

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.

Lesson 210

~~Believe~~ 20000 + chicks

Andy Uspenski's verbal
report on flight
of 6/6/95

138
155

no flyable chicks left - not one!

Mission

chicks = 1/2 of one island

V. Turtur's return

This ~~is~~ ^{is} found

14/5/96

no date on it

all

Fax (02/06/1995) from JL to GBP with a four-page 'Draft Program Lake Ballard June 1995' with instructions for GBP, ACh and ACl 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.

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT
BUSSELTON DISTRICT
FAX NO: (097) 521 432

TO: G.P. URGENT: YES NO

AT: WRC

FROM: J.L. Fax No.

DATE: 2/6

Your Ref:

Local Ref:



Re Bellbird — Draft

No. of pages inc. this page: 5

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

FAXED

Some urgent

P

GRANT: SOME ODDS AND ENDS REQUIRING ATTENTION

- * Is the leg flag glue at Woodvale? You should obtain another tube in any case as the first tube probably won't do more than 50-100 flags.
- * I have today mailed Australia Post to you a bag of leg flags and two plastic weighing cones. ~~& your traps~~
- * Banding pliers in dissecting box at Woodvale?
- * I assume you have a work camera you can take
- * If you are buying film the 100 ASA Ektachrome is excellent (remember to have Churchills number them).
- * You will need to make another wing rule (no less than 25cm). I have the oversized rule from the last trip.
- * The dial calipers are stuffed. You need to buy or borrow a "pair" of good quality vernier calipers
- * I have sent fax today to Jeremy Hogarth asking whether ABC tent still on island where Argo keys are and how much fuel and water is a) at the trailer and b) on the island

DRAFT PROGRAM LAKE BALLARD JUNE 1995

Wed 7 June Morning

Andy Chapman + 2nd observer fly Lake Ballard. Telephone or fax Grant Pearson at Woodvale immediately after flight to confirm still chicks on lake.

Objectives (priorities highlighted)

- i) Are there still Banded Stilt (BaSt) on the Lake? If so, how many and in which part(s) of Lake?
- ii) Are there still flightless chicks on the Lake? If so how many and where?
- iii) Is there any current nesting activity on the Lake? If so, what is location of island(s) and approx number of nests?

Methodology

- * Fly east-west transects of lake to find BaSt and any current nesting.
- * Fly low over flocks to see if capable of flight or not.

Equipment

- * Maps (1:250,000 ?) to record locations of BaSt, flightless chicks and current nesting islands.
- * GPS (plane's?) to fix location of any current nesting islands
- * 35 mm camera with Ektachrome 100 ASA (or Kodachrome 64 ASA) to photograph current nesting islands.

*casette
recorder*

Extra

* Fly one transect of Lake Marmion on way back to Kalgoorlie to check for nesting and/or chicks. Record appropriate info.

Thurs 8 June

Grant Pearson and Alan Clarke drive to Kalgoorlie

Fri 9 June

Morning

Op, AC1 and ACh drive (2 vehicles) to Lake Ballard and establish camp on Camp Island. Make notes on evidence of waterbird breeding seen while crossing Crossover Lake; measure depth; take water sample(s).

Afternoon

Measure water depth, temp, pH & take water samples, do standard invertebrate sweeps near Camp Island

Precisely measure (in order to precisely determine area) the boundaries of the nesting area of 1st breeding island).

If time permits, start collecting family parties for oesophagus and proventriculus+gizzard contents analysis (details below)

Sat 10 June

Morning

Collect family parties for oesophagus and proventriculus+gizzard contents analysis (continue until 5 family parties collected).

Afternoon

Banding and flagging of chicks.

Sun 11 June

Banding and flagging of chicks.

ACh needs to be back in Kalgoorlie on Sun night. Make notes on evidence of waterbird breeding seen while crossing Crossover Lake in the afternoon.

(3)

Mon 12 June and Tues 13 June

Banding and flagging of chicks.

Wed 14 June

Again measure water depth, temp, pH & take water samples, do standard invertebrate sweeps near Camp Island (same procedure as Fri afternoon).

Return to Perth

Collecting Methodology:

- * ACI in one punt and GP & ACh in other.
- * choose solitary family parties with single adults.
- * ACh shoot the adult, gather chicks and dispatch (ACh technique).
- * attach waterproof label to each bird and label "Adult (1-5)" and "Chick (1a, 1b etc, 2a, 2b etc to 5a, 5b etc)".
- * weigh each bird.
- * record "completeness" of breast band and black belly of adults.
- * record presence/absence of brood patches (bare skin) on either side of sternum.
- * dissect out (scissors & tweezers) oesophagus and gizzard (incl proventriculus) of each bird and store separately in 70% alcohol with label (Adult 1, Chick 1a etc plus date).
- * while GP & ACh do the above, ACI to measure water depth, take water samples, do standard invert sweeps (as on last trip).
- * keep bodies (take back to camp at end of day and that night sex and measure gonad size of the adults and measure bill, head+bill, metatarsus & wing of adults and chicks).
- * bury bodies.
- * carefully replace alcohol (except dregs) after 24 hrs or so. Replace again one week later.
- * Andy Chapman has one tyre from trailer in Kal (was flat, now fixed).
- * Also ask Andy whereabouts of 2nd outboard and any other gear ABC may have left with him.
- * 10' punt from Ben is bungless.

Banding and Flagging Methodology

- * when find chicks, have GP, ACI & ACh in 12' punt towing 10' punt.

7

- * have Nally bin with towel (at camp) in bottom to keep chicks dry/clean.
- * Initially at least, ACI driver, GP catcher and bander/flagger, ACh flagger
- * band on right tibia (i.e. above "knee") and flag on left tibia every chick.
- * note that the bands are difficult to close properly and patience is required.
- * to apply flags, hold flag open, slip onto tibia, apply glue to both surfaces, hold together for 1 minute (timed).
- * note that flag surfaces to be glued must be clean and dry and must not move at all while being held together.
- * remove any miss-applied bands (special pliers) and flags (separate "wings" with knife)
- * ACI & ACh can advise on the most efficient
- * If you run out of bands (unlikely), continue with flags only.
- * record band numbers used each day

Nesting Colony Methodology

If you find one and can readily get to it on the ground (one visit will suffice):

- * measure (or pace) the nesting area so its area (m^2) can be determined.
- * visually assess stage(s) of development of colony (laying, incubating, hatching).
- * photograph island and nesting area.
- * sample dominant plant species.
- * in unlikely event hatching is underway and chicks are being led off the island, record the number of chicks & adults reaching the water in a sample (50-100 will suffice) of family parties. Repeat at 1-2 day intervals if not time consuming (the other work is more important than repeats).

OTHER TASKS

- * make notes of any predator/scavenger activity you see.
- * record other waterbirds seen on Lake Ballard.
- * keep me informed (every day or two) of progress/findings (radio?).

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.**

BANDED STILT PROJECT

Information for Marks and Campbell re Gear

- The key to the Argo is with Andy Chapman in the Kalgoorlie CALM office.
- Andy also has 3 large (20 l) water jerry cans and several small ones at the Kalgoorlie office — also one 20 l fuel jerry.
- The petrol outboard (8 hp) is in Kalgoorlie being serviced and its fuel tank is with it. (Andy organising service)
- Mark needs to hire (borrow?) another 8 hp petrol ~~outboard~~ outboard and tank from Kalgoorlie if he intends to range more than a few kilometres west of Camp Island (ie 2 boats and ~~outboard~~ outboard needed for safety).
- The 12' and 10' punts are on the north side of Cossener Lake.
- Also on north side of Cossener is a drum of drinking water ($\frac{2}{3}$ full), 2 lifejackets and other bits and pieces in trailer.
- The Argo ~~aspiration~~ is on the south side of Cossener lake. Its floorboards need to be lifted, 2 longs replaced (these are wired to the throttle) and its drive chains sprayed ~~with~~ with the adhesive lubricant (spray can) that is in the Argo.
- The 2 way radio is in the ABC tent on Camp Island and the aerial is still up.
- Also still on Camp Island are generator, $\frac{1}{2}$ jerry can of unleaded fuel, plastic container of outboard oil (50:1), box of cutlery and pots/pans, single burner stove and gas bottle, light and power cords, first aid pack and stretcher, other bits and pieces, 10 l of drinking water.

- The only ~~3~~ gear left at Jeedange homestead is the First Aid Kit — in the sheavers' quarters.
- Mark and Cam will need warm clothing day & night.
- They should also take thigh boots to keep dry.
- Craig Chapman will take my place on the flight — Thanks
 He was working with us on the date for 3 days this week and can give good advice on current conditions, bird behavior, access etc. I recommend you work thru him / involve him in the organization of next weeks trip.

If any queries I can be contacted in Bassettown from tonight onward.

Good luck.

Jim Lane
21st May 95

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.

History in the mating:



Banded Stilts do it again!

Banded Stilts — endemic to Australia — are unique among the 214 species of wading bird in the world in that they: nest colonially, lay white eggs (with a few black streaks and blotches), have white downy chicks and put their young into crêches. They also have a special habitat requirement — recently-flooded salt lakes — because the young are reared predominantly on brine shrimps, so opportunities to breed only arise every few years. Only about 20 nesting events have ever been recorded — three in inland South Australia and the remainder in the southern interior of Western Australia.

We, and the ABC Natural History Unit, have been (im)patiently waiting for several years for the next nesting event, determined to move quickly enough to locate a nesting colony at an early stage of the breeding cycle. Most previous nesting attempts have only been identified once chicks have become mobile, or once breeding was over (via the abandoned colony).

Cyclone Bobby dumped 380 mm of rain in the Kalgoorlie area of WA in four days of continuous downpour over 25–28 February this year. Banded Stilts disappeared from all their coastal fringe sites in WA (e.g. Rottnest Island near Perth)

Banded Stilts in colony at Lake Ballard in various stages of plumage.

almost immediately. Everything looked right for a Banded Stilt nesting spree.

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. Three large salt lakes, 150–250 km north of Kalgoorlie were covered — all previously known nesting locations. All three were full of water (Lake Barlee least so) and looked ideal,

with myriads of small islands dotted evenly throughout. Lake Marmion had no birds. But as soon as we reached Lake Ballard we encountered Banded Stilts on the water — all paired — and about 20 km down the lake a nesting colony. We could hardly believe our eyes! Only 16 days after the rain started there they were, some 2,000 nests on the top of a small island with about 5,000 birds in attendance. At the core of the colony incubation seemed to have already begun.

This observation, and later observations on incubation periods and hatching dates, indicates that the first eggs in the colony must have been laid around 8 March, an incredible 12 days after the start of the rains, and only 8 days after they ceased! Not bad for birds which had to recognise that a 'rain event' had occurred, migrate around 1000 km, find a suitable location, pair, mate, select a nest site, and grow and lay a clutch of eggs weighing almost as much as the female herself!

