WESTERN AUSTRALIA

S.W.A.N.S.

State
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Spring, 1972

S.W.A.N.S

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SPRING, 1972

Issued by direction of the Hon. A. W. Bickerton, M.L.A., Minister for Fisheries and Fauna.

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The support of the public is an essential component in any conservation or reserve management programme—but an informed, educated public is needed to ensure its continuing success.

This publication is designed as a medium by which the various organisations, individuals, and wildlife management personnel may be kept informed of the work being carried out by this department; of departmental policies and directions; and for promoting a better understanding and appreciation of Western Australian wildlife and the role it plays in maintaining a suitable environment in which man can live.

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Something to think about....

The year 1972 saw the first major breakthrough in Western Australia in the prevention of illegal trafficking in birds. The apprehension of a South Australian at Derby with birds valued at $200,000 on overseas markets was followed by the discovery of a suitcase full of birds at Perth airport.

When reporting the Derby case in S.W.A.N.S. Vol. 3, No. 2, we made the comment that "consideration needs to be given to provision for stiffer penalties". Although Commonwealth Customs Legislation provides for heavy penalties, the Fauna Conservation Act provides only for confiscation and a maximum fine of $200. Penalties in some other States are even lower. What is needed are uniform and appropriate penalties throughout all States, and it is gratifying to learn that interstate discussions have been taking place with this in mind. States with smaller penalties than others tend to be used as clearing houses by those involved in illegal trafficking.

Continuing co-operation and exchange of information between States and the establishment of uniform and substantial penalties will ensure that the days of the illegal bird trafficker are numbered. Much is already known of the activities of certain individuals, and all State fauna authorities are determined to stamp out this racket for good. Those involved, whether on a large or small scale, can rest assured that if they make one slip then they will have the book thrown at them. We hope that all States will reach agreement on severe and uniform penalties in time to ensure that when the book is thrown it is a very weighty tome indeed.

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AUSTRALIAN COMMITTEE ON WATERBIRDS

The Fourth National Conference of the Australian Committee on Waterbirds was held at Rottnest Island from 8th to 11th November, 1972. This Committee is a technical sub-committee of the Australian Fauna Authorities Conference and the members are professional biologists representing all States, Territories and the Commonwealth of Australia.

Delegates to this year's conference were:

Dr T. L. Riggert (W.A.; Chairman)
Dr L. W. Braithwaite (C.S.I.R.O.; Canberra)
Mr S. J. Cowling (Vic.)
Mr L. B. Delroy (S.A.)
Mr M. A. Elliott (A.C.T.)
Mr F. Gnauck (N.T.)
Mr A. K. Morris (N.S.W.)
Dr F. I. Norman (Vic.)
Mr R. C. Longmore (A.C.T.; Secretary)

The delegates lived and worked at the Biological Station on Rottnest Island, and five members of the Department's staff were present to make their stay as comfortable as possible.

Because the Committee is a sub-committee of the A.F.A.C. it is not possible to give full details of the meetings held during the conference, but basically the Committee's objectives were to examine current and proposed research and management programmes on all species of waterbirds found in Australia and Papua and New Guinea.

A.C.O.W. Delegates—l. to r. Dr L. W. Braithwaite, Mr M. A. Elliott, Mr L. B. Delroy, Dr F. I. Norman, Mr A. K. Morris, Dr T. L. Riggert, Mr F. Gnauck, Mr R. C. Longmore, Mr. S. J. Cowling.

The field of waterfowl research is one in which close co-operation between States is essential. Waterbirds migrate throughout Australia and species to be found in one State are generally found in others too. (Grey Teal banded in W.A. have been found recently at Mackay in Queensland). It is essential therefore that biologists from all over Australia have the opportunity to get together and discuss their work and also their problems, which in many cases are common to all. Of special importance is the conservation of each species in relation to the sport of duck shooting and in the light of Australia's rapidly diminishing wetlands; also the research requirements necessary to prevent certain rare and endangered species from becoming extinct.

The Assistant Editor who was at Rottnest throughout the conference can vouch for the hard work put in by members of the Committee. Meetings commenced before 6 a.m. and generally delegates were still working late into the evening. Little time was available to enjoy the relaxing atmosphere of Rottnest Island, but committee members did take the opportunity to study the fauna of the island. Of particular interest to the delegates were the very tame quokkas, the dugites and the lizards—one species of which is thought to be a sub-species found only on the island.

On November 10th, a Seminar Day was held which was attended by about 40 guests. Delegates explained the structure of their departments and outlined the recent research work carried out in their respective States. Additional 'bonuses' were a very interesting talk on the Magpie Goose given by Dr Stephen Davies of the C.S.I.R.O., and an address by Mr Tom Spence, Director of the South Perth Zoological Gardens, who explained how duck shooting is organised and controlled in Scotland and other European countries.

Space does not permit full reproduction of the delegates' talks, but there were several points arising which will be of interest to readers.

Mr Cowling from Victoria—

Up to 42,000 game licenses are issued each year; 33,000 last year.

Surveys of shooter's habits have been carried out with over 1,000 hunters interviewed. Three States combined in this survey in 1971.

Mr A. Morris from New South Wales—

Problems are encountered with ducks feeding on rice fields in the Riverina area. This has been overcome by establishing a damage license system.

In 1960-70, 60% of the coastal wetlands were drained.

Pesticide residues in wildlife are being studied.

About 11,000 game licenses are issued each year—the license fee is $4.00.

Mr L. Delroy from South Australia—

The conservation of waterfowl is compromised by the need to maintain an adequate water supply to Adelaide.

The possibility of growing feed for waterfowl is being examined.

Mr M. Elliott from the Australian Capital Territory—

Canberra is experiencing the river pollution problems associated with all large inland cities and one officer is fully employed in this field of research.

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Mr F. Gnauck from the Northern Territory—

An assessment of Magpie Geese numbers is continuing, and indications are that numbers are one-quarter of those of 5 years ago. Causes are the loss of habitat through pastoral activities and the deterioration of habitat brought about by buffalo.

Aborigines are selling Magpie Goose eggs in tens of thousands.

Dr T. Riggert from Western Australia—

The major problem is the reduction of wetland habitat.

Freshwater swamps are deteriorating through the inflow of brackish or saline water.

Guests arriving on the Department's new patrol vessel "Freycinet" for the Seminar Day.

Following the seminar, delegates and guests enjoyed a barbecue and were shown some films on waterfowl from overseas.

During the first few days of the following week, the delegates joined Dr Riggert on the annual aerial survey of the South-West and Eucla Land Divisions. The results of the survey and the decision not to hold a waterfowl hunting season in Western Australia are reported elsewhere in this issue.

ZOO PLANNED AT EXMOUTH

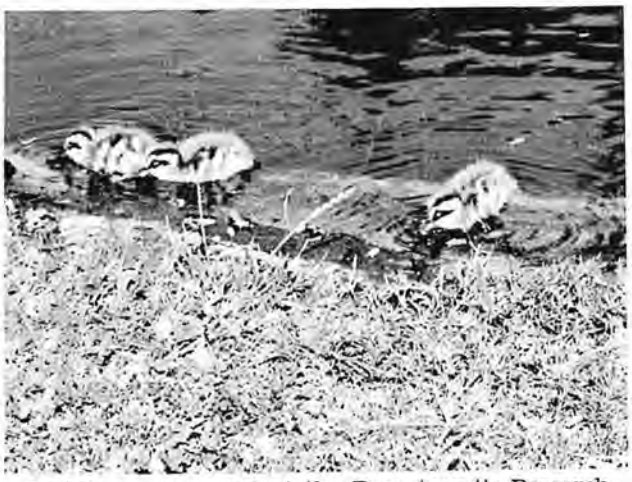
Fifty acres of land have been allocated at Exmouth, and thousands of dollars are to be spent to establish a zoological gardens.

Under the Presidency of Lt Col J. P. K. Murdoch, Commissioner of the Shire of Exmouth, and the Patronship of two high-ranking officers of the U.S. Navy and R.A.A.F., a committee of responsible citizens has been formed to set up the project.

In S.W.A.N.S. Vol. 3, No. 2, we stated . . . "Few people realise how much capital is required to establish a zoo and even fewer people have worked out the economics". However, it is obvious that the Zoo Committee at Exmouth have given consideration to all the factors involved in their high cost proposal, and it would seem that they have the finance and business acumen to ensure the successful establishment of their venture.

REARING OF PINK-EARED DUCKS

The Department's Waterfowl Research Unit has been attempting to rear Pink-eared Ducks *(Malacorhynchus membranaceus)*. Forty eggs were taken from nest boxes at Moora and incubated at the research centre at South Perth.



Ducklings on a pond at the Department's Research Centre at South Perth.

The incubation was very successful and three clutches totalling 32 ducklings were hatched. The major problem in rearing this particular species is the diet because the birds are "filter feeders"—sucking in water and filtering out the minute particles of food. Various artificial foods were tried but the first two clutches all died of impaction of the intestine within a short while.

More success was experienced with the third clutch; these were fed on daphnia collected from the metropolitan lakes, and survived for about 10 days. Despite these setbacks the research staff now feel that the initial problems have been overcome and expect greater success in 1973.

Pink-eared duckling—five days old.

FAUNA WARDENS' REPORTS – 1972

FAUNA DISTRICT 1—WYNDHAM

Warden—Geoff Hanley

Crocodile poaching has been cut to a minimum —mainly due to the assistance and co-operation of the Police Department.

Suspected crocodile poachers have been detected, stopped and searched at Fitzroy Crossing, Derby and Wyndham. Although no skins have been discovered, the persistent searching has undoubtedly acted as a deterrent.

Indications are that the 1972-73 finch season will be good. Gouldian Finches are abundant, as are Star and Long-tailed Finches. The restricted issue of trapper's licenses is a good thing—approximately 12 bird trappers operate in the area and there have been no complaints or evidence of illegal activity by these licensed trappers.

The "pinch" of the year was made in April when a smuggler was apprehended with some $200,000 worth of birds in his possession.

FAUNA DISTRICT 2—ONSLOW

Warden—Bob Dear

A great deal of time has been involved in policing the new policies and regulations relating to Red Kangaroos; especially with regard to the issue of damage tags.

From December 15, 1971, to April 15, 1972, I was engaged in Operation Ord Noah [See story S.W.A.N.S. Vol. 3, No. 1]; the weather was very hot and the job not without its dangers.

