL to, from and over Lake Boonderoo and Ponton Creek in 1995. ACh identifies one of the photos as being of Hannan's Lake on 23/08/1995 and JL writes '[It was] a good flight!' Note that this was not an aerial search for breeding BaSt. To know more, see JL's papers (and report in prep.) concerning the 1995 – c.2007 research work at Lake Boonderoo.

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

JIM LANE

ANDY CHAPMAN Form CLM 80A

To: ANDY CHAPMAN

From: JIM LANE

Your Ref:
Our Ref:
Enquiries:
Phone:

Subject:

hollow extension of LARGE
UN-NAMED lake system due south
of Swan Lake

14/1/95 19.35
un-named lake
30 km SE
Cooksway railway
siding

The photos showed up at home - buried amongst family photo!

I had 2 sets of print made, and 1 set accompanying this memo.

Do you think you could find time to answer the following queries? 23/2/95. HANNAN'S LAKE.

- What is the lake (and date) of photos A0 → A6?
- Are photos A8 → A13 of Swan Lake? YES.
- What is the lake in the background of A13?
- What is the lake of A13 → A14? SHEEHAN SWAMP.
- " " " " " A15 → A19?

MYALL & BLACK OAK - What is the flooded area in B3? (Bondera)
B17- B20 (APPROX) Which photos are within Cuddelee Aboriginal Reserve?
C1- C10 (APPROX) " " " " " Queen Victoria Spring Nature Reserve?

No urgency. I have kept the negatives for likely future use (transparencies - blow-ups).

Let me know if you need them at any time.

except your personal best photos.

Give a good flight!

Cheer Jim

11/3/96
A.C.

14/4/95

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

JIM LANE

ANDY CHAPMAN Form CLM 80A

To: ANDY CHAPMAN

From: JIM LANE

Your Ref:
Our Ref:
Enquiries:
Phone:

Subject:

horizontal extension of LARGE
UN-NAMED lake system due south
of Swan Lake

14/1/95 19.85
un-named lake
30 km SE
Coonawarra railwa
sidings

The photos turned up at home - buried amongst family photos!

I had 2 sets of prints made, and 1 set accompanying this memo

Do you think you could find time to answer the following queries?

- What is the lake (and date) of photos A0 → A6? 23/8/ HANNAH'S LAKE
- Are photos A8 → A13 of Swan Lake? YES.
- What is the lake in the background of A12?
- What is the lake of A13 → A14? SHEEHAN SWAMP.
- " " " " " A15 → A19?

MYALL & BLACK OAK - What is the flooded area in B3? (Borden)

B17- B20 (APPROX) Which photos are within Cardale Aboriginal Reserve?

C1- C10 (APPROX) " " " " " Queen Victoria Spring Nature Reserve?

No response. I have kept the negatives for likely future use (transparencies - blow-ups).

Let me know if you need them at any time.

except your present local photos.

Give a good flight!

Deep J

Replied 11/3/91 A.C.

14/1/95

Fax (23/08/1995) from JL to GBP headed 'Banded Stilt Monitoring' that inter alia reads 'Monday's aerial survey [21? or 22?/08/1995] by Andy Chapman showed that Lake Marmion will be dry in a week or so and Ballard in the next month or two'. Day of flight (Mon 21st or Tues 22nd) needs to be checked against other documents in this RMCR.

(23/8/95)

Lucky Day Biggest
legends

TO: GRANT PEARSON

or was it Tue 22/8? 10/1/14

BANDED STILT MONITORING

Monday's air survey by Andy Chapman showed that Lake Marmion will be dry in a week or so and Ballard in the next month or two. The stilt are therefore starting to move and will very soon be headed for more watered parts near and on the coast.

What we need are a few observers (one each) at a few key localities where Banded Stilt are known to congregate as inland waters dry out, to record the following on a regular basis. Weekly or fortnightly would be great. monthly would also be very worthwhile.

The information required from each visit is:

- * Location
- * date and time
- * observer
- * total number of Banded Stilt
- * % with chestnut chest band
- * number with yellow leg flags or metal leg bands or both
- * whether or not each of the banded/flagged birds has a chest band.

The few localities could be chosen from the following list (from Watkins 1993 *A National Plan for Shorebird Conservation in Australia*). The number in brackets is the highest known count, as given in Watkins 1993. Mike Bamford will be able to give you advice on who might be approached about which sites. I have asterisked the sites I think you are most likely to find people for.

