

Department of Fisheries and Wildlife
Western Australia

ANNUAL WETLAND & WATERFOWL REVIEW

NOVEMBER 1978

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and Technical Officer D.R. Munro for
submission to the W.A.W.A. Bird and Game
Committee on 20th November 1978.

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WETLAND AND WATERFOWL REPORT - 1978-79.

I INTRODUCTION

This report was completed on the 17th November 1978 at the conclusion of ground and aerial surveys of wetland systems within the South-West and Eucla Land Divisions of Western Australia.

The statistics, assessments and conclusions are submitted in support of the appended duck hunting season recommendation.

The report is based upon data from monthly rainfall reviews, documented reports from the public and media sources, from previous annual reports and ground and aerial surveys.

A meteorological district map is attached at the back of the report. Unless otherwise stated, references to districts are for those shown on this map. All dates are inclusive.

II SURVEYS

(a) Ground

- i. Central Coastal and North Central from 3/10/78 to 5/10/78.
- ii. South Central (Part) from 10/10/78 to 13/10/78.
- iii. South Central (Part) and South Coastal (West of Albany Highway).

(b) Aerial

- i. North Coastal (excluding RAAF Zone) and North Central - 24/10/78.
- ii. South Central (excluding northern sector) - 25/10/78.
- iii. South Central (northern sector), South-East and the South Coastal - 26/10/78 and 27/10/78.
- iv. North Coastal (RAAF Zone) 12/11/78.
- v. South Central (major systems) and South Coastal (Busselton-Perth) - 14/11/78.

III RAINFALL

For the period January to October the rainfall departures from normal for the North, South and

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Central Coastal; and North and South Central Districts were - 10%, -5%, -8%, -13% and -10% respectively (Figures 1. and 2.)

Of significance in this year's rainfall pattern were the extremely heavy falls recorded in February. At the end of the month, major flooding occurred throughout the Eastern sector of the North Central and South Central districts.

Rainfalls in the March-June period were average in the Central Coastal and South Coastal Districts; below average in the North Coastal and South Central Districts, and well below average in the North Central District.

July rainfalls were above average or average in all districts.

Rainfalls for all districts were very much below average in August, the Central Coastal District having its driest August on record.

September-October rainfalls were average for all districts.

Shires within which are situated major lake systems - i.e. Wongan-Ballidu, Wickepin, Narrogin, Wagin, Dumbleyung and Woodanilling received below average rainfall for the year.

IV WETLANDS

i. North Coastal District

In the S.W. sector the wetlands are from $\frac{1}{2}$ full to full, the Lake Eganu system being in excellent condition. In the remainder of the division larger lakes are dry to $\frac{1}{2}$ full - e.g. Moora Lakes - $\frac{1}{2}$ full, Lake Ninan - low, and Lake Hind almost dry.

ii. Central Coastal District

With very few exceptions, wetlands within this district are high or full and providing excellent waterfowl habitat.

iii. North Central District

Although the shallow salt-lakes and connecting streams of the drainage-system and flood-plains are dry, a majority of the deeper lakes are from $\frac{1}{2}$ full to high.