During May and June I was involved in the survey of the Kimberley Islands [See story S.W.A.N.S. Vol. 3, No. 2].

These two operations having taken up a large proportion of the year, it was hardly surprising that there was an accumulation of work waiting at the office. The job of reducing this backlog was not helped when on my first trip out to put up signs at the Millstream Fauna Reserve I contracted irisitis caused by the dusty conditions. This necessitated my being flown to Port Hedland by the Flying Doctor and thence to Perth.

Patrols have been made to Mount Newman, Bulloo Downs, Prairie Downs, Mount Stuart, Dampier, Karratha, Wickham, Roebourne, Wittenoom and Pannawonica.

FAUNA DISTRICT 3—MOUNT MAGNET

Warden—Mike Mahoney

I have spent nine months in this district and have travelled some 31,000 miles.

Rainfall has been extremely poor in most areas of the district and local people are very concerned about the future. Most wildlife has been concentrated in areas of good rainfall such as the West Cue and Meekatharra areas. A wide range of fauna has been sighted—and of particular interest are the following—Mallee Fowl, Red-backed Kingfishers, Bourke Parrots, Cockatiels, Red-plumed Pigeons and Diamond Doves.

There has been considerable liaison with Honorary Wardens and I have found them most helpful at all times.

A great deal of time has been spent on the implementation of the Red Kangaroo Management Programme. Altogether 22,000 damage tags have been issued. All professional shooters have been most co-operative and are happy with the present arrangements.

FAUNA DISTRICT 4—CARNARVON

Warden—John Neal

Much of the work in the Carnarvon district has been connected with the Red Kangaroo Management Programme—damage license inspections and chiller patrols. Seven thousand two hundred damage tags have been issued from this office.

The absence of summer rainfall and the concentrated nature of winter rainfall has meant a good season for most shooters. Professional shooters appear to have consolidated their operations this year and are now on a sound economic footing.

Seventeen damage licenses have been issued and I have had to refuse only one application. Generally, professional shooters and damage license shooters accept the present scheme and are complying with all the requirements. All shooters are more than willing to assist in any way with research.

During the first week in September I attended the R.A.O.U. survey at Peron Station, Shark Bay. The purpose of this exercise was to conduct a survey on birds and other fauna and compare results with previous surveys. Peron Station covers approximately 260,000 acres, and 48 members participated in the survey. By September 5th, 81 species of birds had been reported—a few not previously recorded for the area.

Due to other commitments no patrols have been made to Bernier and Dorre Islands. Fresh moves have been made by prominent citizens of Carnarvon to have Bernier Island established as a tourist resort. Increased tourist activity would, of course, affect the present populations of unique fauna on these islands.

During the latter part of the season, the Regional Vermin Control Board instituted a goat poisoning programme in the Murchison area. The result was many and varied reports of the poisoning of wildlife.

I have covered 27,000 miles in the departmental vehicle—19,000 miles of which were on unsurfaced roads.

FAUNA DISTRICT 5—GERALDTON

Warden—Peter Pennings

Geraldton is a new fauna centre and I was appointed to this position in May this year. Much of my time has been spent relieving the warden at Mount Magnet and it is impossible therefore to offer a full report.

I have made a number of kangaroo damage inspections, mainly in the Chapman Valley Shire.

Trips have also been made to the Abrolhos Islands with the dual purpose of introducing myself to the fishermen and exterminating feral cats on Rat and North Island and rabbits on Morley Island.

FAUNA DISTRICT 6—MOORA

Warden—Ian Cooke

Moora is a new fauna centre and the office has only recently been established. The warden's residence has not yet been built.

The majority of the work undertaken during the period under report has been concerned with kangaroo damage inspections and the issuing of licenses to control this problem. The main area affected is the Eneabba-Coorow District where large numbers of kangaroos have built up and are causing damage to crops.

The Dandaragan, Gingin and Toodyay areas have few problems. However, I am aware that illegal shooting is going on. Night patrols are carried out regularly and these have the effect of warning and frightening off those involved.

I spent a portion of the year relieving the warden at Wongan Hills.

FAUNA DISTRICT 7—WONGAN HILLS

Warden—Don Noble

I have spent nine months as warden of this district, travelled some 31,000 miles and covered half the State from the Metropolitan area to Ethel Creek Station north of Mount Magnet.

Duties have consisted mainly of farm and station inspections for kangaroo damage, the inspection of reserves, the checking of cage facilities for birds and animals, calling on Honorary Wardens, patrolling for illegal shooting, erecting signs and posters to inform the public and giving talks to clubs and societies.

I have issued 35 damage permits enabling each farmer or station owner to shoot between 10 and 300 Red or Grey Kangaroos; 1,120 tags have been issued.

Eleven prospective new reserves have been inspected and existing reserves have been surveyed for bird and animal numbers, gravel and sand pits, damage caused by the Dongara-Perth gas pipe line and the ever-present problem of people depositing rubbish.

Kangaroos are on the increase in this area, also Pink and Grey Galahs. Red-tailed Black Cockatoos and Wedge-tailed Eagles. Other species are holding their own.

FAUNA DISTRICT 9—PINGELLY

Warden—Les Moss

Activity has been concentrated mainly on the Grey Kangaroo Management Programme. Actual administration of the programme has presented no difficulty, the only problem being the lack of comprehension by farmers of the details of the programme.

It has become obvious that a close liaison between shooters, farmers and the district warden is essential to the success of the programme.

The duck shooting season was not successful due to poor seasonal conditions, but the introduction of a duck shooter's license was well received.

There has been very little illegal shooting in forests and reserves, although the restricted open season on the grey kangaroo has sparked off some shooting on private property.

The co-operation of the Police, Honorary Wardens and the public has been good and this plays an important part in the work of the district warden.

Thirty thousand miles were covered during the year.

FAUNA DISTRICT 11—BUSSELTON

Warden—Kevin Morrison

Activities in this district have increased particularly as a result of the implementation of the Grey Kangaroo Management Programme. The problem of kangaroos causing damage to property is adequately controlled under the present system, and 'kangaroo haters' have now turned their attentions to complaining about the dangers of kangaroos on the roads. This will be resolved by the introduction of part-time shooters to cull kangaroo populations, particularly in the Manjimup, Boyup Brook, Nannup, Bridgetown and Donnybrook Shires.

I have been inundated with applications for part-time shooter's licenses, 41 in all, and a total of 21 have been approved. I have had a continual flood of applications for damage licenses from farmers who wish to have a professional shooter to operate on their property. In the 12 months to September 1972, 175 damage licenses were issued for taking kangaroos, with a total of 5,867 tags issued.

Emus have increased in numbers, and unfortunately the Shires most troubled are those where emus are still protected (Boyup Brook and Manjimup). In the past twelve months at least 50 damage licenses were issued with approval to take emus listed on them.

There has been a surprising decrease in the number of complaints about possums causing damage and about Maned Geese (Wood Ducks) polluting dams. There has also been a noticeable decrease in the number of possums killed on the roads.

Wild ducks are breeding in large numbers in the coastal areas of my district, but a grim picture is

painted further inland with many districts 8-10 inches below their average annual rainfall.

There do not seem to be many 'wrong-doers' around, and interest among the local public is very good.

FAUNA DISTRICT 12—ALBANY

Warden—Dick Grayson

Exceptional seasonal conditions in the last three years may be responsible for the movement of different species from their normal range of habitat. Wild turkeys have appeared at Peaceful Bay; Mallee Fowl were reported nesting in jarrah forest country between Walpole and Rocky Gully; White Corellas and Galahs appear to be moving further southward and one lone Royal Spoonbill reached Albany; Crested Pigeons appear more common and emus are becoming more plentiful; large clutches of Black Duck have been recorded near Albany.

Grey Kangaroos have increased in forest and uncleared areas adjacent to farming land with a resultant increase in applications for damage licenses, and many complaints have been received of kangaroos creating a road hazard. The introduction of licensed shooters has not necessarily increased the number of grey kangaroos being taken, as in the past these animals would have been shot and the carcasses left in the paddocks.

In favour of the professional shooters is the fact that they are inclined to take the larger animals and include a high proportion of bucks, resulting in more young does being left to breed the following year—farmers are not so selective. All professional shooters in this district are reliable and efficient.

FAUNA DISTRICT 13—PERTH METRO AREA

Warden—Bob Marshall

From time to time, farms in the Metropolitan Area and some extending into rural areas have been inspected for damage caused by grey kangaroos. No problems have been encountered in this respect.

Recently there appears to have been an increase in the dealing and trapping of birds; there is no apparent reason for this upsurge of interest.

Pollution problems are increasing and several minor oil spillages occurred on Metropolitan beaches. Two serious spillages occurred, one affecting the Fremantle Harbour and extending upriver beyond the Claremont baths, and the other seriously affected a large portion of the beach at Woodman's Point. On both occasions the Fremantle Port Authority were able to disperse the oil without a great adverse effect on bird or marine life.

A large area of the upper reaches of the Canning River was polluted by reclamation work carried out at Riverton. This resulted in the death of large numbers of waterfowl. Many birds were analysed by the Waterfowl Research Branch but I consider that the overall result was that once again the ecology fell victim to the bulldozer.

Whitford's townsite was taken by storm following the "positive identification" of a lion; this turned out to be a Great Dane dog. A Tasmanian Tiger roaming Glen Forrest also turned out to be a Great Dane. A Crab-eating Leopard Seal was stranded at Cable Station beach and was later sighted at Kwinana—they are very rare visitors to our coast. Also during the year I reported a flock of Sulphur-crested Cockatoos frequenting the Murray River south-east of Pinjarra; Warden Moss later reported their presence. I have not yet learnt the origin of the colony.

I have spent a good deal of time in a relieving capacity as the Supervising Warden is often on district inspections.

No reports are available for District 8 (Waroona) or District 14 (Manjimup) as no wardens have been appointed to those areas at present, nor for District 10 (Kalgoorlie) and District 15 (Esperance) where wardens are not yet permanently established. Major activities in the Kalgoorlie area have been concerned with kangaroo management, and in the Esperance area with assisting the Agriculture Protection Board in locating and destroying starlings.

SILVER GULLS TRAPPED

In November, two local newspaper reporters visiting Carnac Island discovered eight juvenile Silver Gulls which had become entangled in what appeared to be single strands of fine cotton.