The aerial survey revealed

a total of 10,000 Banded Stilts on Lake Ballard and 20,000 on Lake Barlee, but there was no sign of a colony forming on the latter.

We immediately decided to visit the nesting colony and set up the first stages of a comprehensive research programme. A helicopter was available from Kalgoorlie on 15 March, and this enabled us to spend 8 hours observing activities at the colony, pegging out and photographing a grid, and marking some 250 clutches of eggs to determine information such as clutch size, nest density, incubation period and hatching success. As no-one has previously found a colony at such an



Aerial view of the colony — an estimated 4,500 nests.

early stage, much basic breeding biology of the Banded Stilt was unknown (see the frequent references to such in Vol. 2 of *HANZAB*).

Since the nesting island was part of a small archipelago of small islands, it was possible to land the helicopter (and then to make the research base camp) some 600 m away from the colony on a rocky knoll (which even had some trees and

The colony had doubled to an estimated 4,500 nests within three days...

shade!), without disturbing the birds. We initially made observations from a distance, but soon found we could sit quietly within 10-20 m of the colony without the birds apparently taking any notice.

There was an unbelievable frenzy of activity. The colony had doubled to an estimated 4,500 nests within three days, and more birds were settling in every minute. Birds seemed to be bustling in every direction. Aggression associated with mates and nesting selection was widespread. Up to 20 copulations were visible at any time — on the water, on land, in the colony, standing, sitting, walking, swimming (and each lasting an aver-

age of 45 seconds!). Incubating birds were leaving the nest and running down to the water to dunk their breast-feathers in the water and have a quick drink before returning to the nest (it was a hot day). Overall it was like a cross between the main street of Tokyo and the 'red light' district of Kalgoorlie!

One of the most surprising observations was that a third of the birds did not have complete breeding plumage, and 10% had none at all, being completely white underneath and lacking the chestnut band on the breast and black patch below it. Yet such plumaged birds did not seem to be inhibited from full participation in activities, including copulation (both males and females) and incubation. It seems that assuming breeding plumage is a secondary consideration to being 'quick off the mark' to take advantage of these rare breeding opportunities (then why have a breeding plumage?).

The research team, together with the ABC film crew, returned to Lake Ballard, by amphibious vehicle and boat, on March 31, and one (or more) of us has been in residence almost continuously ever since. A further aerial survey on March 30 revealed three new nesting colonies on Lake Ballard (but still no nesting, and fewer birds, on Lake Barlee). The

Below left: Banded Stilt eggs. Clutches of 3 or 4 are most frequent, but 2 or 5 sometimes occur.

Below: Pegging, marking and photographing the nests in the colony.



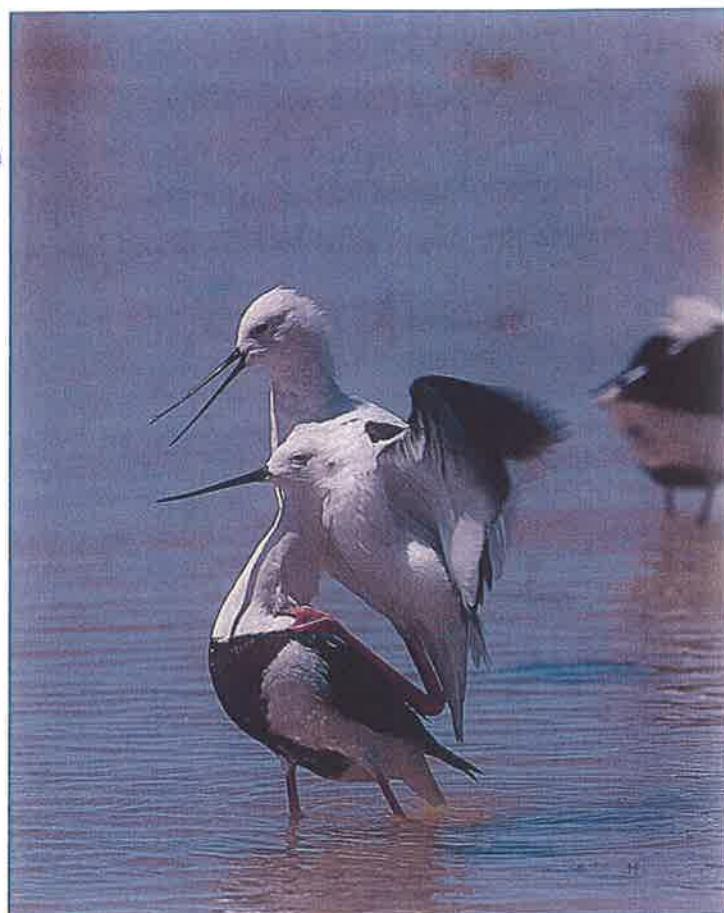
main colony had grown to 20,000 nests (at 10 per square metre — just pecking distance apart), and there were 15,000 nests in the largest of the new sites, only 4 km to the west.

Hatching began on 3 April. It was wonderful to see each family of chicks being led down to the water by a parent, then sailing away like little blobs of white fluff on the water. Most had 2, 3 or 4 chicks, but the occasional bird had successfully hatched a brood of 5. Several families were often all closely associated, but it was always possible to discern the individual parent-offspring relationships, and there was no sign of true crêching (handing over the care of chicks to a lesser number of adults) at this stage or over the next few days when the chicks were still within 3 or 4 km of the colony. On some mornings up to 2,000 chicks would leave the colony in just a couple of hours. Such sights will remain imprinted on our memories forever.

A pleasing feature was the relative lack of predation. The Banded Stilt nesting event at Lake Torrens in 1989 was heavily molested by Silver Gulls, that eventually totally destroyed the last part of the colony as well as taking many eggs and some chicks throughout the breeding cycle. At Lake Ballard a few crows (thought to be Little Crows) started visiting the colony regularly once the chicks began to hatch, but they mainly fed on chicks which were already dead around the colony and were only twice seen to take live chicks (often seen to fail in their attempts). Once a Wedge-tailed Eagle snatched a chick from a group of adults and chicks which were crossing an island in the archipelago.

But, thankfully, not a single Silver Gull appeared. A consequence of their absence was that the colony became littered with 'lost' eggs — ones that had rolled or been blown out of nests, laid in the wrong place, or been left parentless for whatever reason. These quickly went bad in the hot sun, often popped (causing a minor local disturbance in the colony), and must have given a nasty surprise to any would-be predators.

A vast amount of detailed information has been collected on this breeding event and all aspects of the birds' behav-



...it was like a cross between the main street of Tokyo and the 'red light' district of Kalgoorlie!

our and this will subsequently be submitted as a paper to *Emu*. The story at the time of writing (late April) is still not complete. The chick crêching process has to be followed, and banding/colour leg-flagging of the chicks carried out. 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, which restored the gradually drying lake almost to its maximum level.

There is no doubt that Banded Stilts are marvellously adapted to take up any opportunity to breed which may arise from a 'big wet' in these ephemeral salt



Banded Stilts mating

lake areas. It really is a case of 'making hay while the sun shines' or, more appropriately, 'breeding while the brine shrimps last'. Perhaps the most baffling question of all is — How do they know? — especially when they are sunning themselves on Rottnest Island where it didn't even rain!

CLIVE MINTON, GRANT PEARSON

AND JIM LANE

PHOTOS: CLIVE MINTON

THE BANDED STILT is certainly an enigmatic bird. Once the current breeding event at Lake Ballard is fully documented, we will know more about the breeding of the Banded Stilt than ever before! Volume 2 of *HANZAB* summarises all we know of their biology. One of its least-known aspects is what governs their movements. As in the preceding article, Banded Stilts living on the coastal fringe of WA, including Rottnest Island, will desert these sites to head inland to inundated salt lakes, although no rain has fallen on the coast itself. Equally mysteriously, the flooding in the Lake Eyre basin, SA, stimulates the departure of birds from coastal

SA and Vic. Flooding of the Cooper and Darling basins, however, do not seem to elicit equivalent responses. Rainfall may result in influxes of Stilts as the dry wetlands are filled, or in the birds' departure, perhaps because the salinity of wetlands is reduced, or because the birds have dispersed more widely across suitable habitat. Just as their movements to breeding sites can be mystifying, so too are their departures. At Lake Torrens, chicks and adults dispersed within a few days of hatching, moving 50–100 km across the lake. Adults have been recorded abandoning young once the salt lake dried out, and bands of wandering chicks have been recorded numerous times dispersing from breeding colonies along roadways. There is one record from Menzies of 1,400 chicks walking through the town. Unfortunately, some 500 met their end on the busy road, so even they never solved the mystery of their eventual destination.

DETAILS FROM HANZAB

Banded Stilt with little breeding plumage about to brood eggs.

