

## CHAPTER TWO

### TOURISM

#### FEATURES OF THE REGION

1. The Kakadu National Park region holds many attractions for tourists. There are areas of great scenic beauty, a variety of plants and animals, impressive galleries of Aboriginal rock art, and opportunities for a range of recreational activities. Many tourists also consider the continuing presence of Aboriginal people as an important feature of the area. The present chapter will examine these various attractions and consider the impact made upon them by the growing number of tourists who are drawn to the region.

#### Landscape

2. The landscapes of the region show great variety. The tidal flats along the northern fringe merge into floodplains with meandering rivers, billabongs and swamps. Moving south, one encounters extensive lowlands with forest-covered plains and hills, and isolated pockets of dense rainforest. Further to the east and south the impressive 500 kilometres long escarpment of the Arnhem Land plateau traverses the Park with waterfalls at times reaching as high as 200 metres. Beyond the escarpment are the western extremities of the Arnhem Land Plateau itself, presenting a rugged landscape of weathered rocks and pinnacles. In the Stage 3 area to the south and south-west, lies an area of hills edged with low cliffs, separated by the valleys of the Mary, South Alligator, and Katherine River systems. In addition to this scenic variety there is the sheer size of the total area.

As Professor J.D. Ovington, Director of ANPWS, commented, '[v]ery rarely does a National Park give such a feeling of untouched wilderness and have such an immense variety of landscapes as Kakadu'.<sup>1</sup>

3. There are some outstanding scenic highlights which include Twin Falls and Jim Jim Falls where water cascades from the rocky escarpment; Yellow Water, a billabong area teeming with birdlife and a habitat for crocodiles; UDP Falls in the south which featured in the film Crocodile Dundee; and Koolpin Gorge where the escarpment has eroded to form a spectacular chasm. The escarpment itself offers many impressive sights, such as Mount Brockman, with its sheer sandstone cliffs, and Ubirr which, in addition to its galleries of rock art, offers a sweeping view across the floodplains.

#### **Fauna and flora**

4. The region is home for a wide variety of animals. Scientists have recorded approximately 75 reptile species, 275 bird species, 50 mammals and 45 fish. One of the most popular attractions for tourists is the crocodile. Both saltwater and fresh water crocodiles are found in the region, the saltwater variety occurring on the tidal flats and floodplains, and the fresh water crocodile living further inland. Visitors to the Park are frequently able to see saltwater crocodiles during conducted boat tours at Yellow Water. In Kakadu, as elsewhere in the Territory, crocodile numbers appear to be increasing.

5. Birds are an important attraction, particularly for visitors with specialised ornithological interests. The variation in topography and vegetation provides a wide range of habitats and about one-third of all Australian species are found in the region. Several of these are rare.<sup>2</sup> Populations vary with habitat. Estuarine mangroves for example provide shelter for egrets, cormorants, mangrove herons, brahminy kites and a range

of other species. Other habitats are afforded by the rainforests, the escarpment, the coastal woodlands - where the rare hooded parrot and Gouldian finch are found - the sandstone spinifex areas of the Arnhem Land Plateau, and the important wetlands areas which are frequented by a wide variety of birds in large numbers.<sup>3</sup> Commenting on the wetlands, the submission from the CSIRO stated that:

[o]ne of the great natural wonders of Australia is the huge number of waterbirds - geese, ducks, herons, egrets, ibises, the jabiru, the brolga, etc. - that congregate during the dry season on the complex of persistent swamps and the moist soil that constitute the floodplains of Kakadu. Counts have shown that there are millions of birds present in some seasons... The significance to Australia of this complex of wetlands and its bird fauna is difficult to exaggerate. No other region of the continent can boast such enormous populations of waterbirds.<sup>4</sup>

Migratory species also make annual visits to the Park region. At certain periods the swamps, watercourses, billabongs and tidal flats provide wintering habitats for many Asiatic waders, while a number of other species shelter in the region's forests.<sup>5</sup>

6. Although a wide variety of mammal species is found in the region, particularly in the forests and hills,<sup>6</sup> many have nocturnal habits or a shy nature and are rarely seen. Others such as the agile wallaby (Macrophus agilis) and the dingo are a more common sight. Buffalo, which are an introduced species, occur in many areas and are frequently a source of curiosity for tourists. However, because of the damage they cause to the environment and because they are reservoirs of disease, buffalo numbers are progressively being reduced through an eradication program.

7. As indicated above, there are 45 species of fish in the creeks and rivers of the region. The majority of these are found only in freshwater habitats. By comparison, it is interesting to

note that the Murray-Darling river system, which is the most extensive in Australia, supports 27 fish species. None of the species found in the Park region is regarded as endangered, although the Primitive Archer Fish is regarded as rare.<sup>7</sup> Several fish species are known to have only a limited distribution in northern Australia.<sup>8</sup> The Park plan of management includes measures to prevent the introduction of exotic fish and so far this has not occurred. Both commercial and recreational fishing have taken place in the region over a long period, although restrictions are now being applied. Aspects of recreational fishing are discussed later in this chapter. Commercial fishing is treated separately in Chapter five.

8. The plant life of the Kakadu National Park region has been described as 'one of the richest, yet least known floras in Australia'.<sup>9</sup> About 1500 species have been identified, their distribution varying with the changing topography. An attractive selection can be found in the well-illustrated work Wildflowers of Kakadu which was provided to the Committee in the course of its inquiry. The plant life throughout the region has considerable scenic value, one popular source of interest being the flora on the floodplains which includes waterlilies and sedges. Tourists visiting Yellow Water are able to view this rich aquatic flora together with the large numbers of waterbirds which inhabit the area.