Cotton-waste discharged from ships is a known danger to sea birds, as also is nylon fishing line. However, the origin of this particular material is unknown.

Six of the gulls were already dead, but the remaining two were released and apparently survived.

Juvenile Silver Gull. Arrows indicate cotton thread.

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WANDERING ALBATROSS AT WONNERUP INLET

Fauna Warden Kevin Morrison of Busselton reports as follows:

"On September 5, 1972, following a phone call from a local resident, Cadet Warden Ray Smith and I investigated a report of a large unidentified sea bird on the beach. From the first description we assumed it to be a Giant Petrel; however we found the bird up on the beach east of the mouth of Wonnerup Inlet and were able to identify it as an immature Wandering Albatross. The bird had a wingspan of at least 9 feet, though it was obviously an immature bird because of its dark plumage.

The Albatross had an injured leg and from the lacerations appeared to have been savaged by a large fish or shark. We carried the bird down to the water where it finally managed to take off into a stiff south-westerly breeze".

[The wandering Albatross is not a really unusual visitor to our shores, and does go as far up the Western Australian coastline as Fremantle. They are often forced ashore by storms in July and August; this bird may have been injured during the last strong blow in August and remained in the area until found by Warden Morrison—Ed.]

Warden Kevin Morrison with the immature Wandering Albatross.

AUSTRALIAN SEABIRD GROUP

The formation of the Australian Seabird Group in November, 1971, was announced in S.W.A.N.S. Vol. 3, No. 1. Since then two meetings have been held. The first, at Melbourne on 12 May, 1972 and attended by 14 persons, decided to submit to the R.A.O.U. the proposal that the Group should be operated by the Field Investigation Committee. The second meeting, held at Sydney on 1 October, was attended by 23 persons and discussed in some detail the projects at present contemplated.

These projects are: the mapping of off-shore island seabird colonies, the collection of beach-washed birds (preferably by regular patrols) and the recording of activities of birds at sea. The aim of these projects is to gather together in the one place as much information as possible so that it is readily available to ornithologists for future study.

The Group intends to produce a newsletter for circulation to financial members, which will facilitate the exchange of information on work being carried out. The first issue of this newsletter was expected to be published towards the end of November, 1972.

Membership of the group is open to all interested persons, whether members of the R.A.O.U. or not. The annual subscription is $2; it will be appreciated that a project of this kind involves costs for such matters as printing and postage, which cannot be met entirely from ordinary R.A.O.U. funds. Anybody wishing to join or obtain further information should write to Mr M. Carins, P.O. Box 235, Civic Square, A.C.T. 2608.

Members working on seabirds or interested in doing so are urged to contact Mr Carins who will be glad to learn of work already in progress and to suggest to those wishing to help the ways in which they can do so. Forms are being devised to assist in recording data.

HONORARY FAUNA WARDEN APPOINTMENTS

Mr Archie Douglas Spencer, of Mines Department, Port Hedland (gazetted 22/9/72).

Mr Frederick William Gardiner, of 20 McMahon Street, Rockingham (gazetted 22/9/72).

Mr Anthony Moylett, of 9 Tyne Court, Safety Bay (gazetted 22/9/72).

Mr Kevin Thomas Richards, of Wimbledon Street, Beckenham (gazetted 22/9/72).

Mr Ian Ross Milroy, of 23 Venn Street, Collie (gazetted 22/9/72).

FAUNA WARDEN APPOINTMENTS

Ronald Edward SMITH (gazetted 22/9/72).

Michael George OSBORN (gazetted 27/10/72).

TREATMENT OF OILED SEABIRDS

A pamphlet produced by the Royal Australasian Ornithologists' Union dealing with the treatment of oiled sea birds is being distributed in large numbers throughout Australia.

The information given and the treatment recommended, prompted the editor to look at other sources dealing with this subject. As a result it appears that there are conflicting views held by the various authorities as to the best methods of treating oiled sea birds.

First let us look at the pamphlet distributed by the R.A.O.U. which reads:

"Conservation and pollution, have become major issues of the Seventies. This growing awareness and concern has led to the Royal Australasian Orinthologists' Union arranging the publication of this brochure as a practical means of helping preserve the environment.

Marine oil spills often cause contamination of sea birds. However, with the proper "first aid" and care, a contaminated bird can be saved. This pamphlet is designed to show how. It is based on overseas and local experience, but testing and experiments regarding treatment are continuing in many places. While giving some positive steps to be taken, measures to be avoided are also included. A central "nerve centre" to deal with large-scale emergencies has not yet been established in Australia although such centres exist overseas. It is hoped that a similar establishment will soon be possible here.

Oiled fairy penguins awaiting treatment. (Photograph by courtesy of W.A. Newspapers Ltd.)

Rehabilitation has so far been mainly devoted to the Fairy (or Little) Penguin, *Eudyptula minor*, the species most commonly affected here. Because penguins cannot fly, they are more closely confined to the sea than are other seabirds.

The following methods of treatment are directed towards penguins, but they are similar for all oiled seabirds, although adaption for different species may be needed.

This pathetic-looking Little Black Cormorant was soaked with oil on the Swan River. (Photograph by courtesy of W.A. Newspapers Ltd.)

Do not try to rehabilitate a bird yourself if you are inexperienced in handling birds and there is more expert care available.

Warning. Almost all native birds are protected. You should therefore seek advice from your local fauna authority after the first urgent steps have been taken.

An oiled bird will probably be suffering from all five of the following:

Shock. Cold. Starvation. Feather damage. Poisoning.

TREATMENT:

Shock. *Don't chase the bird.* Approach slowly and use a landing net or throw a blanket over it. Wear gloves for protection. Place the bird in a box small enough to restrict its movement, using a separate box for each bird.

Cold. Oil in the feathers allows water to penetrate, thus destroying the natural insulation.

Transport the bird quickly to a box large enough to allow it to move around easily. This should be placed in a quiet room warmed to about 70-75 deg. F. where there is a minimum of human disturbance. Place clean woollen material without loose threads, thick layers of newspapers or plastic foam, on the floor. This floor covering should be changed frequently to avoid infection.

Avoid Crowding. Birds of different species should be separated.

Do not wash.

Do not use straw or grass because these can lead to diseases of the lungs.

Starvation. When a bird suffers from cold or lack of food, it uses up its body reserves and becomes emaciated.

To help relieve irritation caused by intake of oil, the first feeding should be preceded by a dose of about one dessertspoon of either codliver oil, paraffin oil, Kao Magma or similar medication.

Feed penguins with small fresh oily fish such as pilchards up to six inches long. If these are unavailable use squid, or fillets of larger fish (defrosted if frozen). Pilchards are particularly suitable because of their oily nature, and the whole fish offers a more complete diet. Up to half a dozen can be offered at the initial feed. A healthy penguin may eat at least half a pound of fish daily, and a starving penguin will need more.

Oiled Darter—estuarine birds suffer, too. (Photograph by courtesy of W.A. Newspapers Ltd.)

Larger seabirds need to be fed in proportion to their size. Scavengers such as Silver Gulls, *Larus novaehollandiae,* will feed on many readily available foods.

To help counteract possible dehydration first dip the fish in water. The bill should be gently but firmly prised open and the fish pushed head first well down into the back of the throat. If overfed, the bird will regurgitate excess food.

If fish are not available any easily digested protein-based invalid food such as Pro-Lac may be temporarily substituted. Again this must be placed well down the throat.

Wrap the bird firmly in a cloth or towel to prevent it struggling. Remember to handle gently and quickly for as short a time as possible.

Fresh drinking water should always be provided.

Feather damage. Feathers matted by oil should be smeared liberally with lard or vegetable oils such as maize, peanut or olive oil. Always stroke downwards to avoid breaking or damaging feathers. To absorb some of this excess fat and oil, a powder such as Fuller's Earth, cornflour or cornmeal should be puffed into the feathers with a puffer.

To avoid stress, more heavily oiled birds should be treated in easy stages over a period of several days. Where only minor oiling is apparent and the bird appears healthy and energetic the powder treatment, followed by a gentle hosing down with warm water, may be all that is required. A watering-can may be used if a water-mixing hose is not available.

Do not use detergents. These remove natural waterproofing and may necessitate a long time in captivity.

When the bird is feeding well and gaining weight, a brief shower daily with the garden hose will stimulate preening, the grooming which is necessary for plumage recovery. You must also accustom all birds to outdoor conditions again.

Poisoning. Frequent vomiting, haemorrage, lack of appetite or increasingly offensive droppings are signs of poisoning. There is little that can be done here except under expert guidance, when oral Veterinary Aureomycin or Terramycin can be administered. A "dripping" nose is quite normal with seabirds.

Release. If you are successful in restoring a Fairy Penguin to a healthy condition, it should weigh 900-1,200 grams (about 2-2½ lb.). Ensure that the feathers are fully waterproof by allowing the bird to remain in a bath of water for several hours. Avoid chilling. Should it become waterlogged, it will need to be kept for a longer time. Release too soon will result in death by drowning, cold or starvation.

Once more, contact your local fauna authority. They may wish to place a metal band on the penguin's flipper (or leg in the case of other seabirds) to enable a check to be made on the success or failure of its return to its natural evironment.

Oil pollution at Como on the Swan River. Note dead shag in foreground. (Photograph by courtesy of W.A. Newspapers Ltd.)

Do not try to tame the bird. Your aim must be to return it to its natural environment.

Do keep a record of the state of the bird when found and all steps taken before its eventual release or death. Forward the information to your fauna authority to be used as a guide for future work.

Do not destroy a hopelessly contaminated bird before contacting your fauna authority to seek instructions. They will also be able to advise you if post-mortem examinations can be arranged, and what institutions may be interested in obtaining specimens."

The information given in this pamphlet is first-rate and offers some sound principles especially in relation to feeding. However, before accepting all the recommendations as "gospel" let us look at the following article by Dr P. Croxall, Director of the Research Unit for the Rehabilitation of Oiled Seabirds, Department of Zoology, University of Newcastle upon Tyne, England . . .

"Large numbers of seabirds are killed every year as a result of contact with oil. Some die after swallowing quantities of oil but most perish from a combination of heat loss and inability to feed properly, both induced by the action of the oil in destroying the waterproofing of the plumage.

