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HOUSE OF REPRESENTATIVES SELECT COMMITTEE ON WILDLIFE CONSERVATION

Precis of Discussions Held During Field Visits in Western Australia

Rottnest Island	Friday, 5 February 1971
Perth - Albany	Saturday, 6 February 1971
Albany - Two Peoples Bay	Sunday, 7 February 1971
Denmark - Perth	Monday, 8 February 1971
Perth - Pingelly	Tuesday, 9 February 1971

Members

Mr Fox (Chairman)

Mr Bonnett

Mr Calder

Mr Collard

Dr Jenkins

Mr MacKellar

Mr Sherry

(The following is a precis of an address given by Dr A.R. MAIN on the occasion of the visit by the House of Representatives Select Committee on Wildlife Conservation to Rottnest Island.)

Dr MAIN explained to the Select Committee that, before it visited places of interest on Rottnest Island, it was his intention to inform the Committee of certain matters of which he thought it should be appraised in relation to the quokka.

He explained that work started in the early 1950s when Rottnest Island was looked at from the point of view of an accessible marsupial study area. Initial work was done on reproduction. This was the first study of the reproduction of marsupials on the island. The idea then was to develop techniques and to work the area in the sense of studying only the physiology of reproduction. The estimation was that as the animals were abundant on Rottnest Island a picture and a full appreciation of the study would be relatively simple.

In the summer of 1954 it was decided that, as a good deal was known about the reproduction of the animal, the study would move into the field of population. It was decided to attempt to estimate the population of the animals on Rottnest Island. Work started using the classic method of a little box trap in order to try to trap the animals. This never worked. It was determined that something more ambitious should be attempted. The quokkas had been observed coming in to the seep. At the time it was thought that, as so many were coming in,

the quokkas must have been coming from a long way away. Attempts were made to tag the animal and in fact the animal was tagged successfully. The tagging would enable those carrying out the work to determine how far back these animals moved.

In the summer, when tagging work commenced, a large scale observation of the quokka population in certain areas was carried out. When the quokkas were chased and caught it was found that the animals would fall back, arch their backs, and flex their necks. The animals died in this rigid situation. It could be said that, at that stage, when an animal was tagged it would almost surely die. Immediately after this period, a very bad fire raged through the island. The course being pursued at that time could not be continued. The position to be faced was that as well as fire being the enemy of the animal, the threat of fear was also quite serious.

Dr MAIN drew the attention of the Committee to areas outside the exclosures which had been erected in different parts of the island. The vegetation was mainly heath. Dr MAIN continued by explaining in some detail the history of the development of the vegetation on the island. Earliest records of the vegetation on what now constitutes Rottnest Island showed that it came from fossil pollen and megascopic remains in the swamp sediments and dunes of the late Pleistocene age. Over a period of many years the vegetation had deteriorated on Rottnest Island. As the area was geologically fairly stable, the

extrapolation was, on all the facts available, that at some stage many thousands of years before, Rottnest Island had been connected to the mainland.

The inquiries were 2-pronged. One prong of concern was that when the animals were handled they died. The other was that fire was a very definite problem. A study of the vegetation on the island disclosed that the quokkas had been there for so long and had been grazing so intensely on certain areas that re-generation of some of the more palatable plants did not occur. Action was taken to locate at random throughout the barren burnt areas of the island exclosures. The result of this action was quite spectacular. It showed that the quokkas, in fact, were regulating the growth of the plants. Re-generation of plants occurred very noticeably in the exclosures.

Steps were taken to establish the nutritional requirements of the quokkas. A study of the plants growing inside the exclosures, and a comparison of them with the vegetation outside the exclosures, made it clear that the quokkas were grazing on the plants which were of high nutritional and high protein value. It was equally clear that the animals were grazing preferentially on a higher quality diet. Those carrying out the study were beginning to establish some of the requirements of the quokka diet.