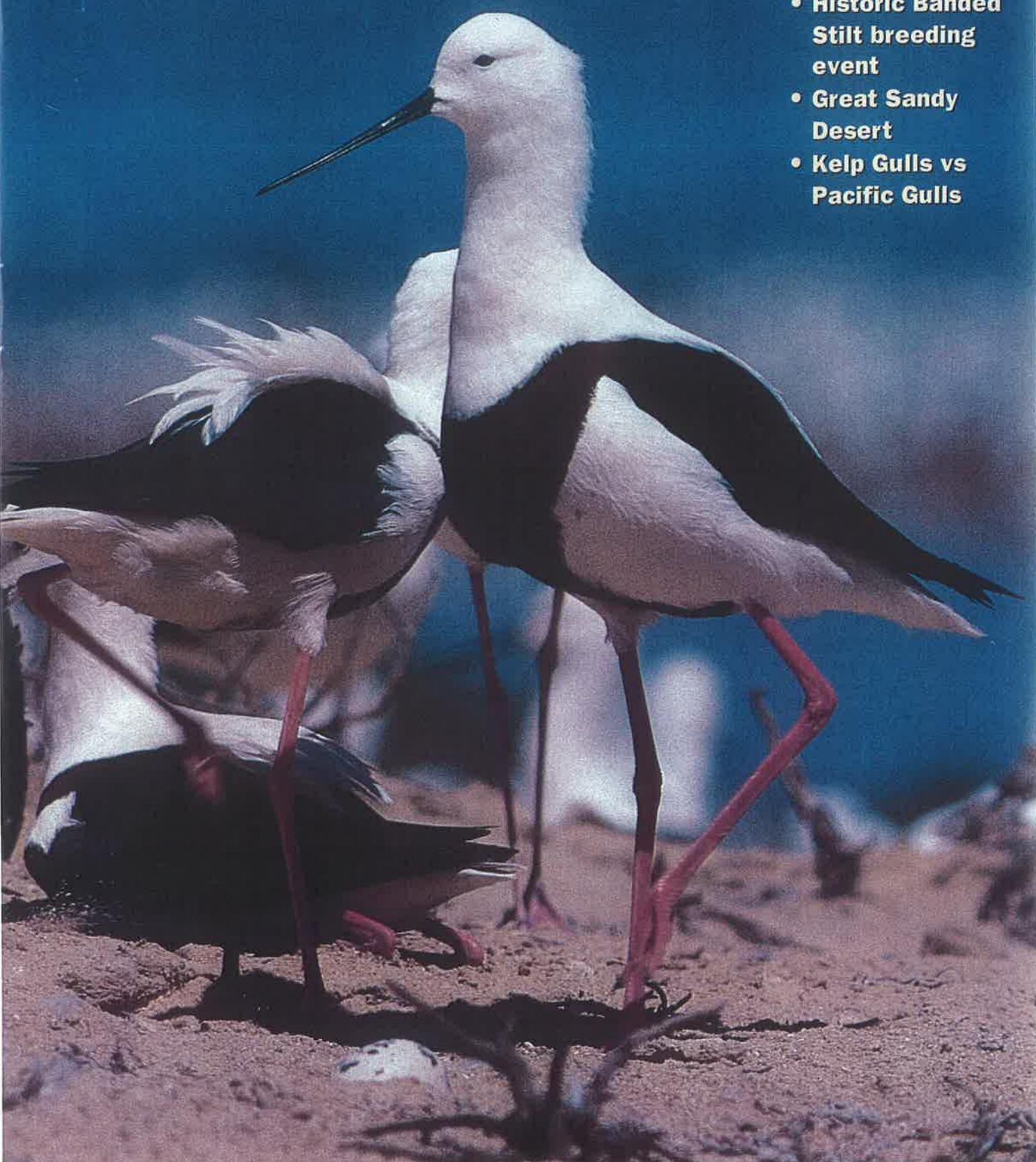
Wingspan

For birds and birdwatchers

Vol. 5 No. 2 June 1995

IN THIS ISSUE

- Historic Banded Stilt breeding event
- Great Sandy Desert
- Kelp Gulls vs Pacific Gulls



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]'.

Stu
95.

Message for Rob Thomas

We will leave Kel at approx 2 pm and expect to arrive at Teederie Homestead around 3.30 pm.

It is then a 40 min drive to "Conover Lake", then 1 hr to get one gear to the shore of Lake Bellard and 1 hr to get to "Camp Island" — so we won't get there until about 5.45 pm.

Today's flight revealed that there are no longer any Banded Shilt ~~on the tree~~ near Camp Island. The closest breeding colony is now 4 km further west.

All of the above means that there ~~is~~ will not be any opportunity to see breeding Banded Shilt until tomorrow Friday (am).

You are welcome to join us moving gear this afternoon but I don't see any point (for you).

Perhaps you could stay over with us ~~tonight and~~
~~tomorrow~~ see the Shilt tomorrow?? or join us with Gaby Cleaver next week?.

Jinthere
1pm
27/4/95.

**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.**

95.
97.

091 922294 fax

TO: CLIVE MINTON (Bonne Bay Observatory)

From: JIM LANE (caus Kiganiac)

Dear Clive — for info:

I flew Barker and Bellard this morning (0810-1135hr).

Barker : Found one creche of c50 large chicks with c10 adults south-west of Anificous Island. Also 3 flocks of "adults" totalling c1500 in same general area. Found abandoned breeding site (50m x 10m), with many eggs visible, further W at $29^{\circ}07'77''$ S and $119^{\circ}33'42''$ E.

Bellard : No birds at first breeding island (near camp). Birds still sitting on 2nd island (3.5 km W). No other breeding sites found. Many family parties and some creches (c50) mainly west of 2nd breeding island ~~on~~ on northern side of lake, all the way to the W end of the lake. Water appears too shallow here for outboards and access difficult. Total number of chicks in thousands but not tens of thousands. If we can't get to these chicks we ~~will~~ will bark/flag near 2nd breeding island with your modus operandum.

Jeremy Hoyleth says film team (Mark and Cam) will come to Bellard next week, probably late in the week.

My assistant (1-2) and I will be on Bellard from tonight until next Wed PM (3/5).

Cheers. Jim
27/4/95

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].

13/4/95

FAX TO: Jim Lane
CALM BUNNELLTON
FAX NO: 097 - 521432

FROM: R.E.JOHNSTONE

Dear Jim,

Here are the details of our Banded Bill survey. We flew over lake Coongarrie, Lake Marmion, Lake Ballard and the central arm and northern portion of lake Barter.

Lake Marmion.

About 500-1000 birds on the north end, (one large group of about 500 another of 300 and several smaller groups).

Lake Ballard.

On the eastern end of lake Ballard we located your main site with c. 3-5000 pairs.

About 4 km further west at 29°27'5. 120°58'E we located another breeding colony (your site 2) with about 2-3000 pairs.

Further west at 29°23'5. 120°51'E we located another small colony of 500-1000 pairs.

Also near the western end of Ballard (on map) there was a group of 500-1000 birds which appeared to be breeding on a small circular island. They lifted and returned quickly.

Lake Barter.

On central northern portion of lake Barter at 29°07'56"S 119°32'10"E we found another small colony of about 1000 pairs all sitting at one end of a small island.

Western
Australian

museUUm

Francis Street Perth
Western Australia 6000
Telephone (09) 328 4411
Facsimile (09) 328 8666

Date:

Your Ref:

Our Ref:

74.
75.

Branches:
Western Australian
Maritime Museum
Cliff Street, Fremantle
Western Australia 6190
Telephone (09) 431 8444
Fax (09) 430 5120

Fremantle Museum
Finnerty Street, Fremantle
Western Australia 6160
Telephone (09) 431 8444
Fax (09) 430 5120

Geraldton Region Museum
Marine Terrace
P.O. Box 112, Geraldton
Western Australia 6530
Telephone (099) 21 5080
Fax (099) 21 5158

Albany Residency
Museum
Residency Road, Albany
Western Australia 6330
Telephone (098) 41 4844
Fax (098) 41 4027

Museum of the Goldfields
P.O. Box 25
Kalgoorlie, Western Australia 6430
Telephone (090) 21 6533
Fax (090) 91 2791

73.
74.

I will send you details of specimen stomach contents etc
at a later date. As I mentioned over the phone I would
be grateful if you could help me with the following.

1. Measure a few adult scapulas.
2. Collect some of the semi-incubated clutches and some of
the groups of eggs that I think are possibly gathered
by non-breeders.
3. Collect a series of different age chicks.

Our WAM collections of this species are poor so
anything you can get will be useful.

Best Wishes
Ron Johnston.

Ron J. (7/6/95) he (from full chest bend to zero chest bend)
says, his range of adults that were incubating on
(10-12 birds) ^{his visit}
He also has c 4 chicks.

↑ telephone connection of 7/6/95

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.

(2)

31.
920

2000 pair on
- 3000 pairs on ^{2nd breeding} _{stage}

- eggs for incubation for Landbouk.
- get birds - just a trace of
birds & were markedly - collected
small numbers. (2 catches +?)
- food - chicks feeding small
creepers - 5 chicks seen, 2
just above - others more distant
+ ~~too~~ too many to return.

Phone call from
Ron Johnson
11/4/95

(1)

31.
93.

Ron Johnson

Phil Stone (Memor) & his
co-worker
Nick Kotsiris

Flew on 7/4/95 ^{central area}
Memor Bellard, ^{1/2} _{Belle}
Beeside (central)

Visited Memor 1000 birds
feeding patches.

From west - on ground
another further west - order of couple of
small colony in central area of Belle.
A

(3)

31.
91.

has notes from: (4)
John Darnell - Banded
50-60,000 80% increase

(12/4/95)

89.
90.

had one day only on Bellard
- targets (single)

(5) collect chicks at various
stages. - fingered - plug eyes.

(6) collect eggs from ground

found fresh

eye clasher

- partial band bird rolled egg back to (6)
~~nest~~ (with food) back to it on st.
(Front of 200) ~~(back)~~

Phil Stone had "view CAM"
They took photos
Coll squalls.

Center of 50 birds.

5 2 Keyhole? 68.
69.
Wood of
Crows came off 2nd whl
at Bellens

Wedge 1.

Barker Ledge
Central Com
 $29^{\circ} 07' 56''$ S
 $119^{\circ} 32' 20''$

1000 fms.

Frithurst West on Bellens
 $29^{\circ} 23' 40''$ "Small"
 $(20^{\circ} 51' 31'' E.)$

Mammal - mostly near N end - w of
water \rightarrow ~~427 2739~~^{by 3 stages} island (where
from N).

West end of Bellens 68.
69.
Signs well
2 roads - + flocks

Will check his let + logo
+ find myself incorrect.

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.

FILM	DATE	CAMERA	NOTES
1	30/3 - 1/4	-	aerial (by Count) and Crosswater camp.
2	1/4 - 2/4	-	[3-22, 10 quadrats on 1st Island] 1/4 23-26, 4 laying quadrats on 1st Island 2/4
3	31/3 2/4 - 2/4	-	[1-28, Crosswater lake + moving to Camp Island] 31/3 [29-38, adult West shot by Count] 2/4
4	29/3 -	-	[1-4, return to Kilgarrig] 29/3 [5-24, 10 quadrats on 1st Island] 31/3 [25-28, 4 quadrats on Island 1] 31/3 [29-32, 4 quadrats on Island 2] 1/4 with pink tape
5	3/4 only	-	[3/4 (1-30, 15 quadrats on 1st Island)] 31-34, 4 laying quadrats on 1st Island 1/4
6	4/4 only	new	4/4 (1-11, 10 quadrats on 2nd Island) [13-33, 10 quadrats on 1st Island] 4/4
7	Wed 5/4 only	new	5/4 (3-21, 10 quadrats on 2nd Island) 5/4 [22-38, 10 quadrats on 1st Island] 5/4
8	2/4 - 5/4	old	2/4 (4-23, 10 quadrats on 1st Island) 2/4 [24-27, dead birds] 2/4 28-31, 4 laying quadrats on 1st Island [32, blank] 5/4 [33-36, 4 laying quadrats on 1st Island] 5/4 [37, last of hatching quadrat on 1st Island] 5/4
9	Fri 7/4 only	old	7/4 [1-7, berries on water] 7/4 [8-29, 10 quadrats on 2nd Island] 7/4 [30-35, scenic of 2nd Island]
10	6/4 - 7/4	new	6/4 [1-20, 10 quadrats on 2nd Island] 6/4 [21-28, 4 laying quadrats on 1st Island] 6/4 7/4 [29-34, distant shots of Island 2]
11	7/4 only		
12	7/4 only		

See photo locs (1)
(6/6/95)
of this side

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.

