

CHAPTER FIVE

COMMERCIAL FISHING

BACKGROUND

1. Commercial fishing has taken place in river estuaries of the Kakadu region for about forty years. The principal target is barramundi although substantial quantities of threadfin salmon are also caught. Some harvesting of mud crabs takes place as well. The Committee received evidence on the operation of the commercial fishing industry and on the proposal to phase out this activity in the Kakadu region over the period of the current Park plan of management.

2. Commercial fishing takes place in many areas along the Northern Territory coastline. Licences are issued by the Northern Territory Department of Ports and Fisheries and there are currently forty commercial licence holders in all. About six of these regularly fish in the Kakadu region although this number can rise to nine when fish are especially plentiful. The Northern Territory Fishing Industry Council told the Committee in October 1986 that about 15-20 per cent of the total Territory commercial catch came from the region.¹ The relative importance of the major fishing areas in the Territory as calculated in 1984 is shown in Table 5.1. The table also indicates the level of recreational fishing in these rivers. There is a growing recognition that recreational and commercial fishing exert joint effects on fish populations within individual river systems and that recreational fishing may be having a large impact. Barramundi, for example, are now thought to complete their life cycle within the one river system. Tagging studies show that very few fish move between rivers and that most stay within or just outside their resident

rivers. Consequently, prolonged overfishing in any one river will almost certainly cause long term depletion of that particular stock of barramundi.

TABLE 5.1

STATUS OF MAJOR FISHING AREAS - NORTHERN TERRITORY

River (and/or system)	1984 Commercial Yield (tonnes)	% NT Total Commercial Catch	Recreational Use
VICTORIA including Fitzmaurice	26	4	Low
DALY including Reynolds	64	10	High
FINNISS including Darwin, Adelaide	56	9	High
MARY including Wildman	127	20	Very High
ALLIGATORS	100	16	Very High
ARNHEM	64	10	Negligible
ROPER	85	14	Medium-Low
MCARTHUR	55	9	Medium-Low
OTHER	40	7	Very Low

Source: Department of Ports and Fisheries, NT: Report of Barramundi Task Force. 1985.

3. The NT Fish and Fisheries Act prohibits commercial fishers from operating upstream of stipulated points in each river. In the Kakadu region the rivers can be fished for distances varying from five to eight miles from their mouths. Standard fishing technique within the rivers is to set gill nets of approximately 50 metres in length. Outside, along the tidal mudflats, nets of between 200 and 750 metres are used. The nets are visited at least four times a day by fishers operating out of dinghies. The catch is stored in freezer vessels, which are usually about ten metres long. An average operation involves two people who work a selected area for two to four weeks or until freezers are full.² Fishing regulations provide that a licence holder may not set more than 1000 metres of net, that fish should be of a minimum size, that net mesh also be of stipulated minimum size, and that nets should not be set across more than half the width of a stream. In addition, certain areas are closed to commercial fishing and there is a complete ban on taking of barramundi during the spawning season from 1 October to 31 January each year.

COMMERCIAL FISHING IN THE PARK

4. The first plan of management for the Park was issued in 1980. It made reference to the CSIRO pre-management study of 1979, which suggested that barramundi were on the point of being over-exploited, and outlined procedures for the phased reduction of the commercial fishing effort.

5. This policy was not implemented during the life of the first plan and normal commercial operations continued in accordance with the provisions of Northern Territory fishing regulations. The current plan of management has reaffirmed the objective of phasing out commercial fishing in the Park and sets out a timetable for implementation. All commercial fishing is to cease within five years of 1986, the commencement date of the

plan, with the stated intention of bringing all operations to an end within three years of the plan's commencement. The plan requires commercial fishing to have been prohibited in the East Alligator River in its first year.

6. The plan mentions three considerations underlying this policy. Firstly, reference is made to information assembled in the report of a Barramundi Task Force established by the Northern Territory Government in 1985. The plan notes that the barramundi catch per unit effort 'has decreased dramatically' in the period 1972 to 1984, which 'supports the view that barramundi populations in the Park have declined considerably' during this period. It is suggested that this trend may have been accelerated by the impact of recreational fishing. Secondly, the plan states that 'commercial harvesting of native fauna, including fish, is incompatible with national park aims' and comments that 'the effects of fishing are not confined to fish, since crocodiles and other animals are also caught in the nets.'³ Thirdly it quotes a Specialist Group of the International Union for the Conservation of Nature (IUCN) which expressed concern in 1984 at the continuing commercial netting of barramundi 'to the detriment of the C. porosus [saltwater crocodile] which are an important part of the park ecosystems.'⁴