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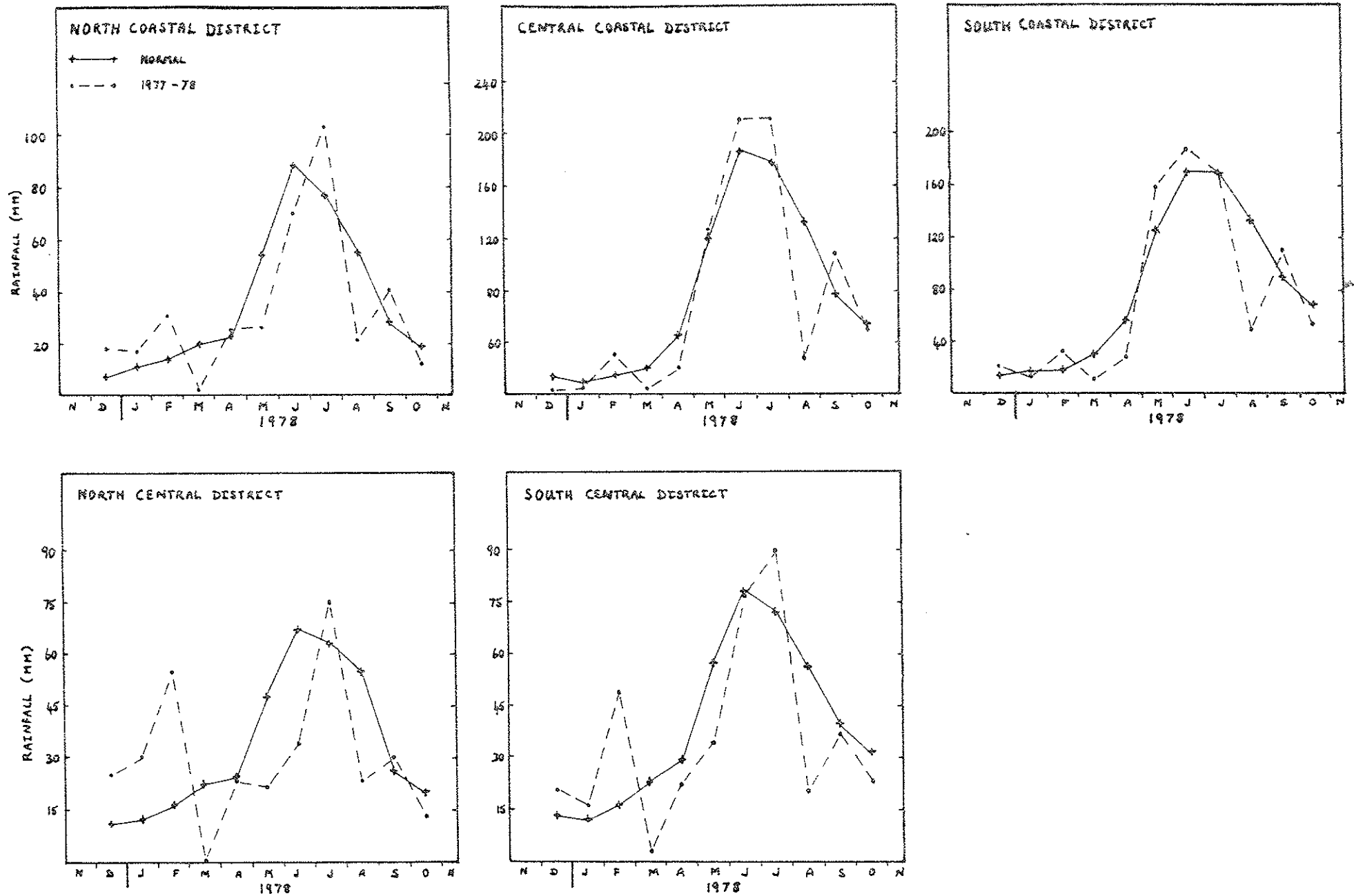
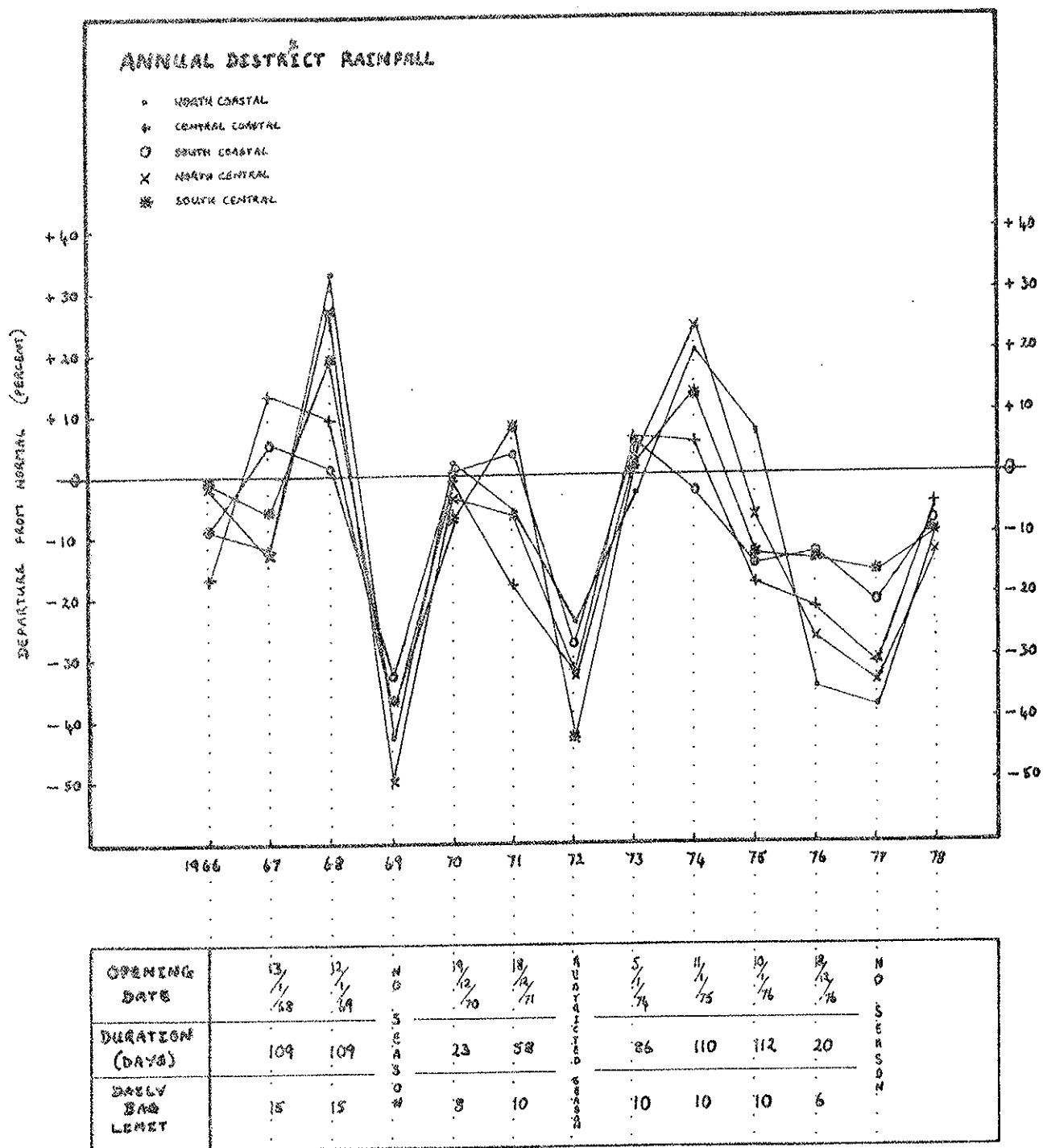


