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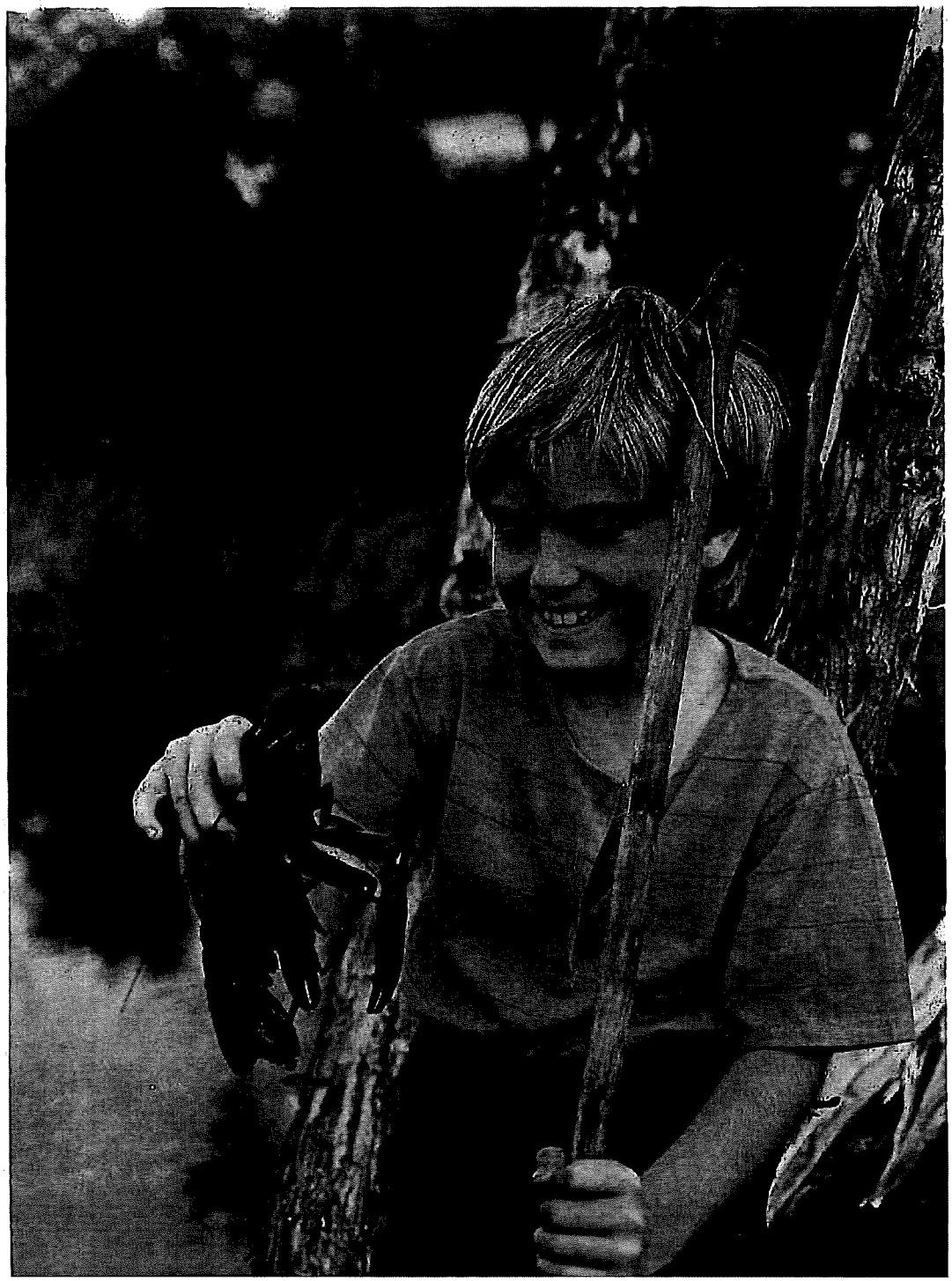
Sport fishing for marron in Western Australia - management for the future : a discussion paper on management options for the marron fishery.

Fisheries Department of Western Australia.

Sport Fishing for Marron in Western Australia — management for the future

A discussion paper on management options for the marron fishery



Fisheries Management Paper No. 19

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Sport Fishing for Marron in Western Australia — management for the future

Introduction

MARRON and marroning have long been regarded as part of the Western Australian way of life. The large freshwater crayfish are not only delicious to eat but have provided sport and recreation for thousands of West Australians of all ages, probably since at least the beginning of this century. Before that they were an important component of 'bush food' for the Aborigines.

Unfortunately for people living elsewhere in Western Australia, marron are mostly confined to rivers and dams in the State's south-west region. However, as this region also boasts the highest population density in the State, a lot of people have access to marron waters. Just how many people fish for marron, and the popularity of the sport, can be shown by the number of fishing licences issued each year. In 1986-87 alone, a total of 24,688 Recreational Fishing Licences were issued for marroning. This is about 5000 more than the number issued for amateur rock lobster fishing (19,544) and almost 10,000 more than that issued for amateur fish netting (14,969) during the same period.

It has been estimated that the total amateur catch of marron each year is between 50 and 100 tonnes. Of course, not all of this is taken by locals. The recreational attractions of marroning are readily appreciated by visitors too and marron contribute significantly to the tourism potential of the south-west of the State.

That's the good news. Now the bad news. The number of marron that may be caught each year without seriously jeopardising the long term future of the fishery is limited. However the number of people wanting to fish for marron continues to grow each year. This fact and a certain disregard of the fishing regulations by a small minority has led to increased pressure on marron stocks in recent years. The effects of this pressure, together with a few years of below average rainfall, were directly responsible for a dramatic fall-off in catch during the 1986-87 marron season. The situation deteriorated still further after another winter of low rainfall in 1987 and as the 1987-88 summer drew closer it became doubtful

whether the State's marron stocks could withstand another season of hard fishing pressure.