The next thing that was done was to move around the island at night, by land rover, to the fringe areas where

the animals came out to feed. The quokkas could be captured by the use of an ordinary crab-net. When the animals were caught, samples of their blood was drawn. Every clinical test that could be applied to the analysis of the blood was carried out. The studies related, in particular, to haemoglobin and sedimentation rates. It was found that in spring and early summer, the quokkas were in a relatively healthy condition. Their body weight was up. The haemoglobin - the red cell count - was up. No indication was present of any abnormality or sickness. In February, the haemoglobin content or rate began to fall. By the end of May, a pronounced anaemia was present. Also, the animals had lost a quarter of their body weight. The picture disclosed was that on Rottnest Island ruminants had a cobalt deficiency. The anaemia could have been induced by cobalt deficiency. However, Dr MAIN pointed out, the need for cobalt in ruminants was indirect and cobalt deficiency was in fact a deficiency of Vitamin B_{12}. The deficiency was not to be found in this quarter. The general picture showed that the anaemia was a protein deficiency anaemia marked by massive body weight loss. A study was made of the droppings of these animals. These droppings were passed intact. Students, who undoubtedly could be described as the slave labour of universities, set to work on these and a study of them disclosed what had been shown earlier - that was that high protein plants were being preferentially eaten. It was possible to

calculate the materials, the volumes and so on that the quokkas had eaten. In this respect Dr MAIN referred the Committee to page 164 of the publication: 'Rottnest Island: The Rottnest Biological Station and Recent Scientific Research' which had been distributed to the Committee by Dr MAIN. He explained in some detail the eating habits of the animal and its protein absorption characteristics. In the summer the animals could not find a diet sufficiently rich in protein to meet their needs.

A number of quokkas had been kept in yards or in compounds. When these animals were shocked or when a sudden cold change occurred, the muscles of the animals wasted and the animals died in exactly the same way as the quokkas had been observed to die after they had been tagged earlier. The discovery was then made that this was caused by a deficiency of Vitamin E in the diet available in the compound or yard. During the long summer the plants had not produced Vitamin E which the animals required and the animals, over a long summer, had the problem of being unable to meet their nutritional needs, and further, were unable to meet their Vitamin E needs. This led to muscle wastage, a complete mimicry of human muscle distrophy. By massive doses of Vitamin E, it was possible to cure this disease. The quokka is now being used as a clinical animal for experiments in muscular distrophy in humans.

Dr MAIN pointed out that 2 study areas had been selected on Rottnest Island. One comprised the whole of the west end of the island. This was an area of some

500 acres joined to the main island by a narrow isthmus. He stated that the other area was located adjacent to Lakes Bagdad and Pink. Its total area was about 300 acres. No free fresh water was contained in the west end study area. Presumably the animals satisfied their water requirements from that contained in their food. The Lake Bagdad study area had an ample water supply all the year round, as a number of seepages around the periphery of the salt lakes flowed both summer and winter. Hookworm was also a problem experienced with the quokkas. However, it was found that it was not parasites causing the problem; the problem had a nutritional cause root.

Dr MAIN then explained in great detail of the methods by which the population was estimated. He explained the mixing of the animals, which resulted sometimes in 10 animals previously tagged in a sample of 100 being collected in the next sample of 100 taken. However, some of the quokkas, particularly at West End, did not mix. It was estimated that in the West End area numerous quokkas did not move more than 50 yards from the area in which they were initially tagged.

Replying to a question by the CHAIRMAN, Dr MAIN explained the reason why the quokkas died after they had been handled. He stated this was a straight-out shock reaction. Handling causing shock, or a sudden cold change, as he had mentioned previously, would bring on such a muscular spasm. With the Vitamin E deficiency, the handling of the quokkas was killing them. What happened

in the yards was mimicked in the field. Given massive doses of Vitamin E, no trouble arose. A double-barrelled nutritional problem existed and on top of this was the question in relation to water and water consumption.

Mr RIGGERT explained in great detail to the Committee the work which he was carrying out in his investigations of the waterfowl.

(The Committee then inspected areas of interest and the Research Station on the island).

On arrival at West End, the Committee was shown the type of card on which information was recorded concerning the quokka. Calculations punched on to these cards were processed by computer. The cards gave records of where an animal was caught. The whole of the West End area was gridded on these cards and it was possible to determine movement of animals from various observations and processing. Animals caught in specific areas at West End would turn up again and again in the same place. The maximum number of recaptures of one animal in the same area was 32. This animal turns up all the time in the same area. Dr MAIN then explained in some detail, differences between male and female quokkas and motivation for the female, in particular, to leave one area and choose a new area. The young of the quokka were born in February. If a female quokka lost her joey in the January to June period of the year, the chances were that she would move and rear another joey in another place. In other words, in a bad time of the year when a quokka lost its joey -

