S.W.A.N.S.

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DEPARTMENT OF FISHERIES AND WILDLIFE, PERTH

S.W.A.N.S.

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Issued by direction of the Hon. Peter Jones, M.L.A., Minister for Fisheries and Wildlife.

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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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OBITUARY

Our wildlife and the whole conservation movement suffered a grievous loss on the 19th May this year with the passing of Gloria Butcher.

Mrs Butcher was one of the pioneers of the conservation movement in W.A. and her dedication and tireless efforts made her one of the most respected members of our community. Her ability to work harmoniously with Government Departments, her profound judgement, and the sincerity and charm with which she dealt with both individuals and organisations has left a lasting monument.

Because of her outstanding attributes as a negotiator Mrs Butcher was welcomed and accepted at all levels of the conservation movement and even those of the opposing side.

The number of committees and organisations with which she was associated was far too extensive to enumerate and her passing will most certainly leave a void which will take time to fill.

The sympathy of the Department and members of the Western Australian Wildlife Authority is extended to Jim Butcher and family.

IN THIS ISSUE . . .

FLORA AND FAUNA SURVEY—COFFIN ISLAND

By Wildlife Officer R. Sokolowski, Ranger, Two Peoples Bay

On May 1, 1976 a successful landing was made on Coffin Island using an inflatable rubber dinghy floated off from the patrol vessel *Phillip King*.

Dr G. Smith, C.S.I.R.O., and I were safely ashore by 0830 hrs and we both completed a circuit of this island in opposite directions. The island is very small (approximately 1 300 m x 440 m) and is entirely exposed to the four winds and heavy pounding seas. Consequently, only the western end affords an opportunity to land, providing the sea swell is very slight.

There are no sandy beaches, therefore great care must be exercised when landing as all rock areas carry dangerous and sharp crustaceans which can penetrate and cut fabric and skin instantly.

I have observed this island from the mainland quite often during the last 3 years, and the hazardous area and land dangers virtually ensures that illegal usage would be very limited. My views on this matter have been re-enforced by this landing on May 1, 1976 when in such a slight swell I was tipped out of the dinghy.

The island terrain is quite flat and a variety of flora flourishes. I collected 15 specimens which will be identified by the Herbarium, South Perth. Some of the plants were new to my own collection on the mainland and it is probable that we shall have some new plants to show in the Reserve herbarium. I also took photographic plates of each species collected.

The entire island is riddled with burrows of the Great-winged Petrel *Pterodroma macroptera* and chicks were found in the burrows. In addition large numbers of King's Skink, *Egernia kingii*, were seen; one specimen being 35 cm in length and in speckled form; no doubt these skinks play havoc with the nestlings and eggs.

A large number of Australian Sea Lions were found basking on the island and 29 specimens were counted. In a boat off the island I have counted over 50 of them.

The bird population was small and four Rock Parrots, *Neophema petrophila*, were observed in flight; presumably there would be a large movement of various birds across to the island from the mainland which is 200 m distance.

No fresh water pools were found but the rocky terrain would, no doubt, catch some water in the crevices.

A great area of the island was covered in a succulent plant (as yet unidentified) growing to a height of 1 m as well as a vigorous growth of Common Pigface, *Carpobratus aequilateralis*, on the edge above high water mark. This covering became reduced on the exposed Eastern and South-Eastern end of the island.

It was unfortunate that very few species of flora were in bloom and if a further opportunity presents itself I will make another visit later in the year.

There were no signs of any landings by other persons. This would be an area of total wilderness throughout the year protected by the elements which, in our winter months, can be very severe.

Dr G. Smith and I vacated the island at 1230 hrs, May 1, 1976, returning to Two Peoples Bay.

Coffin Island from the mainland.

PROPOSED LEAD SHOT BAN

The U.S. Fish and Wildlife Service has proposed that the traditional lead shotgun shell be banned for waterfowl hunting in the coming season in America.

Steel shot would be the only type permitted to be used for hunting waterfowl in specially designated areas.

The purpose of the proposed ban is to stop the further building up of lead in areas used by aquatic birds. Some species are routinely eating spent shot while foraging for food and are being poisoned. The lead is ground down in the gizzard and absorbed and deposited in tissues; then when the poisoning sets in a few days later the birds become lethargic and die. In North America, an estimated 2–3 million waterfowl die from lead poisoning every year.

While the U.S. game fraternity far outnumbers our own, it is estimated that at 30 shots per person, 372 kg (730 lbs) of lead shot was deposited in Lake Mears and Quairading on the Western Australian game seasons' opening weekend.

STAR SWAMP–A METROPOLITAN NATURE RESERVE

A feather in the cap for Fisheries and Wildlife Minister Mr. Peter Jones and a first-up for Western Australia, in that a metropolitan natural bush area is to be set aside purely for environmental education.

Star Swamp is a freshwater swamp, about 2 hectares (5 acres) in area supporting depauperate faunal and floral communities. It is surrounded on the west by a residential area, and on the north, east and south by a remnant tuart forest which is worthy of protection because such forest formations are becoming depleted on the Swan Coastal Plain. Large areas of reeds and rushes provide nesting sites for waterfowl while the centre of the lake is thick with paperbark trees.

Although no large numbers of waterfowl were recorded on a recent inspection, numerous Grey Teal, Black Duck, Coots, Western Swamp Hen and White-faced Heron were sighted. Summer inspections could reveal greater numbers and more species.

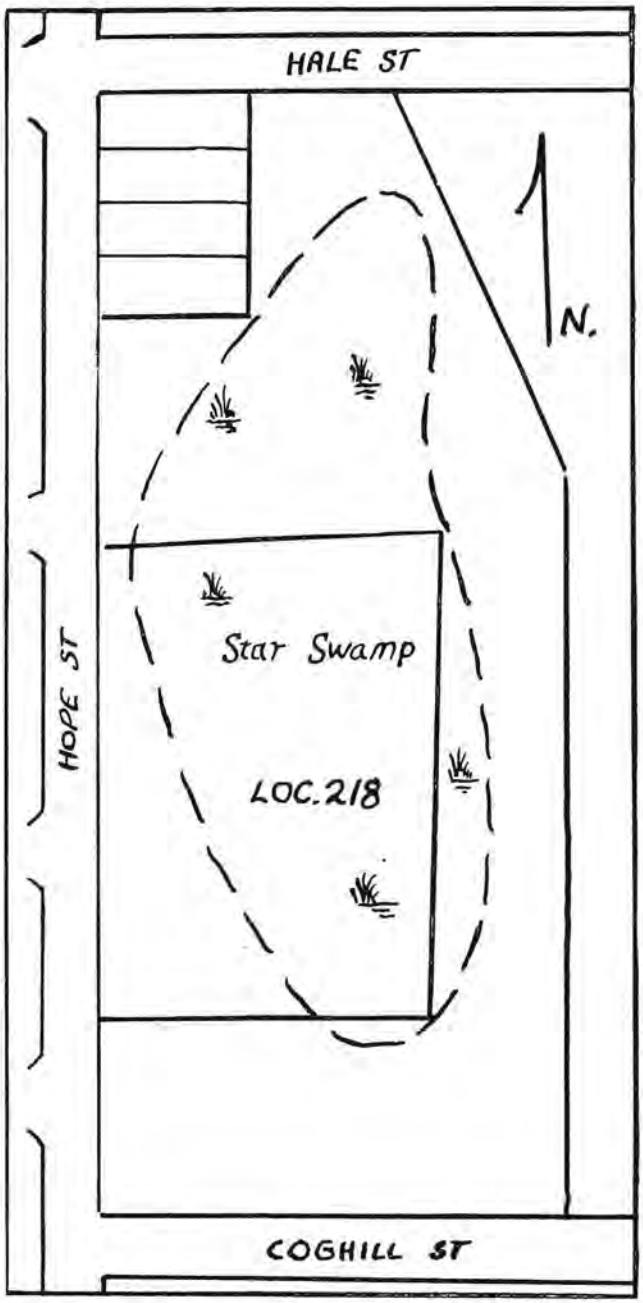
Pollution and associated midgie plagues are not problems of the swamp, because much of the swamp's catchment is not yet residentially developed. Another reason would be that direct overland flow of pollutants into the swamp would be checked by surrounding vegetation.