In Britain, the aftermath of the *Torrey Canyon* oiling incident in the English Channel in March, 1967, focused widespread attention on the plight of oiled seabirds, particularly auks (razorbills, guillemots and puffins).

About nine tenths of the seabirds (mainly auks) that came ashore oiled, subsequently died despite large scale attempts to clean those less severely affected.

Research Unit Established

As a result of this the Advisory Committee on Oil Pollution of the Sea established a research unit on the rehabilitation of oiled seabirds in the Department of Zoology at the University of Newcastle upon Tyne. The unit, established in January, 1970, with finance for five years from a group of sponsoring oil companies, recently completed a programme of research into the cleaning of these birds.

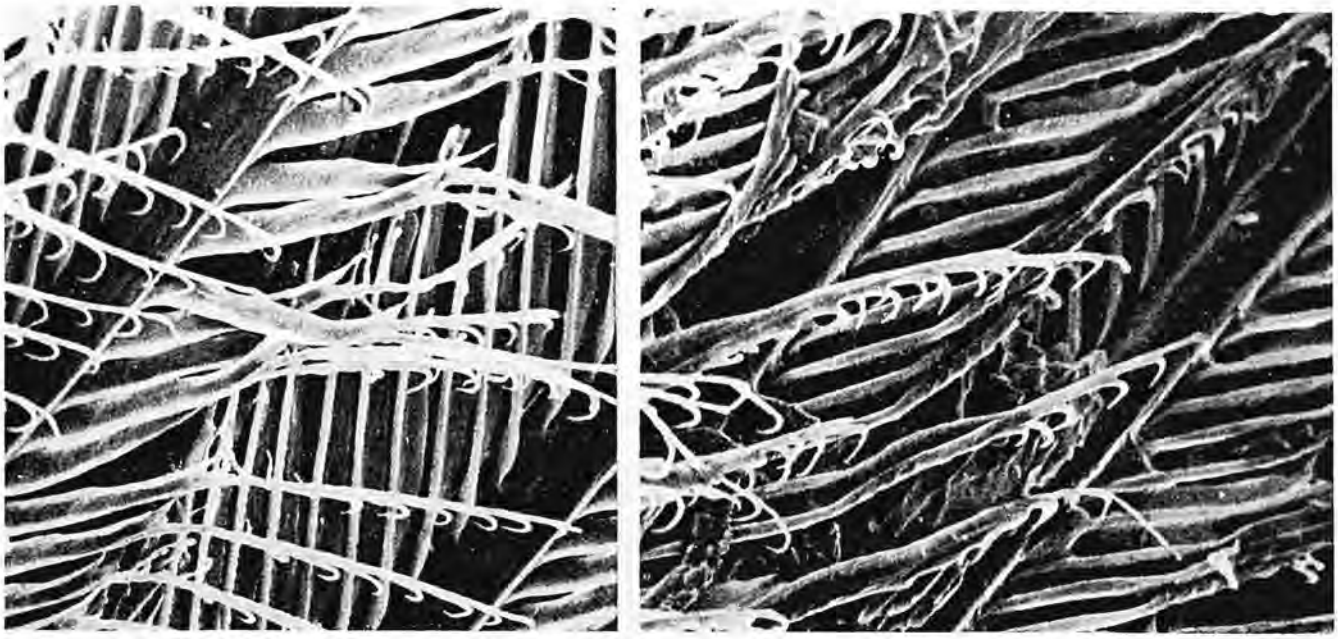
A major difficulty in attempting to rehabilitate oiled seabirds had always been the loss of water repellance of the plumage. Even after cleaning, birds took many months to regain this waterproofing. The long period of captivity not only exposed them to ailments and infections but the survivors became so tame that their chances of survival in the wild were seriously prejudiced.

It was thought that water repellency was due to either the waxy secretions of the preen gland spread over the feathers by the bird's preening, or the minute detail of the feather structure. Research by the unit showed that although preen gland secretions are important in maintaining water repellency, they are not primarily responsible for creating it.

Minute Traces of Oil

It is quite true though, that disturbance of the fine structure of bird feathers by oil drastically impairs waterproofing. [Photograph shows stereoscan microscope views of a normal guillemot feather (left) and a similar view of an oiled feather with the barbules greatly disturbed (right)].

The unit showed that once the oil has been removed from the plumage the feather structure



Left—Unoiled guillemot breast feathers. Right—Oiled guillemot breast feathers.

soon reverts. with preening, to normal, but that water repellency may still not be regained. Further work showed that the main cause of loss of water repellency is contamination of the feathers with traces—often minute—of the polluting oil or of the cleaning agent or of other materials.

Thus if oil is not completely removed or if the cleaning agent is not thoroughly washed out after use, complete waterproofing cannot be quickly attained and the bird cannot be returned to the wild.

Waterproofing Lost Again

In addition, if birds when fully waterproof after thorough cleaning are kept in unsuitable conditions, the plumage may become recontaminated with dirt or faecal material and waterproofing is lost again.

These results obviously go a long way towards explaining the previous lack of success in cleaning and rewaterproofing oiled seabirds, especially on a large scale, where insufficient attention was given to them both during and after cleaning.

Having established the causes of loss of waterproofing, a complementary part of the unit's research was to test possible cleaning agents.

To be useful a cleaning agent must satisfy two requirements: it should remove contaminating oil as completely as possible with minimum damage to the plumage, and it should not remain as a residue—even as a trace—on the feathers at the end of the treatment.

Liquid Detergents

A wide variety of cleaners was tested, including high viscosity cleaners, organic solvents and water-soluble detergents.

In brief, it was found that although some organic solvents are very successful at oil removal they tend to have disadvantageous side effects and are expensive to use. Because of the practical advantages of using domestic detergents if they proved suitable, these were studied in greater detail.

Detergents were usually most effective at removing oil when used dilute (1% solution) and in warm (40-50°C) water. Taking into account both the efficiency of oil removal and the ease with which cleaning residues could be removed from the plumage, a small number of common proprietary brand washing-up liquids were judged particularly suitable. They also had the advantage of being cheap and easily obtainable.

Recommended Procedures

The unit has combined its recommendations for successful cleaning with other general information on the care of oiled seabirds in a pamphlet. It has by now been able to try out its recommended cleaning procedures on substantial numbers of oiled auks and on various seaduck oiled after an incident near Edinburgh in Scotland. Cleaning was most successful in all cases, waterproofing being rapidly regained, and wherever adequate facilities were available for aftercare of the birds nearly all were successfully rehabilitated and released.

The breakthrough in understanding the nature of plumage waterproofing and the development of successful cleaning techniques has attracted great interest in other countries, including Australia, Canada, the United States of America and South Africa.

Oil on beach at Safety Bay.

Crucial First Steps

In all these countries oil pollution has taken its toll of seabirds—especially in the southern hemisphere, of penguins, which are the counterparts there of auks—and private organisations and government institutions have been struggling to cope with the problem of rehabilitating these birds.

The work of the research unit at Newcastle University shows that the crucial first steps in rehabilitation can now be undertaken inexpensively and with every prospect of considerable success.

Continuing its work the unit is now looking at the best diets for weakened and starving birds to ensure their survival to a stage where they can be safely cleaned, and also at the behavioural and other problems involved in reintegrating cleaned and waterproof birds into their breeding colonies."

So there we have it—two reputable bodies concerned with the treatment of oiled seabirds and both agreeing on many aspects of care, but with completely opposite views on the use of cleaning agents. The scientific unit at Newcastle recommend a diluted detergent solution while the R.A.O.U. recommend the use of lard or vegetable oils and specifically state **"Do not use detergents"**.

It would appear that the main bone of contention has been the fact that it has been thought detergents remove the natural secretions which waterproof the bird. However, from the work at the Newcastle unit, it appears that the gland secretions, while **maintaining** water repellency "are not primarily responsible for creating it". It would seem to us therefore that the most important factor is that whatever cleaning agent is used it must be capable of being **completely** removed by simple methods (e.g. warm water). Detergents are

easily available, are inexpensive, are very effective and can be removed completely. Furthermore, natural preening will (if all traces of oil and detergent are removed) restore water repellency.

In the light of the recent discoveries in England it seems that many previously accepted ideas require to be rethought, although, in Western Australia at least, the principle of using household detergents has been advocated for many years by Miss Lexie Nicholls of the C.S.I.R.O. Division of Wildlife Research.

Asked to comment on the divergencies of opinion Miss Nicholls said: "It seems to me that people's attitudes to the necessary treatment of oiled seabirds are coloured by their own personal opinions or understanding of what makes plumage waterproof. In other literature, the Newcastle Unit have observed that 'oiled plumage cleaned by any method usually lost its water repellence but sometimes did not'; this is a most critical piece of information. The detergent is not the 'bad boy' in itself.

"I have never ascribed to the theory (and resultant treatment) that preen wax alone was the source of waterproofing, and have used some common household detergents for 15 years with very satisfying results.

"One must remember, and this is all important, that any foreign matter spilled on a seabird's plumage for some purpose will cause that plumage to deteriorate—as also will mechanical injury

Miss Lexie Nicholls drying a fairy penguin during treatment. (Photograph by courtesy of W.A. Newspapers Ltd.)

This Thick-billed Penguin (only the third of this species recorded in W.A.) was successfully rehabilitated.

caused by close penning or over handling, particularly with wet hands, etc. In cleaning an oiled seabird one must therefore have in mind that one is only combating one pollutant **with another pollutant** (be it detergent, vegetable oil or whatever) and that in the end **both** have to be thoroughly got rid of. This, of course, is what one is thinking of if one does not ascribe to the 'wax makes feathers waterproof' theory.

"I think that of the two pollutants with which the original one (oil) is to be attacked, detergent is by far the lesser evil—especially in the hands of amateurs. My birds are also treated with an antibiotic as a matter of course—oral Aureomycin for the first week. Otherwise this recent Newcastle work reflects my own experience.

"One statement made in the R.A.O.U. pamphlet —'Fresh drinking water should always be provided' needs to be expanded upon. Penguins neither feed nor drink of their own accord from a bowl or dish on land—I have seen a number of examples of suffering through innocence of this fact. **They must be hand fed and watered** unless a swimming tank has been provided where they may get fish in the water."

In bringing to light in this journal the divergence of opinion regarding the treatment of oiled seabirds, we do not wish to be critical of the excellent efforts of any organisation to inform the public on rehabilitation methods. Rather, it is our intention to keep our readers informed of the continuing research which is being undertaken in this field, and of the most recent advances in the methods of treatment.