FIGURE 1. Monthly Rainfall Patterns : December 1977 - October 1978



- NOTES:**
1. Percentage departures from normal for 1978 are based on January - October rainfall data. Normal rainfalls for this period are 93% - 96% of annual totals.
 2. Restricted shooting season in 1972-73 permitted taking of Mountain Duck and Wood Duck on private property only.
 3. Bag for 1971-72 was "split". That is, 4 of the 10 birds were to be Mountain Duck or Wood Duck.

FIGURE 2. Annual Rainfall Patterns : 1966 - 1978 ; and Yearly Duck - Season Specifications.

iv. South Central District

Generally, the condition of wetlands in this district has improved considerably when compared to last year. Patchy rainfall distribution, however, resulted in some systems filling while others remained dry or only maintained the levels attained last year.

For example:

Beverley System - run-off from the flooding which occurred in the Eastern Agricultural Division during February filled all lakes of the Beverley Lakes catchment, with sufficient water reaching the Lakes themselves to fill them to a depth of approximately 1 metre.

The average and above average falls recorded respectively in June and July resulted in the whole system filling to capacity.

Lake Mears - Also benefitted considerably from the falls in June and July receiving sufficient run-off via the diversion to almost fill the lake.

Yealering Lakes - Most lakes are high with the exception of White-water Lake ($\frac{1}{2}$ full) and Lake Nonalling which is low as a result of the temporary check failing to retain water.

Toolibin - Arthur River System - These wetlands being further to the South and having a limited catchment area received no benefit from the February rains. Local rainfall for the area was well below average and as a consequence the principal lakes in this system remained dry. The exceptions here are: Lakes Walbyring, Billy, Ibis, Bokan and Little White. The levels of these lakes range from low to high.

Lake Coomelberrup - A very good flow down the Dongolocking flood plain in July and August raised the level of the lake to almost 1.0m., but not sufficiently high for it to overflow into the Cobline River. The lake is classified as high.

Lake Coyrecup and Lakes to the East filled or attained high levels but again no flow occurred West of these lakes into the Cobline River. There was, however, sufficient local catchment to maintain the level of Lake Ewlyamartup at half-full.

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Coblinine River Flats

As mentioned no flow occurred down this system. Lake Casuarina is dry and only pools are present in the mainstream of the flats.

Corakin Swamp, however, has an independent supply-source and did fill.

Lake Dumbleyung

Because no flow occurred down the Coblinine River, and local catchment was minimal, the classification of the lake remains low.

Lake Gundaring

This lake is also low for the same reasons as Lake Dumbleyung.

Woodanilling System

Local catchment was sufficient in the Shire of Woodanilling to slightly improve the overall status of lakes in this system although many still remain very low.

For example:

Wagin Lake	-	½ full
Lake Parkeyerring	-	½ full (0.65m)
Lake Qualin	-	High
Lake Norring	-	Low (0.50m)
Lake Wardering	-	High
Lake Martinup	-	Low
Billie-light Swamp	-	Low

Other lakes in this system are very low or dry, as they were last year.

v South Coastal

Without exception, all wetlands of this District are high or full, with additional areas of inundation observed between Bremer Bay and Albany. This situation has existed since June when heavy falls caused flooding in the area.

vi Summary

In very few instances has the condition of any wetland deteriorated this year when compared to the situation as it existed this time last year. On the contrary, numerous lakes have improved considerably. Many which were dry or low in 1977 are high or full this year.

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The fact that a substantial percentage of the wetlands (those which received run-off from February rainfalls) attained high levels early in the season is of significant value in respect to the early creation of suitable breeding habitat in some areas.

It is anticipated that under normal conditions those lakes of the inland districts which attained high levels will retain satisfactory depths at least until February or March 1979. Of course, those lakes now classified as being less than half full will dry out rapidly during summer.

Overall, the total area of open-water in the South-West of the State is substantially greater this November than in November of last year (See Figure 3)

V BREEDING

Reports and observations indicate that per-capita production for the season has been exceptionally high. Breeding commenced very early with ducklings appearing as early as late June. The season is still continuing at this time, particularly in the Coastal districts where young Black Duck and Grey Teal are still appearing along rivers. During the most recent ground survey numerous pairs of Black Duck and Grey Teal were noted on the Harvey and Serpentine Rivers. These birds displayed nesting behaviour.

Although the number of broods appearing can shortly be expected to decline there is no doubt that non-flying juveniles will be present on the wetlands until the end of January 1979 and possibly until mid-February.

VI WATERFOWL POPULATIONS

Aerial surveys conducted during the period 24th - 27th October revealed very few large concentrations of waterfowl.

Although sightings of several thousand Mountain Duck were common their numbers were far below that recorded last year. Grey Teal and Black Duck numbers were also comparatively less (See Table 2).

This decrease in numbers observed is believed to be due primarily to two factors. Firstly, ducks are more dispersed this year than last year due to the greatly increased area of open water available in the South-West. Secondly, due to prolonged breeding activity, birds have yet to congregate.