and the joey would be lost simply because the female quokka was in such bad condition - that quokka would then move. Areas in which a high proportion of joeys survived were areas in which quokka populations remained fairly constant, whereas areas in which joeys were lost were areas from which female quokkas moved. The tendency to move was greatest at this time of the year and in the areas to which the attention of the Committee was directed. The behavioural patterns of animals in different areas was outlined too to the Committee. Two patterns evolved - areas of relatively constant population, with animals continually resident, and areas from which animals moved. Directing the attention of the Committee to the West End area, Dr MAIN pointed out that superficially the habitat area was one in which little contrast could be discerned. It was pretty terrible scrub area, yet studies in this area had led to an insight into the picture of the requirements of mainland populations of wallabies and kangaroos. Rottnest Island was a place at which to obtain ideas but not specific interpretations for requirements on the mainland.

(The Committee completed its tour of Rottnest Island and returned to Perth.)

HOUSE OF REPRESENTATIVES SELECT COMMITTEE ON WILDLIFE CONSERVATION

PRECIS OF ADDRESSES

(Taken at Perth - Albany)

SATURDAY, 6 FEBRUARY 1971

Members

Mr Fox (Chairman)

Mr Bonnett
Mr Calder
Mr Collard
Mr Jenkins
Mr MacKellar
Mr Sherry

(The following is a precis of addresses delivered to the Committee during its journey from Perth to Albany).

At the Dryandra Forest the Committee inspected the Mallee fowl's nest after having had shown to it on the journey to this area the various species of flora endemic to the area. Dr BURBIDGE explained certain details about the numbat found in the Dryandra Forest. It was one of the few marsupials which came out during the daylight hours. He explained the interesting relationship between the numbat and the termite. The numbat lived in hollow logs under the ground, in holes dug by termites and its diet was termites. His belief was that the numbat was adequately protected by present reserves. He outlined in detail the physical characteristics of the numbat.

Dr RIDE in dealing with the Dryandra Forest explained that it was an area which had been the subject of very considerable controversy. An agreement had been entered into between the State Government and 2 major mining companies - Alwest and BHP. The Dryandra State Forest together with another major reserve, namely, the Boyagin State Forest to the north of Dryandra were included in the area in which Alwest and BHP were given exclusive rights to mine bauxite by open-cut methods. This action produced an immediate outcry. The result was that the companies concerned voluntarily gave an undertaking that they would not mine in either of those reserves. This was a very satisfactory solution, in view of the present state of mining legislation in Western Australia, because

it meant that the areas would be well protected if these 2 companies did not break their pledge and carried out their mining activities in other parts of the area allocated to them. The companies had given their undertaking and as they were large and responsible companies the expectation was that they would honour this undertaking.

Dr RIDE indicated that the Dryandra State Forest was of considerable importance because apart from containing such animals as the numbat, it was peripheral to the area mentioned by Dr BURBIDGE in evidence in Perth - that is, the wheat belt area. This area contained very few reserves because, in a conservation sense, attempts were made too late. The Dryandra State Forest contained a major sample of wheat belt fauna. The diversity of such fauna and flora in Dryandra was remarkable. The Dryandra State Forest being open and arid contained a number of species different from those to be found in more restricted forms of habitat in jarrah forests and karri forests where a smaller number of species of different types were found.

Dr RIDE enumerated the species of fauna found in the Dryandra State Forest. He mentioned first the grey kangaroos. He referred next to the brush wallaby. This wallaby was not found in eastern Australia although a close relation of it was found in South Australia. It had pronounced characteristic markings and was a lovely animal. The tammar also was found in the forest. It was a small wallaby, but bigger than the quokka. The number of

these animals on the mainland was becoming much more restricted but it was found on a number of off-shore islands in Western Australia. The closest location of it to the metropolitan area was Garden Island which was to be developed as part of the naval facility which was to be established at Cockburn Sound. He believed pressure had come from conservationists and naturalists who sought a reserve on Garden Island for the purpose of protecting the tammar. What would happen in the present situation was unclear. The hope was that the Navy would decide to establish an ammunition facility on the island, thus excluding members of the public from the area. Other animals included the bettong or wallaby. Formerly, the wallaby species, western nail-tail wallaby occurred in this type of country but it was one of the animals which seemed to have disappeared completely from the area. The only recent record of it was the remains of an animal discovered in central Australia. This animal seemed to have been killed by a fox. This species was one of the most endangered or least safe in Western Australia in the mammals category. He mentioned also the striped bandicoot which, again, had not been seen for some considerable time. He referred again to the numbat. He mentioned also the short tailed bandicoot which occurs in swamp and thickly forested areas. The brush-tailed possum also was found in the Dryandra Forest. Dr RIDE intimated that he could continue at length and enumerate species of mammals as the list was extremely diverse. This was one of the reasons

why conservationists and naturalists were very keen to keep the Dryandra Forest area inviolate.