7. In evidence before the Committee in October 1986, the Director of ANPWS, Professor J. D. Ovington, reaffirmed the intention to phase out commercial fishing and mentioned three grounds for the decision. Professor Ovington saw 'some evidence that fish stock are suffering, are being depleted' and noted that 'the Northern Territory Government ... has taken various measures elsewhere in the Northern Territory to improve this situation.' Secondly, Professor Ovington mentioned 'growing concern because of the advent of a disease called Bundaberg disease in the Northern Territory which is having adverse effects on a wide variety of fish species.' The third consideration was the IUCN request mentioned above concerning the preservation of saltwater crocodiles.⁵

8. The policy of closing the Park to commercial fishing received support directly or indirectly from other witnesses. As indicated in the discussion of recreational fishing in Chapter Two, the World Wildlife Fund highlighted the fact that while hunting of terrestrial species is not permitted in the Park, aquatic fauna are not afforded the same protection. The Fund recommended that fishing should be prohibited. Similar sentiments were expressed by the Australian Conservation Foundation, and by the Australian Heritage Commission. The latter body commented:

{the Commission supports the Australian National Parks and Wildlife Service in its plan to phase out commercial fishing in Kakadu National Park over a three year period. Fishing for native fish is not an appropriate recreation within a national park (just as koala shooting is not appropriate).⁶

9. Strong opposition to commercial fishing was also expressed by Professor H. Messel of the University of Sydney. On the basis of research conducted in the Northern Territory over a number of years, Professor Messel argued that as well as depleting barramundi stocks, commercial fishing had resulted in the killing of large numbers of saltwater crocodiles which were caught and drowned in fishing nets. Professor Messel made reference to the IUCN Specialist Group (of which he was a member) which had expressed concern in 1984 at the effect of commercial fishing on saltwater crocodiles in the Kakadu area. He believed that the Australian Government was under an obligation to ensure that commercial fishing cease in the Park.

10. Support for the prohibition of commercial fishing was also expressed by the Amateur Fishermen's Association of the Northern Territory (AFANT), although the Association expressed

concern about the pressure likely to be exerted on rivers outside the Park by fishers who would need to relocate their operations. As indicated in Chapter Two, the Association opposes the closure of any areas in the Park to recreational fishing.

11. Opposition to the phasing out of commercial fishing came principally from the Northern Territory Government and the Northern Territory Fishing Industry Council. These both challenged the proposition that commercial operations were resulting in the depletion of barramundi stocks or in serious effects on the crocodile population.

12. Representatives of the Northern Territory Fishing Industry Council (NTFIC) argued that commercial fishers had noticed signs of overfishing several years ago and that this had led the NTFIC to propose new management measures to conserve stocks. The major innovations were the imposition of maximum net lengths and the introduction of a net 'buy back' scheme. Before 1981 a maximum net length of 1500 metres per licensee was imposed and this was reduced to 1000 metres in 1982.⁷ The net 'buy back' scheme which commenced in 1982 allowed individual net units (each unit being equivalent to 250 metres), or a whole commercial fishing licence, to be sold back to the Northern Territory government at a stipulated price per unit.⁸ The size of a net unit was reduced in 1983 and the buy-back price per unit increased over the calendar period 1982 to 1988, as it became more difficult to move people from the fishery.⁹ This scheme was finalised at the end of 1987 when the number of licences remaining in the fishery was 38,¹⁰ compared to the 123 licences held before the scheme was undertaken.¹¹ In 1988 a new buy back scheme intended to give emphasis to the Mary River was introduced. This covered the buy back of five full licences (1000m net/licence) at a price of \$60 000 per licence. The NTFIC

measures had led to a considerable reduction in the fishing effort in Northern Territory coastal waters.¹²

13. The Northern Territory Fishing Industry Council argued that these changes protect the barramundi stock from overfishing. The Council bases this claim on conclusions reached by the Barramundi Task Force. The Task Force's report concluded that the maximum sustainable yield - the fishing level at which fish stocks are in equilibrium - would be reached if the fishing effort was of the order of 61 300 hundred metre net days. (One 'hundred metre net day' is 100 metres of net set for one day, or any combination of net length and days which equals 100.) As a result of the new management procedures the current level of effort is 35 000 hundred metre net days.¹³ On this basis the Council argues that barramundi are 'biologically safe and are not 'over exploited'.¹⁴ The Council claims that 'the number of fish is on the rise.'¹⁵

