

WESTERN AUSTRALIAN WILDLIFE RESEARCH CENTRE

WILDLIFE RESEARCH AND MANAGEMENT SEMINAR

1-3 May 1984

J.A.K. Lane

# 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 condition of WNRs.
- iv) management of particular WNRs e.g. Lakes Beverley, Chittering, Nonalling, Byenup, Tordit Garrup, Poorginup and Chandala.

## 1.2 Procedures

- i) Gauge Installation : This was completed in 1982/83. The total number of gauged wetlands is now 119. 100 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. (See Research Project 3.7).

The data gathered continue to be of considerable assistance in dealing with management problems which have hydrological components, that is, proposals which may effect water quality or quantity of specific wetlands.

Monitoring of wetland condition during the "Waterbird Usage" project (Research Project 2) is also provided for by the present programme.

## 1.5 Proposals for 1984/85

Two-monthly monitoring of all gauged wetlands by Research Staff and W.A.F.G.A. members will continue until May 1985. From that date onwards only selected key wetlands will continue to be monitored at two-monthly intervals. The remainder will be checked in July, September and November each year to provide a basis for duck-shooting season decisions.

#### 1.6 Publications 1983/84

None.

#### 1.7 Publications 1984/85

The 1983 and 1984 "Reviews of Rainfall and Wetlands in the South West of Western Australia" will be published during 1984/85.

### 2. WETLAND NATURE RESERVES : SURVEY OF WATERBIRD USAGE

#### 2.1 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.

#### 2.2 Procedures

The Royal Australasian Ornithologists Union has been commissioned to undertake this 4 year field study which began in April 1981. Total funding for the project is \$134 500; \$71 300 from the Wildlife Conservation Trust Fund (duck-shooters' licence fees) and \$63 200 from Consolidated Revenue. The RAOU has appointed a full-time Project Coordinator, Mr Roger Jaensch, who has two main roles; to recruit, train and coordinate a team of amateur observers, and to design, test and report on census techniques. A more complete account of procedures is contained in the April 1981 Research Seminar paper.

#### 2.3 Results

Some 112 wetlands within 68 WNR's were being regularly monitored for waterbird usage at 31/12/83. Twenty-two important wetlands require observers for the 1984-85 waterbird season; these are being sought in early 1984.

100 observers were actively censusing waterbirds for the Project at 31/12/83: 58 of these were based at non-metro locations. These figures have stabilized over the year 1983 due to roughly equal recruitment and loss of contributors (mostly lost because of changes in work

commitments).

The RAOU continues to receive strong support from members of the Field and Game Association of W.A. who regularly monitor ten wetlands.

To 31 January 1984, 1 973 data sheets had been processed. These represent 1 746 waterbird surveys and cover 205 wetlands (within 122 WNR's). Some observers have been particularly diligent. One has sent in more than 150 sheets, another 120 sheets, while four have completed 50 to 70 sheets. Feedback by personal contact during field trips and at RAOU meetings has continued, while articles in W.A. Bird Notes and the National RAOU Newsletter have been printed regularly. The former publication is largely funded by the Waterbird Project and has been well received throughout Australia.

The Field Officer has undertaken major field trips to different sectors of the South-West and Eucla Divisions every two months. These have facilitated training and feedback for participants and have been directed at wetlands with access and/or coverage problems, poorly-recorded species and breeding species. The high water-levels in wheatbelt and coastal plain wetlands in spring 1983 necessitated extra excursions to assist local observers in covering 'expanded' wetlands.

One of the special activities organised in 1983 was a crane and rail trapping exercise at Thomsons Lake. This yielded more than 30 birds of four species and provided insight into crane/rail status and abundance as well as giving breeding records (runners caught). Reports of the exercise in the National RAOU Newsletter generated quite a deal of interest in the technique.

In March, the Field Officer studied wetlands and waterbirds in the North-East Kimberley. This work provided experience with Black and Little Bitterns. It also improved knowledge of census methods and difficulties in tropical wetlands.

Breeding by Little Bitterns, Pacific Herons, crakes and Freckled Ducks was pursued in spring. Special efforts were made at reserves with management conflicts, especially Beverley Lakes and the Lake Muir complex. Knowledge of these two complexes is now greatly improved. Some particularly noteworthy findings have been

1. A flock of more than 500 Freckled Ducks at Toolibin Lake.
2. A flock of 182 Great Egrets at the Harvey Estuary.
3. First recorded breeding by the Glossy Ibis in the South-West at Chandala Lake (second W.A. breeding locality?).
4. First recorded breeding by Gull-billed Terns in the

South-West at Hinds Lake.