One of the problems as has been pointed out by Mr STEWART, was that the commercial value of the area as forest country had been becoming progressively reduced over the years. Arrangements had been entered into between the departments responsible for forest and fauna so that when land no longer was required for foresty purposes it was converted to land used for conservation purposes. The Department of Fauna and Fisheries then was actively engaged in areas which formerly were controlled by the Department of Forests.

He explained in depth the lack of understanding of the reason for the extinction of certain species from areas which had not been cultivated. Another problem with relation to the extinction of certain species was that those investigating these species did not know what could be described as 'unsafe' or what could be described as 'safe'. Actually this was a meaningless approach when local populations of animals were being considered. Dealing with specific species, it might be said that a certain animal was safe, was well catered for and showed no signs of extinction. However, for the purposes of scientists and conservationists who wished to see animals at certain places it could be said that those animals were no longer in those places. He referred to the Committee's attention a publication entitled 'Guide to Native Mammals of Australia' of which he was the author. Dr RIDE drew

particular attention to chapter 2 of this publication.

Specifically in relation to the Sterling Range, the Committee was informed that the area had been set aside as a national park because of the wildflowers found there, most of which were endemic to the area. In particular, mountain bells were synonomous with the Sterling Range. Serious problems affecting the Sterling Range were fire and water. The difficulty with the first was its control whilst the obtaining of the second was a serious problem.

(During the remainder of its journey to Albany the Committee had explained to it in detail matters of historical and conservation interest pertaining to the areas through which the Committee travelled.)

PROOF

HOUSE OF REPRESENTATIVES SELECT COMMITTEE ON WILDLIFE CONSERVATION

PRECIS OF ADDRESSES

(Taken at Albany - Two Peoples Bay)

SUNDAY, 7 FEBRUARY 1971

Members

Mr Fox (Chairman)

Mr Bonnett	Mr Jenkins
Mr Calder	Mr MacKellar
Mr Collard	Mr Sherry

(The following is a precis of addresses delivered to the Committee during its journey from Albany to Two Peoples Bay.)

Dr BURBIDGE informed the Committee that the noisy scrub-bird, previously thought to be extinct, was discovered on what now constitutes the Two Peoples Bay reserve by the local headmaster in 1961 while he was searching for another species. The area which now constitutes the reserve was formerly Crown land and land set aside for defence purposes. The bird has the ability to mimic other birds although this ability is not developed to the extent of that found in the lyre bird.

The town site of Campbelltown was to be established near the reserve. This would have meant the virtual extinction of the species. However, due to the work of conservationists and naturalists and the Duke of Edinburgh who added his voice to the cause of the noisy scrub-bird, the siting of the town in this location was abandoned.

In 1964 the Division of Wildlife Research of the CSIRO moved its exotic division to Perth and started to study the song of the noisy scrub-bird. This work has now been taken over by Dr SMITH who is studying the ecology of the bird as well as its song. Dr BURBIDGE explained to the Committee that the first consideration of establishing a reserve such as the one at Two Peoples Bay was the conservation of the fauna. It is intended that part of the Two Peoples Bay reserve will be soon opened to the public. However, part of the reserve will be closed to the

public and used as a CSIRO research station to study the noisy scrub-bird. Other birds to be found in the reserve include the western whip bird and the southern emu bird. Mammals to be found on the reserve include the grey kangaroo, the quokka, the ring tailed possum, the brush tailed possum, the yellow footed marsupial mouse and bush rats.

Noisy Scrub-bird

(At Two Peoples Bay, the Committee met a number of officers, including Dr SMITH of the Commonwealth Scientific and Industrial Research Organisation who explained to them a short history on the discovery of the noisy scrub-bird in the Two Peoples Bay area.)