14. These arguments received support from the Northern Territory government. The Northern Territory Department of Ports and Fisheries stated that it has:

an on-going research monitoring programme to assess the status of the barramundi fishery. This is oriented to the continuing refinement of estimates of desirable fishing levels in the aggregate derived from catch and effort data. Some 14 to 15 years of data is now available for this purpose. The models used indicate that current effort is below the commercial optimum.¹⁶

The Northern Territory Government's submission stated that ANPWS had misrepresented the conclusions of the Barramundi Task Force Report¹⁷ and that the fish resource cannot be regarded as 'at risk under the present arrangements.'¹⁸ The submission argued that ANPWS had chosen to ignore 'dramatic reductions in the number of fishermen' together with 'significant reductions in

fishing effort'. The submission claimed that ANPWS had also omitted to mention the Barramundi Task Force's conclusion that additional fishing control measures were not required for the Alligator Rivers area because the existing fishing effort there was below the optimum.¹⁹ In examining these arguments the Committee noted that the Task Force study not only questioned the accuracy of the various models used to predict sustainable yields²⁰ but also went on to add that various other factors (environmental, changes in fishing strategy, geographical distribution etc.) had resulted in 'somewhat inflated estimates of sustainable yield'.²¹ The report further concluded that a study of river systems and their exploitation 'gives a clear indication of the need to impose additional restrictions overall ...'²²

15. The claim that commercial fishing kills large numbers of crocodiles was disputed by the Northern Territory Fishing Industry Council. It characterised this proposition as based on 'rumours [which] are often spread by Southerners who have no idea of the true situation.'²³ Council representatives commented that fishers had previously used a heavy netting material from which crocodiles found it difficult to escape. Current practice was said to entail a monofilament, nylon netting which crocodiles are able to break out of more easily.²⁴ Some crocodiles still get caught, the Council acknowledged, but these represent only a very small proportion:

[m]ost crocodiles live very happily with nets using the bunt of the net to assist them in catching fish. There are of course some "rogue" crocodiles, a very small percentage of any one area of crocodile population, who take fish from nets and who are occasionally caught. These crocodiles, where possible, are released from the nets, occasionally they drown. We would estimate that the percentage of any river's population so killed would be slightly less than 1% and would in no way compete with cannibalism or death from fighting that would occur naturally.²⁵

Council representatives said that crocodile numbers are increasing. They quoted figures provided by the Northern Territory Conservation Commission indicating that the current rate of increase is 10.8 per cent per annum and that the population of the South Alligator River in particular is increasing at an annual rate of 22.5 per cent.²⁶ This is also supported by the ANPWS Plan of Management which states that the number of saltwater crocodiles 'is increasing even though some animals are drowned in commercial barramundi nets set in the mouth of rivers'.²⁷

16. The suggestion that commercial fishing may have some causal role in the spread of Bundaberg disease was also disputed. Mr. D. Dunstan, Executive Officer of the Northern Territory Fishing Industry Council said:

[w]e are told that this disease has always been present. But nobody knows why it has come out this year. It is confined in the main to freshwater billabongs. The commercial fishers have had very small instances of diseased fish this year. It has been a very low percentage compared to what is being caught by amateurs in inland freshwater areas ... it is clear that barramundi is the least affected fish by the disease. It seems to be standing up to it a lot better than catfish and other incidental types of fish.²⁸

The Committee notes that little appears to be known about the disease. Professor Ovington explained that it is thought to be a virus, possibly of South East Asian origin, and that it is causing high mortality rates in many fish species. It is known to be in the South, East and West Alligator Rivers, the Wildman River and Coopers Creek just outside the Park.²⁹

17. Finally, there was dissent from the proposition in the Park plan of management that commercial fishing 'is incompatible with national park aims.' The Northern Territory Government described this as an 'ambit claim' which it could not accept and

which was also 'incompatible with the principles adopted by the Commonwealth in the context of the National Conservation Strategy in relation to conservation and resource utilisation.'³⁰ (The National Conservation Strategy, as indicated in Chapter Two, adopted as a general principle that conservation and resource utilisation should be treated as interdependent.)