AUSTRALIAN FAUNA NOTED IN "RED BOOK"

The following Australian fauna has been recorded by the I.U.C.N. (International Union for the Conservation of Nature and Natural Resources) in their "Red Book" as being rare and possibly decreasing in numbers.

The status given by the I.U.C.N. is indicated for each species and the code is explained at the end of the list.

Common Name; Scientific Name; Category.

MAMMALS

Southern Planigale; *Planigale tenuirostris;* 4(a)P.
Kimberley Planigale; *Planigale subtilissima;* 4(a)P.
Red-Tailed Phascogale; *Phascogale calura;* 4(a)P.
Long Tailed Sminthopsis; *Sminthopsis longicaudata;* 4(a)P.
Kultarr; *Antechinomys laniger;* 4(a)P.
Eastern Native Cat; *Dasyurus viverrinus;* 4(a)P.
Western Native Cat; *Dasyurus geoffroyi geoffroyi;* 4(b).
Thylacine; *Thylacinus cynocephalus;* 1(a)***P.
Rusty Numbat; *Myrmecobius fasciatus rufus;* 4(a)P.
Eastern Barred Bandicoot; *Perameles fasciata;* 4(a).
Western Barred Bandicoot; *Perameles bougainville;* 4(b)P.
Rabbit Bandicoot; *Macrotis lagotis;* 1(a)P.
Pig Footed Bandicoot; *Chaeropus ecaudatus;* 4(a).
Grey Cuscus; *Phalanger orientalis peninsulae;* 4(b).
Leadbeaters Possum; *Gymnobelideus leadbeateri;* 4(a)P.
Scaly Tailed Possum; *Wyulda squamicaudata;* 4(a)P.
Western Ring-tail; *Pseudocheirus occidentalis;* 4(a)P.
Flinders Island Wombat; *Vombatus ursinus;* 4(b).
Barnards Hairy Nosed Wombat; *Lasiorhinus barnardi;* 2(a)P.
Western Hare Wallaby; *Lagorchestes hirsutus;* 4(b)P.
Banded Hare Wallaby; *Lagostrophus fasciatus;* 4(a)P.
Ring-tailed Rock Wallaby; *Petrogale xanthopus xanthopus;* 4(b)P.
Bridled Nail-tail Wallaby; *Onychogalea fraenata;* 4(a)P.
Crescent Nail-tail Wallaby; *Onychogalea lunata;* 4(a).
White Throated Wallaby; *Macropus parma;* 2(a)P.E.
Brush Tailed Rat Kangaroo; *Bettongia penicillata;* 4(a).
Lesueur's Rat Kangaroo; *Bettongia lesueur;* 4(a)P.
Desert Rat Kangaroo; *Caloprymnus campestris;* 4(a).
Long Nosed Rat Kangaroo; *Potorous tridactylus trydactylus;* 4(b)P.
Musky Rat Kangaroo; *Hypsiprymnodon moschatus;* 4(a)P.
Dugong; *Dugong dugon;* 3(a)P.

BIRDS

Cape Barren Goose; *Cereopsis novaehollandiae;* 4(a)P*.
Australian Night Parrot; *Geopsittacus occidentalis;* 1(a)P***.
Orange-bellied Parakeet; *Neophema chrysogaster;* 2(a)P.
Turquoise Parakeet; *Neophema pulchella;* 3(a)P**.
Splendid Parakeet; *Neophema splendida;* 3(a)P**.
Ground Parrot; *Pezoporus wallicus wallicus;* 4(b)P.
Ground Parrot (Western); *Pezoporus wallicus flaviventris;* 4(b)P.
Ground Parrot (Tasmania); *Pezorporus wallicus leachi;* 4(b)P.
Golden Shouldered Paradise Parakeet; *Psephotus c. chrysopterygius;* 4(b)P.
Hooded Paradise Parakeet; *Psephotus c. dissimilis;* 2(b)P.
Beautiful Parakeet; *Psephotus pulcherrimus;* 4(a)P.
Noisy Scrub Bird; *Atrichornis clamosus;* 1(a)P***.
Rufous Scrub Bird; *Atrichornis rufescens;* 1(a)P**.
Western Whipbird (SW); *Psophodes n. nigrogularis;* 2(a)P**.
Western Whipbird (SE); *Psophodes n. leucogaster;* 2(a)P**.
Western Whipbird (S); *Psophodes n. pondalowiensis;* 2(a)P**.
Eyrean Grasswren; *Amytornis goyderi;* 3(a)***.
Western Bristle Bird; *Dasyornis brachypterus longirostris;* 3(b)P.
Western Rufous Bristle Bird; *Dasyornis broadbenti littoralis;* 2(b)P.
Helmeted Honeyeater; *Meliphaga cassidix;* 3(a)P**.

REPTILES

Reticulated Velvet Gecko; *Oedura reticulata;* 2(a)P.
Australian Freshwater Crocodile; *Crocodylus johnstoni;* 2(a)P.
Short Necked Tortoise (or Western Swamp Tortoise); *Pseudemydura umbrina;* 1(a).
Hawksbill Turtle; *Eretmochelys imbricata;* 1(a)P.T.
Estuarine Crocodile; *Crocodylus porosus* 2(a)P.T.
Green Turtle; *Chelonia mydas* 3(a)P.T.

CATEGORIES

1 Very rare and believed to be decreasing in numbers.
2 Less rare but believed to be threatened—requires watching.
3 Very rare but believed to be stable or increasing.
4 Status inadequately known—survey required or data sought.
5 Depleted—severely reduced in abundance and still decreasing.

SYMBOL

(a) Full species.
(b) Subspecies.
E Exotic introduced or captive populations believed more numerous than indigenous stock.
M Under active management in a national park or other reserve.
P Legally protected, at least in some parts of its range.
R Included because of its restricted range.
S Secrecy still desirable.
T Subject to substantial export trade.

"STAR LISTING"

Species or subspecies of special importance.
*** Giving cause for very grave anxiety.
** Giving cause for considerable anxiety.
* Giving cause for some anxiety.

SUGGESTED READING

BIRDS

"Birds in Bass Strait"—Ken Simpson, Sydney, A. H. & W. A. Reed, 1972.

Apart from annotated checklists of species, this is one of the first books to describe the birds of a restricted region of Australia.

It is intended as a source book for information on the birds of the Bass Strait region but will also be a useful guide for the young or inexperienced ornithologist.

The text is designed to point out gaps in the existing knowledge of the birds that inhabit Bass Strait and to indicate directions for their future study. The physical features and hints to the identification of the birds are described, together with breeding, behavioural, and geographical notes and the status of the bird within the total bird population of the Bass Strait area. The birds, particularly the seabirds, in Bass Strait are also common to Australia's Southern seas, giving this book a wider application than the title implies.

A very fine selection of seabird photographs, both in colour and black and white, are a feature of this book. These have been particularly selected to show the birds in close up and in flight. In all, the 112 pages contain 40 full page full colour illustrations, in addition to the black and white illustrations.

YELLOW-BELLIED SEA SNAKES

Warden Kevin Morrison reports that there have been a number of Yellow-bellied Sea Snakes found on the beach at East Busselton and Wonnerup Inlet.

It would appear that these were washed ashore during storms in late August although many were found still alive in the first week in September. Warden Morrison and Cadet Warden Ray Smith inspected a three mile section of beach north-east from the mouth of Wonnerup Inlet and collected 8 Yellow-bellied Sea Snakes, several of which were alive.

Cadet Warden Ray Smith with the eight sea sakes found at East Busselton.

Warden Morrison comments that although it is not uncommon for this species of sea snake (which is native to the warmer tropical waters of the Pacific and Indian Oceans) to be found washed up after winter storms on beaches as far south as the Metropolitan area, it is unusual for so many specimens to be found at once in such a small area and as far south as this. Apart from the 8 specimens collected, 6 other specimens were reported found from Bunbury to Wilyabrup.

Sea snakes are particularly venomous but generally will attack only if provoked or handled; on land they are very sluggish and give the appearance of being dead. It is best to treat all sea snakes as alive and dangerous until proven otherwise.

INTERSTATE REMOVAL OF BIRDS

For some time the Department of Fisheries and Fauna and the Agriculture Protection Board have recognised the need to draw up a complete list of exotic birds which should be the only species permitted to be brought into Western Australia for the purpose of aviculture.

The Department's concern over the importation of exotic species is that some could acclimatize and become a threat to established native Western Australian birds. The Agriculture Protection Board's concern is over exotic species which are potential pests to agriculture.

The Vermin Control and Fauna Conservation Co-ordinating Committee (which is an interdepartmental committee comprising officers of both Departments) has held lengthy discussions as to the composition of the list of bird species. Recognizing the fact that experienced aviculturists should have the opportunity of expressing their views, the Committee invited Western Australian avicultural societies to send representatives to discuss a provisional list. As a result the seven organisations represented at this meeting agreed to discuss the list with their members and subsequently to make submissions to the Committee as to any amendments they would like to see made.

It was expected, and was only natural, that some exotic species which did not appear on the list and were currently held by aviculturists would cause some concern. Aviculturists who had been keeping a particular exotic species for some years were sure to be perturbed at the thought of further breeding stock of this species becoming a prohibited import and of existing stock gradually being phased out. The submissions of aviculturists were discussed by the Committee and, as a result, some amendments were made. Despite being given the opportunity to suggest amendments it is likely that some aviculturists may remain unhappy about the final composition of the list. It is a well-known axiom that you cannot please everybody, so it should be emphasized that the Government has a responsibility not only to aviculturists but also to conserve our native fauna and protect primary industry from potential pests.

Aviculturists who feel that they can make out a case for a particular species to be added to the list, or for a species to be moved from one category to another, are advised that the door is still open and the list is flexible and subject to amendment if a reasonable case is presented.

At the time of going to press, the bird species which may be brought into the State and their classification within the conditions applying to the removal of birds interstate are as follows:

A

Birds that may be imported if Department of Fisheries and Fauna approve license. (No Agriculture Protection Board permit required).