Thus, for the first time in the history of the fishery, it was considered necessary to ban all fishing for marron during the 1987-88 season.

What implications does this have for the future of the marron fishery? To start with the move emphasises the need for everyone concerned with the future of marron and marroning to consider the matter seriously. What management measures can be taken to improve the situation? And not only improve it but safeguard the future of the fishery for the enjoyment of generations to come.

This discussion paper has been prepared to help start the ball rolling in the right direction, and ensure any measures taken to safeguard the fishery are backed up by full community understanding and support. The paper includes a brief description of the fishery's decline over recent years. It describes present management techniques and regulations and examines possible changes to these together with the likely results.

If you are at all concerned with ensuring the future of the marron fishery in Western Australia, read this paper. Carefully examine the facts and proposals outlined therein and send any comments you may have on the management options to:

The Director
Fisheries Department
108 Adelaide Tce
Perth WA 6000.

The closing time for submissions will be July 31, 1988.

The management proposals and submissions will then be considered by a Committee of Review which will recommend to the Minister for Fisheries an appropriate course of action to be taken for future management of the marron fishery.

The Committee will be chaired by the Honourable Mr Doug Wenn, MLC, and will be made up of representatives of the Fisheries Department and the general community.

Recreational marroning – state of the fishery

Statistics on catch rates, fishing pressure and other aspects of the marron fishery have been collected since the beginning of the 1971-72 open season. Methods of collecting the information have ranged from licensing information to voluntary logbook programs and end-of-season telephone surveys.

How many marroners?

The number of marroning licences and, more importantly, the estimated number of licence holders who actually carried out at least one marroning trip each season is shown in Figure 1.

This confirms a general increase in the number of practising marroners over the years although this trend has been modified markedly in periods of drought.

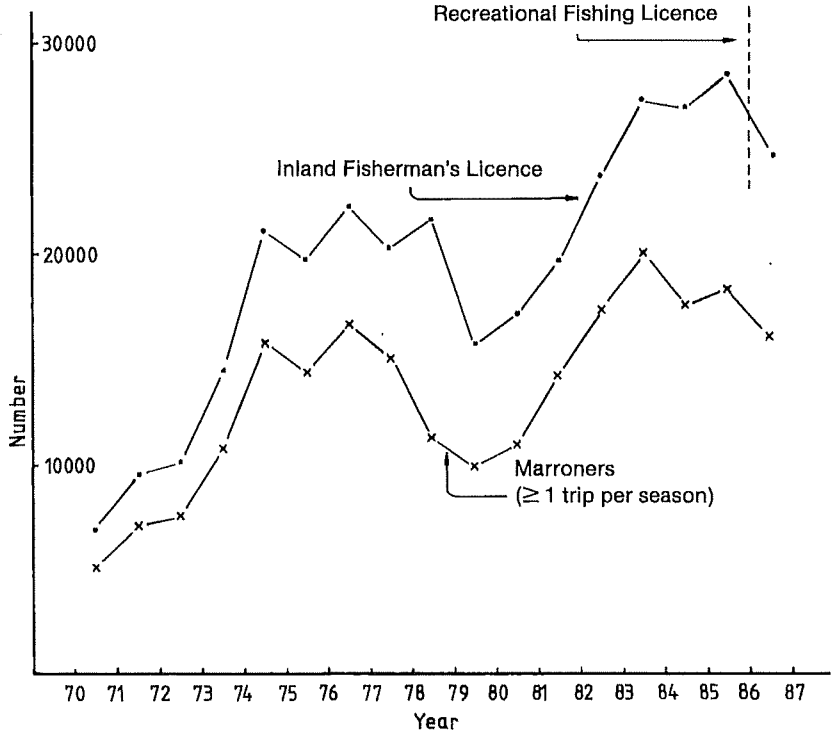

Figure 1. *Number of Inland Fishermen's/Recreational Fishing Licences issued, and number of practising marroners.*

Annual rainfall, as a proportion (%) of the long-term average over six south-west localities (Perth, Dwellingup, Collie, Pemberton, Albany and Cape Leeuwin), is shown in Figure 2 and provides a measure of drought.

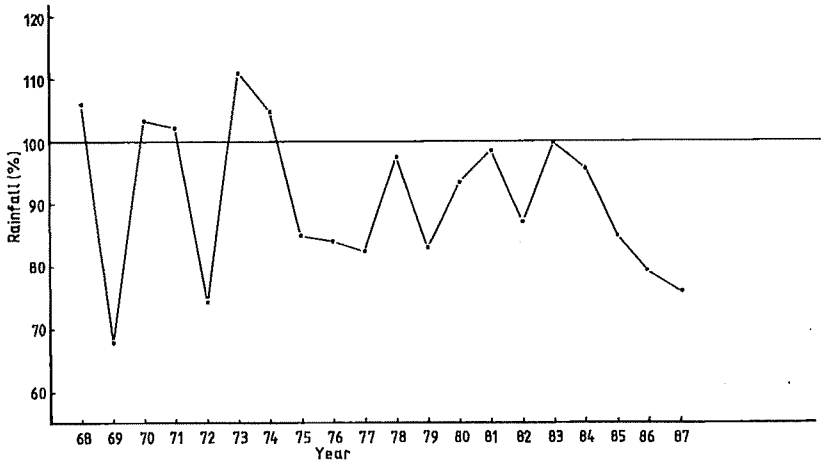

Figure 2. *South-west annual rainfall as a percentage of the long-term mean rainfall.*

Examining these figures it is evident that as droughts make their presence felt, marroners react in one of two ways. Either fewer marroners go fishing (for example, a minimum of 52 per cent in 1978-79) or, simply, many do not purchase a licence (for example, in 1979-80). Over the past decade the proportion of licensed people who actually went marroning after better winter rainfall was about 74 per cent. Over the past three seasons this proportion has been about 65 per cent.