#### **Aboriginal presence**

9. The Kakadu region has an Aboriginal presence not only in terms of cultural legacies such as rock art but also in the form of a viable contemporary community. As indicated earlier in this report, nearly all the area corresponding to Stage 1 of the Park, together with a small portion (approximately seven per cent) of Stage 2, is Aboriginal land granted under the Aboriginal Land Rights (NT) Act. The Committee was told that the creation of a national park over this land has helped to provide Aboriginal people with an environment in which they feel comfortable<sup>10</sup> and where some aspects of their traditional lifestyle, such as

religious practices, can be retained if they so desire. There has been an increase in the Aboriginal population in the region from the 60-70 residents at Mudginberri in 1975, to 139 in 1980. In 1986 there were 277 Aborigines located in various areas around the Park.<sup>11</sup> This increase has been largely due to the employment opportunities offered by the Park. As indicated in Chapter One, parts of Stage 3 and the Conservation Zone are currently the subject of an Aboriginal land claim and this may increase the Aboriginal population of the region. There is evidence to suggest that for some tourists, particularly those from overseas, the Aboriginal presence may be one of the attractions of the Kakadu region. The implications of this, and the impact on the Aboriginal people themselves, are discussed later in this chapter.

#### **Aboriginal rock art and archaeological sites**

10. The Arnhem Land escarpment and its rock outliers contain large numbers of caves and rock shelters which were frequented over thousands of years by the Aboriginal inhabitants of the region. Many of these secluded places display examples of rock art. In the words of one witness, these constitute 'the largest, and in general, best preserved body of rock art in the world.'<sup>12</sup> Exact dating of the paintings is difficult but it has been estimated that some are at least 20,000 years old, equal in age to the famous French and Spanish art sites at Lascaux and Altamira.<sup>13</sup> The most recent examples belong to the last few decades. In many cases, surfaces have been painted and repainted in a succession of styles. The richness and archaeological significance of these sites has been widely recognised and was a major reason for the inclusion of Stage 1 of the Park on the World Heritage List.

11. Some rock art sites are easily accessible for tourists. An outstanding example is Ubirr in the north of the Park where numerous galleries are located beneath rock overhangs. A major attraction here is the main gallery which has fine examples of the "X-ray" style of painting.<sup>14</sup> Another well-known site is Nourlangie Rock further to the south where a major feature is a large frieze, repainted in the 1960s, depicting a number of mythological beings. Little Nourlangie Rock nearby has a rare example of paintings using blue pigment.

12. There are also numerous archaeological sites throughout the region resulting from Aboriginal occupation over thousands of years. The few completed excavations have revealed the oldest occupied sites yet found in tropical Australia, dating back at least 23 000 years.<sup>15</sup> ANPWS estimates that there are several thousand archaeological sites in the Park. One site has now been opened for public viewing at Nourlangie Rock.<sup>16</sup>

#### **Recreational opportunities**

13. Both the current and the previous plan of management for Kakadu National Park have recognised that one objective of the Park is to provide for a range of appropriate recreational activities while ensuring protection for the area's cultural and natural assets. The major activities currently catered for are walking, camping, bird-watching, recreational driving, boating and fishing.

#### Walking

14. Walking is a popular means of appreciating the scenic and cultural attractions of the region. The current plan of management distinguishes four walking categories: walking from carparks via formed tracks to established tourist sites, such as Ubirr; longer walks to a particular location using unformed tracks, or the general exploration of a camping or picnic area;

bushwalking involving camping en route, with a permit system for camping in other than designated camping areas; and guided or self-guided nature walks assisted where possible by explanatory pamphlets. ANPWS intends to maintain this range of walking opportunities to cater for the different interests and capabilities of visitors. Additional walking tracks are being considered and facilities such as informative signposts are to be progressively improved.<sup>17</sup>

### Camping

15. Camping facilities are available at the two motels in the Park and at a number of camping areas provided by ANPWS. Facilities provided at the three major camping areas at Merl (East Alligator), Mardukal and Muirella Park, include a landscaped central section with a modern ablutions block, solar powered hot water, and lighting. Access is via sealed roads. These camping grounds are located near Ubirr, Yellow Water and Nourlangie Rock respectively. Other camping areas at Malabanbandju, Baroalba and Gadjaduba have graded access, pit toilets and a rubbish disposal service. The facilities are beginning to be over taxed by the recent dramatic increase in the number of visitors to the Park. Visitor information and boat launching facilities are also available at the major camp sites.<sup>18</sup> Camping in recognised areas has so far been free of charge although the current plan of management foreshadows a possible change to this policy.

### Bird-watching

16. An outstanding opportunity to view the birdlife of the wetlands is provided by the guided boating tours of Yellow Water. ANPWS has published a bird check list<sup>19</sup> and further viewing hides are being constructed near places where birds, and other

wildlife, are known to congregate.<sup>20</sup> Some tour operators are now beginning to offer excursions which cater specially for tourists interested in bird-watching.<sup>21</sup>

#### Scenic driving and tours

17. Part of the road system in the region is suitable for conventional vehicles and there is no difficulty during the dry season in travelling between main centres such as Ubirr, Jabiru and Coinda. In addition there are a number of tracks suitable for four wheel drive vehicles, such as those giving access to Jim Jim Falls, Twin Falls and Koolpin Gorge. This network of roads and tracks is used extensively by both private vehicles and commercial tour operators. The standard of the road system within the region was the subject of some comment during the inquiry and is discussed later in this chapter.