Dr SMITH explained to the Committee that the noisy scrub-bird was discovered first on 3 November 1842. Another sighting of the bird occurred in October of 1889. This was the occasion when the last bird was collected for a long period. In fact, the noisy scrub-bird was not again sighted until 1961.

The original discovery of the noisy scrub-bird was made in the flat area of the Two Peoples Bay district near the coast. During the investigations by the team at present on the site it had been established that the noisy scrub-bird was fairly well distributed in the whole area. Until the rediscovery of the bird in 1961, little or nothing was known of it.

Dr SMITH outlined the physical characteristics and habits of the bird. The noisy scrub-bird was a small bird about 9 inches long. Its colouring was dull brown on top and white underneath. He indicated to members of the Committee the gullies in which the noisy scrub-bird was to be found. The bird was territorial. Very little work had been done so far to establish biological material on the bird. It was known that it was a winter breeder. Breeding occurred in June. It could breed again in late September.

A very interesting correlation existed between the song output of the bird and breeding. Mr Robinson who had been studying the song in the last 3 years had found that although the bird issued its calls throughout the year a marked increase in calling occurred between April and June culminating in the laying of the first egg. A second peak in calling occurred later in September. This again correlated with the laying of the second egg when a second egg was in fact laid. The laying of a second egg in a year occurred if the first breeding was a failure. It was not known whether the bird could lay 2 eggs in one year. The noisy scrub-bird was a single egg clutch species. It could be that a good season was required for the laying of 2 eggs. This was a matter which would be investigated further.

Dr SMITH then outlined to members of the Committee details of the construction of the bird's nest and its nesting habits. Later in the morning, the Committee inspected the area in which the noisy scrub-bird was to be found and was shown the nest of a noisy scrub-bird. Dr SMITH explained that in 1969 correlation was observed between the changes in the ground water level and nest laying. When the water reached the surface, the bird started to build. When the water receded again the female stopped building.

No information was available as to the feeding habits or food requirements of the noisy scrub-bird. This was as far as investigations had gone. Most studies had been carried out on a detailed analysis of the song of the noisy scrub-bird. Dr SMITH explained that his job would be to study the ecology

of the bird. His work would be starting during the current year. He would have a look at its food, its general biology and analyse its habitat. The belief of he and his colleagues was that when this work had been done they would have a fairly good idea of what the noisy scrub-bird needed to survive. When this information was ascertained, some sort of management plan could be formulated to ensure that the noisy scrub bird did not become extinct.

At the moment in the area of Two Peoples Bay a maximum of 60 breeding birds were to be found. He indicated the area in which these birds were resident. They did not occur to his knowledge down on the flat. In indicating the area in which the study would be carried out Dr SMITH highlighted the difficulties that would be involved in the study. Breeding was triggered off by rain affecting food and other factors which were unknown at this time. More detailed information was expected to be available in a couple of years.

Replying to questions from members of the Select Committee, Dr SMITH stated that the life-span of the noisy scrub-bird was 7 years or 8 years. No attempt had been made to catch and band the noisy scrub-bird.

Dr BURBIDGE stated that a drive had been organised as a result of which a bird had been captured. The process involved in capturing the bird was detailed. It was a difficult and most unsatisfactory method. The bird that was flushed out was photographed.

Dr SMITH mentioned also the western whip bird which was a rare bird found only in the Two Peoples Bay reserve and

north of Albany. The brussel bird, a rare species also, was found in the area.

(Having completed its inspection of the Two Peoples Bay area, the Committee returned to Albury. In the afternoon, the Committee proceeded to Denmark).

PROOF

HOUSE OF REPRESENTATIVES SELECT COMMITTEE ON WILDLIFE CONSERVATION

PRECIS OF ADDRESSES

(Taken at Denmark - Perth)

MONDAY, 8 FEBRUARY 1971

Members

Mr Fox (Chairman)

Mr Bonnett
Mr Calder
Mr Collard
Mr Jenkins
Mr MacKellar
Mr Sherry

(The following are precis of addresses given to the Committee)

(The following are precis of addresses given to the Committee during the course of its journey from Denmark, WA to Perth)

(The Committee journeyed through Karri and Jarrah forests and had explained to it relevant features of those forests.)