- | | | |
|--------------------------------|--------------------------|-------------------------------------|
| Lake McLeod (53 100) | too remote? | CALM CSIRO Redden exclusion Program |
| * E Lake King (30 000) | rarely has water/stilts? | |
| * E Lake Gore (20 000) | ask HooP researcher? | |
| Shark Bay (14 500) | too remote? | |
| Lake Grace North (12 000) | too remote? | |
| Walyormouring lake (10 700) | | |
| * E Lake Warden (10 000) | Esperance resident? | |
| * Peel Inlet (9 000) | we are doing (Creery) | |
| Lake Hinds (8 000) | | |
| Lake Kwooncup (7 000) | | |
| Lake Dumbleyung (6 000) | | |
| Lake Mears (5 200) | | |
| E Culham Inlet (5 000) | ask Andy Chapman? | |
| Gidon wetlands (Esperance) | | |
| Lake Quarbind (Wagin) (4 500) | | |
| Nambling (nearby lake) (3 000) | | |
| Lake Ninan (3 000) | | |

Monk Trever

2 sites minimum baseline

Oldfield Estuary (3 000)
 White Water L (Yealering) (2 900)
 Balicup Lake (2 800)
 Wilsons Inlet (2 500)

ask Denmark resident?

Other sites with useful numbers of Banded Stilt but not listed by Watkins are:

- * F. Hedland or Dampier saltworks ask Mike Bamford which & who might do
- * Rottnest Island ask Denis Saunders or Perry de Kebeira who might do
- * Vasse Wonnerup I could take care of

You might find CALM staff, e.g. Malcolm Graham and Leon Silvester in the Wheatbelt region (where there are numerous prospective sites), who could participate or give you names.

It also occurs to me that we can count/check the BaSt at each of the lakes we monitor in Sep and Nov this year.

Would you please set this up as a matter of urgency. The first step should be to contact Mike Bamford for ideas on who might cover which localities and to make sure that as far as possible whatever we set up is not in conflict with the regular wader counts he is setting up. I will let Mike know you will be contacting him and will also send him a copy of this fax for info.

All observations should be sent to you rather than me.

Any queries please ring me.

Jim Lane
 23/8/95

P.S. Please ~~ring~~ ring me when you have read this.

23/8/95

60.

TO: GRANT PEARSON

BANDED STILT MONITORING

Monday's air survey by Andy Chapman showed that Lake Marmion will be dry in a week or so and Ballard in the next month or two. The stilts are therefore starting to move and will very soon be headed for more watered parts near and on the coast.

What we need are a few observers (one each) at a few key localities where Banded Stilt are known to congregate as inland waters dry out, to record the following on a regular basis. Weekly or fortnightly would be great, monthly would also be very worthwhile.

The information required from each visit is:

- * Location
- * date and time
- * observer
- * total number of Banded Stilt
- * % with chestnut chest band
- * number with yellow leg flags or metal leg bands or both
- * whether or not each of the banded/flagged birds has a chest band.

The few localities could be chosen from the following list (from Watkins 1993 *A National Plan for Shorebird Conservation in Australia*). The number in brackets is the highest known count, as given in Watkins 1993. Mike Bamford will be able to give you advice on who might be approached about which sites. I have asterisked the sites I think you are most likely to find people for.

- | | | |
|---|--------------------------------|-------------------------|
| | Lake McLeod (53 100) | too remote? |
| | Lake King (30 000) | rarely has water/stilts |
| * | Lake Gore (20 000) | ask HooP researcher? |
| | Shark Bay (14 500) | too remote? |
| | Lake Grace North (12 000) | too remote? |
| | Walyormouring lake (10 700) | |
| * | Lake Warden (10 000) | Esperance resident? |
| * | Peel Inlet (9 000) | we are doing (Creery) |
| | Lake Hinds (8 000) | |
| | Lake Kwoornicup (7 000) | |
| | Lake Dumbleyung (6 000) | |
| | Lake Mears (5 200) | |
| | Culham Inlet (5 000) | ask Andy Chapman? |
| | Gidon wetlands (Esperance) | |
| | Lake Quarbind (Wagin) (4 500) | |
| | Namblino (nearby lake) (3 000) | |
| | Lake Ninan (3 000) | |

Oldfield Estuary (3 000)
 White Water L (Yealering) (2 900)
 Balicup Lake (2 800)
 Wilsons Inlet (2 500) ask Denmark resident?

Other sites with useful numbers of Banded Stilts but not listed by Watkins are:

- * P. Hedland or Dampier saltworks ask Mike Bamford which ~~is~~ who might do
- * Rottnest Island ask Denis Saunders or Perry de Rebeira who might do
- * Vasse Wonnerup I could take care of

You might find CALM staff, e.g. Malcolm Graham and Leon Silvester in the Wheatbelt region (where there are numerous prospective sites), who could participate or give you names.

It also occurs to me that we can count/check the BaSt at each of the lakes we monitor in Sep and Nov this year.

Would you please set this up as a matter of urgency. The first step should be to contact Mike Bamford for ideas on who might cover which localities and to make sure that as far as possible whatever we set up is not in conflict with the regular wader counts he is setting up. I will let Mike know you will be contacting him and will also send him a copy of this fax for info.

All observations should be sent to you rather than me.

Any queries please ring me.

Jim Lane
 23/8/95

P.S. Please ~~not~~ ring me when you have read this.