5. Many 'new' breeding localities for the Pacific Heron.
6. Breeding by Freckled Ducks at Toolibin Lake, Benger Swamp and Crackers Swamp.
7. Breeding colonies of Little Bitterns at Jandabup Lake and Yarnup Lagoon (19 nests - one of the largest known colonies in Australia).

#### 2.4 Proposals for 1984/85

One of the principle objectives in early 1984 will be recruiting of additional observers in preparation for concerted, highly co-ordinated waterbird surveys from June 1984 to May 1985 (end of fieldwork).

The Field Officer will be increasingly involved in writing of articles resulting from data collected.

During March and April, the Field Officer will be studying bird research organisations, waterbird census projects and management of waterbird reserves in Japan, Great Britain and the Netherlands. He will also represent the RAOU at the I.U.C.N. "Convention on Wetlands of International Importance, especially to Waterbirds", in the Netherlands.

### 3. WETLANDS : OTHER STUDIES AND MANAGEMENT PROJECTS

Waterbird Research Staff were involved in a number of other research and management projects during 1983/84.

#### 3.1 Lake Chittering

The "check structure" (adjustable-height weir) on the outlet from Lake Chittering continues to require frequent checking and adjustment (by Technical Officer Don Munro) 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.

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

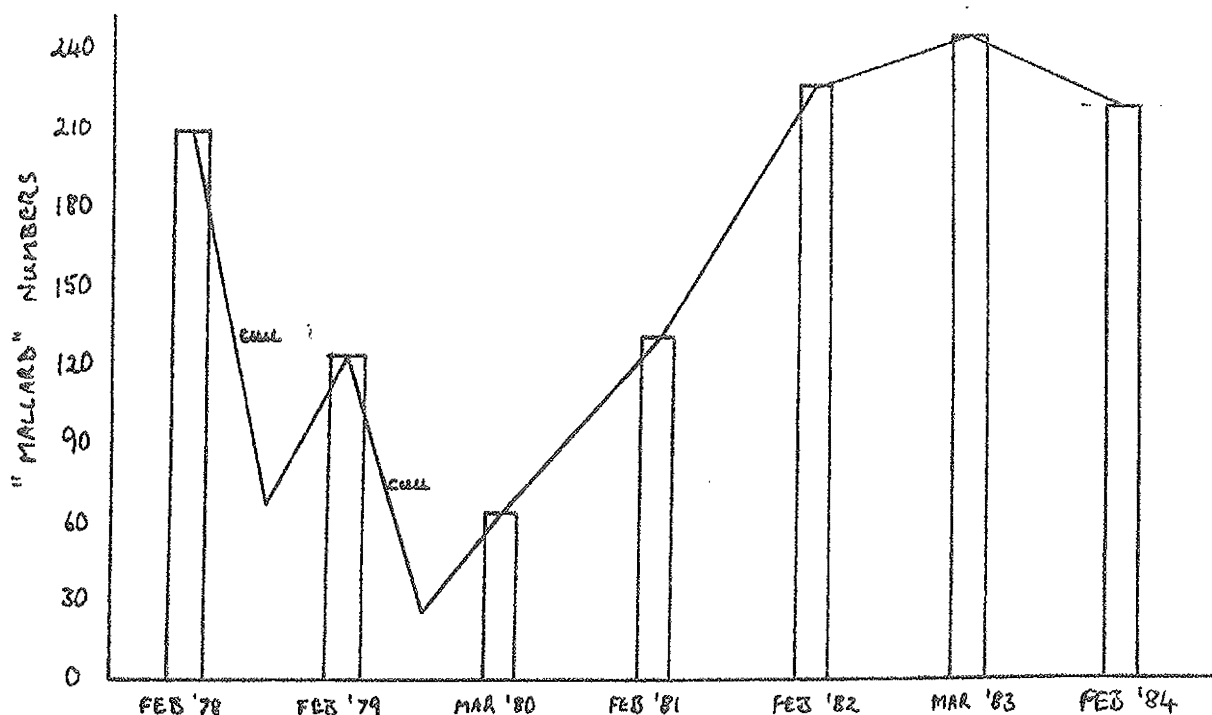
Mines Department require regular monitoring of water depth, salinity and pH of the above lakes prior to mining for peat. This monitoring has been carried out by D. Munro since April 1977 and is now being performed as part of the wetland monitoring programme (Research Project 1).

#### 3.3 Feral Ducks and Geese

The last cull of feral ducks and geese on metropolitan

lakes by Departmental staff (D. Munro) was in 1979. From February 1983 to February 1984 feral "mallard" (i.e. Anas platyrhynchos - derived domestic ducks) fell from 252 to 214, muscovy rose from 17 to 34 and geese fell from 27 to 8. The decrease in mallard numbers has probably been due to the efforts of private citizens who have been encouraged, and in two cases authorized, to remove these birds.