18. The Committee finds some of these arguments more substantial than others. The question of Bundaberg disease can be dealt with quite briefly since there appears to be very little reliable information about it at this stage. The presence of the disease in the fish populations in the Park should certainly be investigated carefully. However, there appears to be no evidence at the moment of any causal connection with the activities of commercial fishers.

19. The impact of commercial fishing on crocodiles is difficult to determine with any accuracy but the Committee believes the situation to be less serious now than it was in the late 1970s when Professor Messel observed high rates of crocodile mortality resulting from fishing nets. The use of the lighter monofilament nets, together with the substantial reduction in the number of licensed operators, seem to be the main reasons for this changed situation. Nevertheless, as the Northern Territory Fishing Industry Council itself acknowledged, some crocodiles continue to be drowned in nets despite the best efforts of fishers to prevent this. This situation is unlikely to alter as long as commercial fishing continues, and it clearly runs counter to the basic national park objective of ensuring protection for native fauna.

20. The impact of commercial fishing on fish stocks is also difficult to assess with accuracy. ANPWS highlights the major decline in catch per unit effort since 1972 in the Alligator Rivers region, as documented in the Barramundi Task Force report. (Catch is measured in whole weight and effort is measured in

hundred metre net days). The Northern Territory Government and the NTFIC on the other hand see the Task Force report as supporting their own position that, given the substantial reductions in fishing effort, commercial fishing in the Kakadu region (and in the Northern Territory in general) is now being held at a level which ensures that over-exploitation does not occur. The Northern Territory Department of Ports and Fisheries referred to its long-term research and monitoring program in support of this position. Perhaps the only common ground between the Territory government and the ANPWS in this context is that both acknowledge the growing impact on the fishery of recreational anglers, and both see a need to investigate this more closely.

21. Whether or not commercial fishing is taking place at a sustainable level however, it is clearly removing large quantities of fish from the river systems of the Park. The commercial catch in the Kakadu area over the period 1981 to 1985 has ranged between 145.06 and 57.46 tonnes of barramundi, in addition to substantial quantities of threadfin salmon. This, together with the incidental drowning of saltwater crocodiles, clearly amounts to a substantial assault on the aquatic fauna of the Park. It is a situation which sits uneasily with the generally accepted concept of a national park as an area in which exploitation of natural resources is prohibited, and where fauna and flora are protected. The principles enunciated in the National Conservation Strategy, to which the Northern Territory government referred, do not affect this situation in the Committee's view. The Strategy certainly argues that policies relating to resource development and conservation should be interdependent, as the Northern Territory pointed out. As indicated in Chapter Three however, the Committee sees this principle as applying to land use policies generally rather than to national parks in particular. Where the latter are concerned, a much stronger emphasis on conservation is normally considered to be appropriate and the exploitation of natural resources is strongly discouraged. As mentioned in Chapter Two, the IUCN lists

fishing as one of the forms of exploitation of natural resources which should be prohibited in national parks. The World Heritage listing of part of the Park, including much of the Wildman and Alligator River systems, also implies very high standards of resource preservation.

22. The Committee recognises the apparent inconsistency in supporting the phasing out of commercial fishing and not opposing the continuation of recreational fishing. As noted in Chapter Two, recreational fishing also removes substantial quantities of fish from the river systems of the Park. Given the increasing numbers of visitors and the reduced number of commercial fishers, the total recreational catch may now in fact be considerably in excess of the commercial take. This is demonstrated by the fact that 50 per cent of recreational fishing in the Northern Territory takes place within the Park, and recreational fishers were responsible for 58 per cent of the total barramundi catch. Recreational anglers also tend to catch a wider variety of fish species, which may add to their ecological impact. It might of course be argued that commercial fishing can more readily be described as 'exploitation' of Park resources since it is carried out for commercial gain and not simply as a recreational activity. The consequences for the aquatic fauna are however the same in both cases. Both commercial and recreational fishing amount essentially to 'hunting' of fauna and for that reason are difficult to reconcile with national park aims. As indicated in Chapter Two, the Committee has accepted that recreational fishing plays an important role in tourism in the Park region and has not proposed the closure of the Park to amateur anglers (although that position is linked to a recommendation that further research be carried out which may entail partial closures.) Unlike recreational fishing however, commercial operations are not linked with other activities within the Park and cannot be supported on such grounds. The Committee believes the current policy of a progressive phase-out is correct and should be implemented.

Recommendation

The Committee recommends that the policy of phasing out commercial fishing in Kakadu National Park be implemented according to the timetable presented in the second Kakadu National Park Plan of Management.