#### Boating

18. Recreational boating is becoming increasingly popular in the region. Many visitors bring their own boats and make use of the rivers and billabongs. Boating opportunities are increased in the wet season and at high tides. Access and launching facilities have been provided at some locations and two billabongs have been set aside for non-motorised craft. The use of such craft is discouraged in some areas however, in view of the threat posed by saltwater crocodiles.<sup>22</sup>

#### Fishing

19. According to the Amateur Fishermen's Association of the Northern Territory, recreational fishing is the most popular specialised activity in the Park. The Association claimed that 'perhaps more than 50% of recreational fishing across the Top End' takes place within the Park.<sup>23</sup> Results from an ANPWS survey indicates that 37 per cent of private visitors bring fishing gear



with them. The most sought-after fish is undoubtedly the barramundi which is prized, according to the Amateur Fishermen's Association, for 'its size, its aggressive nature, its fighting ability, its appearance and its table qualities.'<sup>24</sup> The Northern Territory is generally recognised as Australia's premier location for barramundi fishing. Recreational anglers in the Kakadu region also fish for such species as saratoga, sooty grunter, threadfin salmon, jewfish, golden snapper, queenfish, trevally and mangrove jack. Restrictions applying to recreational fishing are discussed later in this chapter.

#### Other recreational activities

20. Other activities in the region include swimming, rockclimbing, target shooting, aerial tours and visits to the Ranger Uranium Mine. Swimming is generally not encouraged in natural waterways and in many places the presence of saltwater crocodiles has led to its prohibition. There is a public pool in Jabiru. Rockclimbing currently occurs at two places only. Many of the suitable sites have Aboriginal significance and their use would require the approval of traditional owners. Target shooting is prohibited in the Park but is permitted near Jabiru for recognised clubs. Hunting, whether by firearms or other means, is prohibited except in the case of Aborigines with traditional rights. Aerial tours offer a means of appreciating the vastness and the diversity of the Kakadu landscape. A number of such tours currently operate, both from Darwin and from Jabiru. The Ranger Uranium Mine also provides a point of interest for some tourists. Mine management estimates that 15,000 tourists visited the mine in 1985 and 18,000 in 1986. In the calendar year to the end of October 1987 a total of 22 300 people visited the mine,<sup>25</sup> including visitors who are shown the mine as part of an organised tour of the Park. Data supplied by ANPWS suggests that approximately 15 per cent of private visitors include Ranger on their itinerary.<sup>26</sup>

## Accommodation

21. There are currently two commercially operated motels within the Kakadu National Park - the Kakadu Holiday Village (previously the South Alligator Inn) and the Cooinda Hotel/Motel located near Yellow Water. The first offers motel rooms, demountable rooms and dormitory style accommodation, and caters for up to 260 people. There are also caravan and tent sites. The Cooinda Hotel/Motel has motel rooms for 150 people as well as some caravan and tent sites. Motel accommodation is also available at the Bark Hut Inn, 38 kilometres west of the Park. In accordance with original intentions, Jabiru has so far not provided any tourist accommodation. Work has now been completed however on the construction of a 110 room crocodile-shaped motel in the township of Jabiru. The motel is a joint project of the Gagudju Association and Industrial Equity Limited.

22. In addition to accommodation at motels, camp sites are provided at a number of locations. Camping facilities are discussed in paragraph 15 above.

23. A survey conducted by ANPWS shows that visitors to the Park fall into four main groups:

1. international and interstate tourists seeking high class accommodation coupled with air, land and boat tours;
2. specialist tour groups such as ornithologists, archaeologists, scientific and educational research groups;
3. visitors interested in a range of recreational activities as well as park appreciation seeking moderately priced accommodation other than camping;
4. visitors seeking camping/caravanning opportunities in a range of settings.

The current plan of management for the Park acknowledges that present accommodation facilities do not cater adequately for this range of requirements. The construction of the new motel at Jabiru will assist with the first group, although the plan suggests that another motel may need to be established in the southern part of the Park. The plan also recognises the need for 'simple, moderately priced lodge style accommodation ... which would be intermediate in standard between the high class hotel/motels and the camping grounds.'<sup>27</sup> This would help in catering for the third group identified in the survey. Low cost accommodation would be provided by establishing Youth Hostel facilities, initially at Yellow Water. For researchers and special interest groups, the plan suggests 'a limited amount of cabin accommodation' together with some reliance on accommodation provided for general visitors. The plan also envisages a number of measures to improve facilities for camping. The Northern Territory Government has criticised provisions for tourist accommodation in the Park, referring in particular to shortages of motel rooms in peak periods. This is discussed later in this chapter.

#### Other facilities

24. The two motels within the Park sell petrol and have stores which stock basic food supplies. The Border Store near Ubirr sells food supplies and petrol. The township of Jabiru has a recreation lake, a public swimming pool, a golf course, shooting range, supermarket, chemist, service station, post office, medical centre and police station. On completion of the new motel, Jabiru will also offer accommodation. The current plan of management suggests that construction of a new motel in the southern part of the Park would be likely to generate a need for facilities such as a store, a restaurant and a garage.

## Information and education

25. ANPWS uses a variety of means to provide information about Kakadu National Park and to foster an appreciation of the Park's natural and cultural heritage. Visitor information is provided through static and portable displays, signs, brochures, books, posters and maps. Topics include geology, climate, ecology, flora and fauna, prehistory, Aboriginal art and the current Aboriginal population in the area. There are guided tours of the major rock art sites, and four walking trails. Orientation talks are provided on request to Jabiru residents, the Darwin community, school camps, and other interested groups. Courses are conducted for tour operators bringing visitors to the Park. ANPWS intends to upgrade these information and education facilities in a number of respects and a major audio-visual bird centre has been opened at Park headquarters. In addition to material provided by ANPWS, there is a growing number of well-illustrated books about aspects of the region and its inhabitants. Tour operators also provide numerous pamphlets and brochures.

