WESTERN AUSTRALIAN WILDLIFE RESEARCH CENTRE

WILDLIFE RESEARCH AND MANAGEMENT SEMINAR

27 April 1982

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1. WETLAND NATURE RESERVES (WNRs) : MONITORING OF WATER DEPTH AND QUALITY

1.1. Objectives

Routine monitoring of water depth and water quality of selected WNRs in the south-west of the State assists in:

i) annual evaluation of conditions for waterfowl breeding

ii) prediction of summer conditions for waterfowl

iii) determination of seasonal, annual and longer-term variations in water depth and quality - important aspects of the conditions of WNRs.

iv) determination of salinity tolerances and preferences of waterbirds for breeding and other purposes.

v) determination of salinity and depth tolerances for other aquatic fauna and flora.

vi) management of particular WNRs e.g. Lakes Chittering, Nonalling, Byenup, Tordit Garrup, Poorginup and Chandala.

1.2. Procedures

i) Gauge Installation : 28 depth gauges (staffs) were installed during 1981/82 - 21 on previously un-gauged wetlands and 7 on gauged wetlands. (Some wetlands require more than one gauge due to the gently sloping nature of their shores). The total number of gauged wetlands is now 108. 90 of these are WNRs vested in W.A.W.A.

ii) Monitoring : Depth and salinity have been monitored by Research Staff at two-monthly intervals since November 1978. Regular monitoring of pH commenced January 1982. West Australian Field and Game Association members have assisted in monitoring since January 1980.

1.3. Results

All data are now on computer and available on request in either tabular or graphical form.

1.4. Conclusions

In conjunction with rainfall statistics, results obtained from the monitoring programme provide a sound basis for season-to-season comparisons of conditions for waterfowl breeding, and for prediction of conditions likely to prevail during impending duck-shooting seasons.

The data gathered have also assisted in studies of the distribution and occurrence of aquatic macrophytes (including important bird-food plants such as Ruppia and Chara) in relation to salinity and permanence of habitats. (See Research Project 4.5).

Monitoring of wetland condition during the "Waterbird Usage" project (Research Project 3) is also provided for by the present programme.

1.5. Proposals for 1981/82

During 1982/83 it is proposed to install depth gauges on a further 4-5 W.A.W.A. vested WNRs in the south-west of the State. This will complete the gauge installation programme. Two-monthly monitoring of water depth by Research Staff and W.A.F.G.A. members will continue through 1982/83. Salinity and pH will also be monitored.

1.6. Publications 1981/82

Lane, J.A.K. and Munro, D.R. (1981). 1980 Review of Rainfall and Wetlands in the South-West of Western Australia. Dept. Fish. Wildl. Rept. No. 47 : 1-23.

1.7. Publications 1982/83

The 1981 and 1982 Reviews of Rainfall and Wetlands in the South-West of Western Australia will be published as two separate Departmental Reports. From December 1982 onwards each year's Review will be published in December that year.

2. WETLAND NATURE RESERVES : AREA OF WETLAND RESERVED. SALINITY AND PERMANENCE CLASSIFICATION

2.1. Objectives

i) To determine the total area of wetland included in each of the 180-odd W.A.W.A.-vested WNRs in the south-west of the State.

ii) To classify each WNR using a salinity and water-permanence classification developed from the wetland monitoring programme (Research Project 1).

iii) To update this information at 6-monthly intervals (necessitated by addition of new reserves and changes to or deletions of existing reserves).

2.2. Procedures

Objectives i) and ii) were achieved during 1980/81. Achievement of objective iii) awaits the purchase of a back-up disc-drive unit for the Wildlife Research Centre computer system.

2.3. Results

Preliminary results were presented at the April 1981 Research Programmes Seminar. No further progress has been made during the past year.

2.4. Conclusions

Further progress awaits purchase of disc-drive unit for WRC computer system.

2.5. Proposals for 1981/82

Disc-drive unit is due to arrive by June 1982. The WRC computer system will then be used for 6-monthly updates of wetland area and salinity/performance data for W.A.W.A. vested WNRs of the State.

2.6. Publications 1981/82

None.

2.7. Publications 1982/83

It is proposed to publish the up-dated data during the coming year. Date of publication will depend, however, on the time taken to develop the new system (new hardware and new software are involved).

3. WETLAND NATURE RESERVES : SURVEY OF WATERBIRD USAGE

3.1. Objectives

i) To provide information on waterbird usage to assist in the management of WNRs and in the resolution of conflicts between different uses.

ii) To assess the role and importance of the WNR system in the conservation of waterbird populations.

iii) To provide appropriate experience for future monitoring of waterbird abundance.

3.2. Procedures

Procedures have been described fully in the April 1981 Research Seminar paper.