23. The Northern Territory Government submitted that if this is to occur there should be adequate compensation for the licensed operators affected. The basis of this argument is that although commercial fishing in the Territory's coastal waters is currently at a level below the maximum sustainable yield, the six to nine licensees displaced from the Kakadu area could not be absorbed into the remainder of the fishery without placing excessive pressure on fish stocks in other areas. Since barramundi fishing boats are purpose-built and are unsuitable for the open sea, there is no possibility of transferring to deep sea fishing. The Territory Government argues therefore that if any fishers are excluded from the Park area, they should be compensated at a level which will enable their complete removal from fishing in Territory waters. Appropriate compensation, the Territory submits, would be 'at least the same level as received by those who surrender entitlements under the present net buy-back scheme together with a component relevant to the vessel and equipment involved.'³¹ The Committee accepts the logic of this argument and believes that claims for compensation at this level should be considered. If this is not done and the operators remain in the industry, the phasing out of commercial fishing in the Kakadu area could possibly jeopardise fish stocks elsewhere in the Territory. A policy motivated by a concern for conservation could then result in adverse effects on aquatic fauna in other areas.

Recommendation

The Committee recommends that commercial fishers displaced from the Park be offered compensation by the Commonwealth for their total removal from fishing activities in Northern Territory waters. The compensation should be at a level received by those who surrender entitlements under the present net buy-back scheme, together with a component relevant to the vessel and equipment involved.

CRABS

24. Mud crabs in the Northern Territory are primarily harvested by the use of pots. Crabbing occurs in all of the mangrove areas along the coastline, with the majority of the catch being taken in places close to the larger population centres. Like commercial fishing, the crab industry is also subject to management measures. No more than 55 operators are licensed, each with a permit for a maximum of 60 pots. Crabs less than a minimum size must be returned to the water.

25. In line with the policy of phasing out commercial fishing, the current plan of management prohibits the use of crab pots unless a permit has been obtained from ANPWS. In practice this means that the Park has been closed to crabbing.

26. The Northern Territory Government and the Northern Territory Fishing Industry Council argued that this measure is unnecessary. The Territory's submission claimed that crab resources in the Territory cannot be regarded as 'at risk' under present management arrangements and that, like fish, crab resources in the Park should continue to be managed as an integral part of the overall Territory situation. The Council expressed similar views and drew attention to restrictions introduced since 1985 which limit the number of operators in the industry, the number of crab pots which can be used, and the size

of crabs taken. The submission argued that measures such as these ensure the long-term protection of the crab population.

27. The Committee's views on this matter parallel its approach to commercial fishing for barramundi and threadfin salmon. The commercial harvesting of crabs within the Park amounts to an exploitation of part of the area's ecological resources and as such is in conflict with national park aims as they are normally understood. The prohibition of crabbing in the Park seems therefore to be the appropriate course of action.

Recommendation

The Committee recommends that the Kakadu National Park remain closed to commercial crabbing operations.

1. Evidence p. 2297
2. Evidence p. 2284
3. Australian National Parks and Wildlife Service (ANPWS) 1986
Kakadu National Park Plan of Management, ANPWS p. 30
4. ANPWS ibid p. 26
5. Evidence p. 2199
6. Evidence p. 1517
7. Department of Ports and Fisheries Northern Territory 1985
Report of Barramundi Task Force p. 3.6
8. Department of Ports and Fisheries, Northern Territory op. cit.
p. 3.6
9. Letter from Mr J Dillon, Department of Ports and Fisheries,
Northern Territory to Mr P Roberts, National Resources
Committee dated 14 July 1986. Attachment p.1
10. ibid p. 2
11. Evidence p. 2290
12. Evidence p. 2290
13. Evidence p. 2286
14. Evidence p. 2286
15. Evidence p. 2290
16. Letter from Mr J F Dillon op. cit.
17. Evidence p. 2487
18. Evidence p. 2442
19. Evidence p. 2487 and 2488
20. Department of Ports and Fisheries op cit p. 5.4
21. ibid p. 5.9
22. ibid 2.4
23. Evidence p. 2286
24. Evidence p. 2292
25. Evidence p. 2286
26. Evidence p. 2293
27. ANPWS op cit p. 26
28. Evidence p. 2300, 2301
29. Evidence p. 2202
30. Evidence p. 2441
31. Evidence p. 2443