





CHIEF RESERVE MANAGEMENT OFFICER.

~~MR LANE~~

Re: Bambun Lake - Waterbird Conservation Values

Bambun Lake is contained within ~~C class~~ Reserve No ~~26756~~ <sup>C 24257</sup> vested with the W.A.W.A. for the purpose of Conservation of Flora and Fauna. It is located in the Shire of Gingin.

Lake water levels at Bambun have been monitored since May 1979 as part of the wetland monitoring scheme (see graph). The lake water level fluctuated from a low of 1.20 m (May 1979) to a high of 2.56 m (Sept 1983). The salinity varied between 2.85 ppt to 1.3 ppt. The lake water is slightly alkaline varying between pH 8.2 and pH 9.9.

During this period lake water levels have fluctuated annually from approx 1.3 m (May) to 2.5 m (Sep)

Vegetation

The lake is fringed by ~~a~~ Eucalyptus rudis and Melaleuca raphiophylla woodland over emergent sedges and terrestrial shrubs. Stock (cattle) have grazed the entire perimeter. Cladium articulata grows in the lake, particularly at the northern and southern ends in open belts some metres offshore.

Hydrogeology

I have no detailed information concerning the nature of the lake bed or lake substrate and cannot therefore comment on the lakes ability to hold water or the origin of its catchment.

Waterbird Usage

41 species of waterbirds, including 9 breeding species, have been recorded since 1981. A list of these and of maximum numbers recorded

From the south-west waterbird project data 41 species for each is attached. have been recorded including 9 breeding species.

These The data reveals that Bambun Lake is one of the most important wetlands in the South-west for Blue-billed Duck (Maximum 302 April 1983). The lakes depth is a significant factor for this species. diving species.

Dusky Moorhen have been recorded on the lake which is an unusual occurrence for lakes north of Perth.

Black-tailed Native Hens were recorded on 4 occasions and bred in September 1982. Breeding records for this species are uncommon in the South-west (Jaensch pers. comm).

The lake supports a significant resident population of Yellow-billed Spoonbills.

Reasonably high populations of Great Egret, White-faced Heron, Little Black Cormorant and Great Cormorant frequent the lake for most of the year.

cont'd....

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Great-crested Grebe, Hoary-headed Grebe and Australasian (Little) Grebe were recorded in significant numbers. Although Great Crested Grebe <sup>are now</sup> ~~are~~ more common in the South-west <sup>not</sup> than in past years, their status is uncertain and known habitats should be managed carefully.

Six species of migratory wader were recorded in small numbers from late spring and through the 1982-83 summer. It is possible that Bambun provides a valuable summer refuge for waders when adjacent lakes such as Mungala and Wallering have dried.

### Summary

It is evident that the lake provides a valuable summer refuge for a large and diverse population of waterbirds. It is of particular value for its ability to hold water longer than ~~its~~ neighbouring wetlands (ie throughout the year).

Bambun's deep water is suited to diving ducks (Blue-billed Duck, Musk Duck, Hardhead) which make frequent use of the lake.

Detailed hydrogeological information <sup>would be needed</sup> ~~should be sought~~ to determine the effects of modifications to the lakes catchment on its water levels.

It is quite probable that actions <sup>would</sup> affecting the lakes ability to fill to normal levels ~~will~~ cause the displacement of some of the traditional species utilising Bambun Lake.

*G.B. Pearson*

G.B. PEARSON  
Technical Officer  
Waterbird Research  
December 16, 1983.

Species	Mts. loc.	Range	Alt. time	Comment
G10I	1	0-1	May 83 →	resident since May 83
YBSL	15	0-15	6	Jul. 82 →
PaBD	222	16-222	c 50	Continuous
GyTL	292	3-292	c 70	"
Shov	44	0-44	10	cont.
PeaD	575	5-575	90	cont
Herd	132	1-132	5-80	Cont
BSB, D	302	12-302	20-100	Cont
BTNH	52	0-52	6	after few breeding sites known in
Dumbo	2	0-2	1	few. Uncommon away from Mt. Everest.
Water	Migratory	6		
	Non.	34		

Breeding

Swan  
Shel.  
PaBD  
GyTL  
PeaD  
BTNH  
Coat  
G10I  
Mus D

graph wetland Monitoring Data Water levels  
Water quality  
No. Wetland data - use.  
period  
Numbers  
species

Water level fluctuations - period of time  
compare to rainfall

Water quality - Salinity  
pH.