3.3. Results

Mr Roger Jaensch was appointed Project Coordinator in April 1981. Mr Jaensch came from South Australia with a B.A. majoring in Geography and considerable experience in identification and survey of waterbirds.

A Project Office was established in Boya, however this will soon move to the north side of Perth City. This move will bring the office closer to W.A. Wildlife Research centre, UWA Computing Centre, wetlands, and project participants.

A large proportion of project time has been spent on design, production and field testing of survey data forms. Field survey booklets and computer forms have now been finalized.

During 1980/81 the Project Officer visited more than half of the 180 WNRs to be surveyed.

Survey "kits" for many of the 180 W.A.W.A. vested WNRs have been produced. Each includes specific survey instructions, air photos, access maps, an identification guide for difficult species and a survey technique guide.

The R.A.O.U. newsletter W. A. Bird Notes has been revamped to provide quarterly feedback to all Waterbird Project participants.

Recruitment has been achieved (71 people to date) through the newsletter, daily newspapers, the W.A. Wildlife Show and R.A.O.U. meetings. Periodic training excursions and campouts have been held.

Surveys are not due to begin in earnest until May 1982. However, 41 completed survey forms have already (3 March) been received at the Project Office. Participants have, almost without exception, filled in these forms exactly as required.

### 3.4. Conclusions

The project is running on schedule and within budget.

The considerable effort which Mr Jaensch has put into the design and testing of survey techniques, survey booklets and computer-compatable survey forms has provided a solid foundation for the remaining three years of the project.

Recruitment and training of participants is proving productive.

### 3.5. Proposals for 1982/83

Recruiting and training of observers will continue during the coming year. Arrangements for data punching and computing have yet to be worked out and these aspects of the project will no doubt occupy a sizeable portion of the Project Coordinator's time.

The Project Coordinator is jointly organising a workshop on waterbird counting techniques to be held at Rotamah Island Bird Observatory, Victoria in May 1982. This will be attended by people with appropriate experience from all parts of Australia and will permit critical examination of the W.A. project. I will be attending the workshop.

### 3.6. Publications for 1981/82

Lane, J.A.K. (1981). Waterbird Survey Commissioned. S.W.A.N.S. 11 (3) : 11-14.

### 3.7. Publications for 1982/83

None proposed at this time.

## 4. WETLANDS : OTHER STUDIES AND MANAGEMENT PROJECTS

Waterbird Research Staff were involved in a number of other research and management projects during 1981/82.

### 4.1. Islands for Waterbirds

During September 1981 Technical Officer Don Munro made inspections of the 87 islands which had been constructed on Lakes Coyrecup and Little white in March and April of 1980. These inspections revealed that, whereas wind has had little effect, water action has produced a wide "apron" of soft clay around the base of each of the

islands. Some colonization by samphire, introduced grasses and other plants had occurred however most islands were still completely bare. The islands were being used by waterbirds, notably ducks, for roosting purposes however no evidence of nesting was found. The flood waters of January 1982 covered the Coyrecup islands completely and it will be interesting to see what effects this has on the form of the islands, and on the rate of colonization by plants. Monitoring of the islands' progress will continue during 1982/83.

4.2. Lake Chittering

The "check structure" (adjustable-height weir) on the outlet from Lake chittering requires frequent checking and adjustment during winter and spring each year in order to fill the lake without flooding the adjoining landholders' properties. Since the check structure was installed in April 1977 it has been possible to hold water right through summer, despite the low rainfalls of recent years. Lake Chittering is therefore a most valuable breeding and summer refuge area for waterbirds.

4.3. Lakes Byenup, Poorginup, Tordit-Garrup (Lake Muir Wetland Nature Reserve).

Mines Department require three-monthly monitoring of water depth, salinity and pH of the above lakes so that appropriate conditions can be applied to peat mining leases to be granted in the near future. This monitoring has been carried out by Technical Officer Munro since April 1977 and will continue during the mining operation.