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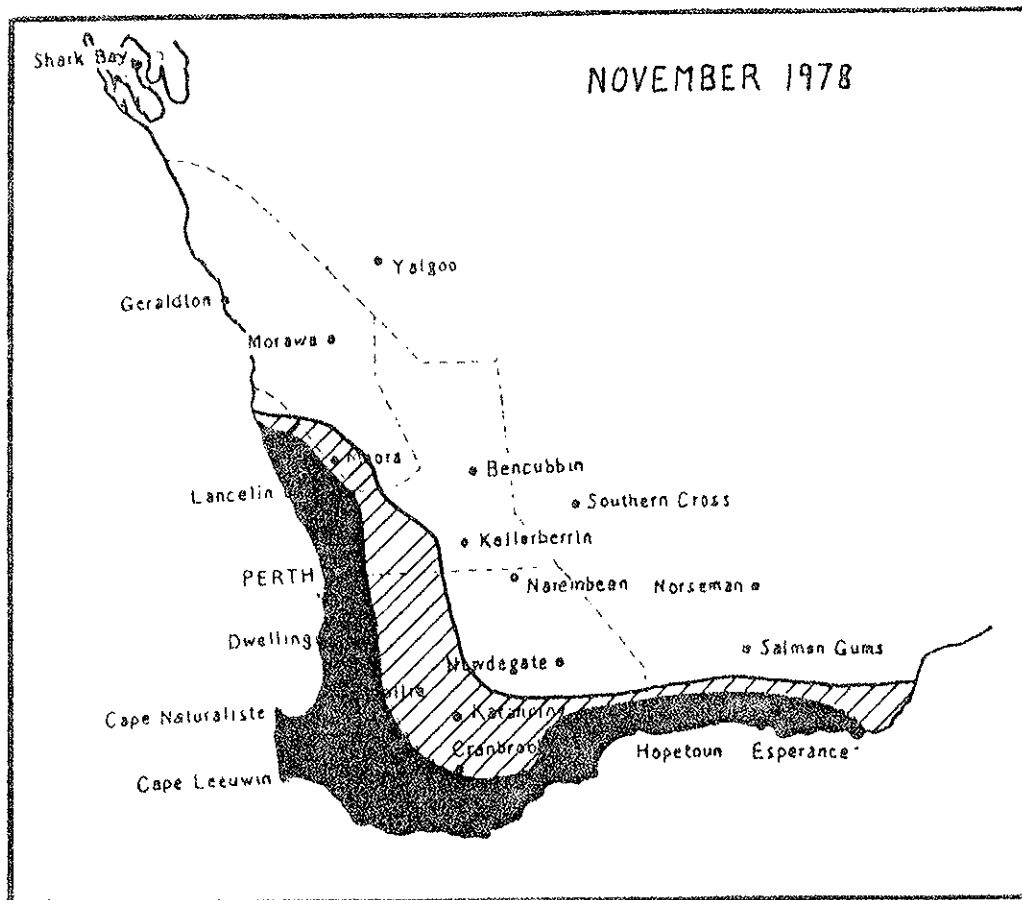
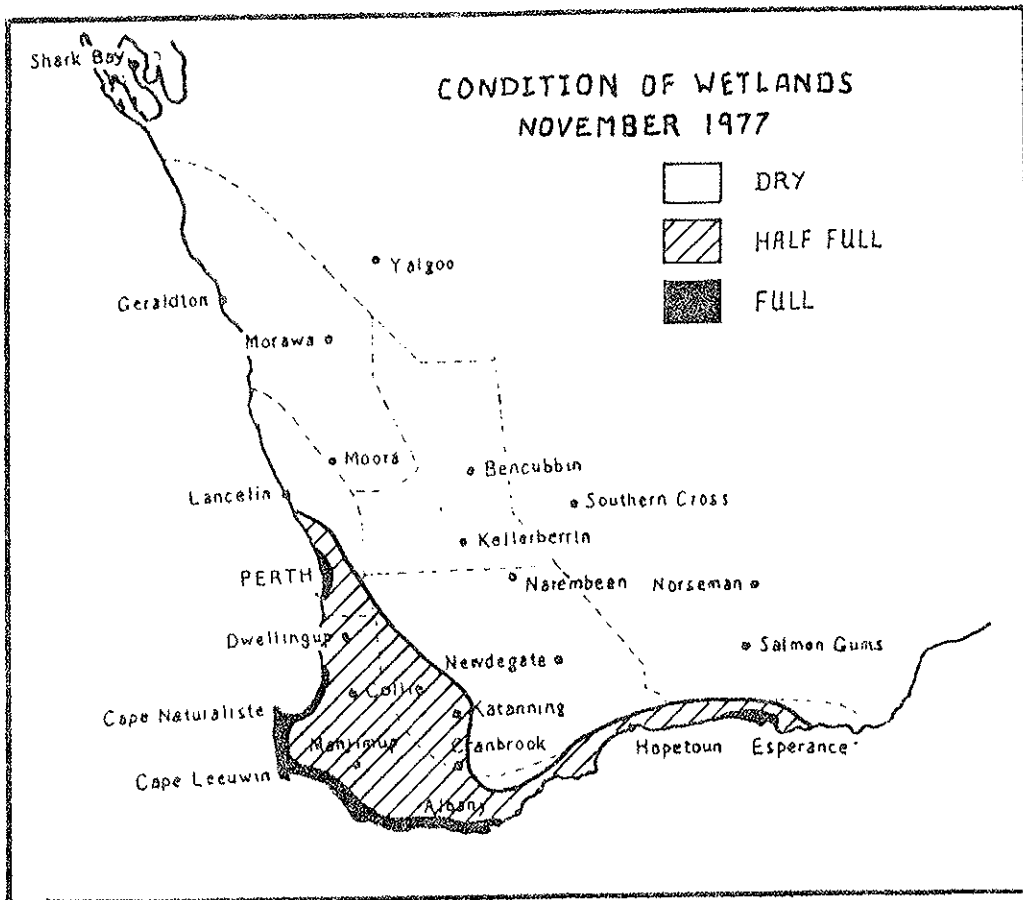