## TOURIST NUMBERS AND CHARACTERISTICS

26. The popularity of the region as a tourist destination has been steadily increasing in recent years. The Kakadu Visitor Use Survey which is carried out by ANPWS on a continuing basis gives the figures for visitor numbers for the period 1982 to 1986 shown in Table 2.1. The extent of the recent increase in visitor numbers is demonstrated by the fact that in 1987 more people visited the Park in July than in the whole 12 months of 1982.<sup>28</sup>

Table 2.1

ANNUAL VISITOR NUMBERS - KAKADU NATIONAL PARK<sup>29</sup>

	Number of visitors	% annual increase
1982	45,800	
1983	57,850	26
1984	75,200	30
1985	101,600	35
1986	131,000	29
1987	185,000	41

27. The survey also provides an estimate of visitor days spent in the Park. Over the period in question the total annual visitor days, which also showed a steady increase, were as shown in Table 2.2. These figures indicate an average visitor stay in excess of three days for each of the years surveyed, with a slight increase in average stay over the period. The length of stay varies between private and tour visitors. On current trends, private visitors spend an average of 4.61 days in the Park, with tour participants having a average stay of 1.96 days.

Table 2.2

ANNUAL VISITOR DAYS - KAKADU NATIONAL PARK<sup>30</sup>

	Number of visitor days	% annual increase
1982	150,800	
1983	185,750	23
1984	268,300	44
1985	370,150	38
1986	500,450	35
1987	660,000	31

28. The ANPWS survey also provides some information on the characteristics of visitors to the Park. Private visitors have consistently been more numerous than visitors travelling on organised tours, the ratio being of the order of 5.5 to 1. More than half of the private visitors carry camping equipment while the majority of overnight visitors on tour stay in hotel/motel accommodation. In each of the five years of the survey, overseas visitors represented about 10 per cent of private visitors and 15 to 18 per cent of tour participants. Approximately 50 per cent of overseas private visitors are from Europe (mainly from the United Kingdom, West Germany and Sweden), with 25 per cent from the USA and Canada and 14 per cent from New Zealand. Tour operators are becoming increasingly conscious of the interest being shown by travellers from overseas, one operator reporting a 65 per cent increase in international visitors over a recent two year period.<sup>31</sup> Specialised tours are becoming more common. Mr T. Winter of the Darwin Tourist Promotion Association told the Committee of groups of tourists from America with special interests such as bird-watching, geology and Aboriginal culture. European groups were often in search of wilderness areas.

29. The ANPWS survey indicates that visitors tend to focus on a number of key sites. They include the East Alligator region, Coinda/Yellow Water, Aboriginal rock art sites at Ubirr and Nourlangie and Park Headquarters.<sup>32</sup> The most popular activities enjoyed by tourists include camping fishing, picnics and barbeques, swimming, boat tours, and shopping/hotel visit.<sup>33</sup> 'The overwhelming majority of feedback' for the survey 'is complimentary as well as constructive'.

## ECONOMIC IMPACT OF TOURISM

30. Tourism is the Northern Territory's second most important industry after mining. According to the Northern Territory Tourist Commission, tourism has been the catalyst for substantial infrastructure expenditure and generated \$285.9m in direct revenue in 1986/87.<sup>34</sup> A submission received from the Northern Territory Government stated that:

[t]ourism is the Territory's fastest growing industry with an annual growth rate of over 10% p.a. It currently employs 8% of the Territory's workforce. It offers the best chance for creating employment opportunities in the short term.<sup>35</sup>

Mr A. Morris of the Department of the Chief Minister referred to Bureau of Industry Economics figures indicating that 'for every 250 Australian tourists visiting somewhere, there is one new job there', and that 'for every 26 overseas tourists there is one new job'.<sup>36</sup> The Northern Territory Government's submission argued that 'because the Northern Territory has fewer strings to its economic bow than Australia as a whole, tourism is of more paramount importance to the Territory.'<sup>37</sup>

31. The importance of Kakadu in this context was stressed by a number of witnesses. The Northern Territory Government argued that the Park should form 'one of [the] most critical components' of the Territory's tourist industry<sup>38</sup> while another witness described it as '100 per cent the backbone of Top End tourism.'<sup>39</sup> There are difficulties in estimating revenues generated specifically by a regional area such as Kakadu since figures available on average daily expenditures by tourists relate to spending in Australia generally, rather than to particular locations. However, some idea of the importance of the region within the Territory's tourist economy may be gained by comparing it with other major centres. Figures supplied by the Northern

Territory Tourist Commission allow a comparison of tourist trends at Kakadu with two other popular destinations in the Territory - Katherine Gorge, and the Uluru National Park. These are the three most popular tourist destinations in the Territory. The figures (shown in Table 2.3) indicate that, starting from a much lower base, Kakadu has now nearly drawn level with the other two centres in terms of visitor numbers.