4.4. Farm Dams for Waterfowl

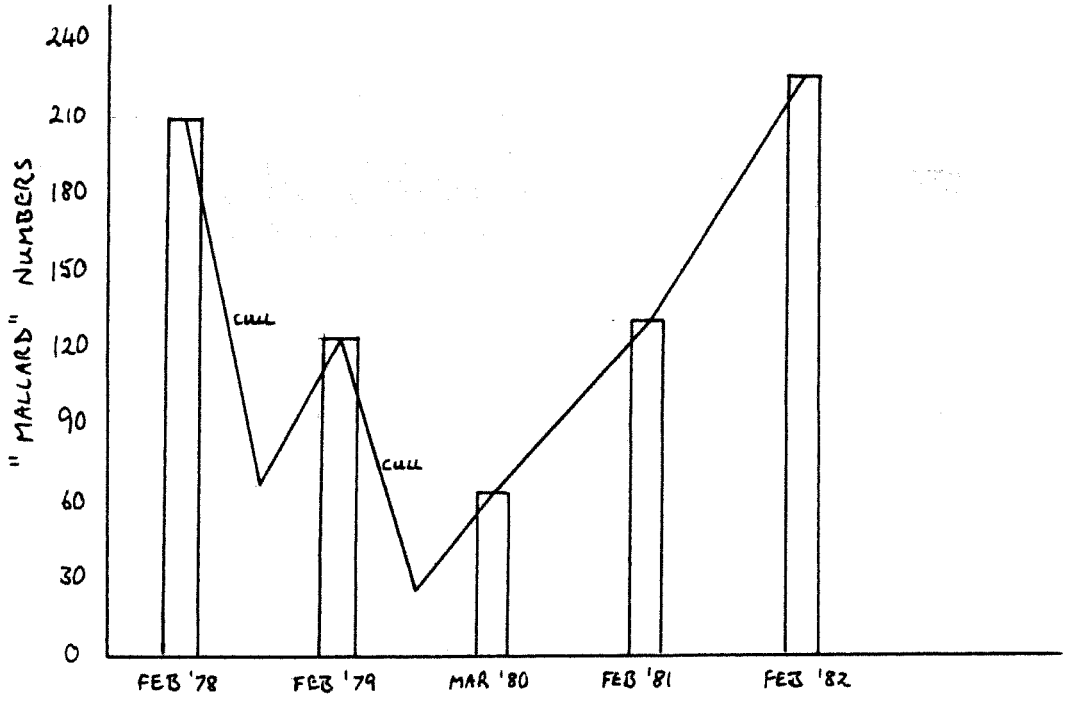
Technical Officer Grant Pearson maintained contact with the Cunderdin, Narrogin and Denmark Agricultural Schools during 1981. Leaflets describing methods for increasing the suitability of farm dams for breeding waterbirds, particularly game-species of ducks, were distributed to each school for use by students. Members of the W.A. Field and Game Association continued their experimentation with various designs of nest-boxes for ducks. Boxes were erected on Wannamal and Little White Lakes. Liaison was maintained with Departmental Research Staff.

4.5. Aquatic Flora

Dr M. Brock's studies of the ecology of hydrophytes (angiosperms and the larger algae) in salt lakes of W.A. continued during 1981/82. Research Staff assisted with collection of plant material from selected WNRs. Early results of this work will be presented at the "2nd International Symposium on Saline Lakes" in Canada, June 1982 (Margaret A. Brock and J.A.K. Lane. "The aquatic flora of a wide range of saline wetlands in relation to salinity, depth and permanence.")

4.6. Feral Ducks and Geese

The last cull of feral ducks and geese on metropolitan lakes was in 1979. From February 1981 to February 1982 feral "mallard" numbers rose from 130 to 223, muscovy from 21 to 27 and geese numbers from 5 to 29.




4.7. Duck-Shooting Seasons : Opening Day Bag-check Data

Bag-check data for all shooting seasons since 1972 are currently being re-worked for publication this year.

4.8. West Australian Wader Study Group

Research Staff assisted the Wader Study Group during 1981/82 by lending the Group mist-netting and cannon-netting equipment and by participating as joint organiser in the September 1981 and

March 1982 wader counting and banding trips to the Kimberleys. Further assistance will be provided during the proposed September 1982 trip to Roebuck Bay and the Eighty Mile Beach. Other commitments will prevent Research Staff from providing physical assistance (other than a loan of equipment) beyond September 1982.

4.9. Determination of Annual Duck-Shooting Seasons

Decisions concerning duck seasons in the south-west of the State (i.e. the South West and Eucla Land Divisions) are based on annual assessments of conditions for waterfowl breeding. These assessments are based on rainfall data, and on water-depth data derived from the WNR monitoring programme (Research Project 1).

Conditions for waterfowl breeding in 1981 were much-improved on those which prevailed during the drought years of 1979 and 1980, and a restricted shooting season was declared for the summer of 1981/82.

4.10 Wetland Creation

No further progress was made during 1981/82 with the proposal to create new wetlands by damming old drainage lines (salt lake chains) of the wheatbelt.

ADVICE AND COMMITTEE WORK

During 1980/81 approximately 25% of my time was spent on advice, committee and liaison work.

COMMITTEES

I am a member of the following committees:

1. Bird Committee of W.A.W.A.

2. Standing Working Group on Birds of the Council of Nature Conservation Ministers.

3. Wetland Advisory Committee of the Environmental Protection Authority. (Didn't meet during 1981/82).

4. Field Investigation Committee of the Royal Australasian Ornithologists' Union.

I was on Annual and Long Service Leave for three months during 1981/82. Ten weeks of this time was spent in Kenya and Tanzania visiting National Parks, Game Reserves and other areas of wildlife interest.