30/3/95

①

0725

Take off C210

Mark handle

Wetline CP

0810

Banks

Water level no change

29 27 81 } at bottom south end of East arm
119 49 32 }

29 23 51 } wpt 02 Island ad 3th end East arm
119 44 30 }

No BST in eastern arm

Big isel - nil

Western bog of East arm (Elvine) - nil
Old sites Nil

Big isd

29 15 36
119 41 51

29 10 18 500 Stills BST
119 38 40

2 not photo West and top part of Banks
3 not Nth end looking 5th
4 " " " west

100's 150's

0852 Top end of east end contains NE

0855

No colony

1 group Adults as above

29 19.8
50 29.0

} rocky outcrop Vendange Rock

0918

Bellard

45 -50 best feeding
129 82
120 39 feeding it!

Rest of tape was wiped

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.

TO: RAELENE URGENT: YES / NO

AT: WOODWARD

..... Fax No.

FROM: JEM L.

DATE: 20/3/95

Your Ref:

Local Ref:

Please send draft script
and place ^{copy} script in myagan book for wed
(and fax to me in Bsn if completed today)

Thanks

No. of pages inc. this page: 5

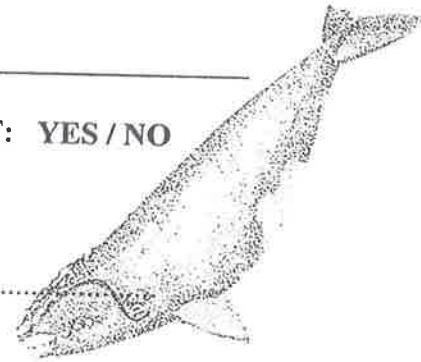
Please call us on (097) 521 677 if this message was incomplete or illegible

Of the 70 species of wader which have been recorded in Australia (55 regularly), it is one of the eight resident endemic species.

There are estimated to be 250 000 Banded Stilts in Australia (Watkins 199¹). Some 60-70% of these live in Western Australia, the remainder being in South Australia and Victoria.

Breeding has only been recorded about 20 times (Higgins 199²) since it was first proved in 1930 (at Lake King in W.A. and at Lake Callabonna in S.A.). All but three of these attempts have been in Western Australia, with Lakes Barlee, Ballard and Marmion most favoured. The last known breeding occurred at Lake Barlee in 1992 and at Lake Torrens (S.A.) in 1989.

The Banded Stilt is one of the least studied species of wader in Australia. In particular its breeding biology is little understood. This is because breeding takes place in remote locations, which are especially inaccessible after the heavy rains which precede such events. In fact most breeding records relate to colonies found after



BANDED STILT RESEARCH PROGRAMME - LAKE BALLARD, MARCH/APRIL 1995

(drafted by C.D. Minton) following discussion with F. Finch →

Background

See folios 3-10 of this file
for Clive's handwritten originals
of this.

The Banded Stilt is unique amongst the 214 species of wading birds in the world in that it

- (a) nests colonially
- (b) rears its chicks in crêches
- (c) only nests intermittently - when inland salt lakes become flooded by exceptional rains

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1993

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28

Wet

The discovery of a nesting colony on Lake Ballard on 12th March 1995, only 15 days after the commencement of a three day 'wet' from the aftermath of cyclone "Bobby", provides a unique opportunity to study the breeding process throughout the full cycle. The aerial survey showed several thousand (3-5000) birds apparently already with nests but there was another 5000+ birds (mostly in pairs) on adjacent parts of the lake which seem likely to join the colony in the near future. The colony is thus still at the formative stage.

There are many scientific reasons why the systematic study of a Banded Stilt breeding event should be undertaken. Basic information such as even the ^{incubation} period is still not known. And for a species where the majority of the world population lives in one area (the southern half of W.A.) and is subject to vagaries of the climate for rare breeding opportunities it is important to determine breeding success and lay the foundations for future survival measurements - and to determine the factors governing these.

It is important also, from a conservation viewpoint, to assess the predator impact at a Western Australian breeding colony. Historical information suggests this has in the past been very low. However at Lake Torrens (S.A.) in 1989 there was a huge influx of Silver Gulls during the breeding event and this resulted in severe egg losses (and some chicks too) - the last two thousand nests were totally predated because the Banded Stilts were outnumbered by gulls. The Silver Gull population in Australia has increased enormously over the past 50 years and may well pose a long-term threat to the Banded Stilt (at least at South Australian locations).

Objectives

The broad objective should be to collect all practicable data on the breeding event, with a particular emphasis on the special adaptations developed by the Banded Stilt to maximise its breeding productivity in the limited 'window of opportunity' which it seeks to exploit.

The specific parameters which should be studied/measured/assessed include (not in order of priority):

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.

14/3/95

DRAFT

①

Banded Stilt Research Programme - Lake Ballard March/Mar 1995

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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?

10-3 April 1995

The Tattler

rugged-up, with long pants, beanies and jumpers. But we soon felt at home lugging keeping cages and dragging canoens back to the trailer.

It was great to visit the RAOU Head Office and we thank everyone there for making us welcome. The new meeting room was put to the test when Danny Rogers and Mike Weston entertained us with their superb Siberian slides and fascinating talk. Another benefit of our trip was the placing of 70% of the AWSG North-West banding data on our computer by Mark Barter. With answers at our fingertips, we now feel more in control of our shorebird banding project.

Wader Catches at Broome 6/10/94-31/10/94

WADERS	New	Retrap	Total
Masked Lapwing	6	0	6
Lesser Sand Plover	5	5	10
Greater Sand Plover	112	40	152
Red-capped Plover	34	1	35
Black-front. Dotterel	3	0	3
Black-winged Stilt	21	1	22
Red-necked Avocet	1	0	1
Ruddy Turnstone	14	9	23
Eastern Curlew	2	0	2
Little Curlew	1	0	1
Wood Sandpiper	16	14	30
Grey-tailed Tattler	2	0	2
Common Sandpiper	1	0	1
Marsh Sandpiper	14	2	16
Terek Sandpiper	2	0	2
Asian Dowitcher	9	0	9
Black-tailed Godwit	195	31	226
Bar-tailed Godwit	99	12	111
Red Knot	192	15	207
Great Knot	12	0	12
Sharp-tailed S'piper	1	0	1
Little Stint	492	107	599
Red-necked Stint	3	0	3
Long-toed Stint	129	18	147
Curlew Sandpiper	4	0	4
Broad-billed S'piper	1371	255	1626
TOTALS			

GULLS & TERNS

Little Tern	18	0	18
Whiskered Tern	2	0	2
Caspian Tern	1	0	1
Gull-billed Tern	6	0	6
Silver Gull	18	0	18
TOTALS	45	0	45

These figures exclude banding carried out by the AWSG NW Expedition earlier in the year.

TRAVELLING CANNON-NETS - Clive Minton

Clive Minton was invited to take part in an international team which visited Tierra del Fuego for two weeks in February this year. This southern province of Argentina is the most southerly non-breeding area for northern hemisphere migrant waders in the world (55° deg. south, which is the same as Macquarie Island).

Seventeen thousand waders were found in the Rio Grande area (10,000 White-rumped Sandpiper, 3000 Red Knot, 3000 Magellanic Oystercatcher) and 50,000 in Bahia San Sebastian (30,000 White-rumped Sandpiper, 20,000 Hudsonian Godwit).

Several cannon-net catches were made including one of 850 Red Knot. Five of these already carried bands and colour bands/flags from Brazil and two from USA/Canada.

Extensive food and feeding rate observations were also made on Red Knot (Theunis Pietersma, head of the International Wader Study Group, is the world expert on Red Knot). DNA samples were collected extensively by Prof. Allan Baker and his team from Toronto Museum/University (They financed the expedition).

By far the greatest problem was the transport, as excess airline baggage, of a full sized cannon-net set, plus keeping cages, electric fuses, firing boxes etc from Melbourne to Tierra del Fuego (and back!).

BANDED STILTS QUICK OFF THE MARK - Clive Minton, Grant Pearson & Jim Lane.

Clive Minton, Grant Pearson at CALM, and the ABC Film Unit have been "at the ready" for several years to move into action as soon as a rain event occurred which was likely to lead to a Banded Stilt nesting event. No one has ever previously filmed a Banded Stilt nesting event from wo to go.

Cyclone "Bobby" dumped 385mm (15.5 inches) of rain in the saltmarshes area of The Goldfields region of southern central WA in four days of continuous rain over 25-28 February.

Marj Reni (VWSG), Grant and Clive did a 4.5 hour aerial survey from Kalgoorlie on 12 March. They covered lakes Marmion, Barlee and Ballard - all previously known Banded Stilt nesting sites, about 150 to 200 km north or north-west of Kalgoorlie. All of the lakes were full and looked perfect nesting sites with hundreds of small islands. Marmion had no birds, Barlee had 20,000 - all seemingly paired - but no sign of a nesting colony. Ballard had 10,000 and half of these were at a colony which already appeared to have around 2000 nests. This was only the 16th day after the rain commenced and 12 days after the rain stopped. Subsequent information indicated that the first eggs must have been laid around 8th March - 12 days from the start of the rain. During this time the birds had to recognise the rain event had occurred, migrate possibly 1000 km from coastal areas of WA, pair, mate, select a site and produce eggs.

We set up a full scale research program and visited for 9hrs by helicopter on 15th March. By then the colony had grown to 4500 nests. We pegged and photographed about half the area and marked the eggs in several hundred nests (for incubation period, clutch size, hatching success determination

The Tattler

No. 3 April 1995

31.

etc). It was a real frenzy of activity. Pairing, fighting, copulating - 20 visible at any moment - like a cross between the main street of Tokyo and the 'red light' district of Kalgoorlie. Particularly interesting was that many of the birds were not in full breeding plumage even - in fact 10% had no breeding plumage at all! Yet these birds were still taking part in all activities even incubating! Needless to say we have a few photos.

About ten days later Jim Lane (from CALM) and the ABC Wildlife Film Unit arrived and spent ten days at the colony and carried out a further aerial survey as well as much research and observations. The initial colony had grown to 20,000 nests at the rate of 10 per square metre and a second colony of 15,000 nests was forming about 3 km away. There were also two smaller colonies. Hatching commenced on April 3rd and data suggests that the incubation period varies between 21 and 23 days.

The white eggs (with a few black streaks and spots) produce lovely fluffy white chicks - both unique for waders. When they are all dry one parent takes them down to the water and away they swim. Grant and I arrived on our return visit to relieve Jim Lane on 8th April and stayed until 15th (last three days on my own - living on an island 30 km from the nearest station was quite an experience in itself). Each morning ca 2000 chicks left the colony - a wonderful, unforgettable sight.