Portion of Star Swamp showing typical stands of paper bark trees.

The biological value of the swamp is low, although several species of birds share the habitat. *Melaleuca* spp. (the swamp's dominant vegetation) are in healthy condition. Existing vegetation plays a role in utilizing pollutants in the waters of the swamp and the adjoining water table of the coastal plain aquifer.

The swamp's great value lies in its continued use as an accessible nature study area for children of the nearby North Beach Primary School. For this reason alone the swamp warrants protection, and protection will certainly be needed when approximately 34 hectares (100 acres) of nearby State Housing Commission land are developed.

Continued on page 37



The location in North Beach showing close residential blocks in top left hand corner and Stirling City's location 218 within the reserve.

Continued from page 36

The continuing value of the swamp as a nature study area is largely dependent on two factors: Firstly, the swamp is a natural basin, and if its integrity is to be protected, then those planning development of its catchment would need to direct surface drainage away from the swamp rather than directly into it. Secondly the future use of Stirling City's 2 hectares (5 acres) of the reserve (Location 218) which is now held in fee simple by the City could conflict with an educational use of the swamp. However, it is anticipated that all bodies concerned with development in the area will help preserve the status of Star Swamp as an uncontaminated nature reserve.

1975'76 DUCK SEASON

The 1975/76 Duck Shooting season opened at 6 p.m. on Saturday January 10th, 1976. This year, night shooting was permitted on the opening weekend only (10 and 11 January), between 6 p.m. and 8 p.m. at Lake Wannamal, Lake Coomelberrup and Benger Swamp. These areas had previously been closed to night shooting on long term conservation grounds, but this year it was decided not to preclude regular shooters of these areas from participating in the opening shoot.

Generally the season was not a good one. While there were a few lakes with good water content, a reasonable number of guns and good stocks of duck, the dry season and late opening date had caused many waterways to be devoid of game.

From the records it is evident that few people obtained the allowable bag limit of 10 game species per day, but the majority averaged 1 to 4 ducks each for the opening weekend.

Wildlife Officers' reports have indicated that the pressure of the opening shoot is causing a few incidents. The party atmosphere, alcohol and anticipation of the 6 p.m. starting time, caused several firearm accidents and hindrances to Wildlife Officers carrying out their duties safely and efficiently.

At Gundaring Lake on Saturday 10th January, 1976 a shooter contravened Regulation 49 (5) (C) which prohibits the shooting of game less than 3 metres above water level: a man was seriously wounded. Wildlife Officers will be looking to curtail this type of irresponsible shooting next season.

Although Katanning lakes were very dry the average bag was 4 birds. It was also noted that some shooters were using heavy shot. Wannamal produced a small average bag compared with the amount of birds on the lake, but the shooters behaviour was to be commended.

The Yealering chain of lakes produced an average bag of 1·3 birds, the worst for years. A good average bag of 5·8 was had at Lake Taarblin with 300 guns attending the opening shoot. Wildlife Officers detected bad littering and illegal fires at Taarblin with shooters refusing to extinguish fires when called upon to do so.

The Department is hoping for a successful shoot in 1976/77 and emphasises the need for all shooters to abide by the Game Regulations which help determine the success of following seasons.

STEALING OF MARRON

In 1975 the Fisheries Act was amended to permit the making of regulations to cover the farming of fish by the various methods of aquaculture.

Research undertaken over a number of years has shown that there is a potential for the culture of marron—particularly in dam situations in the South-west—on a commercial scale.

At present, marron are exclusively a sport fish which are tightly controlled for the benefit of licensed inland fishermen.

Now that considerable interest is being shown by a number of people in the culture of marron on a commercial scale, protection must be afforded to those animals which exist "in the wild" in public waters and streams.

Regulations are therefore being drafted to ensure that wild stocks are not in any way exploited for commercial purposes and that the sport fishery is maintained.

The regulations will also cover the culture, taking, processing and sale of all marron bred for commercial purposes.

Many farm dams have been used in the research and study projects currently being undertaken and the recent publication of this fact has led some people to the mistaken belief that they may take marron from private farm dams

Apparently, some people have been led to believe that as marron are "wild animals" they can be taken without the property owner's consent and cannot be accused of stealing.

This is far from the truth and would-be poachers are warned that, in addition to their offence for trespassing, the taking of marron from any private dams or ponds without the specific permission of the property owner is a criminal offence and such persons could be charged with stealing.

Section 370 of the Criminal Code goes into great detail to describe what things are capable of being stolen—particularly as regards animals, whether tame or wild by nature. The pertinent paragraph which applies to marron raised in dams by farmers or other persons on their own property, reads:

> **"Animals wild by nature, of a kind which is ordinarily found in a condition of natural liberty in Western Australia which are the property of any person, are capable of being stolen while they are in confinement and while they are being actually pursued after escaping from confinement, but not at any other time".**

Marron do not occur naturally in farm dams—the breeding stocks have been placed there by the owner after purchasing juvenile marron from the Fish Hatchery at Pemberton and are therefore his exclusive private property—as much so as are his sheep and cattle.

POTOROO SEARCH—A CONTINUING SAGA

Members of the Wanneroo Wildlife Research Centre have just completed an expedition to islands along the south coast of W.A. in search of the Potoroo. Funded by the Commonwealth Government and using the Department's patrol vessel the *Phillip King*, Bald Island (off Two Peoples Bay Reserve) and Mondrain, North Twin Peaks, Wilson, Corbett and South Twin Peaks islands of the Recherche Archipelago were visited. All these islands are wildlife reserves under the control of the Western Australian Wildlife Authority.

Members of the team were Dr A. A. Burbidge, E. D. Kabay, N. McKenzie, K. Youngson and A. Hopkins (Department of Fisheries and Wildlife), C. Bryce (Mollusc Department, W.A. Museum) who accompanied the expedition to collect shells from the Recherche islands and Dr A. N. Start (National Parks Authority).

Islands off the W.A. coast are extremely interesting as a large number of them harbour animals which are now absent from the adjacent mainland—Rottnest and Garden Islands being the classic examples. It was thought that as the two species of Potoroos (*Potorous gilberti* and *P. platyops*) were originally found along the south coast of W.A., possibly they could be on some of the south coast islands. None of these islands have been studied intensively or trapped but there have been reports of small animals occurring on some of them. A number of the islands have dense thick vegetation on them and are large enough to support at least two species of mammals.

From previous records, Gilbert's Potoroo would be expected to be on Bald Island and the Broad-faced Potoroo on the Recherche Archipelago.

Three to four days were spent on each Bald, Mondrain and North Twin Peaks while the other islands were visited for a few hours only. In addition a trapping programme of one weeks duration was carried out by Ron Sokolowski and Mick Onus on the Two Peoples Bay Reserve. Landing on the islands was in most cases extremely difficult. A system was developed where a rubber raft was used to transfer equipment and personnel from the coast onto the most inaccessible islands.

On the three main islands, trapping was carried out using cage traps, breakbacks and medium Elliotts. All islands were searched extensively for any signs of the existence of Potoroos. In addition, reptiles and other mammal and plant samples were collected, and bird sightings were recorded.

Although no Potoroos were found, some extremely interesting observations and findings were made. A Departmental report is being prepared on the expedition but briefly the main highlights were:

At Two Peoples Bay Reserve live quokkas were caught in the gullies around Mt Gardner where previously, only dead specimens had been found. Two new bird species were added to the Reserve's bird list—the Spotless Crake (*Porzana tabuensis*), a rare species (this individual was trapped in a cage trap) and the Short-tailed Shearwater (*Puffinus tenuirostris*). If the identity of the skeletal remains of this bird are confirmed it will be the most western recorded locality. In addition, bones from the Dibbler (*Antechinus apicalis*) were found in the sand dunes of the Reserve.