FIGURE 3. Condition of Wetlands : November 1977 and 1978.

TABLE 1.

STATUS OF SOME IMPORTANT WETLANDS AS AT NOVEMBER 1976, 1977 & 1978.

LAKE NAME	WATER LEVEL		
	1976	1977	1978
EGANU	Low	Dry	Full
PINGARREGA	Low	Dry	½ Full
MOORA	Low	Dry	½ Full
WANNAMAL	½ Full	Low	Full
WALYORMORING	½ Full	Dry	Low
BEVERLEY	High	Low	Full
MEARS	Low	Dry	High
YEALERING	Full	Low	High
TOOLIBIN	Full	Dry	Dry
TAARBLIN	Low	Dry	Low
NOMAN	Low	Dry	Low
GUNDARING	High	Low	Low
DUMBLEYUNG	Low	Low	Low
COOMELBERRUP	Full	½ Full	High
COYRECUP	Low	Dry	½ Full
EWLYAMARTUP	Full	High	½ Full
CASUARINA	½ Full	Low	Low
WARDERING	High	½ Full	High
RUSHY SWAMP	Full	Dry	Dry
NORRING	Full	Low	Low
FITZES SWAMP	High	Dry	Low
TOWERINNING	½ Full	½ Full	½ Full
BENGER SWAMP	High	High	Full

SUMMARY:

	DRY	LOW	½FULL	HIGH	FULL
1976	0	8	4	5	6
1977	11	7	3	2	0
1978	2	8	5	4	4

TABLE 2.

Numbers of Mountain Duck, Grey Teal and Black Duck observed during air surveys of 108 wetlands and "wetland clusters" in 1977 (7th-11th November) and 1978 (24th-27th October).

	NUMBERS OBSERVED		Variation
	1977	1978	
Mountain Duck	100,000	45,000	- 55%
Grey Teal	45,000	7,000	- 87%
Black Duck	3,000	800	- 73%

TABLE 3.