We collected lots more data and started some banding/leg flagging. Jim returns on April 26th to continue the studies - especially banding and creche formation.

BYE-BYE WADERS

The wardens at Broome Bird Observatory, Jon Fallaw and Becky Hayward, have been assiduously logging the departure of waders from Roebuck Bay on the first leg of their journey back to their northern hemisphere breeding grounds. Most departures take place between 4 and 6 pm but on really good days flocks may also go earlier in the day (particularly triggered by a rising tide).

So far (21 April) over 20,000 have been counted. Eastern Curlews were the first to depart from March 7th. Most Great Knot went in the last week of March (from 21st March). Bar-tailed Godwits were the main migrants for the first two weeks of April, with males departing first. In mid-April Black-tailed Godwit and Whimbrel took over, followed in the next week by Red Knot, Grey-tailed Tattler, Terek Sandpiper and Ruddy Turnstone.

The most amazing count was a total of 1800 Whimbrel over 6 days. It is rare to be able to find more than 2-300 on any formal count. They must be distributed all round the mangrove borders of Roebuck Bay and only congregate in a compatible location at the departure point in Crab Creek when assembling for migration.

Only Red-necked Stints and the rest of the Curlew Sandpiper to go. migration normally ceases by the end of April.

MORETON BAY - AN UNCERTAIN FUTURE - Sandra Harding

Moreton Bay became one of two sites listed under the Ramsar Convention in Queensland in December 1993. In March 1994 it was decided that Brisbane, the city adjoining Moreton Bay, would host the 1996 conference of Contracting Parties for the Ramsar Convention.

Yet there is no management plan in place for Moreton Bay. A Strategic Plan for the waters areas of the Bay provides only a policy guideline and the Local Government Planning Schemes do not extend beyond the line of highest astronomical tide. The Moreton Bay zoning plan which is intended to provide for control of activities likely to cause significant environmental impacts such as dredging, mining and some commercial activities was prepared in December 1993 but has still not been adopted by Government.

How long will it take to see a conservation management plan for Moreton Bay, a Ramsar site? In the meantime, ongoing battles are fought against the threats to Moreton Bay. Some of the recent threats are:

- * Proposed Belims Creek Sewage Treatment Plant
- * Coral mining around Green Island
- * Pollution from the Brisbane River - no management plan either
- * Urban development in areas adjoining mangroves and in reclaimed areas
- * Port of Brisbane reclamation works
- * Proposed Manly boat harbour extension
- * Industrial uses of the Brisbane River mouth

Much of the loss of wetlands in Moreton Bay is insidious, occurring incrementally due to lack of planning and poor management practices. Urban sprawl is extending further along the coast, bringing the pressure of high population living in close proximity to and recreating on the edge or in Moreton Bay. For waders, the loss and continued disturbance of roosting areas fringing Moreton Bay by dogs, boats, bikes and general people presence is having a significant detrimental impact on the numbers of waders supported by Moreton Bay.

There is still several months for the government to put in place a conservation management plan for Moreton Bay before the 1996 Ramsar meeting. We

Page of notes by JL headed 'Telephone Discussion with Clive Minton (at Kalgoorlie) on Monday ... February [1995] (± 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.

Telephone Discussion with Clive Minton (at
Kalgoolie) on Monday - February (± 1 day)

— incubation period

—

— assess productivity \rightarrow Boddish -
of pair Berlee -

— mark WWS eggs (maybe clutches)

— to follow up

— get — before production (gilt)

— all on one egg today? or on
full clutches. \rightarrow 15 days since

— all in breeding plumage or not yet

— Cindy Clever can't

or Helicopter Tom Wed (whole day)

\$685 / hr (1 hr is round trip)

8 hrs

— carry 4 people \rightarrow + ticket

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.

Aerial Survey of Lake Morrison & Boddard ①

0914
0917
0950

Clive Mangony Ch Pilot
Take off
Morrison 250 feet. east side
Boddard 1 Swan 2 RWAU
low islands Photos 1-4

1004

To Boddard along NW arm
Depth 1m.
Did not look at isds to east.
Isds stop midway along lake
1 shel.

1014

Photo 6 Nth end Morrison
Left Morris
7 + 8 east end Boddard

1018

Boddard
#9 E end Boddard

1030

Wft 80 Best in water 2-3000
29 31 96 3 * 80
121 09 866

No breeding

Best

20 + 20, 20, 1000 50, 500
Wft 81 29 29 83
121 02 467

Best

100, 50
6 long Wft 82 5000

Bottom & Wft 80

29 28 076
120 58 108

2 groups main group
Photos on rocky ren + weedy
30 + 50 at western end

1102 Leave Boddard

Serial Survey Lake Banks

10/3/95

(2)

WP 80 Mt Marion Breeding Site #1

Stn most arm is dry.

WP 83 Stilts ~~of~~ + stn most portion of last arm

3000 Bass in this shallow area

No breeding on old islands

15ds on east shore - Notes No signs of birds

WP 84 Bass 2000 + 1000 + 1000 + 1000

29 14 136

119 39 87

Bass 2000 + 3000 on east side

Bass 3000

WP 84 is 2kms south of nth most head of survey

End

WP 85 End of survey at south end of middle arm.

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).

INDEX

SIDE 1

SIDE 2

1995 Lake Bellard

Tape - 300p



This is a photocopy of the container
of an audio cassette made by me
at Lake Bellard during 1995 visit(s)



28/11/00

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?

**DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT
WESTERN AUSTRALIAN WILDLIFE RESEARCH CENTRE, WOODVALE
FACSIMILE NUMBER (09) 3061641**

77

Date: *

29.3.92

To:

Andy Chapman

From:

Grant Hanson

No. of Pages:

No. of Pages
(including face sheet)

Any queries phone:

Message:

..... And The best of British duck

to you

THIS PROCEDURE MAY BE USED TO RECORD OBSERVATIONS.

4. If a colony is recorded please continue with the survey as time permits

5 It's important to contact Jim (3832727 home) or me (4054368 home) as soon as possible following any confirmed breeding. A call from Leonora would be appreciated.

We would prefer to keep the total flight to about 10 hours if possible which will probably accommodations will amount to about \$2000.

I have booked a C182 through the Kal/Bowdoin Flying Club today and confirmed the aircraft availability. Unfortunately the 172 was not available until

*** RECEIVE CONFIRMATION REPORT ***

Journal No. : 002
Receiver : CALM KALGOORLIE
Transmitter : CALM Wildlife Re
Date : 29 May 92 11:48
Time : 04'20
Mode : NORM
Document : 06 Pages
Result : O K

(78)

Pursuant to WP/lett
we hereby approve
WP work proposed

Message: And the best of British luck
to you.

4. If a colony is recorded please continue
with the survey as time permits

5. It's important to contact Jim or (3832727 home)
or me (4054368 home) as soon as possible following
any confirmed breeding. A call from Leonora
would be appreciated.

We would prefer to keep the total flight
to about 10 hours if possible which will
further accommodation will amount to about
\$2000

I have booked a C182 through the Kalgoorlie
Flying Club today and confirmed the aircraft

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

74

Form CLM 80A

To: Andy Chapman

From: Grant Pearson

29-5

19.92

Your Ref:

Our Ref:

Enquiries:

Phone:

Subject:

1

Attached flight path based on NOAA Satellite imagery which indicates presence of suitable water at Ballard, Barlee a lake north of Barlee near Bulga Downs and possibly Coongarrie and Yindarlgooda. If time permits it may be worthwhile to fly down Paeside and Rebecca.

I've estimated 4.5 hours to cover Coongarrie and Ballard refuelling at Leonora.

Then 5 hours for Leonora to Barlee returning to Leonora via the lake north of Barlee to refuel.

Time constraints on the pilot may demand a break overnight at Leonora.

The lake north of Barlee and Paeside and Rebecca should only be included if time and budget permits.

If you find a breeding colony I would like the following data.

1. Precise location - lat long or map co-ordinates
2. Photos prints in preference to slide at 100 ASA or 200 ASA if overcast or low light

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

76

Form CLM 80A

To:

From:

19.

Your Ref:
Our Ref:
Enquiries:
Phone:

(2)

Subject:

3 Notes on depth of water please a
questionable of numbers and other
waterbird species. Counts of other
waterbird species on all lakes would be
useful but should not compromise the BAST
observations. All results are of value.

A small hand held tape recorder is perhaps the
most practical way to record observations.

4 If a colony is recorded please continue
with the survey as time permits.

5 It's important to contact Jim or [redacted] home
or me [redacted] home as soon as possible following
any confirmed breeding. A call from Leonard
would be appreciated.

We would prefer to keep the total flight
to about 10 hours if possible which with
fuel accommodation will amount to about
\$2000

I have booked a C182 through the Kel / Boulder
Flying Club today and confirmed the aircraft
availability. Unfortunately the 172 was not available until
Thursday at the earliest. The pilot has been asked to

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

75

Form CLM 80A

To:

From:

19.....

Your Ref:

Our Ref:

Enquiries:

Phone:

Subject:

(3)

organise fuel and accomm. for himself and possibly two very discrete observers at Leonora.

Any problems please give me a call (or Jim) at home. My apologies for any suggestion towards teaching granny to suck eggs. ~~data~~ luck.

Grant Carson
29/5

P.S. BAST recorded breeding at Bellard in 86 but no indication exactly where.

BAST recorded breeding at Bellard in 86. PJF and I visited the site and from memory it was in the east arm near Mt Elvire homestead and south a bit on an island about 1km off shore (area within box on map). There is nothing to suggest they will use the same site but it may be worth knowing.