On Bald Island, an extremely rare type of *Salmonella* was found. This is a disease-causing bacteria which was found to be living in the bodies of quokkas. As the vegetation was found to be extremely old, detailed measurements were made on the various plant communities on the island. Fragments of sheep bone and a large number of quokka skulls were collected. The quokka population was found to be still in good condition. No evidence of other mammals was found on the island.

On the Recherche Islands, specimens of Rock Wallaby (*Petrogale penicillata*) were obtained from Mondrain and Wilson, Tammar (*Macropus eugenii*) from North Twin Peaks, and Southern Bush-Rat (*Rattus fuscipes*) from Mondrain and North Twin Peaks (for the latter island, this is a new locality for the species). A large number of species of reptiles new to the islands were found. New bird records for the islands were made—Fan-tailed Cuckoo (*Cacomantis pyrrhophanus*), Barn Owl (*Tyto alba*), Black-faced Cuckoo-Shrike (*Coracina novaehollandiae*), and the Stubble Quail (*Coturnix pectoralis*). The rare Black-faced Cormorant (*Phalacrocorax fuscescens*) and Cape Barren Goose (*Cereopsis novaehollandiae*) were also seen.

Further expeditions to these interesting islands are planned by the Wildlife Research Centre to obtain reliable data for the formulation of more detailed management plans for the reserve and to continue the search for the Potoroo.

North Twin Peaks Island.

A Potoroo.

SEALS SHOT

Somewhere off Green Head, 200 km north of Perth, a huge brown seal glided through the murky green depths of a winter Indian Ocean. The bewhiskered face of the animal popped through the surface of the sea close to a slowly moving boat and, as the large brown eyes appealed for the usual handout of fish, two bullets tore into its neck.

Honorary Wildlife Officer Harold Brown of Sandy Cape was the first to report a dead animal washed up on the beach in front of his house. Due to the advanced state of decomposition it was impossible to determine the cause of death. Two other reports were received from the same area and, although decomposed, the bodies showed bullet wounds.

A Departmental Wildlife Officer and a Fisheries Inspector made various enquiries at Jurien Bay, Sandy Cape and Greenhead, but no information was received as to who did the shooting.

The seals were thought to have come from the islands off the coast of Greenhead. Colonies of the animals exist on many of the islands off the Western Australian coast.

Fisherman's Island was inspected and approximately 30–40 seals were observed. While most were on the beach, an unknown number were in dense scrub, behind the shoreline.

Seals are fully protected animals in Western Australia and while most people respect them as harmless creatures, there are those who take sadistic pleasure in molesting them.

While this particular incident happened last year, rumours continue to filter through of similar new atrocities. The inspectorial staff are making an all-out effort to apprehend these people.

1975'76 MARRON SEASON

The 1975/76 Marron Season from December 16 to April 30 resulted in good catching for those who visited their favourite fishing haunts.

The extra coverage this season by the media on Marron as a future farm-managed species has led to an even greater interest in this crayfish as a table delicacy. It is slowly becoming evident that the average catches in easy-access areas are diminishing with fishing pressure.

A total of 17 172 inland fishing licenses were obtained during the season and the greater majority of these were for Marron fishing.

The Department's Inland Patrol worked consistently throughout the season and at the 30th May 1976, apprehensions resulted in 96 parties pending prosecution for breaching fishing regulations. Other Departmental officers had approximately 40 prosecutions pending. Approximately 90 per cent of the charges were for taking undersize animals. The other 10 per cent were charged with either being in excess of the bag limit, no licence or obstruction. Many letters of warning have been issued over and above these figures.

Whilst breaking any regulation is considered serious, it was noticeable that hiding animals in concealed compartments and jettisoning undersized catches on approach to road blocks is increasing. These actions are considered as obstructionary and result in heavy penalties.

In future, inspectors will be stepping up patrols of fishing sites, as evidence is coming to hand that cooking and eating of undersize animals is occurring before parties return home. Past years have indicated most poachers to be active in the Collie area; this year, however, Pemberton is achieving equal notoriety. Two particular apprehensions at Pemberton resulted in one batch of 265 undersized animals and another of 169. This type of avaricious behaviour will destroy the future of successful bags if allowed to go unchecked.

On the brighter side it was pleasing to note that some fishing parties were becoming more organized in respect to conservation by having correct gauges, equipment and attitude to Marron fishing. It was also pleasing to have the complete co-operation and help in country areas from the Road Traffic Authority and local Police.

APOLOGY

In S.W.A.N.S., Vol. 6, No. 1 on page 20 there appeared an article "Shooting and Wildfowl Conservation in Ireland". Apologies are extended to Dr Stephen Davies of the C.S.I.R.O. Wildlife Division, Helena Valley for the omission of credit to him as author of the article.

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BIOSPHERE RESERVES

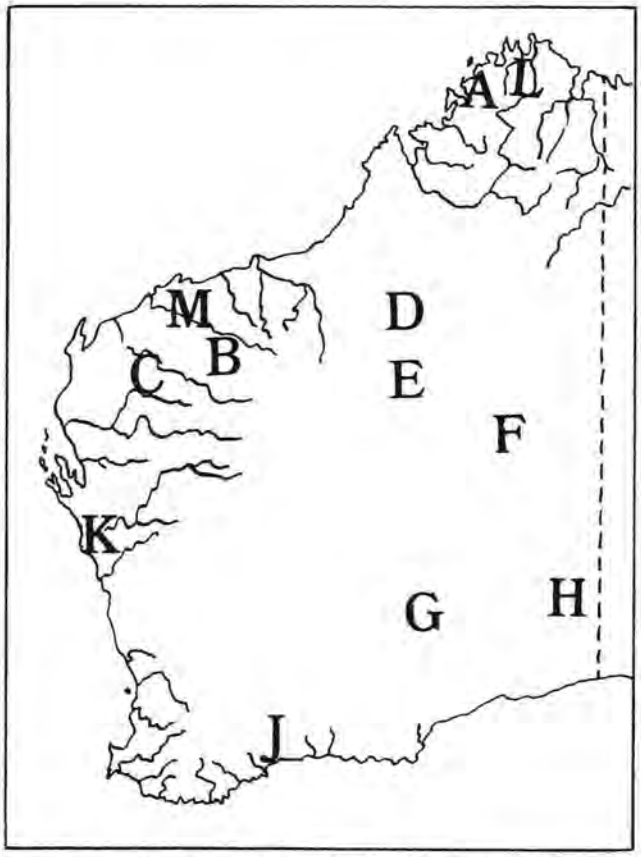
At the Council of Nature Conservation Ministers (CONCOM) Standing Committee Meeting of May 7, 1976, the question of Biosphere Reserves was discussed in relation to the UNESCO Programme called "Man and the Biosphere." Two pamphlets explaining the programme and giving criteria for identifying such areas were provided by the Australian National Commission of UNESCO and distributed to the Standing Committee.

There was agreement at the meeting that a number of significant Australian areas should be included on the list but there was general concern about how best to identify them.

In general, it appears that Biosphere reserves essentially should be self (contained) regulating, effective units containing a diversity of typical and representative ecosystems of national and international significance. The ecosystems can be either natural or extensively man modified. The Reserves should be protected and managed by a responsible Authority.

From those areas in Western Australia of outstanding importance to conservation in Australia the Department of Fisheries and Wildlife has selected fourteen which may be suitable for inclusion in the UNESCO Biosphere list.

Solea Falls, Drysdale River National Park. Note helicopter near top of the falls.



Geographic distribution as described in list hereunder.

Name	Area (ha)	Loc. No.
Prince Regent River Nature Reserve	633 830	A
Hamersley Range National Park	590 200	B
Barlee Range Nature Reserve	104 400	C
Rudall River Area*	1 216 800†	D
Lake Disappointment Area*	350 000†	E
Gibson Desert Area*	1 457 000†	F
Queen Victoria Spring Nature Reserve	272 600	G
Great Victoria Desert Nature Reserve	2 495 780	H
Nuytsland Nature Reserve Cape Arid National Park	884 090	I
Fitzgerald River National Park	242 730	J
Kalbarri National Park	186 620	K
Drysdale River National Park	424 344	L
Chichester Range National Park	150 609	M

†Areas are approximate only.