Report (undated, but must be post 22/08/1995) from ACh to JL with detailed results of aerial surveys conducted by him with others. These surveys were as follows:

06/06/1995: 'Piper Warrior w/- Tony Brandis. Lake Marmion (only)'

14/07/1995: 'Lakes Ballard & Marmion w/- KPJ / GY'

22/08/1995: 'Lakes Ballard & Marmion w/- WR, PB; Piper Warrior'

Ask ACh for notes taken during his 12/06/1995 flight and the names of KPJ, GY, *et al.*

To: JIM LANE

From: ANDY CHAPMAN.

19

Your Ref:
Our Ref:
Enquiries:
Phone:

Subject:

WATERFOWL FLIGHTS. P.I.

but see
Vol 2, page 140
did Ballard check
longer memory date

6/6/95 PIPER WARRIOR w/- TONY BRANDS
LAKE MARMION (ONLY)

1x2 HD +1 +2 +2

1x6 B.st. + 30 chicks

1x6 B.st. + 100 chicks

1x50 GT

1x20 B.st.

100s adult B.st w/- 600-700 chicks.

100s adult. + 200 + 500 B.st adults

1000's adults w/- chicks (inclusive)

1x2 Enew

uniformly, thinly spread Adults w/- chicks 100s.

20 x 5-6 groups of chicks some w/o parents.

Island
Antipodago.

W.
draw.

Nesting colony site.

chicks w/o adults

Adults w/- chicks no major crecking here of, Lake Ballard

1x3, 1x4 GT.

1000s of Adults w/- chicks 'Hook Island

100s birds flying - Eastern area

500 Adults w/- chicks

To:

From:

19.....

Your Ref:

Our Ref:

Enquiries:

Phone:

Subject:

P. 2

14/7/95 LAKES BALLARD & MARION. w/ - K.P.J. / G.Y.

LAKE BALLARD.

1x GT

1x2 MD

1x WTE

1x 20-25 GT

2x1 UNID WADER

1x100 GT +100

1x2 B.st.

1x 1,500 B.st flying lake centre

1x4 GT

1x Kestrel

1x30 GT

1x50 UNID WADER? Re BUTTERFLY

5-6 each 100 B.st (flying.)

1x70 RN Annet

1x2 MD +2

1x100 RN Annet

1x GT, 1x B.st.

1x 250 B.st + 100 flying

1x 2,500 - 3000 B.st flying eastern end lake

1x2 MD, 1x40 RN Annet

1x WTE, 1x 2,000 B.st.

few GT, RN Annets, B.st. breeding along site 'camp' island

~~MARION~~ BALLARD.

transverse #1.

E → W south shore.

BALLARD.

transverse #2

W → E.

N. of S. shore

BALLARD

#3.

To:

From:

19.....

Your Ref:

Our Ref:

Enquiries:

Phone:

Subject:.....

P.3.

transverse #4 N. Shore of BALLARD - nothing further

On Lake Marmon pause button on recorder was depressed but my tally recorded 20-25,000 B.St
10% flightless but adult-sized, groups to 2,500-3,000. Unlike on 6/6/95 most birds were in tightly packed groups.

22/8/95 LAKES BALLARD & MARMON w/- W.R., P.B.

PIPER WARRIOR

BALLARD :-

1x12 GT

1x MD + 1x2 MD w/- B/4

1x 2,500 B.St. (all adults flying)

Western end of lake - dry

1x B.St +10

1x 3,000 - 4,000 all adults wading & flying

1x 4,000 B.St. " " " "

1x MD - 1x3 GT

1x10 RN Arocl, 1x GT, + 1x2 GT w/- B/3. - camp island

1x12 " " 1x20 GT, 1x2 GT+1

1x8 GT

1x 1,500 B.St. eastern end of lake

U.S.F

2500

10

3500

4000

1500

11500

transverse
#1.

#2.

#3.

#4

To:

From:

19..

Your Ref:

Our Ref:

Enquiries:

Phone:

Subject:

P.4.

LAKE MARUMLOW -

N. ARMY dog

1x 25 + 15 B. St.

1x 2,000 B. St. 10 small pods each c. 200

1x 50 B. St. flying + 200

1x 2000 " " " " c. 10-20 incapable of flight

1x 1,500 " " " " c. 3 " " "

1x 50, 1x 20, 1x 100

3x 50 + 300 + 8 + 200 + 150 + 500 + 200.

We collected Argo + gear from Lake Marumlow on 10/8/95. Depth at sample point near camp was 5cm. TDS = 63,350 ug/l of c. 200 birds observed from the shore only 5-6% were adults ie had bands on their breasts.

Hope all this is of some use,

Andy

Fax (29/07/1995) from CDTM to JL inter alia stating ‘Thanks for message re aerial survey. Is that the end or do you intend to do another? How many birds were seen? Where?’