Number of marroning trips

The estimated total number of marroning trips carried out each season in the two major water types (rivers and dams) is given in Figure 3. This shows that: a) rivers are from two to three times more popular marroning venues than dams; and b) on average, individual marroners carry out between three and four trips per season with no discernible trend over the years of monitoring.

Competition for fishing space

Despite the number of marroners at large throughout the south-west, there is little evidence of crowding, at least along river banks. However dams are occasionally crowded, particularly on opening day.

Rivers in the south-west provide at least 1000 kms of bank and the major dams, at least when full, provide about a further 320 kms of

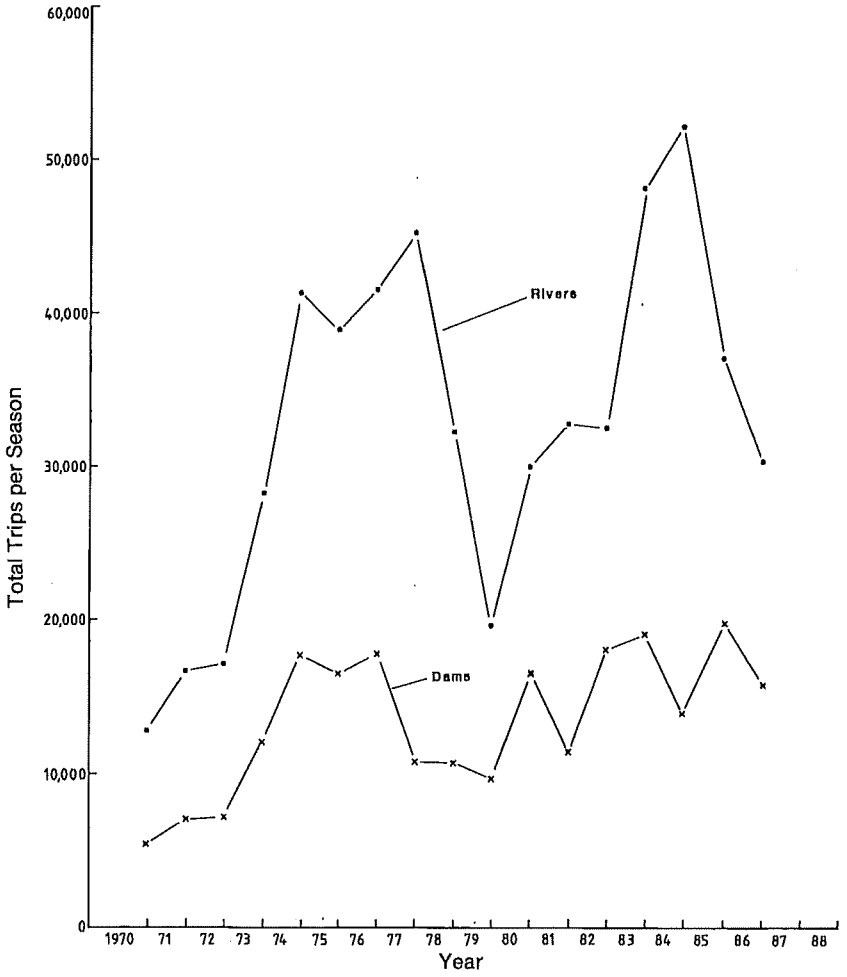

Figure 3. *Annual total number of marroning trips carried out in rivers and dams.*

shoreline. Marroners fishing rivers cover an average of 150 m per trip using six drop nets. In dams, a single scoop net has been employed over 540 m of baited shoreline. These distances should be doubled for the usual 'party' of two marroners.

Wellington Dam provides 66 per cent of the publicly accessible fishing water in dams. In the evening of opening day in recent years up to 200 parties of marroners have been estimated on Wellington Dam which, at full storage, would give each party an average of only 375 m of shoreline. A total of 4727 trips were estimated to have been carried out on Wellington Dam during the 1986-87 season. If these trips were spread evenly over the season, each marroner would have had 1804 m of shoreline available on each trip. Logbook records show parties of two fishermen fished an average of 1454 m of shoreline in 1986-87.

Most of the country water supply dams where marroning is permitted are closer to Perth than Wellington Dam. Marroners

Marron catches

resident in Perth carried out 53 per cent of the total number of trips based on dams in the 1986-87 season. However only 11 per cent of the trips on Wellington Dam were by people from Perth.

Since 1971-72 there has been a discernable decrease in the average number of legal-sized marron taken per trip by marroners fishing both rivers and dams, according to logbook information (see Figure 4). The average logbook catch number per trip over the three seasons between 1973 and 1976 was 13 legal-sized marron, whereas for the period 1984 to 1987 this figure had dropped to nine.