* Areas proposed as either National Parks or Nature Reserves and endorsed by Cabinet.

CORRECTION

Section 1A on page 12, S.W.A.N.S., Vol. 6 No. 1 (Our Diminishing Heritage) should be deleted.

It should read:

A. The fur of Potoroos feels soft.
The fur of Bandicoots feels harsh.

CORMORANT PREDATION ON FISH

During 1975 the Department was approached to control the increasing flocks of cormorants on the Mandurah estuary. Large numbers of birds had been noticed taking small fish, mainly cobbler, to the possible detriment of the local fishery. Complaints had also been received on fouling and tree damage.

To substantiate an immediate plan of action, a departmental officer researched various references to determine the following situation.

Cormorants feed on fish and crustaceans almost exclusively; the fish include both commercially valuable species and many of no commercial value.

The species taken by cormorants varies according to feeding habit and circumstances. Evidence presented by McNalley on the feeding habits of cormorants in Victoria indicates that birds will feed on whatever prey may be taken in quantity with the least effort.

In view of this, there are likely to be circumstances when fish of commercial value are readily available and are then eaten in large numbers. However, there is no evidence to show that any species of cormorant is a predator of significance on the marine-estuarine fisheries.

Of the five species of cormorants found in Victoria, only the Black Cormorant, *P. carbo* can be considered as a predator of any significance in relation to fresh water, estuarine and marine fisheries. The greater size of this bird allows it to attack fish of marketable size, whereas the small cormorants, when they take commercially valuable fish, take only those in the early stages of growth, when mortality from other causes is so high that the activities of these birds are relatively insignificant.

Gut samples analysed by D. L. Serventy (1937) taken from the Mandurah area, show that a large proportion of fish eaten by the Large Pied Cormorant *P. varius* and the Black Cormorant *P. carbo* were mainly young cobbler. The small numbers of birds examined for this area may have biased the results, depending on the location where these birds were taken. However, it is significant to note that in the Swan estuary the diet of the Large Pied Cormorant *P. varius* consisted mainly of Gobbleguts, Gobies and Hardyhead which are of little commercial significance. This further supports McNalley's statement concerning the adaptive feeding habits of these birds.

Cormorants have been credited with the ability to consume large quantities of fish in relation to body weight. Estimates varying from ounces (grammes) to 15 pound (6·8 kg) weight of fish have been given.

Westmore (1927) states that captive *P. auritus* were given from 3/4 to 1 pound (·45 kg) of fish per day for six days per week. Madsen and Sparck (1950) mentioned that cormorants on a daily ration of ·75 kg of fish were able to successfully breed in captivity. The maximum intake, allowing for a margin of safety at any one time was 2 pounds (·90 kg) of fish (McNalley 1957). During the day, cormorants normally make one and not more than two trips to the fishing grounds.

Feeding estimations by Junor (1972) demonstrated that the White-breasted Cormorant chicks consumed 18 per cent of their body weight per day. At the flying stage, daily intake was down to 16 per cent of their body weight. Some birds also showed tendencies of gluttony, i.e. consume 36 per cent of body weight on one day, 23 per cent on the next day following, and for the next two days refused food.

This investigation of the feeding habits of cormorants in the Perth and Mandurah estuaries has established that the birds feed on young cobbler and non commercial species of fish. However, the commercial production of cobbler in the Mandurah Fishery rose from 72 343 kg in 1971 to 105 517 kg in 1975.

There is nothing in these figures to suggest that the State needs to interfere with cormorant populations.

The Conservator of Wildlife is of the opinion that no attempt should be made to control cormorant populations either by attacks on their rookeries or on the birds themselves. These birds play a role in the ecology of the estuaries and, like most animal populations, their populations fluctuate according to natual laws including the availability of their food supplies.

1. JUNOR, F. J. R.	1972	Estimation of the daily food intake of piscivorous birds. The Ostrich V43 (4).
2. MADSEN, F. J. & R. SPARCK	1950	On the feeding habits of the Southern Cormorant (*P. carbosenensis* Shaw) in Denmark. Don Rev. of Game Biology 1 (3)
3. McNALLY, J.	1957	The feeding habits of Cormorants in Victoria Fauna Contribution No. 6, Fisheries and Game Department, Victoria.
4. SERVENTY, D. L.	1937	The Feeding Habits of Cormorants in South-Western Australia. A report prepared for the Fish and Game Society of W.A., Inc.
5. WESTMORE, A.	1924	The Amount of Food Consumed by Cormorants, Condor 29 (6).

Our Diminishing Heritage

The world distribution and evolution of parrots has availed Australia and tropical America the privilege of having the greatest number of species in the world. Because of this, the international demand for birds from these two countries is intense. In Australia one such parrot under environmental and poaching pressure is the Blue Bonnet.

There are four sub-species of Blue Bonnets, three of which are found in south-eastern Australia. They are *Psephotus haematogaster haematogaster*, *P.h. haematorrhous* and *P.h. pallescens*.

The little known, W.A. sub-species *P.h. naretha* is a smaller bird with slightly different colouring and is geographically separated from the eastern forms by 600 km of barren, waterless desert.

The Naretha Blue Bonnet has a very restricted distribution in W.A., being confined to the myall (*Acacia sowdenii*) country which fringes the western edge of the Nullarbor Plain. Narethas have been seasonally observed in the myall country south of the Nullarbor from Mundrabilla to Eucla on the W.A./S.A. border.

The Naretha Blue Bonnet differs markedly from the typical race and is best described by a full description of the male (see opposite page).

The hen is much duller with greatly reduced colours on the wings, ear-coverts and abdomen. The female is also smaller.

In its habitat of arid and semi-arid areas the bird can be observed flying low over heath, saltbush or spinifex plains. The birds generally fly quite close to the ground, rising over the higher bushes and dropping down immediately to the lower level again. A small flock of birds in flight can often be seen to part on coming to a tree, some going right, others to the left and rejoining once the tree has been by-passed.

While in flight the call is nearly always used. If alarmed, a loud *ack-ack-ack* is heard, but *P.h. naretha* is capable of a soft flute-like *cloote-cloote* when perched.

The food of Blue Bonnets consists mainly of seeds of grasses, bushes and herbaceous plants. Pieces of charcoal are also eaten, presumably to aid digestion. The seeds are procured on the ground and, as the birds usually feed under a tree or bush, an observer is not aware of their presence until they are flushed from the ground. When running over the ground the bird has a curious upright stance and appears to stretch itself to its maximum height.

(*continued on page* 50.)

(*Photo Courtesy of A. G. Wells*)

NARETHA BLUE BONNET

Psephotus haematogaster narethae

Distribution

Western edge of the Nullarbor Plain centred around Naretha siding from Zanthus in the west to east of Rawlinna on the East/West Trans Australia Railway line.

Habitat

Myall (*Acacia sowdenii*) country, arid semi-arid salt bush, blue bush and spinifex plain. Lightly timbered. Wholly depends on desert sheoaks (*Casuarina*) for nesting.

Description

Colour description of the male:—

The general colour above, including the greater portion of the head, the fore-neck and chest, pale brown, becoming a greyish-olive on the back. The rump and upper tail-coverts are a rich olive yellow. The nape, hind-neck, throat and upper breast are mottled with a light buff. The forehead and upper ear-coverts are a greenish-blue, changing to a deep purplish-blue on the lower ear-coverts, which have an edging of very pale yellow. This two-tone extensive facial colouring is markedly different from that of the typical race. The abdomen is very deep yellow with no red patch, while the flanks are washed with greyish olive. The under tail-coverts are vermillion. Greenish-blue is the colour of the lesser wing-coverts and shoulders. The outer median wing-coverts are scarlet, while olive yellow is the colour of the inner median and greater wing-coverts. The inner secondaries are also olive yellow, while the outer secondaries, primary coverts and primaries are ultramarine blue. The central tail feathers are dull olive-green washed with blue, while the secondary tail feathers are dull deep blue with white on the outer edges. Under the tail feathers is white washed with blue.