Mr STEWART pointed out to the Committee that all saw millers were licensed. Areas to be cut by the individual millers were allocated by the Department of Forests. The trees to be cut within these areas were marked by departmental officers. The millers were permitted to cut only marked trees. Mr STEWART pointed out that heavy fines, including loss of licence, could be incurred by a miller who cut down unmarked trees.

Dr BURBIDGE drew attention to the problem experienced with inlets in that people in towns around these inlets would like to see the inlets dredged to enable larger boats to proceed up rivers and for more boat traffic to use the waters. However, such action would have drastic results on wading birds and other fauna.

One of the disadvantages of establishing a national park near a town was the disposal of rubbish. The only way in which rubbish could be disposed of was through the area of the national park. This caused a serious fire hazard and was quite unsightly in a national park area.

Responding to a question by the CHAIRMAN, Dr BURBIDGE stated that Western Australia had pioneered controlled

burning by air ignition and this practice was now used in several Australian States.

Dr BURBIDGE stated that approximately 350,000 acres of karri forest was established in the area under consideration. Belts of pure karri rarely exceeded a few thousand acres in any one batch.

The Forest Act was policed strictly in regard to taking of timber. Trees which were not to be taken were clearly marked not for removal and if these trees were removed those responsible for their removal were prosecuted. Magistrates had been very strong in enforcing this law. The possibility that a person or a firm would lose his or its licence to take trees was a serious deterrent to the removal of trees marked not to be removed.

As the Committee proceeded to the Pemberton area, Dr BURBIDGE outlined protection measures taken for the grey kangaroo. Permits may be issued to landholders, who show that grey kangaroos have been causing excessive damage on their properties, for the eradication of those kangaroos.

The CHAIRMAN asked how many permits had been issued for this purpose. Dr BURBIDGE replied that he could not give statistics. He believed that the answer was that a fair number of permits had been issued. Recently, the area over which the grey kangaroo was protected had been increased. The grey kangaroo used to be protected only in portions of its range. Now the whole range occupied by the gray kangaroo was protected. Dr BURBIDGE stated that his Department had been flooded with requests to shoot. In fact, to date the

Department had not been able to cope with all the requests that had been received.

The CHAIRMAN asked whether a tagging system or some other system was used to police shooting. Dr BURBIDGE replied that this subject was in the process of argument. Some people would prefer that a permit given to a landholder to shoot grey kangaroos would also entitle that landholder to sell the carcasses. Another argument was that the farmer should not receive any financial gain from this shooting. A further argument was that the product should not be wasted. Dr BURBIDGE believed that if financial gain was to be obtained by the shooting of grey kangaroos the incidence of shooting would be much more severe and more difficult to control. No final decision had been arrived at but discussions with the relevant authorities were proceeding. It was likely that permission would be given to sell carcasses. If this happened, Dr BURBIDGE had no doubt that policing would need to be a lot more strict.

Responding to a question by the CHAIRMAN as to whether a carcass or size limit was imposed on the animals that might be taken, Dr BURBIDGE replied that no carcass limit or size limit was placed on the taking of animals at all. A further problem was determining just how many kangaroos should be included in a licence to shoot. It was difficult to estimate in the time available when visiting a property just what the population of kangaroos there was and how many of those should be shot. The procedure being followed presently was to issue a permit for a time rather than for a

given number of animals. Permits would be granted for a certain period when damage to the property would occur.

The CHAIRMAN asked Dr BURBIDGE what would be the average length of a permit. He replied that a licence or permit was issued for 2 months to 3 months. A witness to appear before the Committee in its public hearings, Bob Prince, would be able to answer this question more fully.

The CHAIRMAN then referred to the wedgetail eagle. He asked whether it was protected or not. Dr BURBIDGE replied that the wedgetail eagle was declared vermin under the Vermin Act for the whole of Western Australia. Complications had arisen until 1967 because the Vermin Act had taken priority over the Fauna Conservation Act. Dr BURBIDGE went on to explain the way in which the Acts had been amended so that both Acts had equal status. The wedgetail eagle was still classified and declared as vermin in certain areas of Western Australia. In other areas it was not classified in this way. A further complication was that 3 statuses applied - protected, unprotected, and vermin. A person discovering an animal or bird declared to be vermin had the responsibility to destroy that animal. If the person did not do so he was in breach of the Act.