Table 2.3

VISITOR NUMBERS - THREE MAJOR NORTHERN TERRITORY DESTINATIONS

	KAKADU (000's)	KATHERINE GORGE (000's)	ULURU/OLGAS (000's)
1981/82	37.5	75	86.9
1982/83	49.9	90	87.9
1983/84	66.5	100	106
1984/85	80.3	120	110.1
1985	101.6	-	132
1986	131	145	141.1
1987	200	180	250

Source: Northern Territory Tourist Commission

32. The Commission also indicated that tourists tend to stay longer at Kakadu than at the other two destinations in question. The average stay at Uluru and Katherine Gorge is 1.5 days and 2 days respectively, while the average stay at Kakadu is four to five days.<sup>40</sup> In terms of visitor days therefore, the relative importance of Kakadu increases.

33. The Northern Territory Government advocated a faster rate of expansion of tourism in the Park region. The Territory's submission criticised what it saw as the restrictive policies followed by ANPWS and urged the adoption of strategies which would favour stronger tourist growth while still providing protection for Aboriginal residents and the environment. ANPWS,



for its part, expressed satisfaction with the current rate of growth of tourist facilities which, it claimed, were appropriate to the current level of demand. This debate is examined in more detail later in this chapter, following an examination of the impact of tourism on Aborigines and the environment.

## IMPACT ON ABORIGINAL INTERESTS

### Aborigines in the Park

34. As indicated earlier there are now some 277 Aborigines resident in Kakadu National Park. Living areas have been established at several locations in the northern half, including one at Jabiru. There is a likelihood that Aboriginal residents may also establish themselves in the southern area if land claims relating to Stage 3 and the Conservation Zone prove to be successful.

35. ANPWS regulations permit traditional owners and others with traditional rights to move freely throughout the Park and to hunt and gather plants for food.<sup>41</sup> In addition special measures are available to protect Aboriginal interests. Under the National Parks and Wildlife Conservation Act the Director of ANPWS is empowered to restrict entry to certain land to protect the privacy of Aboriginal communities, and to prevent public access to other designated areas. Certain restrictions have in fact been applied. In the interests of privacy, road access to Aboriginal living areas is limited to persons having business there and to those invited by residents.<sup>42</sup> Several locations of particular importance to Aboriginal residents, such as burial grounds and ceremonial areas, have also been the subject of formal closures. The total area involved is small, amounting to about 23 square kilometres or 0.18 per cent of the total area of Stages 1 and 2 of the Park.<sup>43</sup>

36. The effectiveness of these measures in protecting Aboriginal interests was the subject of some comment in the course of the inquiry. Representatives of the Department of Aboriginal Affairs indicated that they were satisfied with the current arrangements which, in their view, assisted Aboriginal people in establishing 'the sort of lifestyle they want in particular locations within the region'. Evidence of this could be seen in 'the number of people who have now gone back and resumed life in ... homeland centres or outstations in the area'.<sup>44</sup> The Department felt that Aborigines now living in the Park 'are not strongly opposed to the presence of visitors' provided appropriate protective measures are taken for themselves and the environment.<sup>45</sup> There were potential benefits for Aborigines since tourism is 'a potential income earner' for Aboriginal people and one of the developments 'in which [they] have an interest and may well want to participate.'<sup>46</sup> As the Department noted, this is already occurring through the Gagudju Association's ownership of the Cooinda Motel and the Border Store. More recently, Aboriginal involvement in the tourist industry has increased substantially with the Association's decision to establish a motel in Jabiru.

37. There were some less optimistic comments. The Department of Aboriginal Affairs itself acknowledged that 'many Aborigines find the presence of strangers disturbing and feel restricted in their use of many hunting and fishing areas.'<sup>47</sup> Mr S. Brennan from the Bureau of the Northern Land Council expressed a similar view. Acknowledging that the Gagudju Association has 'an obvious interest in tourism', Mr Brennan commented that Association members want 'controlled development', not 'unrestricted development that is ad hoc.' The Gagudju people, he said:

do not like the idea of being a bit like a zoo, feeling that they are on display for tourists to come and see what an Aboriginal person looks like in his environment, to see whether he still walks around with a spear.

They certainly do not like that concept of tourism.<sup>48</sup>

The view repeatedly expressed by Gagudju Association members, Mr Brennan added:

is that they do not want the visitor numbers to become so great that there would be environmental damage to the park, and certainly that they are interested in being able to have private living areas that are not intruded upon.<sup>49</sup>

Mr J. Christophersen, Deputy Chairman of the Council, stated there had been tourist pressure on sacred sites and instances of bones being removed from burial grounds.<sup>50</sup>

38. The Australian Conservation Foundation also commented on the impact of tourists on Aboriginal communities. The Foundation spoke of the Aborigines' 'very real fears of widespread tourism,'<sup>51</sup> and argued that Aboriginal traditional owners fear a rapidly expanding tourist industry more than mining 'because of tourism's "permanent" and growing scale.'<sup>52</sup> The Committee is also aware of the warning sounded in the Australian Institute of Aboriginal Studies' report, Aborigines and Uranium, which examined the impact on Aboriginal communities of uranium mining at Ranger and Nabarlek. This report identifies certain adverse effects resulting from these operations and argues that any major new developments, including those connected with tourism, will 'seriously intensify the grave problems already being faced by people in the Aboriginal domain.'<sup>53</sup>

39. Many Aborigines are reluctant to place themselves in situations in which contact with tourists is likely to occur. In Aborigines and Tourism, which examined the impact of tourism on Aborigines in the Kakadu region, it was stated that many Aborigines 'do not at present seek out encounters with visitors although they may respond positively to those encountered on the road or at the Coinda Motel'.<sup>54</sup> The employment of Aborigines as