 (*Photo Courtesy of A. G. Wells*)

Length

Adult male—28·5 cm (average)

Adult female—26 cm (average)

Wing Length

Adult male—122·8 mm (average)

Adult female—112·8 mm (average)

Nest

A hollow in the trunk or limb of the desert sheoak.

Eggs

4 to 6—22 x 18 mm, white colour, rough.

Food

Seeds of grasses and other plants and shrubs.

THE SAGA OF ALFRED COVE

It is at present the off-season of conflict between residents and the endangered Swan River foreshore bird habitat at Alfred Cove.

Because the Department of Fisheries and Wildlife had seen fit to disallow the Cove to be contaminated with pesticides, the resultant increase of insect breeding caused discomfort to nearby residents and concern to the City of Melville Council.

In March a deputation to the Director of Fisheries and Wildlife resulted in a small amount of spraying being allowed in the infested sections only. This was then at a time when migratory wading birds were again leaving for their breeding grounds in Siberia and would be least affected. Unfortunately, the food chain within contaminated waters is always affected.

Solving the problem of conflict at Alfred Cove is a difficult one.

While the Department of Fisheries and Wildlife searches for biological references and tries to determine a research programme to satisfy all, the usual rash of letters to the newspapers suggest nonsense programmes and demand immediate solutions.

The Director of Fisheries and Wildlife, Mr B. K. Bowen recently had discussions with Dr Winston Bailey, Lecturer in Entomology at the University of W.A. and Mr Tony Wright of the same University's Department of Microbiology, covering the mosquito problem at Alfred Cove.

From these discussions it became evident that if a pesticide is to be used for control purposes then it would be far preferable to use Dibrom rather than either Abate or Malathion. Both the latter two chemicals have a very detrimental effect on the crustacean larvae. Although Dibrom has a higher toxicity than either of the others it has a very short life (probably less than 24 hours) and as it is oil based, it does not sink to the bottom where the crustacean larvae live. Mosquito larvae, however, as they rise to the surface, are killed very quickly.

The Town of Canning has had in the past, similar problems with insect pests and they have now developed an approved and successful technique for dispersion of Dibrom.

A fogger is used not only over wetlands but also in areas of affected dwellings where it is most efficient.

On April 9 the Department suggested to the Melville City Council that they discuss with the Canning Town Council the possibility of borrowing the equipment and perhaps receiving assistance from their operators.

Next summer the Department of Fisheries and Wildlife will finance a research programme by a post-graduate student to determine the effects that the mosquito controls were having on mosquitos and invertebrates in the area. A check would be kept on 3 to 4 indicator species of invertebrates rather than the whole range and this could lead to a better informed approach to future controls.

In the meantime, however, as previously stated in S.W.A.N.S. Vol. 6 No. 1, a rare natural habitat such as Alfred Cove must be protected from any imbalance by people unaware of the necessity to retain important areas of natural environment.

It should be expected that persons who wish to live in any low lying wetland areas must accept the immediate natural environment as one of their own choosing.

It should also be pointed out that some land developers do not consider the future residents in areas adjacent to aquatic environments and truths are often left unsaid—another case of monetary values having precedence over aesthetic values.

Alfred Cove foreshore with Perth skyline on the horizon.

Continued from page 45

Five-ringed Snake—*Demansia modesta*
Little Whip Snake—*Denisonia gouldii*
Black-naped Snake—*Vermicella bimaculata*
Black-striped Snake—*Vermicella calonota*
Allied Bandy Bandy—*Rhynchoelaps approximans*
Crowned Snake or Werr—*Denisonia coronata*
White-lipped Snake—*Denisonia coronoides*
Spotted Snake—*Denisonia punctata*
Northern White-lipped Snake—*Denisonia suta*
Red-naped Snake—*Aspidomorphus diadema*
Yellow-naped Snake—*Aspidomorphus christieanus*
Little Brown Snake—*Elapognathus minor*
Mueller's Snake—*Rhinhoplocephalus bicolor*
Bardick—*Denisonia curta*

Introduced

All species of the class Reptilia.

SCHEDULE OF UNPROTECTED FAUNA

A list of the unprotected fauna in the State of Western Australia appeared in the *Government Gazette* May 7, 1976.

WILDLIFE CONSERVATION ACT, 1950–1975

Department of Fisheries and Wildlife,
Perth, May 7, 1976

1. MAMMALS

Indigenous

Wild Dog (Dingo)—*Canis familiaris dingo*

Introduced

Black Rat (Tree or Ship Rat)—*Rattus rattus* and *Rattus alexandrinus*
Brown Rat—*Rattus norvegicus*
Mouse—*Mus musculus*
Rabbit—*Oryctolagus cuniculus*
Domestic Cat—*Felis catus* (Gone wild)
Fox—*Vulpes vulpes*
Goat—all species of the genus, *Capra* (Gone wild)
Donkey and Horse—all species of the genue, *Equus* (Gone wild)
Buffalo and Cattle—all species of the genus *Bos*, and related genera (Gone wild)
Camels—all species of the genus, *Camelus* (Gone wild)
Pig—all species of the genus, *Sus*, and related genera (Gone wild)
Palm Squirrel—*Funambulus pennanti*

2. BIRDS

Indigenous

(a) Cormorants—
Black Cormorant—*Phalacrocorax carbo*

(b) Birds of Prey—
Australian Goshawk—*Accipiter fasciatus*
Collared Sparrowhawk—*Accipiter cirrocephalus*
Wedge-Tailed Eagle—*Aquila audax*
(Protected in Shire of Kojonup)

(c) Parrots and Cockatoos—
White-tailed Black Cockatoo—*Calyptorhynchus baudinii*
Galah—*Kakatoe roseicapilla*
Red-capped (King) Parrot—*Purpureicephalus spurius*
Port Lincoln Parrot or Twenty-eight—*Barnardius zonarius*
Western Rosella—*Platycercus icterotis*
Budgergah—*Melopsittacus undulatas*

(d) Perching or Song Birds—
Western Silvereye—*Zosterops gouldi*
Australian Raven—*Corvus coronoides*
Little Crow—*Corvus bennetti*
Australian Crow—*Corvus orru*

Introduced

(a) Species of Foreign Origin which are exempted from the operations of the Vermin (Declared Birds Regulations) (other than the White Swan)
African Fire-finch—*Lagnosticta senegala*
Aurora Finch—*Pytilia phoenicoptera*
Bleeding Heart Pigeon—*Gallicolumba luzonica*
Copper Pheasant—*Syrmaticus soemmerring*
Cordon Bleu and Bluebreasted Waxbill—*Uraeginthus angolensis*
Cuban Finch—*Tiaris canora*
Domestic Canary—*Serinus canarius*
Domestic Ducks—
Muscovy—*Cairina moschata*
Mallard—*Anas platyrhynchos*
Domestic Fowl and all Bantams—*Gallus gallus*
Domestic Turkey—*Meleagris gallopavo*
Elliot's Pheasant—*Syrmaticus ellioto*
Fire-backed Pheasant—*Lophura diardi*
Golden Pheasant—*Chrysolophis pictus*
Golden-breasted Waxbill—*Amandava subflava*
Goldfinch—*Carduelis carduelis*
Guineafowl—*Numida meleagris*
Impeyan Pheasant—*Lophura impejanus*
Indian Turtle Dove—*Streptopelia chinensis*
Jacarini Finch—*Volatinia jacarina*
Lady Amherst's Pheasant—*Chrysolophus amherstiae*
Lavender Finch—*Estrilda caerulescens*
Melba Finch—*Phtilia melba*
Olive Finch—*Tiaris olivacea*
Peafowl—*Pavo cristatus*
Pigeons—*Columba livia*
Red-crested Cardinal—*Paroaria coronata*
Red-faced Parrot Finch—*Erythrura psittaccu*
Reeve's Pheasant—*Syrmaticus reevesii*
Senegal Turtle Dove—*Streptopelia senegalensis*
Silver Pheasant—*Lophura nycthemera*
Swinhoe Pheasant—*Lophura swinhoei*