The CHAIRMAN asked who would arbitrate when a conflict of opinions occurred as to whether or not an animal or bird was vermin. Dr BURBIDGE replied that any conflict of this type would go before Cabinet. The Ministers concerned would put both sides of the argument before the Ministry. He stressed however that the Agricultural Protection Board was

given a degree of independence from ministerial control. During its journey along Rainbow Drive the Committee had pointed out to it the only trout hatchery in the State. However Dr BURBIDGE pointed out that the introduction of trout into Western Australian streams and rivers had not been very successful because there were not many cold streams in the State.

Later in the day, Dr BURBIDGE drew the attention of the Committee to a number of national parks which it passed on its journey to Perth. Although these areas were defined as national parks, Dr BURBIDGE expressed his belief that the expression 'national park' was a misnomer in the case where these national parks were under the control in fact of shire councils. He pointed out that shire councils could be subject to certain pressures regarding the use of such areas. He would prefer to see the control of such national parks vested in the Lands Department.

Finally, Dr BURBIDGE dealt with the subject of the Cockburn Sound naval facility. Cockburn Sound harboured the Tammar. The Commonwealth Government controlled the land to be used for the establishment of this naval installation. Dr BURBIDGE expressed the belief that part of Garden Island should be set aside for the purpose of establishing a reserve where the Tammar might be protected. This area of protection should be established on the part of the installation that would not be used by the Navy.

The CHAIRMAN asked what the area of Garden Island was. Dr BURBIDGE believed that it was approximately 3,000 acres.

The CHAIRMAN asked further what Dr BURBIDGE considered to be a reasonable area to be set aside as a reserve for the Tammar. Dr BURBIDGE replied that a ratio of 50/50 between the naval installation and the reserve might be struck. However, realistically, this was something that should be put to those persons concerned with the installation on the island and the actual land usage involved. From his own knowledge, Dr BURBIDGE believed that the naval base was to be established at the southern end of Garden Island. He believed that it might be a relatively simple thing to protect portion of the northern end of the island from development.

The Committee completed its journey to Perth.

HOUSE OF REPRESENTATIVES SELECT COMMITTEE ON WILDLIFE CONSERVATION

PRECIS OF ADDRESSES

(Taken at Perth-Pingelly)

TUESDAY, 9 FEBRUARY, 1971

Members

Mr Fox (Chairman)

Mr Bonnett
Mr Calder
Mr Collard
Mr Jenkins
Mr MacKellar
Mr Sherry

(The following is a Precis of Addresses delivered to the Committee on trip from Perth to Pingelly.)

Enroute to the Pingelly National Park, Dr BURBIDGE pointed out to the Committee that since the settlement of the south west more land was going to salt per annum than was being set aside for national parks. He explained that the term 'going to salt' meant that evaporation was causing the salt to rise to the surface, thus killing off all grasses and other vegetation. Approximately 10,000 acres per annum was being lost in this way. The only way to avoid this process was not to over-clear. However, he pointed out that at the present time the definition of the term 'over-clearing' was not known.

On arrival at the Pingelly National Park, Professor MAIN pointed out to the Committee certain features of the park. He informed the Committee that work had commenced on the park in 1957. The area which comprised the park covered 4,900 acres, formerly Crown land and forestry reserves. The area had now been classified as an 'A' class reserve. Public access to the park, at this stage, was largely restricted to local field days to inform the local people of the value of the park. Prof. MAIN informed the Committee that at the present time there were approximately 30 species of marsupials on the reserve. He pointed out that it would have been impossible for it to carry this variety of species if the park had not come under the management of the Department of Fisheries and Fauna. He instanced the case of the small marsupial, the bettong, which requires 100 acres and

a variety of different habitat in which to live. Prof. MAIN explained the geological structure of the park, and summarised the various animals living in it. He indicated to the Committee that Pingelly, being a small national park, was ideally suited for the purpose to which it was being put; that is, the scientific study of the flora and fauna which constituted the area. It was hoped that a study of the information gained from this park would give some idea of the balance of ecology necessary to maintain animals in other national parks. Returning to Perth the following day, the Committee also visited the home of Mr and Mrs A.V. Anderson and were shown the work they were doing to help injured kangaroos and other animals which were brought to them from all over the State. Mrs Anderson pointed out to the Committee members that over the last few years hundreds of animals had been cared for and treated until they were able to be sent to foster homes. She said that at the present time there was a waiting list of people who wanted to take kangaroos as pets.

(The Committee then returned to Perth)