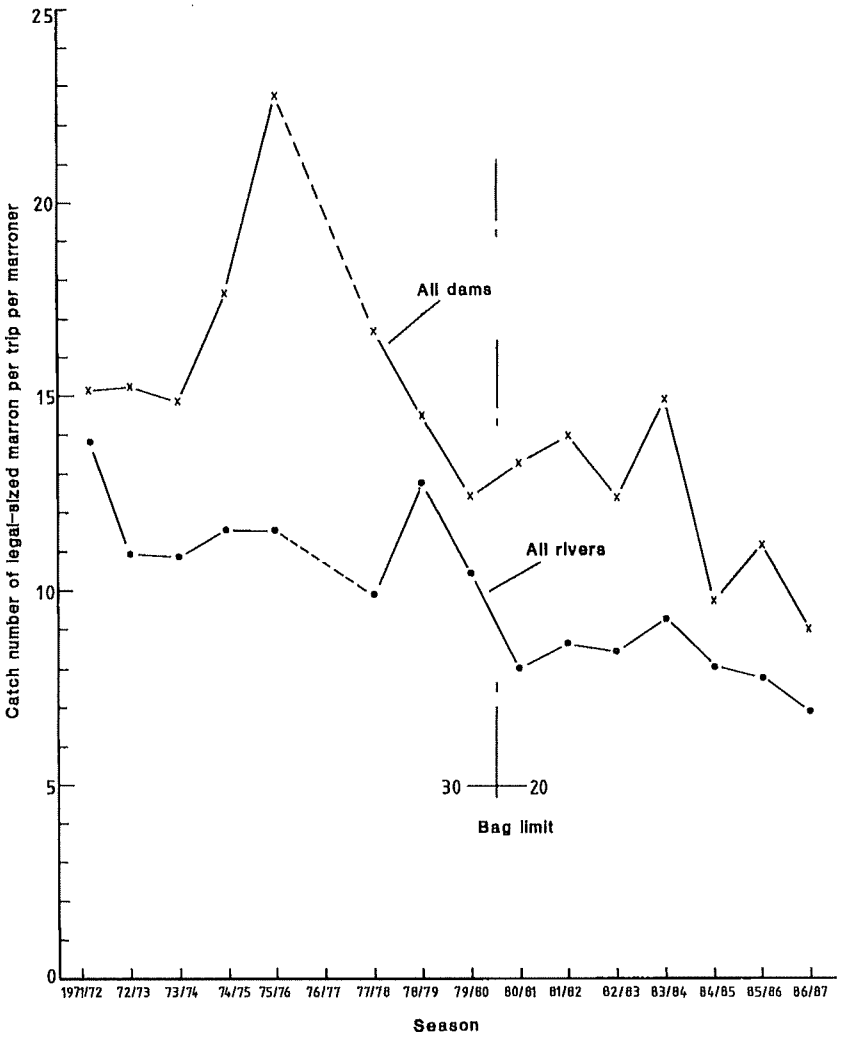

Figure 4. *Catch numbers per trip per marroner in rivers and dams.*

Figure 4, showing catches for logbook marroners, no doubt presents a slightly more favourable picture for the average marroner at large for whom it has not been possible to estimate accurate catch numbers. For example, over the decade 1977-87 logbook marroners recorded an average of only five per cent of trips during which

no legal-sized marron were caught. For marroners at large this figure was 21 per cent.

Figure 4 should also be viewed as a measure of marroning success in relation to the daily bag limit (changed from 30 to 20 for the 1980-81 season) and the idea of a worthwhile catch.

Over the three seasons before the change in the bag limit, maximum catches (bag limit of 30) were recorded on only four per cent of trips by logbook marroners. Over the same period catches of 20 or more legal-sized marron were recorded for 17 per cent of trips. There was little change in these figures over the three seasons following the reduction in the bag limit. Bag limits of 20 were still recorded on 17 per cent of trips and the average catch remained about the same.

There was a brief improvement in catches during the 1983-84 season with an average catch of 12 and bag limits taken on 24 per cent of trips, but this was probably due to improved water conditions during that period. However the last three seasons have seen the lowest catch numbers recorded since 1971-72. Bag limits were taken on only seven per cent of trips and the average catch slumped to nine marron per trip.

Catch rates of legal-sized marron

Catch rates are calculated by dividing the number of legal-sized marron caught per trip by the fishing 'effort' exerted during the trip. This effort is determined by such factors as the number of hours fished, the number of nets or baits used, the distance fished, etcetera.

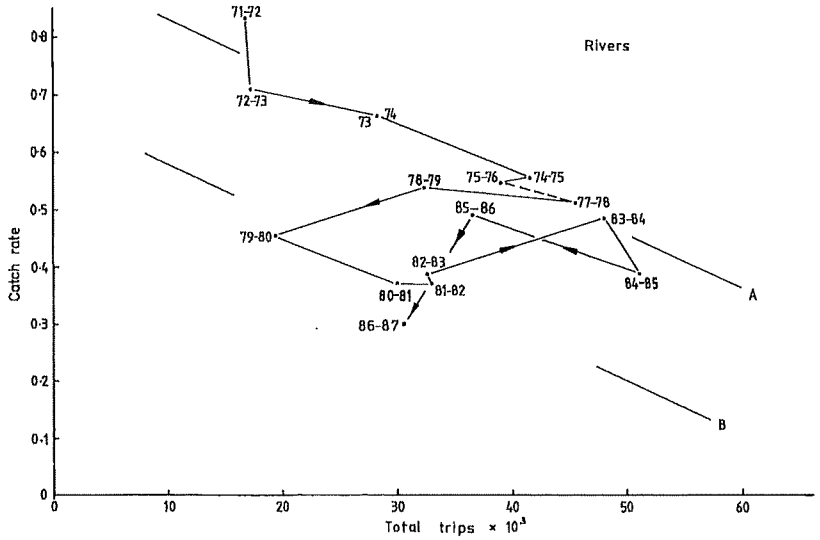

Figure 5. *Annual catch rate and marroning effort (total trips) for rivers.*

Catch rates from logbook records provide a standardised estimate of the best catch in each season from the legal-size marron available to be caught. As a measure of the degree of sharing the catch between marroners, catch rate is plotted against the total number of trips estimated to have been made in the same season.

As shown in Figure 5 (for rivers) and Figure 6 (for dams), the catch rate or share declines as the number of trips (or the number of marroners fishing) increases. This trend, at the 'A' level in Figures 5 and 6, drops to a lower 'B' level in those seasons most influenced by drought.

Figures 5 and 6 show that the catch rate for the 1986-87 season was the lowest recorded in rivers, and close to the lowest recorded in dams, since 1971-72.