(b) Birds of Australian origin not indigenous to Western Australia but now established in the wild.
Red-browed Waxbill—*Estulda temporalis*

3. REPTILES

Indigenous

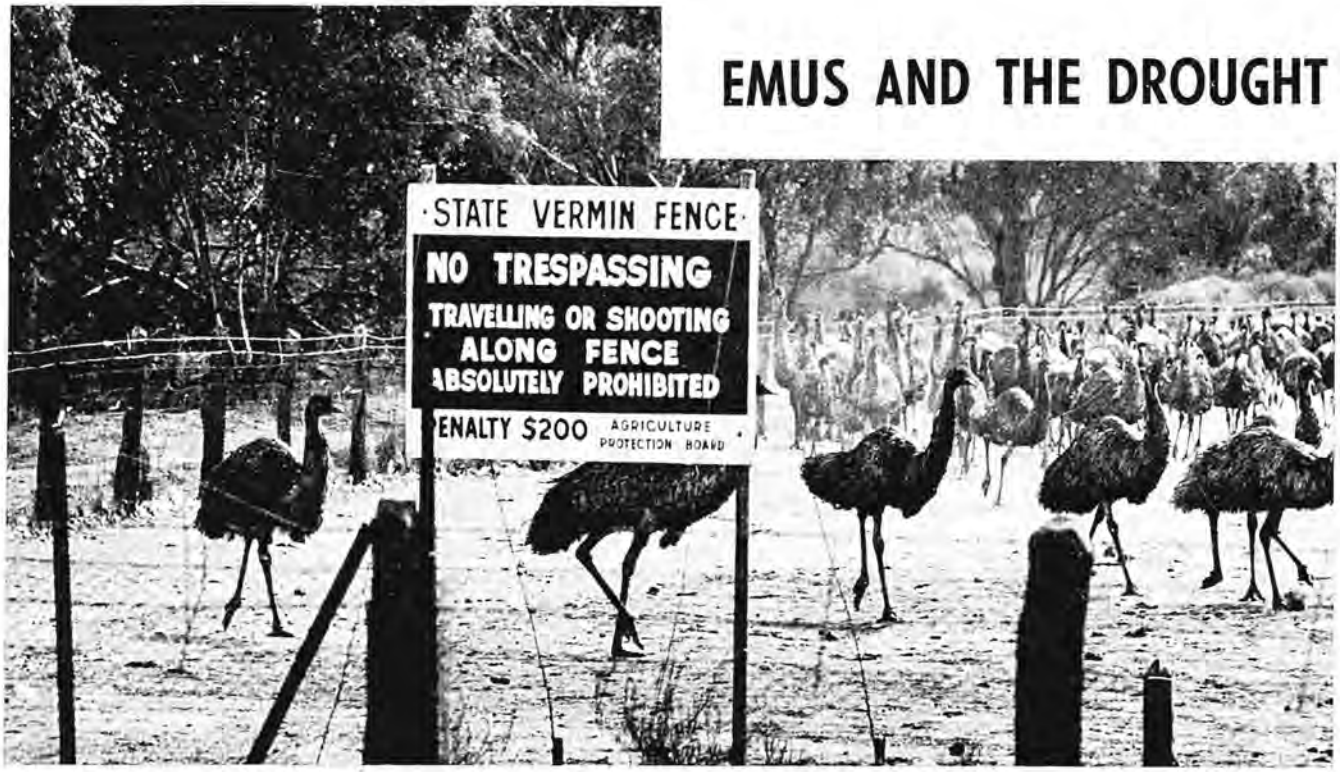
Front-fanged Snakes (Family *Elapidae*):

(a) Large Venomous Snakes—
Dugite—*Demansia nuchalis affinis*
Gwardar—*Demansia nuchalis nuchalis*
Mulga Snake—*Pseudechis australis*
Whip Snake or Wyree—*Demansia reticulata*
Spotted-headed Snake—*Demansia olivacea*
Western Tiger Snake or Norne—*Notechis scutatus occidentalis*

(b) Small Venomous Snakes—
Common Death Adder—*Acanthophis antarcticus*
Desert Death Adder—*Acanthophis pyrrhus*
Rosen's Snake—*Denisonia fasciata*
Ringed Snake—*Vermicella annulata*
Bandy Bandy—*Rhynchoelaps bertholdi bertholdi*
Northern Bandy Bandy—*Rhynchoelaps bertholdi anomalus*
Half-ringed Snake—*Brachymorphus semifasciatus*
Narrow-banded Snake—*Rhynchoelaps fasciolatus*

(*continued on page 44*)

EMUS AND THE DROUGHT



Emus saunter along the A.P.B. vermin fence without haste, following the line except for short forays into the scrub for food and water. Big concentrations of birds panic when approached and scatter into the mallees and gimlets only to regroup later and push on. When the last big drive took place in 1969, check points counted the birds for 10 hours a day. Weeks later the officers could still hear the soft thud of birds' footsteps in their sleep. This year aircraft have made the job easier.

Parts of W.A. are currently suffering the effects of severe drought. Food and water are not only in short supply to farm animals but to the State's native animals as well.

Recently, thousands of emus were shot as they migrated south in search of food and water. The birds travelled *en masse* along the Agriculture Protection Board vermin fence which was constructed to protect cereal crops from depredations by various animals.

While the Department does not support the action of some farmers it must be very worrying to see thousands of these large birds approaching one's property.

This is one of those massive natural occurrences which is impossible to control. Government officers carried out land and air patrols which revealed an estimated 14 000 birds in the Ajana district and another 20 000 moving along the fence near Southern Cross.

During periods of favourable breeding in pastoral areas, the population of emus increases very quickly and rapidly exceeds the food supplies available. The birds move south as, presumably, they did before European man settled, cleared the land, erected fences and planted cereal crops. At the request of the State Government, the Wildlife Survey Division of the CSIRO has been undertaking research into the ecology of the emu for many years, but no way of controlling these eruptions has so far been developed. What does one do when there are tens of thousands of large animals like emus in excess of what the natural environment can support?

Repeated appeals had been made to farmers not to shoot the emus which, incidentally, are not protected fauna in the area concerned. Efforts were made to move the birds away from the fences back into the bush, but if you have ever tried to drive emus, you will understand how difficult this is. There is no point in trying to feed the excess birds, as this would only aggravate the problem of over population.

Whether it is worse for the birds to die quickly from shooting, or slowly from thirst and starvation, depends on one's own rationale. Certainly, if they have to be destroyed, it should be done as painlessly as possible. At least at the present stage of our knowledge and expertise, it is preferred that the emus be turned away by the fences and take their chances of survival in their own environment.

BANDICOOTS IN SUBURBIA

A lady from the suburb of Wilson notified the Department that her young sons had been observing Bandicoots foraging for food in the front yard and patio area of their home.

Toward dusk the animals could be seen emerging from a nearby vacant lot comprising sandy soil with low shrub and sheoak trees.

One of the larger animals could be approached and hand fed, but the others were content to scurry into the garden in search of their natural diet of insect lavae, worms and spiders.

The Short-nose Bandicoot or Quenda (as it is locally called) is one of the hardiest of ground dwelling marsupials that co-habitates with man's urban sprawl. Quendas will exist in an area where their nest remains undisturbed and there is a food source, but the surrounding district is practically built out.

Frequent reports from the Darling Range foothills and outer suburbs indicate a fair presence of these animals in the metropolitan area. For those people who think they may have seen rats in their garden, it might be a good thing to check out the following.