Numbers of Mountain Duck, Grey Teal and Black Duck observed during air surveys of a sub-sample of 35 wetlands in November 1977, and October and November 1978.

	NUMBERS OBSERVED		
	1977	1978	
	7-11 November	24-27 October	12-14 November
Mountain Duck	85,000	26,000	52,000
Grey Teal	41,000	2,700	4,500
Black Duck	830	160	530

Additional surveys conducted on the 12th and 14th of November support this belief. Lakes re-surveyed were some of those which are known to support large numbers of birds at the conclusion of breeding seasons. These are:

Salt Lake (Cataby)
 Yealering Lakes
 Arthur River System
 Lake Gundaring
 Lake Dumbleyung
 Coblinine River
 Lake Coyrecup
 Lake Ewlyamartup
 Woodanilling System
 Lake Towerinning
 Vasse & Wonnerup Estuaries
 Lakes Preston and Clifton
 Harvey and Peel Inlets

These surveys revealed that the number of Mountain Duck and Grey Teal had doubled and that Black Duck numbers had trebled over the period of three weeks (see Table 3).

On the basis of these results, we have reached the conclusion that October-November surveys of duck populations are not useful for determining year-to-year variations in duck numbers. Consideration is therefore being given to the possibility of conducting future surveys towards the end of summer, at a time when duck populations are almost invariably non-breeding, congregated, and concentrated onto far fewer, permanent wetlands.

VII CONCLUSIONS

Our assessment of the waterfowl situation for 1978/79 is as follows:

- i. Breeding conditions for waterfowl in 1978 were much improved on 1977.
- ii. Breeding began early this year and is continuing later than normal. As a result, some non-flying juveniles will occur at least until the end of January.
- iii. Despite good breeding conditions this year, most game species of duck still have low populations following two years (1976 and 1977) of exceptionally low rainfall.
- iv. The Mountain Duck appears to have been least affected by the prolonged drought. Large numbers of this species occur on many wetlands in the south-west.

- v. Though the overall wetland picture is much improved on 1977, it is still somewhat less than average in the North Central and South Central Districts, and a proportion of shooting areas can be expected to dry early in the summer.

On the basis of this assessment it is our view that

- i. Sufficient breeding has occurred in 1978 for a duck season to be declared in 1978-79.
- ii. Populations of most game species (except Mountain Duck) are low, however, and the bag limit for these species should accordingly be low.
- iii. The season should commence late in order to protect late-breeding birds and their young.
- iv. The season should close early to prevent over-concentration of shooters and ducks as marginal areas dry out, and to further limit this year's harvest of birds.

Our recommendations for the 1978-79 Duck Hunting Season are therefore as follows (overleaf) :

.VIII. RECOMMENDATIONS FOR THE 1978-79 DUCK HUNTING SEASON

Opening Date: Saturday 13th January 1979

Time: 6.00 P.M.

Bag Limit: A total of six ducks per shooter but
no bag to contain any more than three
of those declared game species except
Mountain duck (*Tadorna tadornoides*)

Possession Limit: Opening day - 6 ducks
After Opening day - 12 ducks

Closure Date: Sunday 4th February 1979

Closure Time: Midnight.

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Waterbird Research

November 17, 1978.

WESTERN AUSTRALIA

REFERENCE TO METEOROLOGICAL DISTRICTS

- | | |
|-------------------|-------------------|
| 1 NORTH KIMBERLEY | 8 NORTH COASTAL |
| 2 EAST KIMBERLEY | 9 CENTRAL COASTAL |
| 3 WEST KIMBERLEY | 9A SOUTH COASTAL |
| 4 DE GREY | 10 NORTH CENTRAL |
| 5 FORTESCUE | 10A SOUTH CENTRAL |
| 6 WEST GASCOYNE | 11 EUCLA |
| 7 EAST GASCOYNE | 12 SOUTH EAST |
| 7A MURCHISON | 13 NORTH EAST |