EXOTIC SPECIES

COMMON NAME	SCIENTIFIC NAME
Cuban Finch	*Tiaris canora*
Olive Finch	*Tiaris olivacea*
Jacarini Finch	*Volatinia jacarini*
Red-crested Cardinal	*Paroara cucullata*
Cordon Bleu and Blue-breasted Waxbill	*Estrilda angolensis*
Golden-breasted Waxbill	*Estrilda subflava*
African Fire-finch	*Estrilda senegala*
Lavender Finch	*Estrilda caerulescens*
Melba Finch	*Pytilia melba*
Aurora Finch	*Pytilia phoenicoptera*
Domestic Canary	*Serinus canarius*
Red-faced Parrot-Finch	*Erythrura psittacea*
Silver Pheasant	*Lophura nycthemera*
Lady Amherst's Pheasant	*Chrysolophus amherstiae*
Reeves Pheasant	*Syrmaticus reevesii*
Peafowl	*Pavo cristatus*
Impeyan Pheasant	*Lophura impayanus*
Elliott's Pheasant	*Syrmaticus ellioti*
Guinea Fowl	*Numida meleagris*
Bleeding Heart Pigeon	*Gallicolumba luzonica*
Swinhoe Pheasant	*Hierophasis swinhoei*
Fire-backed Pheasant	*Lophura diardi*
Golden Pheasant	*Chrysolophus pictus*
Copper Pheasant	*Syrmaticus soemmeringii*

AUSTRALIAN SPECIES

All Australian Birds (as per R.A.O.U. Checklist of the Birds of Australia) **except the following species:**

Diamond Firetail (Spotted Sided Finch) (Diamond Sparrows)	*Emblema guttata*
Beautiful Firetail	*Emblema bella*
Red-browed Waxbill	*Aegintha temporalis*
Goldfinch	*Carduelis carduelis*
Cape Barren Goose	*Cereopsis novaehollandiae*
Indian Turtle Dove	*Streptopelia chinensis*
Senegal Turtle Dove	*Streptopelia senegalensis*
Greenfinch	*Chloris chloris*
Spice Finch	*Lonchura punctulata*
White-tailed Black Cockatoo	*Calyptorhynchus baudinii*
Corella, Little	*Cacatua sanguinea*
Wedge-tailed Eagle	*Aquila audax*
Emu	*Dromaius novaehollandiae*
Galah	*Cacatua roseicapilla*
Red-capped or W.A. King Parrot	*Purpureicephalus spurius*
Regent or Smoker Parrot	*Polytelis anthopeplus*
Western Rosella Parrot	*Platycercus icterotis*

B

Birds that may be imported if permitted by Agriculture Protection Board and licensed by Department of Fisheries and Fauna.

COMMON NAME	SCIENTIFIC NAME
Hooded Siskin	*Carduelis cucallatus*
Cut-throat Finch	*Amadina fasciata*
Orange-cheeked Waxbill	*Estrilda melpoda*
Ring-necked Pheasants and Varieties and Hybrids	*Phasianus colchicus*
Eastern Rosella (Including Golden-mantled Rosella)	*Platycercus eximius*
Crimson Rosella (Red Lory)	*Platycercus elegans elegans*
Queensland King Parrot (King Lory)	*Aprosmictus scapularis*
Red-faced Lory (Little Lorikeet)	*Glossopsitta pusilla*
Whisk Lory (Musk Lorikeet)	*Glossopsitta concinna*
Scaly-breasted Lory	*Trichoglossus chlorolepidotus*
Rainbow Lorikeet	*Trichoglossus haematodus moluccanus*
Tovi Parakeet	*Brotogeris jugularis*
Brown Parrot	*Poicepalus meyeri*
Red-breasted Parakeet (Moustached Parakeet)	*Psittacula alexandri*
Indian Ringneck Parakeet	*Psittacula crameri*
Indian Ringneck Parakeet subspecies	*Psittacula crameri manillensis*

C

Birds that may be imported subject to complying with health requirements of Department of Agriculture. No license required from Department of Fisheries and Fauna. No permit required from Agriculture Protection Board.

COMMON NAME	SCIENTIFIC NAME
Domestic Fowl and all Bantams	**Gallus gallus*
Domestic Turkey	*Meleagris gallopavo*

*ADULT Domestic fowls may not be imported at present.

TAMMARS AT WUBIN?

Honorary Warden Mr R. Young from Wubin reports sighting a Tammar near his property.

Evening patrols in conjunction with the Department's Warden from Wongan Hills, Don Noble, have failed to confirm the sighting.

Although there is no recent record of tammars in this area, and Wubin is considered to be out of the present known range of the tammar, a recent survey of the area by the W.A. Museum showed that there is a small area of suitable scrub for tammar habitat.

NO S.W. DUCK SEASON

In November, the Minister for Fisheries and Fauna, the Hon. A. W. Bickerton, announced that there would be no duck shooting season in the South-West and Eucla Land Divisions this summer.

The last occasion when there was no duck shooting season was in the summer of 1969 and the pre-season conditions this year have followed a similar pattern to those of three years ago.

"In making my decision," said the Minister, "I have been guided by the recommendations of the Game Management Committee of the Western Australian Wildlife Authority. I feel that the Committee's recommendation echoes the thoughts and sentiments of responsible duck shooters and other conservation-minded people in the State".

Short seasons were declared in 1970 and 1971 and it had been anticipated that normal rainfall patterns would return, but the average rainfall in the South-West and Eucla Land Divisions this year was again well down on a normal season; this is the fourth year in succession that these Divisions have experienced low average rainfall.

From aerial surveys carried out by the Waterfowl Research Branch of the Department and by the W.A. Field and Game Association, it was observed that the majority of the wheatbelt wetland areas are dry and that there is a marked reduction in the refuge areas along the south coast. There are exceptions to these areas, notably at Moora, but these good areas do not balance the dry conditions experienced in the drought refuge areas further south.

Generally, breeding has been low throughout the two land divisions, and two of the major game species, Grey Teal and Black Duck, have been the main sufferers because of the deepening drought and lack of freshwater. On the other hand, Mountain Duck and Wood Duck (Maned Geese) have bred successfully because they utilise artificial areas such as farm dams.

The Department realises that Mountain Duck and Wood Duck could create problems in some areas and special arrangements have been made to control these species in such areas where Shires request assistance and if the Department agrees.

[FOOTNOTE: A restricted open season on Mountain Duck and Wood Duck was gazetted on December 22, 1972. Ducks may only be taken on private property in certain Shires with the written permission of the owner or occupier.]

OILING OF FAIRY PENGUINS

Honorary Warden Miss Lexie Nicholls of Dalkeith, whose comments on the treatment of oiled seabirds can be found on page 89 of this issue, has forwarded the following report:

"On Friday, November 3rd, 1972, while I was carrying out a survey of breeding Silver Gulls on Carnac Island it was discovered that a number of Fairy Penguins had been killed and others were dying from the effects of oil.

Several (about 8) Pied Cormorants had been seen earlier in the week, covered in oil and trying to "dry" their wings on the east Carnac beach. All evaded capture until one by one they died or disappeared. Three dead were collected and buried; all were in an emaciated state.

It did not occur to me that the Penguins might also be affected since no information had been issued that a spill of sufficient threat had occurred—some Cormorants had apparently been oiled from a recent spillage in Fremantle Harbour, but apart from receiving several of these birds for treatment I had heard no other news of this occurrence, either personally or through any of the media. I assumed that the oiled Cormorants on Carnac beach were other victims of this spill and that they had escaped the harbour and found their way across to Carnac where they were now isolated. At that time no thought was given to the Penguins since they do not normally swim in the Harbour (where, it was assumed, the recent unpublicised spill had been dealt with).

On November 3rd, however, I found 18 dead Penguins scattered in crannies and cavities around the northern "headland" of Carnac Island —almost all of these were so thickly oiled that no patch of normal colour was visible. Most had died from about 1 to 5 days before discovery.

Seven other Penguins were subsequently found alive in the crannies, at water level, all oiled, gaunt, emaciated and shaking with cold. These were collected and confined to my camp, where treatment was started. Being cut off from the mainland, however, and unprepared for such an emergency, I could do little for the very weak individuals and three died. The four others were later brought to the mainland where proper treatment was instituted. One has pneumonia, but all are expected to survive with continued treatment.

A check of the high cliff "caves" of the northern "headland" revealed several large Penguin chicks in down, and two healthy adult birds. A pair of chicks in down and two healthy adults were also found in the southern (lee) cliffs.

Several oiled Silver Gulls were also seen on the beach at Carnac, but were still mobile enough to evade capture when I left the Island on November 8th."

DECLARATION AND AMENDMENT OF RESERVES

NEW RESERVES

Name	Res. No.	Locality	Plan	Area	Previous Use	Purpose	Vesting	Gazetted
....	31378	12 miles North of Williams Townsite	384/80 E.F.1	2,888a. 0r. 39p.	....	Conservation of Flora & Fauna	....	16-6-72
....	31425	14 miles West of Ravensthorpe Townsite	420/80 C.2	619a, 2r. 23 p.	....	Conservation of Flora & Fauna	....	7-7-72
....	31603	5 miles South West of Pingrup	418/80 C.1	219a. 2r. 13p.	Property of Mr. James Deacon	Conservation of Flora & Fauna	....	1-9-72
....	31424	18 miles N.W. of Ravensthorpe	405/80 B.C.4	7,225a. 3r. 30p.	....	Conservation of Flora & Fauna	....	7-7-72
....	31629	2 miles North of Lake Brown	35/80 A.1 54/80 A.4	376·7623 ha	....	Conservation of Flora & Fauna	....	15-9-72

VESTING OF RESERVES

Name	Res. No.	Locality	Plan	Area	Purpose	Previous Vesting	New Vesting	Gazetted
....	9648	8 miles South East of Wagin Townsite	409/80	About 221a.	Conservation of Flora & Fauna	....	W.A.W.L.A.	15-9-72
....	31030	50 miles West of Coorow	91/80 B.C.1.2	12,221a. 1r. 33p.	Conservation of Flora & Fauna	....	W.A.W.L.A.	25-8-72
....	27886	50 miles West of Coorow	91/80 B.1	1245·6932 ha	Conservation of Flora & Fauna	....	W.A.W.L.A.	25-8-72

AMENDMENT OF AREA

Name	Res. No.	Locality	Plan	Previous Area	New Area	Purpose	Vesting	Gazetted
....	19118	15 miles East of Cuballing	385/80	About 300a.	513a. 1r. 15p.	Timber (Mallet) and Conservation of Flora and Fauna	....	4-8-72
Boyagin Wildlife Sanctuary	20610	15 miles N.W. of Pingelly	379/80	9,900a.	4043 ha.	Timber (Mallet) and Conservation of Flora and Fauna	W.A.W.L.A.	10-11-72

CHANGE OF PURPOSE

Name	Res. No.	Locality	Plan	Area	Previous Purpose	New Purpose	Vesting	Gazetted
....	27886	50 miles West of Coorow	91/80 B.1	1245·6932 ha	Conservation of Flora	Conservation of Flora & Fauna	W.A.W.L.A.	25-8-72
Lake Wannamal	A9838	Wannamal	31/80 D.2	200a.	Water	Conservation of Flora & Fauna	W.A.W.L.A.	26-5-72
....	2275	15 miles N.W. of Quairading Townsite	3/80 C.2	12a. 2r. 17p.	Water & Camping	Water and Conservation of Flora & Fauna	....	21-7-72

BROLGAS EXTEND SOUTHERLY RANGE

Fauna Warden John Neal of Carnarvon has received several reports of Brolgas sighted in the area of the Lyndon River Crossing on the Minilya-Exmouth road.