Quendas, in their avid search for food, dig little conical holes in the ground. These are a familiar feature of bushland, and in some cases, suburban gardens. The Quenda's nest is a flattened heap of sticks and debris which is extremely well concealed in vegetation. There is no entrance and the animal simply burrows into the nest and then conceals its entrance; similarly, it burrows out of its nest, covering up the exit. During very hot weather in south-western Australia the animals have been known to construct burrows in sandy soil.

Quendas are entirely nocturnal and are seldom seen during the day unless flushed from their nests. Adults are about the size of a rabbit.

With these rarer native animals frequenting isolated pockets of urban land, local Governments should give more thought to having sections of natural bush and stands of timber in their public open spaces. A complex designed similar to a golf course, would seem to have more success than the usual square of barren, sterile lawn.

The Quenda (*Isoodon obesulus*).

WINTER TROUT FISHING

This year, no closed-season has applied to the taking of trout in a number of south-west irrigation dams during the winter months.

This is for a trial period only and future winter openings will be reviewed in the light of this year's experience.

Representation was made to the Minister for Fisheries and Wildlife by the Western Australian Trout and Freshwater Angling Association to have the irrigation dams left open to trout fishing throughout the year. Trout do not breed in the dam waters and generally summer fishing is not very rewarding in the warmer, shallow waters around the dams.

Waroona Dam is fed by a successful spawning creek and, while most of the dam is open to fishing, no trout can be taken within a radius of 200 metres of the mouth of Whiskey Creek. The other dams which remained open were Drakesbrook, Samson, Logue Brook, Stirling and Harvey Weir.

Trout anglers are considered to be a responsible group of fishermen and, all played the game by continuing to adhere to minimum legal size, bag limits and methods of catching.

The usual closed season from May 1 to August 31 still applied to all other inland waters and streams, as it was necessary to ensure that trout were not taken or disturbed in waters normally used for spawning.

ELUSIVE KOONAC

During August, the Harvey Shire Council grader was levelling the crown of a well used gravel road between Harvey and the coast.

Hon. Wildlife Officer R. Coughran was following the machine, clearing small boulders which the grader blade had dragged to the surface. One such boulder had uncovered a healthy Koonac (approximately 14 cms in length) which had apparently dug itself into the hard clay alongside the rock in the centre of the road.

Koonacs (a species of Freshwater Crayfish), are similar to Marron but generally smaller and more rare. They are identified by four ill-defined keels on the back of the head plus a mat of fine hairs contained on the upper surface of the hand. There are no central spines on the surface of the telson (tail fan). Koonacs are found in the inland headwaters of rivers and in swamps which habitually dry up. They appear to be capable of surviving for several years under drought conditions by burrowing.

This fellow was no exception, but in the meantime he must have led a charmed life.

DECLARATION AND AMENDMENT OF RESERVES

CHANGE OF PURPOSE

Name	Reserve No.	Locality	Plan	Area	Previous Purpose	New Purpose	Vesting	Gazetted
	24589	Approx. 12 km south of Cinocup townsite	418/80	Approx. 1 944 ha	Cons. of Flora & Fauna	Cons. of	W.A.W.A.	29/6/75
Malcolm Dam	8946	Approx. 8 km east of Leonora	43/300		Water Supply & Pipe Track	Water & Cons. of Flora & Fauna	Min. for W.S.S.D.	12/12/75
	27354	Approx. 48 km north-east of Esperance	424/80	215 ha	Townsite	Cons. of Flora & Fauna	W.A.W.A.	23/1/76
	9219	Next to Nyabing townsite	408/80 & 417/80	Approx. 68 ha	Water & Public Utility	Water & Cons. of Flora & Fauna	Min. for W.S.S.D.	19/3/76
	14522	12 km south west of Nyabing	417/80 D1	Approx. 338 ha	Water Supply	Water & Cons. of Flora & Fauna	Min. for W.S.S.D.	19/3/76
	10129	Approx. 22 km north-east of Ongerup	418/80	Approx. 2 500 ha	Water Supply	Water & Cons. of Flora & Fauna	Min. for W.S.S.D.	11/5/76
	23128	Next to Hyden town-site	345 & 346/80		Rec. & Cons. of Flora & Fauna	Rec. & Cons. of Flora	Shire of Kondinin	19/3/76
	20046	Approx. 32 km south west of Lake Grace Townsite	407/80	390·5 ha	Timber	Cons. of Flora & Fauna	W.A.W.A.	14/5/76
	13145	Approx. 3 km east of Woodanilling	416/80	133·6 ha	Rifle Range	Cons. of Flora & Fauna	....	12/3/76

AMENDMENT OF AREA

Name	Reserve No.	Locality	Plan	Previous Area	New Area	Gazetted
	33113	East Of Salmon Gums	392/80		8 859 ha	5/9/75
Quarram	33842	Irwin Inlet	452D/40, 456D/40	3 239 ha	3 825 ha	6/2/76
	27354	East of Esperance	424/80	304 ha	215 ha	23/1/76
	18952	Approx. 26 km south east of Popan-yinning	378/80	247·262 ha	247·952 ha	5/3/76

VESTING

Name	Reserve No.	Locality	Plan	Area	Purpose	Previous Vesting	New Vesting	Gazetted
	24589	Approx. 12 km south of Chinocup townsite	418/80	approx. 1 944 ha	Cons. of Flora & Fauna		W.A.W.A.	29/6/75
	33842	Irwin Inlet	452D/40 456A/40	3 825 ha	Cons. of Flora & Fauna		W.A.W.A.	6/2/76
	24472	Approx. 12 km west of Cookernup	383/80	40 ha	Cons. of Flora & Fauna		W.A.W.A.	6/2/76
	27354	Approx 48 km North-east of Esperance	424/80	215 ha	Cons. of Flora & Fauna		W.A.W.A.	23/1/76
Boodalan Is.	33749	Peel Inlet	380A/60	1·5 ha	Rec. & Cons. of Fauna		W.A.W.A. Murray Shire	28/11/75
	A23756	Harvey Estuary	380/80 383/80	990 ha	Cons. of Flora & Fauna		W.A.W.A.	11/7/75
	33854	1 km North of Burakin	65/80		Cons. of Flora & Fauna		W.A.W.A.	6/2/76
Mokine	31211	Approx. 4 km south of Mokine	2/80 2A/40 C3		Cons. of Flora & Fauna	Not vested	W.A.W.A.	23/1/76
Binarocka	32552	Approx. 8 km North of Higginsville	10/80 & 19/80	185·988 ha	Cons. of Flora & Fauna	Not Vested	W.A.W.A.	14/2/75
	21253A	Next to Hyden townsite	345/80 & 346/80	3 328 ha	Cons. of Flora & Fauna		W.A.W.A.	19/3/76
Three Swamps Reserve	26162	Approx. 32 km south-east of Tambellup	436/40 D4		Cons. of Flora & Fauna		W.A.W.A.	15/4/76
Jebarjup Lake	26160	Approx. 25 km east of Cranbrook	445/80 CDI		Cons. of Flora & Fauna		W.A.W.A.	15/4/76
	25812	Approx. 25 km east of Cranbrook	445/80 CI		Cons. of Flora & Fauna		W.A.W.A.	15/4/76
	33300	Approx. 8 km West of Kambalda	40/80	Approx. 3 683 ha	Cons. of Flora & Fauna		W.A.W.A.	28/5/76
	20046	Approx. 32 km south-east of Lake Grace townsite	407/80	390·5 ha	Cons. of Flora & Fauna	Not Vested	W.A.W.A.	14/5/76

NEW RESERVES

Name	Reserve No.	Locality	Plan	Area	Previous Purpose	New Purpose	Vesting	Gazetted
Boodalan Is.	33749	Mandurah Estuary	380A/40	1·5 ha		Rec. & Cons. of Fauna	Murray Shire W.A.W.A.	28/11/75
	33854	Approx. 2 km North of Burakin	65·80			Cons. of Flora & Fauna	W.A.W.A.	6/2/76
Low Rocks	33832	Admiralty Gulf	250·76	4·032 3 ha		Cons. of Flora & Fauna	W.A.W.A.	23/1/76
Great Sandy Is.	33831		111/300	25·806 ha		Cons. of Flora & Fauna	W.A.W.A.	23/1/76
Serrurier Is.	33834		95/300	350·967 ha		Cons. of Flora & Fauna	W.A.W.A.	23/1/76