29/7/95

Fax to Tim Lane CALM Buxton 097-521-432. 29/7/95
 From Clive Minion 03-9589-4901

- ① Thanks for message re aerial survey. Is that the end or do you intend to do another? How many birds were seen? Where was water level like?
- ② Are you organising/coordinating counts at favoured location to document the return of Banded Stilts from the breeding areas any signs of this yet? Have you already collected together the early March disappearance data as birds left these areas to breed?
- ③ Good news that we have successfully provoked action on the Lake Torrens paper & that a full draft will be available shortly. We need to now get cracking ourselves, we need to discuss who does what - in about a week's time.

Best wishes,

Clive

Handwritten notes from JL's phone conversation (15/07/1995) with ACh in which he records ACh's observations during '... flight over Ballard & Marmion on Fri 14/07/1995' in a Piper Warrior.

Cindy Chapman's flight over Bellard's Marston
on Fri 14/7/95

he did 4 passes over Bellard.

- 6-7000 ^{Best} _^ all flying
- no further nesting

(J.L.)
as advised to me by telephone
on Sat 15/7/95

Over Marston

- 20-25,000 ^(12 2-2,500) with 10% [^] A check not flying but clustered up
- no sign of further nesting
- gear still there (trailer with bags)

Flt time was 3 hrs ⁱⁿ _^ Pigeon Marston = \$630 in total.

Other observations

+ He saw a few Wedge-tailed Eagles - ^{mainly on} ~~12/7/95~~ _^ Bellard

- 1000's of Tern
- a few Skua
- c 100 ^{about new} ~~2/7/95~~
Breeding Island No 2 (next to Camp Island at Bellard)

Notes by JL that record 'advice from ACh 10/7/95' and imply that ACh conducted an aerial survey of Lake Marmion (only) on 12/06/1995 in a 'Piper', and an aerial survey of Lake Ballard plus an aerial 'overview' of Lake Marmion in a Cessna 210 on 06/06/1995.

1117-50

Q.
ednce from A.C.
10/7/95

to recap

\$110: road repair
\$360: 12/6 Piper Maxima only
\$647.50: 50% of flight on 6/6

4 traverses of
Bellard & Munier
overview in
Lesson 210

Article titled 'Banded Stilts Complete the Job' (p.3 in 'The Tattler No.4, July 1995) authored by 'Clive Minton, Jim Lane and Grant Pearson'. Inter alia it says 'A further aerial survey is planned for mid July [1995] to see if any further nesting attempts have been made and to log the numbers of adult and juvenile birds still present'. Note that this article was re-printed on pp.16-17 of WA Bird Notes, No.76, December 1995.

16/8/95

JIM LANE

PVI

The Tattler

No.4 July 1995

The tour involved presentations by Drs Driscoll and Zikov illustrating the important link between Russia and Australia with Japan. Evening talks at visits to each site were attended by local wetlands groups and representatives of the media. Information was exchanged about Russian, Australian and local research and conservation efforts. An overview of shorebird and Littler Tern banding was presented by Shigets Yoshimitsu of the Yamashina Institute for Ornithology at the Tokyo meeting.

It is hoped that the tour will result in a greater awareness by the Japanese people of the international importance of local wetlands and the need for international cooperation for the conservation of shorebirds and their habitat. The link between Australia and Japan was demonstrated by the presence of colour-flagged Bar-tailed Godwits from Queensland and New Zealand during the tour and observations of colour-flagged waders by members of all groups who attended the visits at the various sites.

Japan has lost great expanses of tidal flats during the last few decades due to development.

Banded Stilts complete the job

Research work by Jim Lane, Grant Pearson and other officers from the Department of Conservation and Land Management (CALM) in Western

Australia has continued at the Banded Stilt breeding locations in the Goldfields. The ABC Natural History Unit also made a follow up visit in late May to film chick creching and fledging.

Overall it appears that breeding success was good with an excellent survival rate of young birds to fledging. Mark Lambie, the ABC cameraman, reported "tens of thousands" of well grown chicks on the western end of Lake Ballard. It seems that although the chicks could swim and feed in the normal metro deep water during their first few days after hatching they preferred to gradually make their way down to the shallow parts of the lake, 30 kms away, for the bulk of their fledging period. There they marched around on the wet mud or very shallow water picking up minute items of food - thought to be too small to be the traditional brine shrimps.

In contrast the accompanying adults, which had greatly reduced in numbers as the chicks gradually coalesced into hundred strong groups, seemed to find feeding unsatisfactory. They thus periodically left the chicks and flew to deeper water, presumably to feed on the now abundant supply of brine shrimps.

In contrast to Lake Torrens in 1989 there has apparently been no 'second round' of breeding at Lake Ballard. Plenty of adults are still present on the lake however and some excited gatherings and even copulation have been observed, and so a further nesting event may occur.

A small nesting colony (5000 pairs) did form on nearby Lake Marnion and at least 2000 chicks were seen in June, but nesting success was probably lower than at Lake Ballard due to the regular presence of a Wedge-tailed Eagle and a Peregrine Falcon at the colony.