Cayley in "What Bird is That?" suggests that Brolgas are not found south of Onslow, and Serventy in "Birds of Western Australia" offers the following comments:

"The Brolga is a bird of the Kimberley Division but it has now penetrated into the North-West and occurs regularly as far south as Onslow. It would appear that this is a more or less recent extension of range as the species was never recorded in earlier days in the North-West . . . Apparently the birds first appeared in small numbers in the 1920's. There was a very large invasion in 1952 when some birds were seen on the Carnarvon Road near Hamelin Pool, and one bird even as far south as Beacon".

Robin Hill, in his "Australian Birds", gives a first-rate description not only of the bird itself but also its habits:

"Brolgas have, like most cranes, loud, trumpeting calls that can be heard over a mile away in open country. A trumpeting bird looks most dramatic—almost heraldic—as it arches its folded wings and droops its wingtips to the ground. The long neck is curved back and the bill points to the sky whilst the bird quivers all over with the exertion of the raucous cry. Their trachea, or windpipe, is greatly developed, being long and convoluted, and acts as a very effective trumpet. They have a variety of mellower, fluting calls, which are more intimate and used as the feeding birds communicate with each other.

In some localities Brolgas appear to be permanent residents, nesting and wintering within a few square miles. Others are nomadic, although not a great deal is known of their movements. They fly high when on the move, and cranes in other countries have been reported as flying as high as two miles.

The dancing habits of the Brolgas are well known, although not many people have seen them indulging in these "quadrilles and minuets". Any number, from a pair up to a dozen or so birds, will line up, roughly opposite each other, and start the dance. They prance forward on their stilt-like legs with wings half-open and shaking. Bowing and bobbing their heads, they advance and retire, gurgling and fluting softly. Now and then a bird will stop and, throwing back its head, trumpet wildly. The birds may also leap into the air a few feet and parachute back to earth on broad black and grey wings. Pieces of twig or grass are flung about and the Brolgas make attempts to catch the pieces or stab at them with their bills as they fall.

Brolga *(Grus rubicunda)*.

Various aborigine tribes have incorporated these Brolga-dances into their corroborees, and they imitate the angular, though graceful birds with great skill.

The dancing of these cranes may be used in courtship display, but they certainly indulge in it outside the breeding season. It seems then, that the birds are often expressing a sense of 'playful exuberance' and a release of energy, rather than anything more functional such as a sexual display.

Brolgas become tame quite readily, and country properties often have a bird that comes to the homestead and can be fed from the hand.

Their diet in the wild is insects and small animals such as frogs, reptiles and rodents. They also eat a certain amount of vegetable matter, and occasionally will damage grain crops.

Brolgas nest in a variety of situations. Sometimes the eggs may be laid on the bare ground, or alternatively a few pieces of grass or reeds may be placed around the eggs. They also nest in wet, swampy spots, in which case the nest will be a more bulky structure of reeds and other plants, and it may even be floating.

Two eggs are the common clutch; sometimes one is laid, and more rarely three. They are a dull whitish colour, minutely pitted, and lightly freckled reddish. The breeding season is from September to March as a rule."

The Department would be most interested to hear from any reader who makes a positive identification of Brolgas outside their normal range.

STATE GOVERNMENT TO SUPPORT ABORIGINAL INDUSTRY

The State Government has approved a scheme to set up Green Sea Turtle and Saltwater Crocodile Farms as exclusive industries for Aborigines in Western Australia.

Turtle farms are already operating in Queensland under the guidance of Dr H. Robert Bustard of the Australian National University, who is a world authority on reptiles and has been retained by the Commonwealth Government as Consultant. He has selected three Bardi men for training with a view to similar farms being established in Western Australia.

Turtles are fully protected under the Fauna Conservation Act, but this Act does make provision for the farming under license of stocks bred in captivity.

In 1969, in a report on the status of crocodiles in Western Australia Dr Bustard recommended the farming of Saltwater Crocodiles as a means of reducing the pressures of poaching. It was as a result of this report that the Saltwater Crocodile became totally protected in this State. (The freshwater species had been afforded protection some seven years earlier.)

The Government feels that commercial farms for Green Sea Turtles and Saltwater Crocodiles hold possibilities of considerable social and economical benefit for Aborigines. However, it is thought that, at least in the early stages Aborigines will need some protection to enable trainees to withstand competition from entrepreneurs with greater capital and expertise.

The Government has decided therefore, that the right to farm crocodiles and turtles will initially be granted solely to Aborigines with the proviso that the situation be reviewed after five years. The Commonwealth Government (Office of Aboriginal Affairs) has provided $250,000 from the Aboriginal Advancement Trust Account to establish farms in Queensland, the Northern Territory and Western Australia.

The farming of turtles and crocodiles will not place any pressures on existing populations. Farming of wildlife species bred in captivity for the benefit of man is a sound conservation technique, and with Government support it is expected that these schemes will do much to improve the quality of the life of the Aboriginal people.

KNOW YOUR DISTRICT FAUNA WARDEN

Alan Robert (Bob) Marshall was born in Dwellingup in 1923. His first job was with the State Mills where he worked until war broke out. Bob joined the A.I.F. and saw active service with the 2/16th Battalion in the south-west Pacific and New Guinea. After the war he joined the Forests Department for a couple of years before transferring to the Police Department. He spent six years in the Traffic Branch in Perth before being transferred to Onslow.

Then began a series of moves around the State which has given Bob a tremendous knowledge of our native fauna, as well as a fund of amusing stories! First to Ravensthorpe where he was Officer-in-Charge, then to Pemberton for three years and then to Kununurra where he became the first police officer for that town. He was promoted to sergeant in 1964 and returned to Perth where he was O.I.C. at Subiaco and latterly at Belmont. Finally, after moving back north to Wyndham for 8 months on relieving duties, Bob joined the Fisheries and Fauna Department in 1967 as the Metropolitan Warden.

His motive, Bob tells us, was a tremendous interest in Western Australia's wildlife, particularly birds (feathered ones he insists). This interest is borne out by the fact that he is recognised as one of the Department's most reliable fauna observers.

Bob married his wife Pat in 1947 and they have two sons, aged 23 and 17. He lists his interests as anything sporting, particularly cricket and Australian rules football.

Asked what he thought was the greatest threat to the environment, he quickly replied, "Man, whether armed with a gun or a bulldozer".

Our Diminishing Heritage

The Cape Barren Goose *(Cereopsis novaehollandiae)* is found only in Australia, and is one of the rarer species of waterfowl. Not only is it rare, but it is a very handsome bird of apparently ancient origin possessing no close relatives. Taxonomists are confused by its relationships with other waterfowl for some consider it to be linked with the true geese of the Northern Hemisphere, others with the Sheld geese, while others would place it in a tribe of its own.

The goose was so named by the survivors of a ship wrecked south of Cape Barren Island in the Bass Straight in 1797. The survivors used the bird as a source of food and it has been persecuted ever since, becoming the subject of considerable controversy. Its habitat has been heavily grazed by sheep with resultant conflict with graziers, and it was the subject of uncontrolled exploitation by shooters for many years. That the species has survived at all suggests that it is very resilient.

Most of the conflict and controversy has centred around the breeding grounds in Tasmania, South Australia and Victoria. In Western Australia the Cape Barren Goose was given full protection in 1938, and in June this year was given additional protection when the fine for taking one of these birds illegally was increased to $1,000. The breeding grounds of the Recherche Archipelago are an "A" Class Fauna and Flora Reserve vested in the Western Australian Wildlife Authority.

The Cape Barren Goose is a distinctive ash-grey colour with black wing-tips and tail and a striking yellow-green cere on the bill. Few measurements are available, but H. J. Frith recorded the data on the opposite page from a sample of fourteen birds taken in 1965.

The geese breed on islands and their distribution ranges along the southern coast of Australia, from the Furneaux Group off the north-east coast of Tasmania to the Recherche Archipelago off Western Australia. They are grazing birds and are usually found on beaches, rocky prominences and grassed areas or, when breeding, in low scrub.

It is thought that Cape Barren Geese mate for life as they are found in pairs throughout the year. Breeding usually occurs in June, but when the summer and autumn are dry, nest building is delayed and restricted. The male assists with the building of the nest which is a heap of whatever material is on hand and is lined with grey down. The number of eggs laid varies between one and seven, but four is the average. Nests are rarely found close together because the Cape Barren Goose is a very territorial bird and the male will fiercely defend the nesting area.

Indications are that Cape Barren Geese do not migrate to any great extent, a factor which highlights the need for all breeding grounds in Australia to be fully protected and for that protection to be strictly enforced. A population estimate in 1968 suggested that only about 6,000 birds remained in the world, but with careful management over a number of years, populations can recover; perhaps one day the goose can be returned to the list of game species. The tragedy is that the status of the bird should have become so precarious in the first instance.

[Footnote—Recent reports from observers in Esperance state that Cape Barren Geese have been sighted on the mainland. This could indicate that numbers on the Archipelago are increasing].

Cape Barren Geese at Kangaroo Island, S.A.
(Photograph by Ederic Slater; courtesy of H. J. Frith.)