NEW RESERVES—continued

Bedout Is.....	33811		114/300	30·711 6 ha		Cons. of Flora & Fauna	W.A.W.A.	31/12/75
Fortescue Is.	33830		111/300	45·419 ha		Cons. of Flora & Fauna	W.A.W.A.	23/1/76
Friday Is.	33829		57/300	8 195 sq. m		Cons. of Flora & Fauna	W.A.W.A.	23/1/76
Charlies Is.	33828		57/300			Cons. of Flora & Fauna	W.A.W.A.	23/1/76
North East Regnard Is.	33903		111/300	Approx. 42 ha		Cons. of Flora & Fauna	W.A.W.A.	5/3/76
Lowendal Is.	33902		111/300	Approx. 245 ha		Cons. of Flora & Fauna	W.A.W.A.	5/3/76
Koks Is.	33901		Quobba 1:250 000	Approx. 2½ ha		Cons. of Flora & Fauna	W.A.W.A.	5/3/76
Wogerlin Hill	34000	16 km north of Corrigin	344/80	Approx. 95 ha		Cons. of Flora & Fauna	Min. for Works & Water Supply	14/5/76

(Cont. from Page 42)

The Naretha Blue Bonnet has a preference for certain trees within its range and the ecological factor is so strong that one can foretell the occurrence of the birds merely by the vegetation. The Acacias (*A. sowdenii* and *A. aneura*) are dominant trees in its habitat while the single species of Casuarina (*C. cristata*) are quite rare. Although only occurring in scattered pockets *C. cristata* is relied on by Naretha Parrots as the only source of nesting hollows.

During the heat of the day Naretha Blue Bonnet is unlike most other broad-tailed parrots in that it is exceedingly quiet while roosting.

When they are disturbed in this position they call excitedly and raise the feathers on their foreheads and crowns while the wings are raised in the folded position. This is a most interesting sight as the plumage is very impressive.

Sexing of Blue Bonnets in the field is most difficult at a distance but at close range the female is seen to be smaller, more slender and duller in colour than the male.

The activity of the birds increases with the beginning of the breeding season in August. Males rigorously display themselves in a very upright position before their mates. The wings are raised and vibrated in a folded position with the head held upright and bobbed forward, while the tail is spread and moved quickly from side to side. The striking feature of the display is the raising of the impressive forehead and crown feathers.

The nesting site, which is usually in a hollow tree trunk or limb, is selected by both sexes. The disadvantage of a small entrance hole close to the ground is usually counter-balanced by the great depth of the nesting hollow at the end of the chamber. Usually 5 eggs are deposited in the decayed wood dust and the female sits very tightly for the 22 days incubation period.

The eggs of the Naretha parrot are pure white and round and have a dull surface. They are laid at 48 hour intervals with incubation commencing on the arrival of the second egg. Only the hen incubates and is fed during the 3 week period by her mate. The newly hatched naked nestlings are closely brooded by the female and fed by her on regurgitated food.

The young leave the nest after approximately 4 weeks and are fed by their parents until they are independant.

The small groups seen by observers are often the family group which stays together for quite some time.

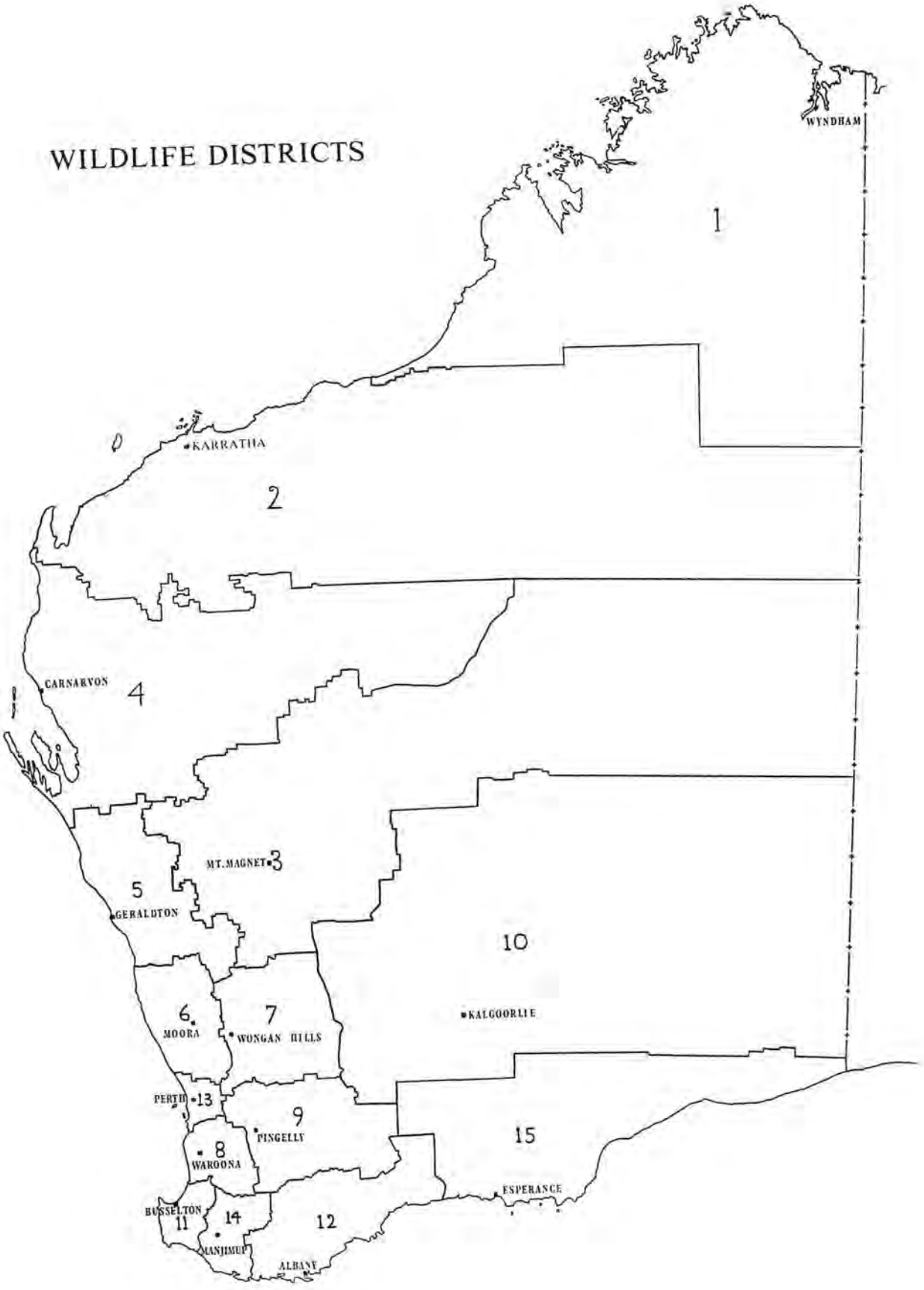
While the Naretha Blue Bonnet is not considered to be in immediate danger of extinction, any ecological imbalance to the habitat would be catastrophic. Climatic or man-made destruction of the vital limited vegetation would certainly mean the loss of the species.

Last summer Wildlife Officers and property owners detected the ransacking of nest sites by poachers in search of nestlings. The cutting down of nest trees is considered by the Department of Fisheries and Wildlife to be a criminal act. Not only is the habitat reduced but all future possible generations in that nesting site are lost.

The Naretha Blue Bonnet is completely protected and is also included on the Rare and Endangered species list. Molesting them will result in a $1 000 fine.

Warning is given by the Conservator of Wildlife that field staff and property owners this season, will be on constant alert to intercept bird traffickers.

WILDLIFE DISTRICTS



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