Park rangers has not led to extensive interaction, the report commented, since Aborigines are 'not very keen on conducting guided tours', partly out of shyness, and partly because they 'preferred not to have to act as "policemen" to rebuke tourists for their actions (for example, with respect to rock art damage).'<sup>55</sup> The report suggested that the recent tendency to promote the Park as an all year-round tourist destination, together with the upgrading of some roads, may increase the level of interaction with tourists. The Wet season has so far been regarded by Aborigines as a period in which tourist numbers fall off markedly, but this was less likely to be the case in the future.<sup>56</sup>

40. There is conflicting evidence about the extent to which tourists desire contact with Aborigines. A survey of visitors to the Park conducted in 1983 and 1984 by Professor F. Gale of the University of Adelaide commented that:

[v]isitors had been led to believe that here they would meet Aboriginal people because Arnhem Land is one of the few extensive areas which was never settled by Europeans ... Such visitors were understandably surprised to discover that they did not come into contact with any Aboriginal people.<sup>57</sup>

According to the Northern Territory Tourist Commission 33 per cent of interstate tourists express regret and disappointment that they did not have contact with Aborigines in the Territory. The 1984 Tourist Development Priorities Plan found that most segments of the tourist market were expecting more contact with 'Aboriginal lifestyle and culture.'<sup>58</sup> On the other hand, a travel survey conducted in 1982 found that only one per cent of those interviewed, which included overseas, interstate and local visitors, were specially attracted to the Territory to see Aborigines or Aboriginal paintings. This group expressed virtually no interest in Aboriginal culture.<sup>59</sup> The survey evidence is therefore somewhat equivocal, although it should be

noted that both these surveys are dated, particularly given the very significant increase in visitor numbers that has taken place since 1982. It is nevertheless true, as described in the the report Aborigines and Tourism, that there has been an increasing tendency to utilise Aboriginal culture as an integral part of tourism promotion and that tourists' expectations are likely to be influenced by the ways in which the Park is depicted in advertisements and brochures.

41. In the Committee's view, the steady increases in tourist numbers in the region, and the progressive improvements in facilities, suggest that tourist pressure on Aboriginal communities will increase substantially in coming years. The Committee believes there are measures which may assist in dealing with this problem.

42. Firstly, Aborigines need to feel that they have sufficient living space to avoid encounters with tourists if they so desire, and that areas of particular importance to them will be protected from interference. To this end, Park regulations concerning restriction of access should be strictly enforced in relation both to living areas and to sites of religious or ceremonial significance. ANPWS should also continue to ensure that measures to upgrade tourist facilities in the Park, including improvements to roads and accommodation, do not jeopardise the privacy of Aboriginal communities. In recommending this the Committee fully recognises the resentment that is felt by some visitors when they discover that they are excluded from certain areas of the Park. ANPWS and the Aboriginal communities themselves will need to be conscious of this and show sensitivity in the enforcement of the regulations. In particular, ANPWS should explain why these closures are necessary in its literature and other information services.

## Recommendation

The Committee recommends that ANPWS:

- (i) continues to enforce strictly the regulations concerning restriction of access to Aboriginal living areas and sites of significance;
- (ii) uses all the means at its disposal to explain to visitors why these regulations are necessary; and
- (iii) ensures that measures to upgrade tourist facilities in the Park do not in any way jeopardise the privacy of the Aboriginal inhabitants.

43. Secondly, accurate information concerning Aborigines in the Park should be readily available to tourists. ANPWS currently provides useful information on Aborigines and their culture through displays at Park headquarters, pamphlets and explanatory notices. The Service also conducts training programs for tour guides. The Committee supports these measures and notes with interest that the current plan of management proposes a community education program to develop knowledge of and respect for the traditions, languages and culture of the Aboriginal people.<sup>60</sup> Despite such efforts however, problems may still be created if commercial advertising, or information provided by commercial tour guides, generates misleading impressions. This might occur, for example, through suggestions that visitors are likely to encounter Aborigines leading a traditional lifestyle, through a failure to stress the Aborigines' entitlement to privacy, or through inaccurate accounts of contemporary Aboriginal culture. The Committee would hope that the Northern Territory Tourist Commission and other interested bodies such as the Darwin Tourist Promotion Association would join with ANPWS to assist in discouraging tendencies of this kind. Accurate and realistic information is clearly in the long-term interests of the tourist

industry itself as well as the Aborigines, since disappointed or disgruntled tourists are unlikely to be a good advertisement for the region.

#### Recommendation

The Committee recommends that ANPWS works in association with the Northern Territory Tourist Commission, the Darwin Tourist Promotion Association, tourist operators and other interested bodies, including the appropriate Aboriginal groups, to ensure that tourist information, including travel commentaries, does not portray misleading or inaccurate information about Aborigines and their role in the region.

44. The Committee notes that Regulation 7AA of the National Parks and Wildlife Regulations provides that, whenever a fee is charged for any commercial activity, a commercial operator will be required to have the permission of the Director. Permits may be granted subject to conditions and a permit system would provide a mechanism for controlling the activities of tour operators.<sup>61</sup> The plan of management for the Park also indicates that tour operators will be required to ensure their staff providing information and interpretation services are accredited by ANPWS prior to involvement with the Park.<sup>62</sup>

#### Recommendation

The Committee recommends that:

- (i) ANPWS introduce a permit system for tour operators in the Park and that the issue of permits be subject to the conditions that the information provided by the operator be accurate and responsible and that the activities of the operators be consistent with what is appropriate for a World Heritage area; and

- (ii) ANPWS introduce an accreditation scheme for persons providing interpretation and information services to tourists in the Park