CAPE BARREN GOOSE

Cereopsis novaehollandiae

(Photograph by Ederic Slater; courtesy of H. J. Frith.)

Distribution of the Cape Barren Goose. The black spots show islands where breeding is known to occur. In summer scattered groups might be found on the mainland and in north-east Tasmania, adjacent to these breeding areas.

DISTRIBUTION:

Islands off southern coast of Australia from Furneaux Group (N.E. Tasmania) to Recherche Archipelago (W.A.).

May be found on coastal swamps in summer.

HABITAT:

Low-lying islands with grass, Poa tussocks and scrub.

Breeding habitat is varied.

LOOKS:

Adult Male and Female—
General colour—ash grey, head is paler;
Crown—white;
Tail—black;
Iris—hazel brown;
Feet—black;
Bill—black;
Cere—greenish yellow.

SIZE:

Length—750-910 mm.
Wingspread—1370-1620 mm.
Wing—450-490 mm.

} From sample of 14 adult males collected in 1965.

Females are slightly smaller.

WEIGHT:

Adult Male—3700-5100 g. (from 1965 sample).

NESTING:

Possibly mate for life. Nest-building may begin in May: clutches are begun between May and August. Main hatching occurs in late July and mid August. Male assists with nest-building and defends the territory while female is brooding.

Nests are usually widely separated, set on western sides of islands exposed to prevailing winds.

Eggs—elliptical, white with layer of lime over shell. An average of 4 are laid.

UNITED NATIONS DECLARATION ON THE HUMAN ENVIRONMENT—PRINCIPLES

The United Nations Conference on the Human Environment (UNCHE) was held at Stockholm in June this year. The principles set out below express the consensus of the nations on socio-ecological issues.

Principle 1

Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations. In this respect, policies promoting or perpetuating apartheid, racial segregation, discrimination, colonial and other forms of oppression and foreign domination stand condemned and must be eliminated.

Principle 2

The natural resources of the earth including the air, water, land, flora and fauna and especially representative samples of natural ecosystems must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate.

Principle 3

The capacity of the earth to produce vital renewable resources must be maintained and, wherever practicable, restored and improved.

Principle 4

Man has a special responsibility to safeguard and wisely manage the heritage of wildlife and its habitat which are now gravely imperilled by a combination of adverse factors. Nature conservation, including wildlife, must therefore receive importance in planning for economic development.

Principle 5

The non-renewable resources of the earth must be employed in such a way as to guard against the danger of their future exhaustion and to ensure that benefits from such employment are shared by all mankind.

Principle 6

The discharge of toxic substances or of other substances and the release of heat, in such quantities or concentrations as to exceed the capacity of the environment to render them harmless, must be halted in order to ensure that serious or irreversible damage is not inflicted upon ecosystems. The just struggle of the peoples of all countries against pollution should be supported.

Principle 7

States shall take all possible steps to prevent pollution of the seas by substances that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.

Principle 8

Economic and social development is essential for ensuring a favourable living and working environment for man and for creating conditions on earth that are necessary for the improvement of the quality of life.

Principle 9

Environmental deficiencies generated by the conditions of underdevelopment and natural disasters pose grave problems and can best be remedied by accelerated development through the transfer of substantial quantities of financial and technological assistance as a supplement to the domestic effort of the developing countries and such timely assistance as may be required.

Principle 10

For the developing countries, stability of prices and adequate earnings for primary commodities and raw material are essential to environmental management since economic factors as well as ecological processes must be taken into account.

Principle 11

The environmental policies of all States should enhance and not adversely affect the present or future development potential of developing countries, nor should they hamper the attainment of better living conditions for all, and appropriate steps should be taken by States and international organisations with a view to reaching agreement on meeting the possible national and international economic consequences resulting from the application of environmental measures.

Principle 12

Resources should be made available to preserve and improve the environment, taking into account the circumstances and particular requirements of developing countries and any costs which may emanate from their incorporating environmental safeguards into their development planning and the need for making available to them, upon their request, additional international technical and financial assistance for this purpose.

Principle 13

In order to achieve a more rational management of resources and thus to improve the environment, States should adopt an integrated and co-ordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve the human environment for the benefit of their population.

Principle 14

Rational planning constitutes an essential tool for reconciling any conflict between the needs of development and the need to protect and improve the environment.

Principle 15

Planning must be applied to human settlements and urbanisation with a view to avoiding adverse effects on the environment and obtaining maximum social, economic and environmental benefits for all. In this respect projects which are designed for colonialists and racist domination must be abandoned.

Principle 16

Demographic policies, which are without prejudice to basic human rights and which are deemed appropriate by Governments concerned, should be applied in those regions where the rate of population growth or excessive population concentrations are likely to have adverse effects on the environment or development, or where low population density may prevent improvement of the human environment and impede development.

Principle 17

Appropriate national institutions must be entrusted with the task of planning, managing or controlling the environmental resources of States with the view to enhancing environmental quality.

Principle 18

Science and technology, as part of their contribution to economic and social development must be applied to the identification, avoidance and control of environmental risks and the solution of environmental problems and for the common good of mankind.

Principle 19

Education in environmental matters, for the younger generation as well as adults, giving due consideration to the underprivileged, is essential in order to broaden the basis for an enlightened opinion and responsible conduct by individuals, enterprises and communities in protecting and improving the environment in its full human dimension. It is also essential that mass media of communications avoid contributing to the deterioration of the environment, but on the contrary, disseminate information of an educational nature, on the need to protect and improve the environment in order to enable man to develop in every respect.

Principle 20

Scientific research and development in the context of environmental problems, both national and multinational, must be promoted in all countries, especially the developing countries. In this connection, the free flow of up-to-date scientific information and transfer of experience must be supported and assisted, to facilitate the solution of environmental problems; environmental technologies should be made available to developing countries on terms which would encourage their wide dissemination without constituting an economic burden on the developing countries.

Principle 21

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Principle 22

States shall co-operate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States to areas beyond their jurisdiction.

Principle 23

Without prejudice to such criteria as may be agreed upon by the international community, or to standards which will have to be determined nationally, it will be essential in all cases to consider the systems of values prevailing in each country, and the extent of the applicability of standards which are valid for the most advanced countries but which may be inappropriate and of unwarranted social cost for the developing countries.

Principle 24

International matters concerning the protection and improvement of the environment should be handled in a co-operative spirit by all countries, big or small, on an equal footing. Co-operation through multilateral or bilateral arrangements or other appropriate means is essential to effectively control, prevent, reduce and eliminate adverse environmental effects resulting from activities conducted in all spheres, in such a way that due account is taken of the sovereignty and interests of all States.

Principle 25

States shall ensure that international organisations play a co-ordinated, efficient and dynamic role for the protection and improvement of the environment.

Principle 26

Man and his environment must be spared the effects of nuclear weapons and all other means of mass destruction. States must strive to reach prompt agreement, in the relevant international organs, on the elimination and complete destruction of such weapons.

BIRDS DROWNING IN OPEN TOP TANKS

Just how important it is for members of the public to express their ideas on conservation problems was brought home to us recently when the Department received the following letter from Mr A. E. Leer of Manly Vale, N.S.W.

"Dear Sir,

I am a keen aviculturist and in the past have had an open permit from the Chief Secretary's Department to keep all Australian birds.

Just recently I returned from a trip through various States and down through the centre of Australia and during this period I found a lot of evidence of one of the worst things that happen to birds each year—that of drowning.

They drown in open-top tanks at windmills and bores. The birds travel hundreds of miles to water in the heat and when they get there in mobs, they land on one another on the edge of the tanks and push one another in. A big percentage get drowned. I think every open-top tank, galvanised or iron, should have a wire netting top over it, preferably the netting just hanging into the water to enable the birds to have a drink and a bath if they need it and, if any of them did happen to fall in when pushed, they could get out on the wire netting—dry themselves then fly away. Failing this, some old wooden ends from cable drums could be left floating in the water so they could have their drink from the boards or get out on to the boards if they fell in. This idea, I feel, should be made compulsory on all bores and windmill sites and I am sure the property owners would co-operate. I have noticed on numerous occasions every time you go to the tank there are always bird skeletons which have to be pulled out. If tanks were ever drained they would find hundreds of skulls of various types of birds.

In the past I used to trap and collect birds and animals for the late Sir Edward Hallstrom from all over Australia. In 1952 I went to Cook on the Nullarbor Plains in search of the Night Parrot, travelling through towards Lake Morris and some 30 miles out from Cook there are some holes marked on the map called the Nigger Holes—the only surface fresh water for some 80 miles. When I arrived, the water was down 6 inches from the top of the rock and some were only two feet deep. I raked out the residue from the bottom of one of these holes and pulled out some 70 skulls of Port Lincoln or Twenty Eight Parrots, showing what percentage of birds do die from drowning and the hole was only about 3 feet round.

The birds cannot breed quickly enough to make up for the numbers getting drowned. Even the numbers of the common love-bird have been reduced by half by drowning in man-made water sites."

In reply, the Department promised to give these excellent thoughts and ideas the publicity they deserve. Honorary Wardens and other readers who have the opportunity to put Mr Leer's theories into practice are urged to do so; we would be interested to hear of the results.

ENVIRONMENTAL STUDIES AT PRIMARY SCHOOL LEVEL

Mr S. W. Woods, Education Committee Chairman of the Keep Australia Beautiful Council (W.A.) has announced that a programme of environmental studies prepared by K.A.B.C. and the Education Department has been offered to primary schools.

Mr Woods said that the programme was based over ten topics. The series of easy-to-follow lessons were aimed at mid primary grades to encourage children to become more conscious of their environment and of maintaining its beauty.

Starting at lesson one, a child learns that beauty is something of individual opinion; he learns the use and need for conservation, in relation to clean air, water, soil, plant life, rare animals and wildlife. Also covered are ways in which people spoil our natural beauty by littering and other irresponsible actions.

Formation of litter prevention clubs was suggested with a line of action that a group could tackle as projects.

Teachers' handbooks give guides to further activities should classes show interest in any particular area.

The Chairman of the Keep Australia Beautiful Council (W.A.), Sir Thomas Wardle, said that the Council believes that the Education programme in schools is a very important feature in its campaign for litter free communities. Reports received by the Council indicate that children have carried home the message learnt in schools, and families generally have now become more litter conscious.

It is not likely that a reprint issue of the studies will be available before school commences in February, 1973.

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