Considerable success was achieved in banding and colour-flagging chicks, with nearly 1000 birds being marked altogether. It was reasonably straightforward to catch chicks in a handnet from a moving boat. When birds were still in family parties it was necessary to only catch part of the brood. This precautionary procedure was also followed with larger groups of chicks. It does incidentally provide yet another contrast between Banded Stilts and other waders. Banded Stilts do not defend their young and do not carry out agitated distraction displays such as the "broken-wing trick" like other waders.

A further aerial survey is planned for mid July to see if any further nesting attempts have been made and to log the numbers of adult and juvenile birds still present. The water levels are holding up well, which is encouraging.

Would everyone in Western Australia, please keep a lookout for banded/flagged birds? Please also monitor, by regular counts, the return of birds to traditional non-breeding areas as they leave the drying salt lakes in the future.

Clive Minton, Jim Lane & Grant Pearson

オオシシキ by any other name- Sniping in Hokkaido

As an adjunct to an ecological study on migratory shorebirds in the Hunter estuary, conducted by Shortland

Wetlands Centre for the Kooragang Wetlands Rehabilitation Project, I was recently fortunate enough to spend a month, from mid-May to mid-June, in Hokkaido, Japan studying Latham's Snipe. My family and I were accompanied during the first week of the trip by Mike Weston of the Royal Australasian Ornithologists Union and the AWSG. Mike, incidentally, is quite an impressive sight in a suit. It is hoped that the RAOU and the Australian Nature Conservation Agency, in conjunction with the Wildbird Society of Japan and the Japanese

Faxed (19/06/1995) copy of 17/06/1995 report by GBP for JL, headed 'Report on Survey to Lake Ballard and Lake Marmion 8 June 1995 to 13 June 1995'. Inter alia reads 'Met Andy Chapman in Kalgoorlie on 9/6 and departed for [Lake] Ballard. AChapman had flown the lakes [presumably this refers to ACh's flight on 6th June 1995] and reported no flightless chicks remained on [Lake] Ballard but young chicks found at [Lake] Marmion'. Also '12/6/95: Andy Chapman departed for Kalgoorlie at 0700 [hrs]' [in order to fly the lake that day?], and, under '13/6/95', 'Chapman reports that the eagle was present on the colony at 1400 [hrs] when Chapman flew the area [work out when – on 12/06/1995 (most likely) or 06/06/1995?] and there were no BaSt on the colony at all or in the area'.

DEPARTMENT OF
CONSERVATION AND LAND MANAGEMENT
SCIENCE & INFORMATION DIVISION
WILDLIFE RESEARCH CENTRE, WOODVALE
FAX NO (09) 306 1641 TELEPHONE NO (09) 405 5100

154
155

Date:

19/6/95

To:

Ain Nom

At:

Bsn

From:

Grant

No of Pages:

(including face sheet)

Message:

Appt for your consideration + queries

Thursday

Cheers

CP

Re visit to
~~Sandy~~ of Ballard + Marion from

8 - 13 June 95

①

155.
154.

REPORT ON SURVEY TO LAKE BALLARD AND LAKE MARMION 8 JUNE 1995 TO 13 JUNE 1995

G Pearson and A Clarke in Toyota Landcruiser 7QE 236. Met Andy Chapman in Kalgoorlie on 9/6 and departed for Ballard. A Chapman had flown the lakes and reported no flightless chicks remained on Ballard but young chicks found at Marmion

OBJECTIVES (from Jims notes) (Jim Lane's)
Obtain further water chemistry data
Measure extent of breeding site on Camp Island colony
Download datalogger
Withdraw gear from Camp Island
Record waterbirds seen on crossover lake during trips

Results

Water samples for salinity, Total P (unfiltered) were collected from the camp island site and from the crossover lake site.
Camp Isd... Depth. 775mm... Temp? NA... pH. 8.67...
Crossover 53cm. 12.0.... ... 8.76...
Invertebrate sweeps collected at each site

The extent of the breeding was measured and mapped for Camp island colony

Datalogger was downloaded and reset to record every hour and average every 6 hours
Waterlevels varied from 398 to 689 for the 70 days it was in place.

All gear was withdrawn from the island and Crossover camp leaving the sites clear.

Waterbirds

Ballard

BaSt	6
Pipit	1
White-backed Swallow	1
Banded Lapwing	2
RNAV	7
Shel	2
Gytl	11
RCaP	2 plus 1 juv

Crossover Lake

Coot	11 plus 6 juv
MusD	3 male
	2 female
PaBD	2 (pr)
LiGb	1

(2)

152
153.

10 June

Packed and loaded gear and departed to Lake Marmion
1108 to Jeedamya. Called in to station for first aid kit and
to talk to Finlaysons. Neither were located. Left a note for
the latter.