45. A submission to the Committee from the Australian Heritage Commission suggested the establishment of a cultural museum in Kakadu National Park which would serve both Aboriginal and European interests but in which 'the highest priority should be given to the interpretation of Aboriginal society and culture.'<sup>63</sup> The Australian Conservation Foundation proposed a similar institution, suggesting that it could perhaps be an extension of the Museum of Australia.<sup>64</sup> The Committee believes that such a museum could be of benefit to both tourists and Aborigines, particularly if it were in part a 'living museum' incorporating contemporary arts and crafts displays, and included information on the culture of Aborigines presently living in the Park. Apart from its general educational value, such a museum might well act as a buffer between tourists and Aborigines by helping to satisfy the natural curiosity of the former about Aboriginal lifestyle and culture. The Committee notes with interest that the current plan of management suggests the development of 'an interpretation prospectus for a museum and cultural centre for the display of local Aboriginal culture.'<sup>65</sup> In particular, the plan states that:

ANPWS will co-operate and provide assistance to the Aboriginal community in developing an Aboriginal Cultural Centre to serve both Aboriginal and European interests. ANPWS may develop such a facility itself if the Aboriginal community is unable to proceed with this project. This should have a high level of involvement by Aboriginal people and assurance of the continuity of the highest standards of professional curation. It will be a major commitment by Australia to the preservation and promotion of Aboriginal cultural achievement.<sup>66</sup>



A useful preliminary measure might be to gauge the likely level of interest through the regular visitor surveys conducted by ANPWS.

### Recommendation

The Committee recommends that ANPWS, in conjunction with its regular visitor surveys and in consultation with the local Aboriginal communities, should assess the level of interest in an Aboriginal cultural centre within the Park and, depending on the response, prepare a proposal for the development of such a centre.

46. Thirdly, the Committee believes it essential that Aborigines have a substantial say in any Park management decisions which may affect them. Both plans of management have recognised the need for close consultation with Aboriginal communities, particularly in relation to matters concerning living areas.<sup>67</sup> The Department of Aboriginal Affairs felt that this aspect of Park management was working well, commenting that:

[ANPWS] management recognize the importance of Aboriginal culture and heritage and there is close cooperation with Aboriginal residents in administering the Park in order to minimise the adverse impacts of tourism and visitor use on Aboriginal interests.<sup>68</sup>

According to the Northern Land Council however, Aborigines in the region feel that they should be more closely involved in decision-making structures. Mr S. Brennan of the Bureau of the Northern Land Council told the Committee that:

[o]ne of our officers spent three months in the field consulting with people on their views of the plan of management. The major factor that emerged from that was that the Aboriginal people wanted to have a say in the

management and control of the park. It is thought best that this can be done through a board of management on which they have a majority membership.<sup>69</sup>

Mr Brennan commented that King's Canyon Park and Coburg Park which are under the day-to-day control of the Northern Territory Conservation Commission have boards of management for policy issues, both of which have a majority of Aboriginal members. Mr Brennan believed these arrangements worked well.<sup>70</sup> These views received support from the Australian Conservation Foundation which argued that there should be 'some formal structure which recognises the rights of Aborigines to be significant role players in the decisions of Park Management.'<sup>71</sup> The Foundation pointed to the policy of the Northern Territory Conservation Commission in providing the opportunity for traditional owners to be 'significant decision-makers' on boards of management.

47. The Committee notes that the Gagudju Association is a member of the Kakadu Interests Groups Advisory Committee which is a body established by ANPWS to 'provide input into' matters relating to the administration of the Park.<sup>72</sup> This Committee has a rather circumscribed role however, and is not involved in broad policy issues. The Committee believes that, as traditional owners and residents of the Park, Aborigines should be part of the decision-making structure on major policy issues, particularly those which affect their interests. This matter is examined more fully in Chapter Seven in the context of a general discussion of consultative and advisory mechanisms for the management of the region.

### Recommendation

The Committee recommends that all the decision making bodies involved with policy development for the Park or with the Park's management should have Aboriginal representatives. (This matter is more fully considered in Chapter 7 on consultation mechanisms)

48. Fourthly, as the report Aborigines and Tourism points out, the Kakadu region is a finite space and the time may come when the steadily increasing visitor numbers reach saturation point, given that tourism will always be required to co-exist with Aboriginal interests. This suggests that there would be advantages in a long-range strategy for tourist development in the Park which would seek to provide an estimate of the maximum visitor numbers which could be permitted before pressure on Aboriginal communities reached unacceptable levels. Such a strategy would need to indicate, in broad terms at least, the nature and extent of the tourist infrastructure which would eventually be permitted, since both issues are interdependent. The result might well provide a valuable reference point for planning purposes and act as a counter to any assumptions that tourist numbers will be allowed to expand indefinitely. This issue is also important in relation to the impacts of tourism on the environment and it is discussed more fully later in this chapter.