An assessment of the risk in terms of gene flow which the feral "mallard" population poses to native Black Duck (A. superciliosa) populations was suggested to the University of W.A. Zoology Department as a 1983 Honours project and was taken up by Ms M. Silbertstein. Ms Silberstein's findings have yet to be carefully considered or acted upon.



### 3.4 Australian Wader Studies

Technical Officer Grant Pearson assisted members of the Australian Wader Study Group in planning and equipping the November '84 expedition to the north-west. More than 500 000 waders were counted and 3 500 of these were banded and colour-dyed. In February 1984 Pearson undertook an aerial survey of the north-west coast as part of a national wader count. 400 000 birds were counted; 50 000 of these were at Shark Bay, adding another site of international importance to the list of migratory wader habitats in Australia.

In October 1983, J. Lane and G. Pearson led a one-week course on wader identification, trapping and banding at Eyre Bird Observatory. A similar course will be held in

October 1984.

### 3.5 Wetland Nature Reserves : Card Index and Photographic Library

The card index of administrative information concerning the 250 -odd Wetland Nature Reserves in the southern half of W.A. was up-dated during 1983/84, as was the aerial photographic library (Lands and Surveys Dept. 9" x 9" prints - 1 : 40 000). These continue to be useful in dealing with the many queries which arise each year concerning WNRs and their management. A system for digitizing the wetland area of WNR's is now in use.

### 3.6 Duck-Shooting Seasons : Opening Day Bag-check Data

Bag-check data for all shooting seasons since 1972 are being re-worked for publication. No further progress was made during 1984/85.

### 3.7 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.

Due to a substantial improvement in conditions in 1983 a full shooting season was declared for the summer of 1983/84.

### 3.8 Wetland Creation

No further progress was made during 1983/84 with the proposal to create new wetlands by damming old drainage lines (salt lake chains) of the wheatbelt. A start on this project is now awaiting an assessment of waterbird usage of the Beverley Lakes WNR, as part of the larger assessment of usage of all WAWA-vested WNRs (Research Project 2).

### 3.9 Benger Swamp

Since 1972 the Department has purchased approx. 85% of Benger Swamp (Harvey). Benger used to be the State's main potato-growing area, however, rising costs during the 1960's made this an unprofitable activity. Typha orientalis is rapidly invading those areas which are no longer cultivated. This and other problems have necessitated the appointment of a consultant, Mr D. Watkins, 6 months per year for three years to study the present situation, liaise with landholders and advise the Department on management. Mr Watkins began his appointment in December 1982 and is supervised by J. Lane.

## 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. (Corresponding member only).
3. Wetland Advisory Committee of the Environmental Protection Authority. (Didn't meet during 1983/84).
4. Research Committee of the Royal Australasian Ornithologists Union.
5. Regional Organization Working Group for the Department of Natural Land Management.

In August 1983 I moved from the position of Research Officer to Chief Reserve Management Officer whilst still retaining overall responsibility for waterbird matters (research and management). This arrangement has necessitated Waterbird Research continuing on an "existing programmes" basis, with few new initiatives. It has also resulted in increased work loads and responsibilities for Technical Officers Don Munro and Grant Pearson. These they have carried most ably. It is to be hoped that the proposed formation of a Department of Natural Land Management with increased staffing in the areas of wildlife research and management will result in an early improvement in this situation.



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CHIEF RESERVE MANAGEMENT OFFICER'S REPORT

J.A.K. LANE

The past year has been one of considerable change for the Nature Reserve Management Section.

#### STAFF

On the staffing side 1983 saw the promotion of Chief Reserve Management Officer Ian Crook to the newly-created position of Assistant Director Wildlife, my promotion from Research Officer Waterbirds to CRMO, Ken Wallace's move from the position of Pingelly Reserve Management Officer to Katanning RMO, Malcolm Graham's promotion from Pingelly Reserve Management Assistant to Katanning Reserves Officer, Ken Atkins' appointment to the staff as Pingelly RMO and Jason Calvert's appointment to the Wanneroo-based Management Team.

#### ORGANIZATION

On the organizational side 1983 saw the Interim and Final Reports of the Task Force on Land Management in Western Australia and the Government's adoption in principle of the Task Force's proposal for the formation of a new Department of Natural Land Management comprising the Forests Department, the National Parks Authority and the wildlife element of the Department of Fisheries and Wildlife. Implementation of this proposal will have a substantial impact on the staff and workings of the Nature Reserve Management Section since it will involve the formation of a single management unit to care for all Nature Reserves, National Parks, State Forest, unvested reserves and Vacant Crown Land in Western Australia. Thus Nature Reserve Management will cease to have a separate identity as of July 1st, 1984.