Drove on to Marmion via Bronc Rock fence line to lake edge.

OBJECTIVES

Use all available yellow flags

Band 200 chicks

Collect water samples

Record depth and install depth post

Locate colony if possible and measure extent and size

Photograph colony

Collect dominant vegetation

1545 arrived Marmion.

Installed depth gauge using an old survey line peg (second
from camp side of shore) 770 mm above water level

depth at gauge was 220 mm

Installed second marker to denote location of site only

Collected water samples and sweep.

pH.. 7.39....

temp 12.0C.....

Argo to big island at 300 degrees from camp to reconnoitre.
Back to camp at nightfall

11 June 95

Began banding and flagging in argo towing 3m punt

Banded 200 on left tibia

Flagged (yellow) 195 on right tibia

Collected one family of Banded Stilts. 1 adult 5 chicks 3-5
days old.

Family 1

1.1 39 gms yolk sac large

1.2 34 gms yolk sac large

1.3 33 gms yolk sac large

1.4 42 gms yolk sac large

1.5 32 gms yolk sac large

1.6 adult male 221 gms

wing length 199 mm

total head 118.7 mm

teste 14.4 mm

Brood patch yes Band full belly 100%

sweep taken

tot P

conductivity 46% (Andy Chapman)

pH 7.94

12/6/95

Andy Chapman departed for Kalgoorlie at 0700

AC and GP headed east for 5 mins and then back west when it became obvious that there were no chick east of the camp.

Large numbers of loose creches and masses of adults extending out of site to the west and north.
 Drove up behind creche of 30 chicks and ran all down placing them in a nally bin with a cloth base. Flagged all and released with adults which had remained in attention.
 Caught brood of 5 and released with parent.
 Continued catching flagging and releasing all day releasing chicks with attending adults.
 Ages varied from 2 to 18 days.

Total Flagged. 195
 +260
 20
 475

Collect

Family 2 Depth 29 cm

5 young 1 adult

	weight	metatarsus	bill	wing	gizzard	oesophagus	teste
number	wt(gms)	mt	th	b	w	Oes	giz sex t
2a	34	24.4	51.5	27.3	-	y	- -
2b	32	25.2	49.7	26.5	-	y	- -
2c	30	25.6	52.3	31.8	-	y	- -
2adult	238	35.0	111.5	74.7	-	y	m 17.2

brood patch yes Band strong belly 80%

Family 3 Depth 3cm

2 young 1 adult

3a	31	23.3	48.8	23.8	-	y	ostracods y - -
3b	34	25.3	50.9	25.9	-	y	- -
3adult	232	32.5	107.8	71.9	202	y	m 120.1

brood patch yes Band full Belly 100%

Family 4 Depth 12 cm

3 young 1 adult

4a	30	22.7	46.3	23.6	36	y	y -
4b	34	23.5	49.8	26.3	23	y	-
4c	31	24.1	49.9	26.5	25	y	-
4adult	200	34.3	-damaged bill	189	y	ost.	m 15.5

Brood patch yes Band full Belly 100%

Family 5 depth 9cm

2 young 1 adult

5a	35	24.1	52.1	22.2	25	y	y -
5b	34	24.9	50.2	29.8	25	y	ost, ants, coleo
5adult	205	32.0	104.9	68.5	193	y	ost, y 14.4

Brood patch yes Band full Belly 100%

(4)

150.
151.

13/6/95

0615 to colony on a bearing of 300degrees determined from flight of aircraft previous day.. Distance unknown

Gyt1 4 large waders 8
small waders 30 shel 2

Masses of adults and broods at north end of Big Island. Proceeded west along north side of Big island. Located colony with telescope from west end of Big Island. Proceeded west across expanse of water to 52cm deep.

Approaching colony 28 chicks and 18 adults in a loose creche. Numerous dead chicks about 1-5 days old along the strand line of the colony island.

300-400 adults at the waters edge in front of the central part of the colony. Agitated and flighty. Occasional dashes by 30-50 birds up the bank to the colony but they would almost immediately fly off in alarm. Peregrine falcon flew low over colony putting flock of Bast on the colony to flight. Wedge-tailed Eagle took off from rear of colony about 100m from active area and flew to a raised tussock about 200 m west of the colony where it sat and watched. On our approach of the colony the eagle departed and during measurements every stilt flew out of site out of sight. Began measurements at 0846 and finished at 0931

Observations

21 chicks in nests with unhatched eggs in a small discrete area of the colony

About 100- 200 nests spread around a greater area of the colony, but within a roughly discrete area, with 2-3 eggs all very cold. No incubation for many hours perhaps days. Some covered with fine sand suggesting exposure during rain some days ago.

Numerous (up to 20) moribund chicks in nests in the discrete active area with an egg or often with one healthier but obviously cold stressed chick.

About 10 small chicks wandering through active part of the colony.

Measured length and breadth of colony plus several other satellite colonies.

Photos of colony

vegt'n samples collected.