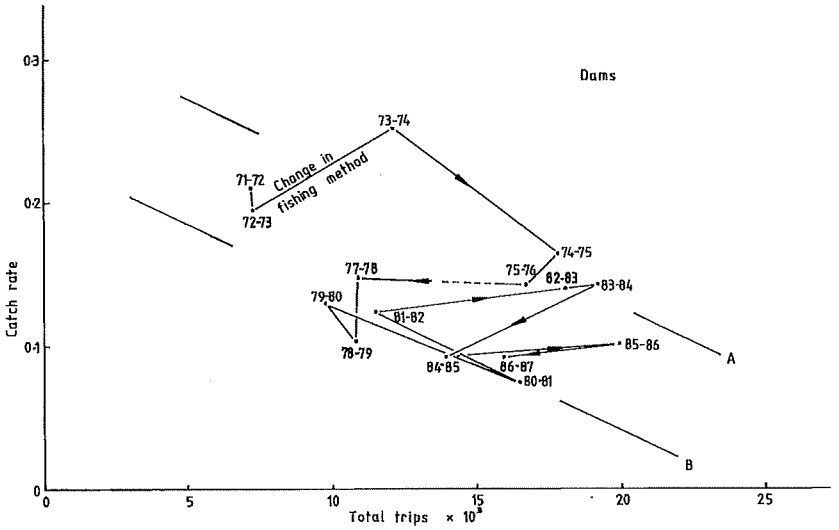

Figure 6. *Annual catch rate and marroning effort (total trips) for dams.*

Sizes of legal-sized marron

The average size of legal-sized marron caught in 1986-87 has fallen significantly compared with that of the early monitoring period of 1973-76. For example in the smallest legal-size category (76 mm to 83 mm carapace length) the frequency of marron increased from 26 per cent to 48 per cent in dams (mainly Wellington Dam) and from 12 per cent to 31 per cent in rivers, with a corresponding decrease in frequency in the larger size categories.

Catch rates of under-size marron

The proportion of under-sized to legal-sized marron captured by logbook marroners was higher in the 1986-87 season than in the early monitoring period of 1973-76. Rather than indicating more juvenile marron, this change is due to a decline in the catch of legal-sized marron. Furthermore the catch rates of under-size marron,

taken independently of legal-size marron, show a 50 per cent decline in abundance of under-size marron in both rivers and dams (see Figure 7).

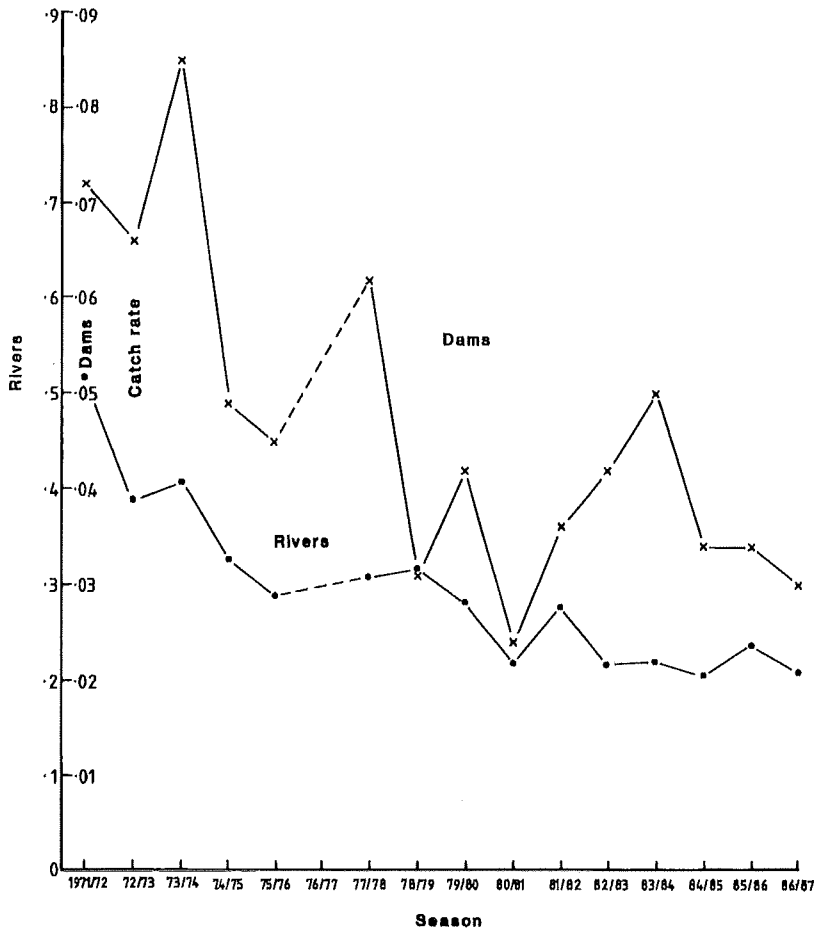

Figure 7. *Catch rates of under-sized marron in rivers and dams.*

Under-size marron are more abundant in rivers than dams because there are more hiding places from predators in the former. It should also be remembered that the drop nets used in rivers take a higher proportion of under-sized marron than the scoop nets used in dams.

Fishing spots, water types and fishing methods

Marron are found naturally throughout the south-west but have also been introduced to waters as far north as Geraldton and further east than Albany. Logbook marroners have recorded trips through 15 watersheds (see Figure 8) and have fished for marron in 35 rivers, 23 tributaries and 18 dams or natural lagoons (coastal lakes). Thus there are at least 50 quite separate breeding stocks of marron which differ in their population density, growth rate and size of females at first spawning. These differences are generally most marked between river and dam populations.

Marron fishing is largely a nocturnal activity. Smaller marron emerge from their hiding places only when darkness provides protection from bird predation. Some daytime fishing for larger marron takes place in the deeper, shaded river pools but marroning along the shallow, open edges of dams is confined to the hours after sunset.