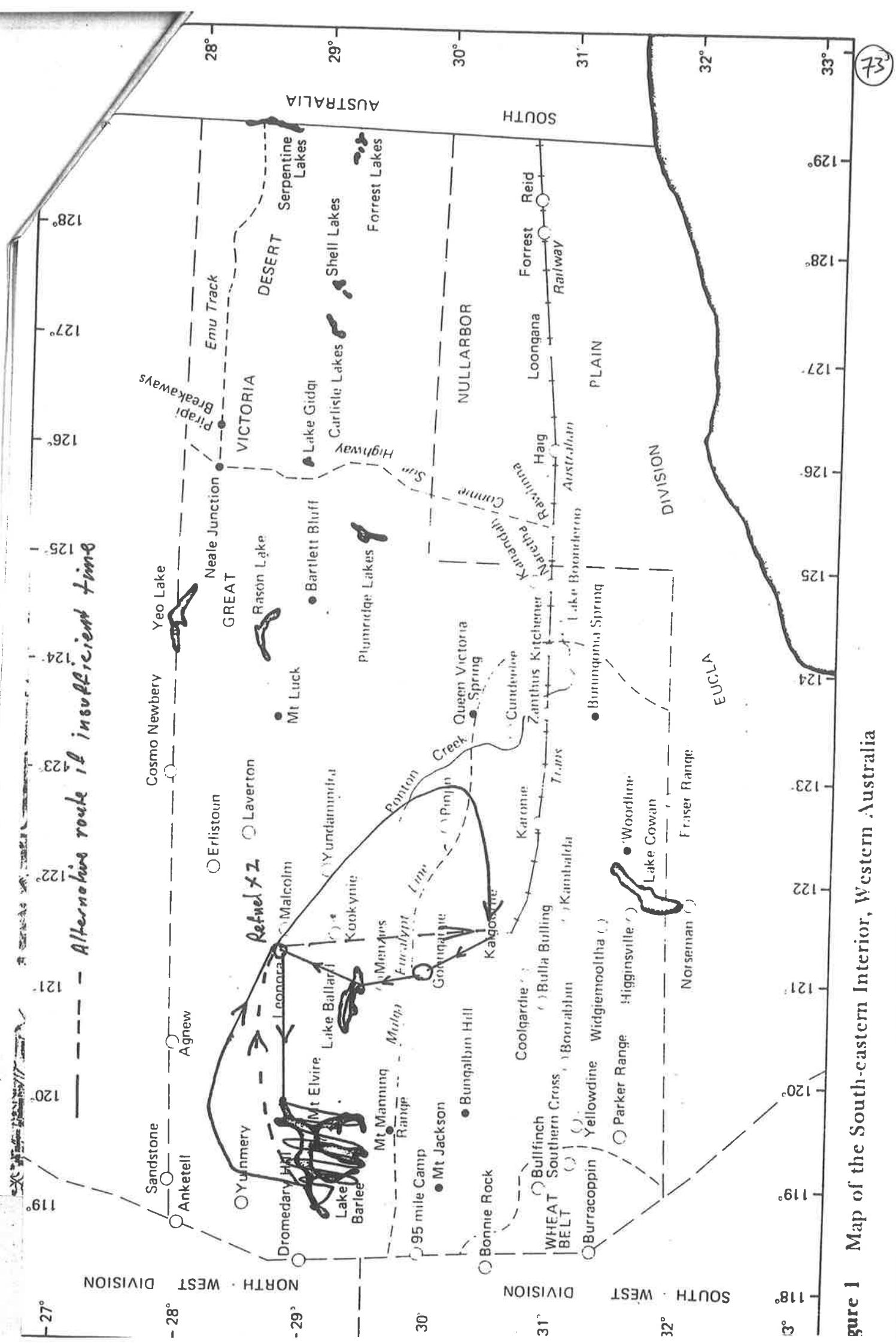


Figure 1 Map of the South-eastern Interior, Western Australia

Handwritten notes (late May 1992) by GBP calculating likely costs of proposed aerial survey by ACh for breeding BaSt on lakes in Eastern Goldfields.

160

80⁹⁰

Hugh Smith

		Cruise	Speed
		KM	Knots
182	\$185 - \$180 / hour	260 (40)	80
172	\$140 / hour		

	Phalt	Suy
Kel - Coongorrie	100	45
G - 211 West	80	
Bill West		100
Bill		240
Bill Leonora	70 Refuel.	385
	250	<u>635</u>
		5 665

Leonna	Reids	80
Reids	-Bontee	80
Bontee		500
Bontee	- Bulga	40
Bulga		60
Salt	Bulga - Leonna	170 280
Salt	- Leono	1005
Reids		744
Reids		980
Rebecca		32
Vine		
Idol		2.88
	40	
	360	
900	250, 3.60)	144
1005	0 125 = 8 } 1164	15.32
		X180
		=2095
		=2757

indayooda

Author 815.00

C. 172

140 Hrs + 7.00

110 K. 5 - 6 Hrs

5-6 hrs

Banbee v Ballard

Monday 0700

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

38

Form CLM 80A

To:

From:

19

Your Ref:

Our Ref:

Enquiries:

Phone:

Subject:

172 is not available

182 is available \$185
Thursday

Direct
Flight
timeSurvey
Flight
time

0700	Kel - Goongarie	via White Flag	100	
	Goongarie		45	
	Goongarie	→ Ballard	40	
	Ballard	→	200	
	Ballard	West	60	
	Ballard	→ Gites honora. Refuel.	60	to Isomine 7.56 5215 + 46 = 5.0
	Gites		30	
	Gites	Borlack	665	
	Borlack	Bulga Dns	40	
	Bulga	lala	65	
	Bulga	→ Salt lala	20	
	Salt		55	
	Salt	→ Raeside	50	To Isomine 895, 745
	Raeside		200	
	Raeside	→ Rebecca	30	
	Rebecca		110	
	Rebecca	→ Roe	40	
	Roe	→ Yandanggoona	15	
	Y -		100	
	Y - Kel		570	
		4.15		
		350	1570	4.81
				hrs 17.36
8185	172		80 knots	82430.
8185	182	140 knot 250k	110 knot	
			170k/H	
		80 knots.	2.05	
			12.66	
		5 hrs.		
			14.71 hrs	140/Hr

3 refuels = 3

= \$205.9

MEL 099635-838
09 2794455090 932005
090 216285.090 932005
090 216285.

			Direct Flight time	Survey Flight time
0700	Kel - Goongarie via White Flag		100	
	Goongarie			45
	Goongarie - Ballard		40	
	Ballard			240
	Ballard West			60
	Ballard - Lites Leonora. Refuel.		60	
				to Leonora 4.5h 5215 + 46 30 = 5.0
Gites				665
Gites	Borlae			
Borlae	Bulga Dns		40	
Bulga Lake				65
Bulga	Salt Lake		20	
Salt				55
Salt	Haeside		50	To Leonora 895 - 745
Haeside				200
Haeside	Rebecca		30	
Rebecca				110
Rebecca	Loe		60	
Loe	Yundanggoda		15	
Y -				100
Y - Kel			415	
			350	1570 4.91
				Hrs 17.36

8185	172		0 110 knots	80 knots \$2430
4425	182	140 knot 250k	170k/H	124
		80 knots.	2.05	12.66
	5 hrs.			

14.71 hours 0 140/Hr

3 refuels = 3
= \$205.9

090 932005
090 016285.

090 932005
090 216285'

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.

To: Andy Chapman

From: Grant Pearson

21 5 92

Your Ref:

Our Ref:

Enquiries:

Phone:

Subject:

Re Bonded Still Breeding

From NOAA imagery it seems
lakes Barker Ballard etc are flooded
to an indeterminable depth ie >10cm.

An aerial survey appears justified
but we need an estimate of costs
first

Could you please find out

1. Types of single engine aircraft available
to you at Kalgoorlie

2. Costs per hour

3. Cruising speeds

4. Range (hours flying at cruising speed)

On receipt of this info you will be able to
work out a flight path and \$
available for you to carry out the
survey which should be done as soon
as possible

cheers
Grant

80

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT
WESTERN AUSTRALIAN WILDLIFE RESEARCH CENTRE, WOODVALE
FACSIMILE NUMBER (09) 3061641

Date :

21.5 - 92

To :

Andy Chapman

From :

Grant Pearson

No. of Pages:

(including face sheet)

2

Any queries phone :

Message :

.....
.....
.....

Plan we will work out flight
route and look for available
to him.

Fly ASAP

RECEIVE CONFIRMATION REPORT

81

Journal No. : 005
Receiver : CALM KALGOORLIE
Transmitter : CALM Wildlife Re
Date : 21 May 92 16:53
Time : 01'19
Mode : NORM
Document : 02 Pages
Result : O K

Any queries phone:

Message:

.....
.....
.....

Then we will work out flight
route and look for available
to him.

Fly ASAP

1. Types of engine
2. Costs per hour
3. cruising speed
4. range (hrs flying at cruise speed)

Then we will work out flight

route and look ~~at~~ available
to him.

Fly ASAP

André

- ✓ Position of breeding
- ✓ Photos - point 100 ASA or 200 ASA of oldest low light
and question of NPS or
and question of NPS or
second priority 100 ASA
- ✓ Take notes of obs. - notes on digit & 1/15 w/ bird streak
and question of NPS or
1/15 results
- ✓ Continue with survey.
- ✓ Contact. JAKL or cf. Horn No. 411 from Jeannine
either way -
- ✓ observer - contactability 4 from Leopold
✓ ~~✓~~ ~~✓~~
- ✓ Monday night cf
- ✓ Fri Ando with defacto fri
✓ ~~✓~~ ~~✓~~
- ✓ Check for MS with Kile for JAKL -
or - 3rd

5/8/

2.8

✓ SAG

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'.

Ballard has water no water.

Mormon has water onto Rebecca. <6"

Cowen had water

Lake Moore.

Lake Margar.

Lake Abrah.
Seabrook

Le-Fox

MIRANDA 4-5 FT. LEINSTER NEAR AGNEW

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.