Measured twenty nests for diameter and dispersal

On our departure about 50 -80 adult bast returned and milled about at the front of the colony . Several ran into the active area but left quickly. We continued to observe until 0950

Chapman reports that the eagle was present on the colony at 1400 when Chapman flew the area and there were no Bast on the colony at all or in the area.

Much evidence of ancient nest attempts from egg shards.

Notes

In large groups of adults there ^{were} ~~was~~ some copulation attempted. Two families of Rnav with two young each. One had adopted a Bast chick about 3 days old and bigger than Rnav chicks.

Left at the camp is argo inside trailer. Chains had been sprayed but require more
Engine needs oil change. Have to buy a vaccuum pump to get the oil out of the sump.
one jerry can of water
One 3m punt
lighting and generator

Depth post installed at colony 211 mm exposed
Coordinates of colony 29.44.36
121.29.13
camp 29.47.01
121.33.06

G Pearson
17 June 1995

Notes made by JL that appear to record information from GBP that was communicated to JL by radio telephone on Sun 11/06/1995. Inter alia these notes read 'Andy flight tomorrow [which would make it 12/06/1995]; photo & find island; details to Grant 7pm; me listen on radio'. Ask ACh for copies of 'photo[s]'.

Morton CST - 03 9 589 4901

106
149

Radio Telephone call from Grant

Sun 11/6/95 ✓
11/5/95

5.50 pm

— they are
— at Mennan - arrived yesterday

or 6th? ✓
ie June?

— found 10-15,000 adults
several 1000 chicks

— ~~188~~

220 done today. (removed flags from 20!) ⇒ 200 to date

— have used the 200 fly heads

— have 200 flagged.

— collected 1 family
on Mennan + Lact Mennan

mont 10-20 cm

too shallow
for boat.

— best v. soft - depth up to 30 cm

— will look for colony in NW

— drive to creeks with Aygo - chase 20-30 +
take back to boat

— creeks c 30

try to get all then release — adults coming
back.

— ^{chicks have} oldest, well developed 1° 2° + all body except head
will fly in 1 week ⇒ 3 weeks old? + mump

— also chicks
2-4 days old.

— have magic computer.

Andy Flight has removed
photo + had where
details to Grant 7pm
me listen on radio

Cover sheet of a fax (08/06/1995) from JL to ACh at CALM Kalgoorlie on which JL writes 'Thanks for the "flight report" – very good info collected'. This no doubt refers to ACh's flight of 06/06/1995, see below.

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT
BUSSELTON DISTRICT

FAX NO (097) 521 432

TO: **TAXED** ANDY CHAPMAN URGENT: YES / NO

AT: KAL

FROM: JIM L.

DATE: 8/6/95

Your Ref: _____

Local Ref: _____

Revised program - for info

Thanks for the "flight report" - very good info collected.

No. of pages inc. this page: 5

Please call us on (097) 521 677 if this message was incomplete or illegible

REVISOR

[Grant: modify program as circumstances dictate. The important thing is to get the main tasks done]

Thurs 8 June

Grant Pearson and Alan Clarke drive to Kalgoorlie

Fri 9 June

GP and AC1 visit CALM office and pick up Argo keys (from June), wheel for trailer (from Andy Chapman) etc., make radio arrangements and telephone Jeedanya and Lake Marmion station (name?) to advise of plans.

GP, AC1 and ACh drive (2 vehicles) to Lake Ballard and withdraw all gear from Camp Island to Crossover Lake. Camp there overnight.

[Make notes on evidence of waterbird breeding seen while crossing Crossover Lake; measure this lake's depth and take water samples]

A report (06/06/1995) from Andy Chapman (ACh) to JL and GBP headed 'Banded Stilts – Lakes Ballard & Marmion'. This reports details ACh's observations, made during an aerial survey 'today' (6th June 1995), of BaSt numbers, geographic coordinates, flightless chicks (none), current nesting activity (none), water depth (inferred), etc., on Lake Ballard and BaSt numbers, geographic coordinates, flightless chicks, water depth, etc. An attached map by ACh shows the locations of the 'sites with stilt chicks'. JL subsequently mapped ACh's coordinates (locations 1-5) of the 'Banded Stilts main rafts' on Lake Ballard and this map is attached.

ACh comments that 'We did not locate the precise nesting site [on Lake Marmion] – but I believe we could locate it on the ground'.

In relation to Grey Teal numbers on Lake Ballard ACh writes '... were present in 1000s (I have better data)'. Presumably this is a reference to his Field Notes – seek a copy.

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

Form CLM 80A

To: JIM LANE
GRANT PEARSON

From: ANDY CHAPMAN
6/6/95 19

Your Ref:
Our Ref:
Enquiries:
Phone:

See also Vol 2, photos --

Subject: BANDED STILTS - LAKES BALLARD & WARMUN.