Snaring, the longtime favourite fishing method of the bushman, is now rarely seen, mostly because of the decline in numbers of large marron. In its place are scoop nets in dams and drop nets in rivers, both of which are more effective in catching smaller marron than snaring. Between 1971 and 1987 the average party of two logbook marroners used 10 drop nets (for comparative purposes, equivalent to 10 baits) over 314 m of river bank for four hours, or one or two scoop nets over 1108 m of dam shoreline (equivalent to 111 baits) for two hours.

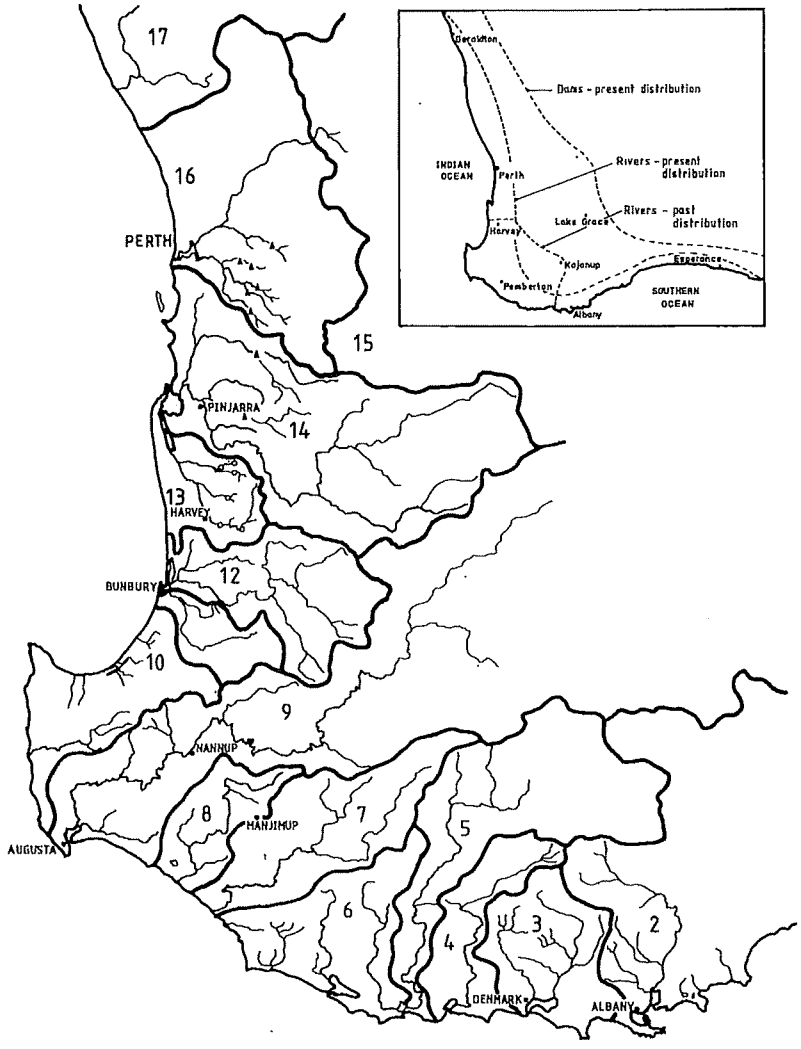

Figure 8. *Distribution of south-west watersheds. The inset shows the past and present distributions of wild marron.*

Environmental changes

As mentioned earlier, the distribution of marron stocks has been extended by introductions to rivers northward and eastward of their original distribution, and by the stocking of man-made dams. However at the same time their original inland distribution along the major south-west rivers has been reduced (see Figure 8). Long stretches of waterways have been affected by eutrophication and increased levels of salinity as a result of agricultural development, making them unsuitable as marron habitat.

Present marron fishing regulations

Fishing season

The marron season is presently open for 137 days from 6 pm on 15 December to midnight on 30 April. The season is closed for the rest of the year to protect breeding marron.

The opening date is a compromise to allow fishing over the Christmas and New Year holiday season and to protect female marron carrying eggs over the springtime. Toward the end of this carrying time, and when hatched young are still attached, the females are relatively inactive with a correspondingly low catchability. Any such females caught are required to be returned to the water unharmed. Mature females carry developing eggs inside their bodies through the open season. These eggs, noticeably red in cooked marron, can be quite large by the end of the open season.

One question which should be addressed, particularly in view of mounting fishing pressure, is whether or not the current duration of the open season limits the number of fishing trips. At first glance 137 days would not seem to be much of a limitation to most marroners, particularly as they only average three to four trips per season. However the days of the season are not all equal in providing either opportunities to go marroning or favourable fishing conditions (evenings during the dark phase of the moon are best).

During the 1986-87 season, logbook marroners carried out more trips on weekends and public holidays and/or over each dark phase of the moon, than at any other time. This combination occurred on only 13 days of the season. There is also considerable competitive incentive to fish on opening day or at least during the first week of the season. In addition the catchability of marron tends to fall off in mid-summer, particularly in rivers when water flow is at its lowest.

Size limit

The present minimum legal-size of marron is 76 mm carapace length. This figure was arrived at in the 1950s as a value judgement, that is, as a minimum size worthwhile for eating.

This minimum size applies to all the quite separate stocks of marron throughout the range of the fishery, regardless of differing growth rates and spawning sizes, particularly between river and dam stocks. In this regard breeding stocks in dams are more at risk

from legal fishing than those in rivers where many females mature well below the minimum legal size.

Any under-size marron caught must be returned to the water. However, in practice, this is a difficult regulation to enforce. Under-size marron do not have to be returned to the water immediately thus conviction of marroners found to be in possession of under-size marron near their fishing site often fails because the accused can state they intended returning the marron. Consumption of under-size marron at or near the site of capture is also often used to exceed the bag limit.*

The legal size is strictly defined by measurement of the carapace length only. Removal of the carapace, or 'head', can be used to prevent conviction for taking under-size marron when apprehension occurs away from the fishing site. Tail weight at the legal carapace length varies considerably between individual marron, so under-sized marron must be well below legal size to be accepted as such.