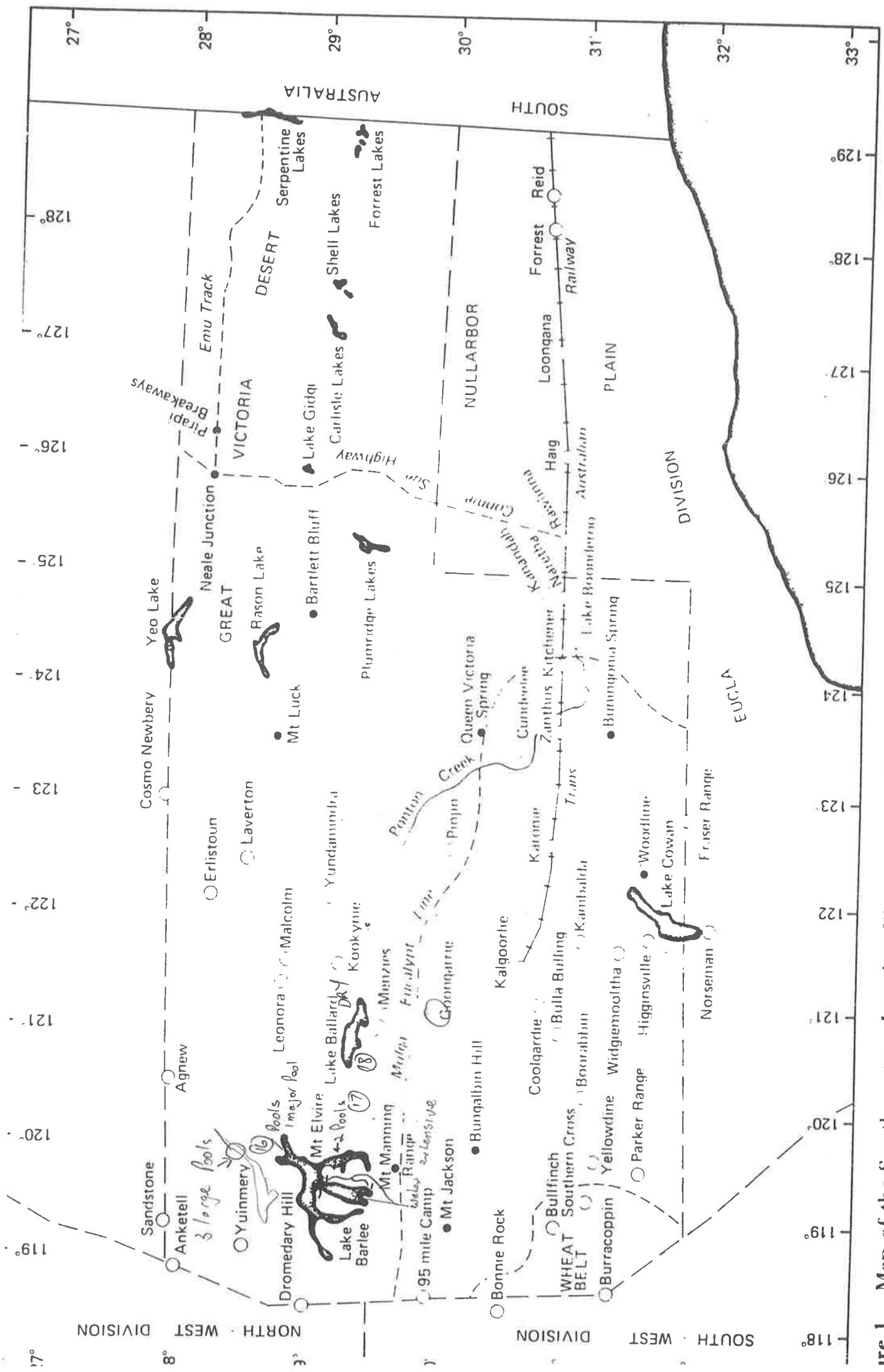


Figure 1 Map of the South-eastern Interior, Western Australia

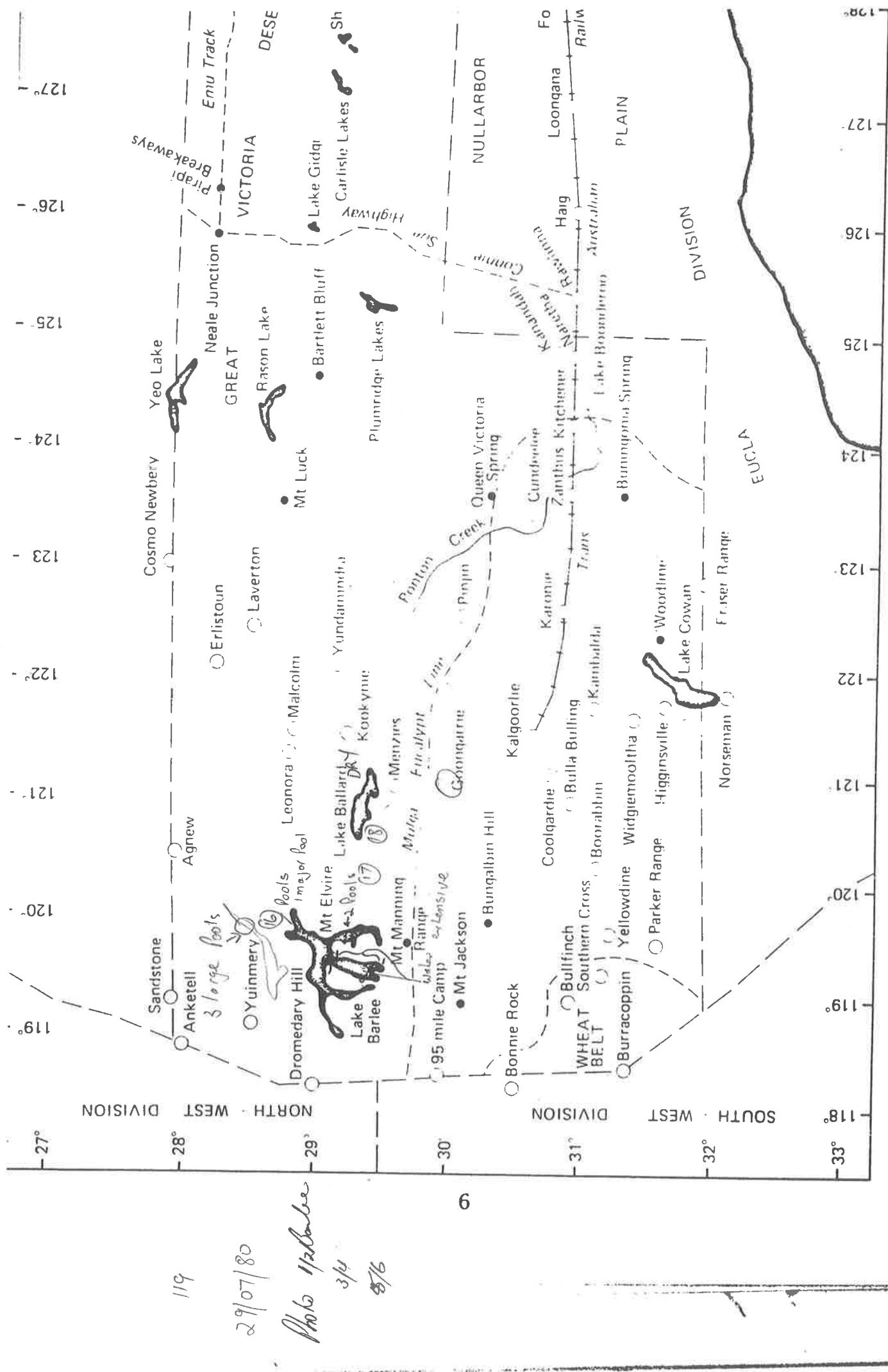


Figure 1 Map of the South-eastern Interior, Western Australia

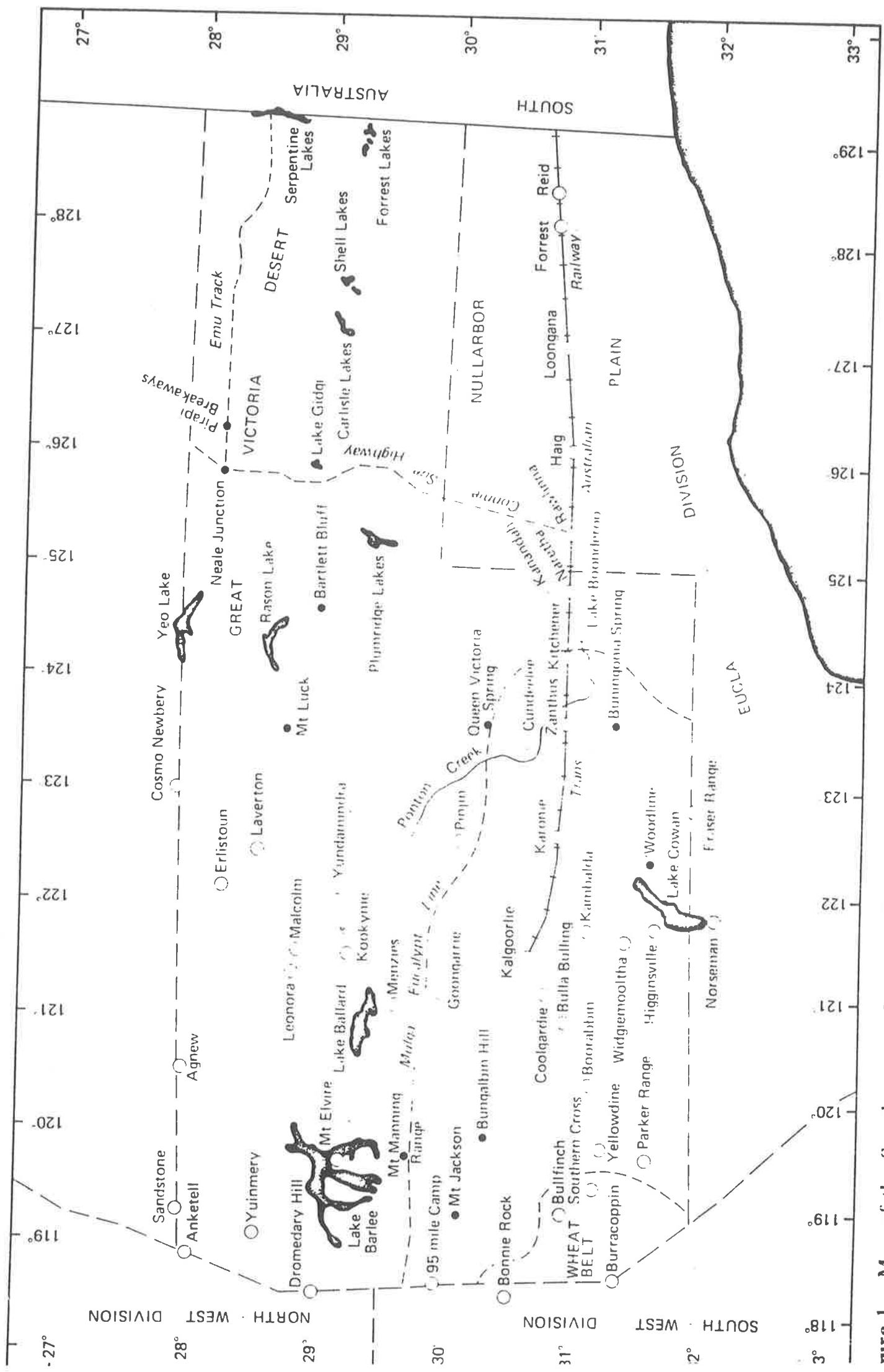


Figure 1 Map of the South-eastern Interior, Western Australia