Today between 1100 - 1330 HRS Ian Kealley & I
saw lakes Ballard & Warmun in Casuar 210
in a strong NW wind. Flew 4 E/W flocks on Ballard.

Lake Ballard :-

Banded stilts main flocks

- ① 1X 10,000 + 2X 1,000 + 1X 100 at 29° 23.79'S, 120° 48.56'E
- ② 1X 5,000 at 29° 25.52'S, 120° 51.77'E
- ③ 1X 2000 + 1X 100 + 1X 100 + 1X 250 at 29° 28.09', 120° 58.77'E
- ④ 1X 1,500 + 1X 200 + 1X 500 + 3X 20 + 1X 100 at 29° 25.75'S, 120° 50.59'E
- ⑤ 1X 70 at 29° 28.21'S, 120° 47.18'E

Definitely no flightless chicks on Lake Ballard or sign
of any further nesting activity. Most of the larger
flocks were in the NW sector of Lake Ballard and
would be inaccessible to dingy with outboards.

Cry teal were present in 1,000s (I have better
data) and Aust. shelducks in 100s.

Lake Warmun :-

banded stilt counts 2X 12, 1X 20, 1X 10, 2X c. 100,
1X 150, 1X 200 all standing in water E. of 'islands'
two groups of chicks (see map) near 29° 44.55'S
121° 30.61'E w/ adults c. 600 chicks c. 1,500 adults.

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

Form CLM 80A

132
139

To:

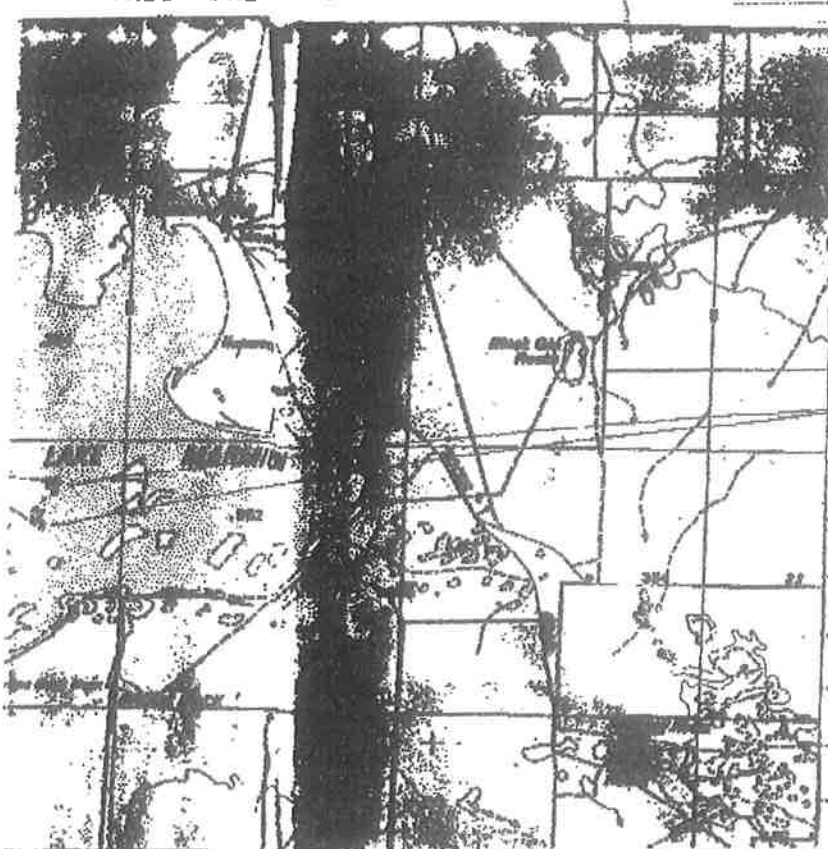
From:

19

Your Ref:
Our Ref:
Enquiries:
Phone:

Subject:

The checks on Warman are at about the same stage as the ones on Ballant Jew we were there in May ie. some but long out of the nest. We did not locate the precise nesting site but I believe we could locate it on the ground. The Warman water is very shallow - too shallow for outboard I reckon. Also 100's of Grey Teal plus few Moust. <holdicks on Warman.



EXTRACT
EDJUDINA
1:250,000 SHEET.

sites w/
stilt checks.

Regents,
Andy.

077034/9/00-50049-1/5253

(Recycled Australian Paper)

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

Form CLM 80A

132
139

To:

From:

18

Your Ref:
Our Ref:
Enquiries:
Phone:

Subject:

The checks on Warmin are at about the same stage as the ones on Ballant. When we were there in May ie. some hot long out at the best. We did not locate the precise nesting site - but I believe we could locate it on the ground. The Warmin water is very shallow - too shallow for outboard I reckon. Also 100's of Grey Teal plus few Mutt. <hedgehogs on Warmin.



EXTRACT
EDJUDINA
1:250,000 SHEET

sites w/
still chicks.

Regards,
Andy.