Bag limit

The daily bag limit was reduced from 30 to 20 before the start of the 1980-81 season. In 1972 a questionnaire answered by logbook marroners revealed that 73 per cent considered that 30 marron were 'about right to provide a worthwhile feed for your family'. However the idea of a worthwhile catch was re-examined in 1978 with the increasingly publicised status of marron as a gourmet food in mind. On this basis a catch of 16 marron was considered worthwhile for a 'nuclear family' of two adults and two children, with one licensed marroner in the family.

As described in a previous section, the earlier bag limit of 30 had no significant effect on controlling catches. The reduction in bag limit to 20 produced no improvement in average catch numbers and has been an insignificant control measure over the past three seasons.

Fishing methods

The present regulations allow a licensed marroner to use one of the following methods to capture marron:

- six drop nets;
- one scoop net; or
- one pole snare.

It is illegal to use traps (which are left unattended to accumulate

* Legislation is currently being introduced to ensure that all marron are measured immediately upon capture at the water's edge and all under-size marron are returned to the water immediately.

marron) or boats (for setting and hauling drop nets) to catch marron, and diving for marron is also prohibited.

However there are no set sizes or designs for legal gear, for example specifying mesh size, diameter and depth of nets, or length of scoop or snare handles. Drop nets are commonly about 600 mm in diameter with two rings separated by up to 300 mm depth of netting mesh, and have a stretched netting mesh base. Scoop nets have a handle up to 2 m in length and a net ring of about 300 mm diameter supporting a shallow, hemispherical wire mesh 'bag' of either chicken mesh or circular mesh. Snares are usually homemade with a copper fuse-wire noose fixed at the end of a rod. The length of a snare handle is usually limited by the user's ability and eyesight rather than any other factor.

All three methods use baits to attract marron. Traditionally, chopped up game or stock (such as kangaroo meat or sheep's heads respectively) have been used for snaring and drop netting. However poultry pellets have become popular for scoop netting in dams (marroners can lay long lines of bait along the dam edges) and are also a convenient bait for drop nets.

The relative fishing powers of the three methods for legal-sized marron depends on the number of baits used. The number of baits for drop nets is fixed at a maximum of six. However in rivers experienced marroners move the positions of drop nets after successive hauls and so, in effect, use more baits over a much longer length of bank than six nets would suggest. The number of baits used in scoop netting in dams depends on the length of shoreline being fished.

Thus, in terms of number of baits, scoop netting has considerably greater fishing power than drop netting. This in turn allows similar catch numbers of marron in rivers and dams, despite the much lower density of marron in dams.

Although comparison tests of the three fishing methods on the same water are difficult to carry out, a series of such tests using the same number of baits for each method has shown similar catches of legal-sized marron. However the catch of under-size marron differed markedly between methods. Drop netting is the most indiscriminatory method, taking the highest proportion of under-sized marron available, and can catch marron as small as 27 mm carapace length (early two year old marron). At the other extreme, the difficulty of even deliberately trying to snare under-size marron is obvious.

Licensing

All marroners are required to have a current Recreational Fishing Licence endorsed for marron. A marron licence fee of $7 is payable although some pensioners and school children under the age of 16 only need pay half the fee.

There is no limit on the number of licences issued each year for marroning. The purpose of the licence is to provide information on annual fishing effort for research monitoring of the fishery.

The magnitude of the fee is not seen as being a discriminatory factor or as a revenue source. At best the fee only covers the costs of administering the licences. Fees collected are deposited in a general government account outside the Fisheries Department and thus do not provide directly for marron research or enforcement.

Suggested changes to marron fishing regulations

The previous sections have dealt briefly with the current state of the marron fishery, its regulations and the factors which most influence the immediate and long term well being of the fishery. This section considers a range of changes which could be made to the fishery, from altering the length of the season to increasing the size limit or decreasing the bag limit, and even changing the way marroners fish.

Marroning season

In the past, the low average number of marroning trips (three to four) made by most marroners has not been limited by the present duration of the open season. Only an open season of just a few days could effectively limit the number of marroning trips. Although this could be considered for the Christmas-New Year period, such a very short season would cause crowding between marroners and limited access to fishing sites so is unlikely to be a popular option.

A later opening time, such as 1 February, has been suggested to eliminate the Christmas-New Year holiday opportunities for marroning, particularly for people travelling from afar. This could see a reduction in daily marroning opportunities to 65 per cent of the present situation.

Alternatively the season could be closed earlier to protect surviving marron stocks as water levels fall in dams and flow levels are reduced in rivers. Minimum river flows occur in February or, in drier years, March. But while water temperatures are generally cooler after mid-March, water levels remain low until the start of the winter rainfall season in May.

An extension of this idea could see a complete closure of the fishery in those years following poor winter rainfalls when dam levels are still low and river flows are below average. This is similar to the present situation where the season was closed for 1987-88 as a management measure for the first time.

However complete closure of the marron fishery, or parts of it, would usually be suggested for several years at a time to allow stocks to recover to a level where once again there were prospects of good catches of larger legal-sized marron. This could even be carried out on a rotational basis where different localities were closed for, say, three years at a time. In considering this idea it must

be remembered that there are many separate stocks of marron and protection of some would not necessarily benefit others. The danger in such a program is that unless overall fishing effort decreased, fishing pressure may just be transferred to those sites still open for fishing — thus compounding an existing problem. What would happen when the other sites were reopened would also need to be considered.

An example of a fishing closure of crayfish water has been documented in Sweden. In the lake concerned, heavy fishing had produced a situation similar to that now being experienced in Western Australia's marron fishery. The average crayfish size had declined and about half the catch was under the legal size. Research showed that growth rates were low due to overpopulation of juvenile crayfish. The fishery was subsequently closed for two seasons (three years). Although this had some effect on increasing the average size, the effect was limited by the slow growth rates and in the numbers of legal-size crayfish. The improvement was also very short-lived once the lake was reopened to fishing. A "gold-rush" atmosphere prevailed and within a year catches and sizes had reverted to the previous low level. Although marron may grow faster than Swedish crayfish over a similar closed period, the benefits on reopening the season are unlikely to last any longer.