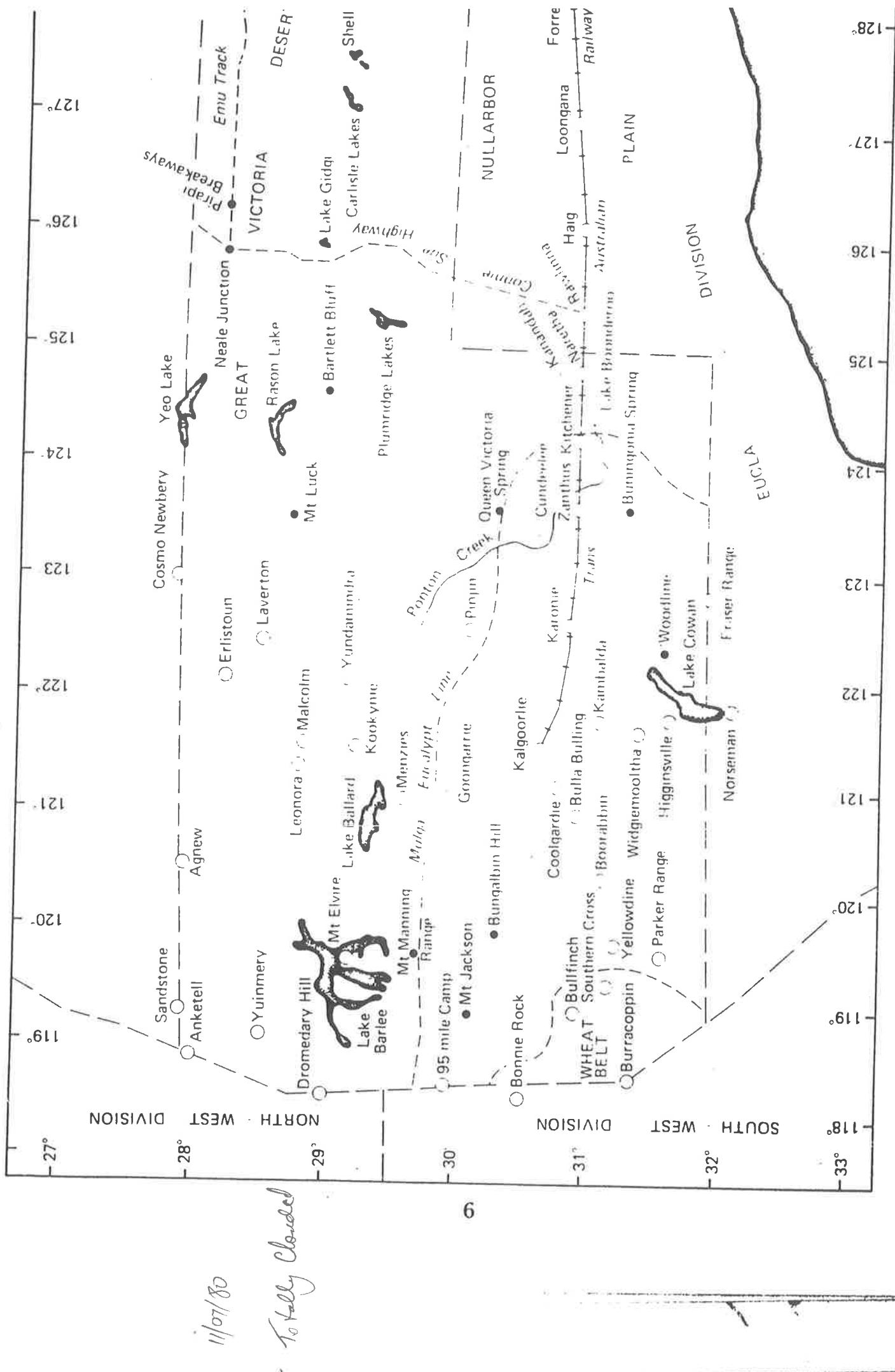
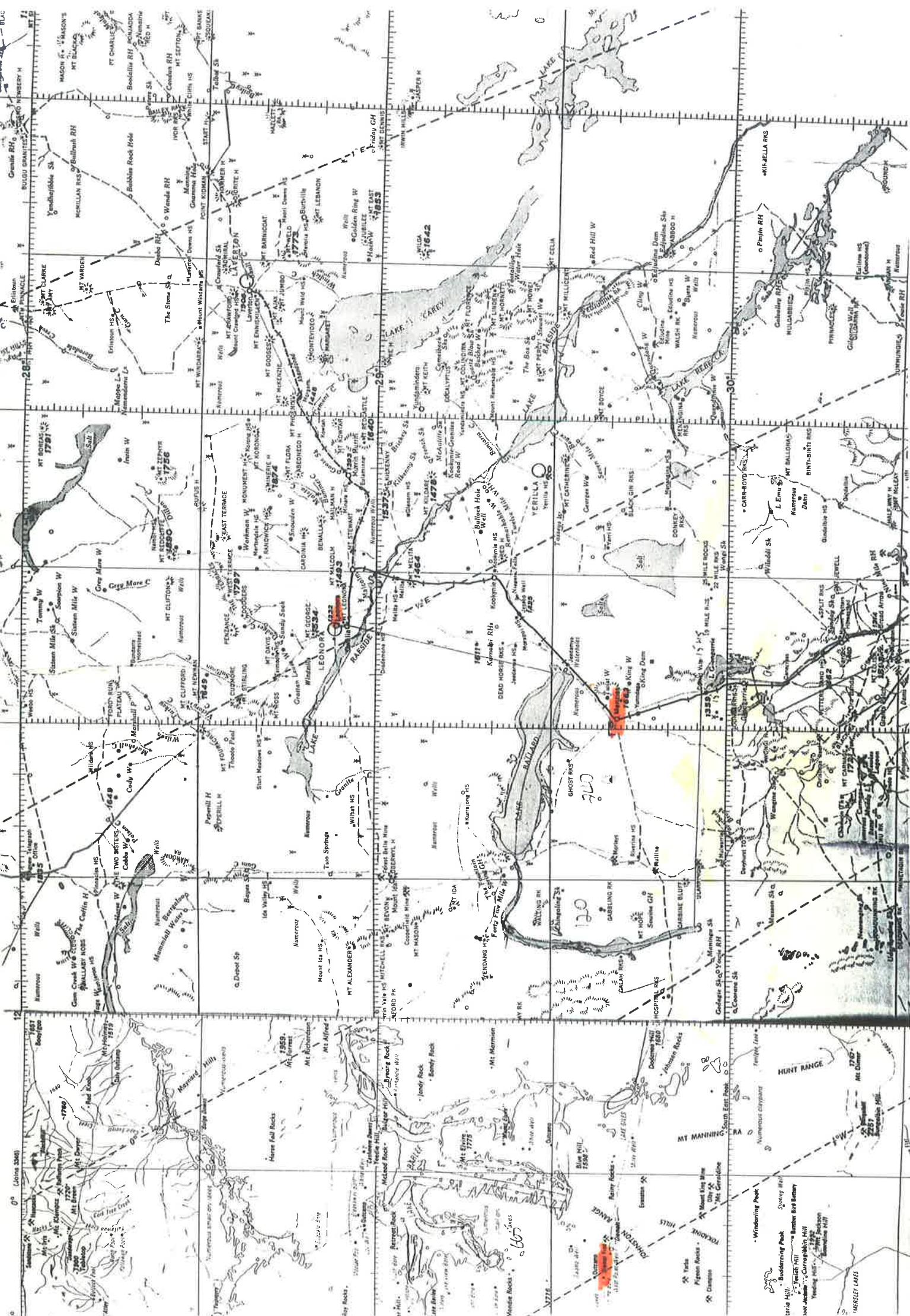
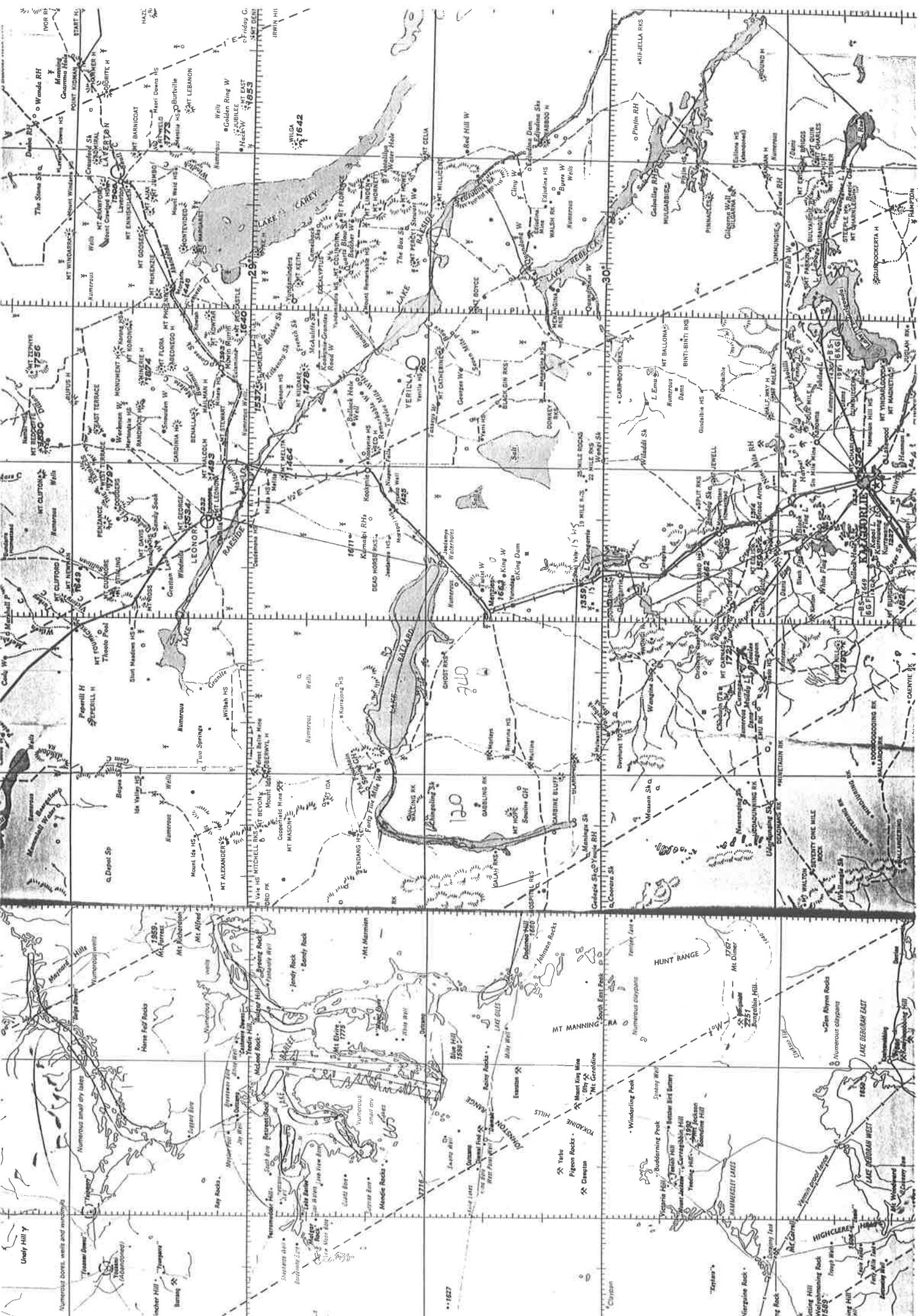


Figure 1 Map of the South-eastern Interior, Western Australia





**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.**

1996 *earlier* 1997
 OR *earlier* 28/11/00

↓