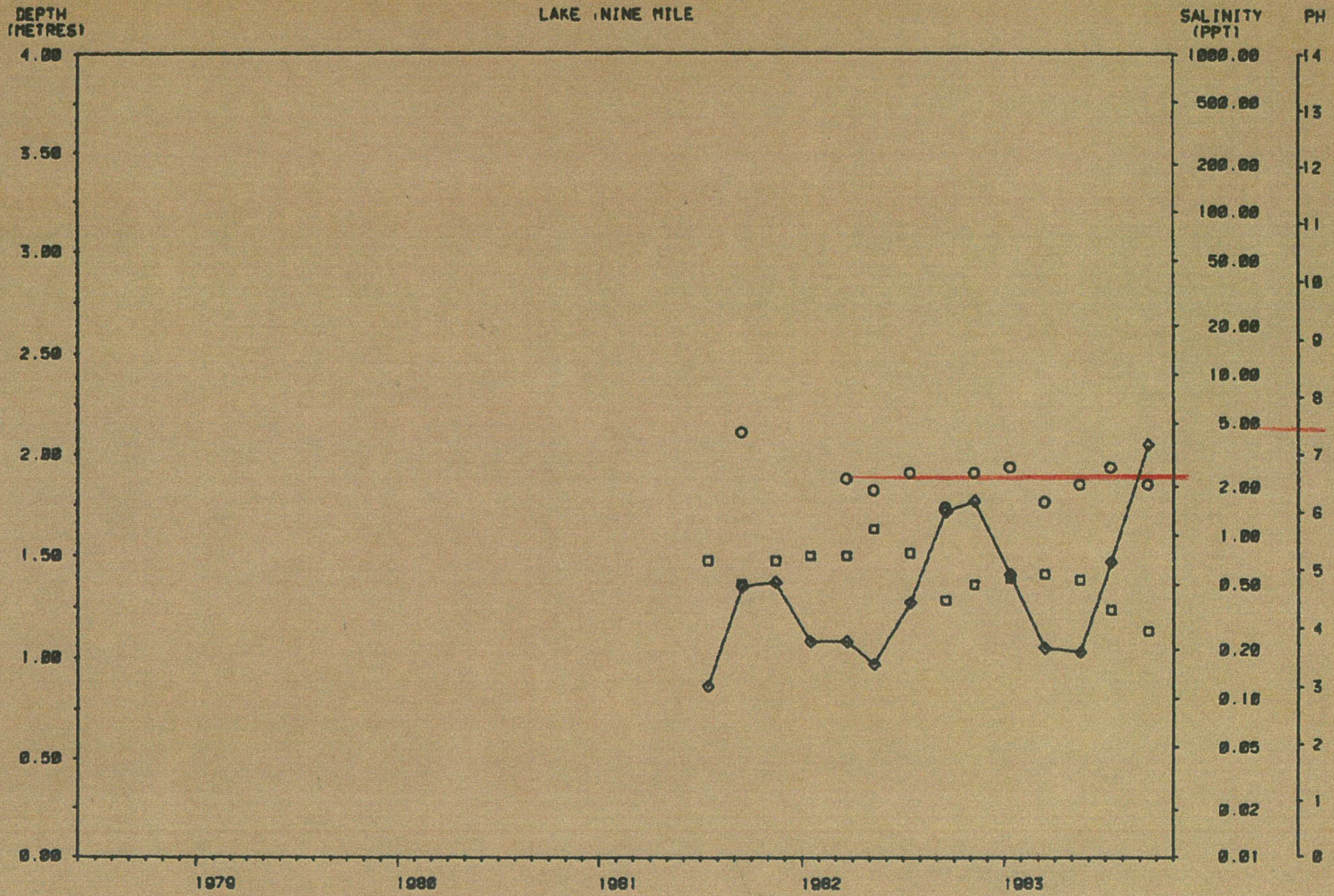
Wetland use  
No. species  
No. unusual species  
Period  
Type of use.

graph wetland monitoring data water levels  
water quality  
No. waterbird data - use.  
period  
numbers  
No. species

Water level fluctuations - period of time  
compare to rainfall

Water quality - Salinity  
pH

waterbird use  
No. species  
No. unusual species  
Period  
Type of use.