In view of the imminent dissolution of the Nature Reserve Management Section I believe it is most appropriate for me to use this opportunity to record two of the most striking impressions which I have gained during my short period as CRMO.

#### PERFORMANCE

The first concerns the staff of the Management Section. Over the past 9 months or so I have been greatly impressed by the professionalism, diligence and dedication of all members of the Management staff from senior professional to "temporary" fire crew. Few organizations in this country could boast such an able, enthusiastic and hard working team. Their performance is of course largely attributable to their personal qualities, however, in my view it has also been attributable to the very strong sense of purpose and direction of the group and to the high levels of responsibility carried by each officer. The job ahead of us will be to ensure that absorption of these staff into a much larger organization with a multitude of roles will not result in a diminution of these senses of purpose, direction and responsibility.

## PRESSURES

The second most-striking impression which I have gained over the past 9 months concerns the nature and magnitude of the task we face in protecting the State's Nature Reserve system.

The immediate pressures on Nature Reserves seem endless. Pressure to burn on short rotation to minimize fuel levels; pressure to allow mining for gravel, sand, limestone, limesands, mineral sands, gypsum, peat and diatomaceous earth; pressure for increased recreational access and facilities, both terrestrial and aquatic; pressure for land for service facilities such as roads, drains, powerlines, communication lines and radio-communication towers; pressures to permit insecticide spraying for nuisance insect control; not to mention illegal rubbish dumping, beanstick cutting, salt diversion works or the pressures exerted by foxes, cats, rabbits, rats, pigs, goats, sheep and cattle or weed invasion, herbicide and fertilizer drift or nutrient runoff. The most important lesson that I have learnt, or at least had reinforced, during my period as CRMO is that the Department's ability to resist these pressures depends not on the strength of its legislation but on the level of community support for the retention and protection of these natural areas. Without strong community support the Department is, in the final analysis, virtually powerless to prevent the natural areas with which it is entrusted from being burnt, bulldozed, mined, poisoned, rubbished or otherwise used and abused to death since any decision which the Department may take to prevent such depredations can be democratically overruled by the Minister, Government or Parliament of the day, ie by the elected representatives of the community we serve.

If the community is to support the retention and protection of natural areas then these areas must be seen by the community to be worthy of protection, ie to be of value. Right at the heart of most of the problems which confront us is the fact that most Nature Reserves are seen by the local community to be areas of no value, areas of land for which no use has yet been found, areas of useless bush. Viewed in the long term, if our Department (either new or old) is to achieve any more than simply legitimize the progressive destruction of most of the State's Nature Reserve system it simply must be able to intensify its efforts to produce a substantial improvement in the attitude of the Western Australian community, and particularly the rural community, towards the protection of these areas.

## MANAGEMENT CAPABILITY

How is this improvement to be achieved? Well it is not helped by the complete absence of management capability throughout most of the State. Lack of management presence simply serves to reinforce the community's attitude that Nature Reserves are valueless. After all, if they did have

value wouldn't it be reasonable to expect somebody to be putting some effort into looking after them? A continuation of this Department's programme for the establishment of a network of regionally based management teams is obviously required.

#### APPRECIATION OF VALUE

Also required is the documentation of the flora and fauna of these Reserves. How can the value of a Nature Reserve be expounded or appreciated when that value is simply not known? There is a desperate need for further biological survey of existing as well as proposed Reserves and for the dissemination of this information to the local community in an easily appreciable form.

#### COMMUNITY INVOLVEMENT

A third urgent requirement is for community involvement. With involvement comes interest, appreciation and commitment. An excellent opportunity for involvement is provided by the need for documentation of the flora and fauna. This documentation can often be carried out by interested locals under skilled leadership. Alternatively locals may assist in survey or monitoring work performed by professional staff. The management planning process developed by Ian Crook with its commitment to public participation in the draft and other stages provides perhaps the best opportunity for community involvement in Nature Reserve management. It is essential that this initiative be vigorously pursued by the new Department.

#### FINALLY

These then, are the steps which are required for Western Australia's Nature Reserves to be valued by the community. Until these Reserves are genuinely appreciated, particularly by local communities, we the custodians will be achieving little more than fighting a rearguard action, retreating in the face of alternative uses, documenting the destruction. If the new Department of Natural Land Management is to live up to its promise of greater security for the Nature Reserves of this State it will have to produce additional resources for these essential areas.

DEPARTMENT OF FISHERIES AND WILDLIFE

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