A further factor against closed seasons for marron is that not everyone observes them, and enforcement is difficult.

Size limit

An increase in the present size limit from 76 mm (3 in.) carapace length to 88 mm (3.5 in.) is another suggestion that has been put forward to increase the average size of marron caught. This represents an increase in body weight from 120 grams to 188 grams or, in other words, slightly more than the increase produced by one moult.

Initially, if this move was approved, there would be even fewer legal-sized marron available for capture. However catch rates of the larger marron could be expected to increase with time. But these catch rates would always be lower than the present ones because of natural mortality over the added growth period. The larger size limit would be beneficial in dams where more mature marron could breed but this is unnecessary in most rivers.

Another possible change to the regulations would be to insist that all under-size marron be returned to the water immediately they were captured.* This would reduce the number of under-size

* Legislation enforcing this is currently being introduced. See footnote on page 9.

marron being legally held at campsites where fishermen at present need only state their intention of returning the marron.

Bag limit

With the present level of average catches per trip, most marroners could only benefit by a marked reduction in the legal bag limit to, say, 10 per trip. This reduction could also provide extra surviving breeding stock at the end of the season provided that the number of trips per season did not increase.

Methods of capture

Several suggestions have been made for more control over fishing effort, that is, measures to reduce the fishing power of the current legal methods of capturing marron.

Such measures could include confining fishing with drop nets and snares to daylight hours in rivers. Of course the same measure applied to scoop netting in dam waters would effectively close those waters.

Another possibility, that of limiting the length of shoreline baited and scoop netted by each marroner, would be very difficult to enforce.

Setting some design specification limits on scoop nets would be more practical. This course of action has become particularly necessary in recent years with the increasing use of 'grab-all' type fish landing nets in place of more traditional nets. These nets have a larger and deeper scoop of fine mesh which can catch more under-size marron than usual.*

Minimum mesh opening sizes have been suggested for both scoop and drop nets. The mesh openings of the synthetic fish netting used in most drop nets tends to be drawn closed across the bottom by the method of construction. This could be solved by substituting the fish netting with rigid wire mesh. Tests showed that a standard research drop net (1-cm nylon mesh) caught twice as many under-sized marron as a 2.5-cm (1 in.) wire mesh bottom net. For wire mesh bottom nets, the catch rate of under-sized is reduced by a further 27 per cent by increasing the mesh size from 2.5 to 3.8 cm (1.5 in.) and by 69 per cent for 5-cm (2 in.) nets. So the mesh opening needs to be quite large to be effective in releasing under-sized marron. Further, there appears to be no size of mesh that will give a 'knife-edge' selection allowing under-size to escape and yet

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* Legislation is currently being introduced prescribing the type of scoop net which may be used, thus effectively prohibiting the use of the larger 'grab-all' type of net.

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retaining all legal-sized marron. Another fact to be considered is that the catch of legal-sized marron also falls off dramatically with the use of wire mesh bottoms. This is apparently because marron dislike crawling on wire. The introduction of a minimum mesh size may also require a changeover period and would need to incorporate a readily available commercial mesh in the size specified.

A more radical proposal, but perhaps the most practical of all, would be the adoption of snaring as the only legal means of capturing marron.

Snaring has a number of advantages over other means of capturing marron, not least of which is its sporting image. Snaring requires some degree of skill for success but uses a minimum of equipment. It is very difficult to catch under-size marron using the method and its wholesale use would also effectively reduce total fishing effort —one person, one snare. Enforcement would also be considerably reduced, a major factor with the limited staff available.

Let's look at this proposal a little more closely. The capture of legal-sized marron by snaring does require more skill than either drop netting (in rivers) or scoop netting (in dams) and is also more limited by water conditions. However it is still possible by snaring to capture the same number of legal-sized marron, up to the bag limit, as by the other methods. In dams, snaring is likely to be a slower method than scoop netting thus limiting the number of baits which can be used and, although this would not apply in rivers, there are still situations, such as deep water or steep banks, where snaring could not be used at all. In effect, 'snaring only' would reduce the average fishing power per trip.

Adoption of 'snaring only' would virtually eliminate the present temptation to retain under-size marron captured all too readily by either of the other two fishing methods.

Snaring requires considerable skill and a patient approach and can easily be compared in technique and equipment with rod and line sport fishing. This sporting image could be further enhanced by the adoption of more sophisticated snares.

Introduction of 'snaring only' would be simple as it only requires the abandonment of other gear and snares are easy to make, only requiring a pole and a wire running noose in its most basic form.

Historically, snaring is the original bush method of catching marron and would be readily acceptable by the community at large, particularly if phased in over a period on certain waters. This

phased introduction could initially involve areas where the method is still relatively popular, such as the Margaret, Blackwood, Donnelly and Warren Rivers.

Finally, 'snaring only' would be easy to enforce as possession of any other gear would be illegal.

Licensing

The only fair way of reducing the number of marroners through licensing would be to issue a limited number of licences on a lottery (random) type basis amongst applicants.

Voice your opinion

Your comments on any or all of the management options discussed in this paper would be welcomed. Also, if you would like to put forward any other specific management proposals that have not been covered in this paper, please do so. There is unlikely to be any 'perfect' solutions to the problems outlined and being experienced in the marron fishery at present but it is important that some steps are taken to alleviate the situation. This is where you can help. Broad-based community support is essential in any management program and a thorough discussion and understanding of the topic is vital towards this end.

Send your comments to:

The Director
Fisheries Department
108 Adelaide Tce
Perth WA 6000.

Remember, submissions close on July 31, 1988.