◇ DEPTH    □ SALINITY    ○ PH FACTOR

VA DEPT. FISHERIES & WILDLIFE  
WATERBIRD RESEARCH

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No. 5247 102.00

0443

5036

WA 4138c GINGIN (2035) PROJECT NO. 980010 RUN 11 12870' ASL 27/07/98  
1:100,000 SHEET AREA 5021-5043 1:25,000 DOLA COPYRIGHT

BAMBUN

## Lake Bambun

Summary of information about the past hydrology of the lake –  
Monitoring data shows depth changes 'not significant' while the decrease in  
salinity is 'very highly significant'.

In September 1955, Lake Bambun, together with lakes Nambung and Mungala, was gazetted as Reserve 24257 for the purpose of "Conservation of Fauna" and not vested (Government Gazette No. 79, 9<sup>th</sup> September 1955, p. 2168; CALM File 015093F3102, old file WM19550161, folio 29). Lake Bambun is the northernmost of the three lakes, which were entirely surrounded by private agricultural land at the time of the Reserve's gazettal. The boundary of Reserve was gazetted as the high water mark for each of three lakes.

In a report on an inspection of the Reserve's lakes and Wallering Swamp carried out by D.L. Serventy of (CSIRO Wildlife Survey Section) and Harry Shugg (Fauna Warden) in November 1956, Mr. Shugg noted that "*the whole area is quite attractive and although Nambung is said to turn quite salt the other two lakes [presumably Mungala and Wallering] are quite fresh*" (CALM File 015093F3102, old file WM19550161, folio 45).

Several comments on the Departmental files indicate that Lake Bambun and the other lakes within the Bambun/Nambung/Mungala/Wallering wetland chain were very fresh during the decade prior to the commencement of sampling (at least).

In April 1972, Dr. T.L. Riggert (Senior Research Officer for the Department of Fisheries and Fauna) summarised the state of knowledge about Lake Bambun's ecology:

*"In the past few years I have visited Lake Bambun on several occasions during wetland surveys. This lake is approximately 103 acres in size and probably has a depth in its deepest areas of 20 foot. The water is extremely fresh for this area and utilised mainly by those species of deepwater ducks (i.e. Musk Ducks, Bluebills and various forms of Grebes)"* (Letter to Mr. Mearns, Department of Fisheries and Fauna by Dr. T. L. Riggert dated 13<sup>th</sup> April, 1972, CALM File 015093F3102, old file WM19550161, folio 128).

A file note containing a 'black and white' photograph of Wallering Swamp on 30/12/75 notes: "*Deepest water is probably 3' and there is no indication of salinisation*" (File note by J. Goodsell, CALM File 015093F3102, old file WM19550161, folio 139).

In late 1983, local landholders surrounding the Lake Bambun Reserve, with the assistance of the Western Australian Department of Agriculture, commenced planning a policy for regulating drainage and irrigation diversions for the Lennard Brook catchment, which feeds into the northern end of Lake Bambun (letter to the Director of the Fisheries and Wildlife Department from K.S. Cole, Senior Advisor, Irrigation and Water Resources Branch, Division of

Resource Management dated November 25, 1983, CALM File 015094F3102, old file WL19550161, folio 52). By 1985, the Gingin Soil Conservation Committee had formed and was seeking the assistance of the Water Authority of Western Australia in "*compiling a report so that consideration may be given to the implementation of a proper drainage system*" (letter to the Executive Director of CALM from NHV Wallace, Shire Clerk, Shire of Gingin, dated 3 October 1985, *ibid*, folios 102-103). The letter from the Gingin Soil Conservation Committee noted:

*"Apparently the Water Authority of Western Australia have in the past few months conducted an investigation into the drainage of Lennards Brook south into Bambun Lake and Ellens Brook.*

*... No doubt you are aware the water flowing from Lennards Brook may flow south into the Ellens Brook or west into Bambun Lake with result that all the small swamps south of Bambun Lake when full, floods across farmland into the region of Ellens Brook.*

*When Bambun is full it flows in a westerly direction into the Gingin Brook.*

*It is this Committees intention to carry out a feasibility study into the possible implementation of a drainage system which would have general control of both water courses..." (ibid).*

There is no further information on the Departmental files that relates to drainage or manipulation of flows into the lakes, or any further information relating to the salinity of the lake. It may be useful to investigate the progress of the drainage plan for the area, either through the Department of Environment (previously the Water and Rivers Commission and the Water Authority of Western Australia), of the Western Australian Agriculture Department.