#### **Art and archaeological sites**

49. The Committee also considered the impact of tourism on rock art sites and the other sites of Aboriginal significance in the region. There has been concern for some time that growth in tourist numbers may result in increasing damage to these sites and this concern was mentioned in a number of submissions to the inquiry. There is no doubt, for example, that in the early seventies serious acts of desecration, including the theft of skeletal material, occurred at a number of sites in Kakadu. Mr R. Ellis of the Aboriginal Sacred Sites Protection Authority commented in relation to in Stage 3 of the Park that:

[t]here is a whole range of rock art sites which have not been properly documented in this area. The museum has done some work. They are the sorts of places that are going to

attract tourism, if there is to be tourist development in that area. Our experience has been, in the past, that art sites are opened up for tourism with little or no preparatory work being done to protect that resource, and it is a very finite resource, from destruction. We think it is very important that if we are going to promote Aboriginal culture as a means of attracting tourists to this part of the Northern Territory we also have to husband that resource in such a way as to ensure that it is ongoing and not exploited to extinction within the first few years of its life.<sup>73</sup>

According to the Northern Land Council, Aboriginal traditional owners wished to limit visitor numbers in certain areas such as Ubirr and Nourlangie, and to exclude visitors from certain areas. They were concerned about the preservation of art and archaeological sites throughout the region.<sup>74</sup>

50. The Committee's attention was drawn to an interesting piece of research on this topic by Professor F. Gale of the University of Adelaide. A team led by Professor Gale observed tourist behaviour at Ubirr and two other art sites in Stage 1 in 1982 and 1983 during peak tourist seasons. The observations at Ubirr took place over a period of time in which facilities in the form of well-defined barriers, explanatory signs and instructions were progressively improved. The results of the study showed that such facilities greatly lessen the chances of wilful or accidental damage to art sites and that if visitors can be kept well back from the art, increasing tourist numbers will not increase deterioration. This supports the view of Mr D. Gillespie, Assistant Director ANPWS, that because of the good level of management of cultural visitor sites their cultural integrity is now 'more secure than it has been for the last two decades'.<sup>75</sup> Because overt acts of vandalism are more likely to occur when other people are not present, large numbers of tourists tend to reduce the risk of damage. In Professor Gale's words:

[i]t appears tourists do protect the art from each other if they are educated to do so and clearly guided by paths, fences and boundaries and are instructed by positive and encouraging notices.<sup>76</sup>

51. The conclusion to be drawn from this appears to be that sites ought not to be opened up for tourism unless adequate preparatory work has been done. This may involve inevitable delays. The Northern Territory Government argued in its evidence to the Committee that only a small number of 'the 4000-odd art sites'<sup>77</sup> are open to the public and that ANPWS appeared to show 'a distinct lack of motivation' to improve this situation.<sup>78</sup> The Committee sympathises with the view that sites should be accessible to the public but believes it would be counter-productive to do this without adequate preparation. It would seem preferable to follow the policy in the current plan of management that any new art or archaeological sites opened to the public should have 'the requisite facilities and staff to protect those sites.' The Committee notes with approval that ANPWS intends to continue monitoring the effects of tourist visits at sites which are open.<sup>79</sup>

### Recommendation

The Committee recommends that:

- (i) archaeological and art sites within the Park should not be opened to the public until adequate facilities and staff have been provided; and
- (ii) ANPWS should continue to monitor the impact of visitors at all art and archaeological sites that are open to the public.

## IMPACT ON THE ENVIRONMENT

52. A topic raised in a number of submissions was the impact of tourism on the vegetation and the fauna of the region, particularly in view of the increasing numbers of visitors and the progressive upgrading of tourist facilities. As the CSIRO commented in a submission to the Committee:

[i]t does not need stressing that increasingly large numbers of people, whether tourists or residents engaged in local service, mining or other industries, may put at risk fragile vegetation communities, particularly the rarer ones or those of limited extent or distribution, and the rarer fauna and their habitats.<sup>80</sup>

The environmental effects of tourism, like those of mining, are not always easy to predict with accuracy. There are, however, a number of specific threats which can be identified - in particular the spread of weeds and other damage to vegetation, disturbance to fauna and destruction of habitats, increased incidence of unwanted fires, littering and occasional vandalism, and the destruction of the wilderness quality of the region.

### Weeds

53. Several submissions stressed the potential hazard associated with the spread of weeds such as mimosa, water hyacinth, Salvinia molesta and Hyptis. The tropical climate, which allows for rapid growth, together with the extensive wetlands areas, make the region exceptionally vulnerable to such infestations.<sup>81</sup> As the CSIRO commented, 'unless eliminated, weeds could dramatically alter the whole character of the floodplains, in particular, in only a few years.'<sup>82</sup> Existing weed problems are due in large measure to feral buffalo whose numbers are now decreasing as a result of the eradication program. However, people and vehicles are increasingly being seen as important

agents in weed dispersal, and seeds can be carried to remote areas by the growing numbers of four-wheel drive vehicles.<sup>83</sup> As noted in Chapter Three, this is also a possible consequence of mineral exploration or mining operations within the Park.

54. ANPWS conducts a continuing weed control program involving three full time staff, with periodic assistance from others including Aboriginal residents. The Committee notes that under the current plan of management, vehicles or machinery regarded as possible carriers of mimosa should be washed down to remove seeds before entering the Park.<sup>84</sup> Examples would be buffalo contractor vehicles and construction machinery. These measures appear to be having considerable success. The Director of ANPWS commented with respect to mimosa:

I think mimosa control is one thing which the park service can be very proud of. We recognised the problem fairly early and we instituted measures to try to protect the park against invasions by this weed ... These measures have proved so remarkably effective that the park stands out within the Northern Territory as being outstanding in this respect. We recently had a visit from the heads of divisions of CSIRO and they complimented us on what we had achieved and urged us to continue. It is not easy, because it is a continuing exercise.<sup>85</sup>

The Committee notes the effective work which has been done in relation to weed control and agrees that it must be continued. ANPWS may need additional resources to cope with the problem as tourist members grow and access to the different parts of the Park is improved.

## Recommendation

The Committee recommends that ANPWS should continue its program of weed control in all areas of the Park and that if additional resources become necessary for this program they should be provided as a matter of priority.

### Damage to vegetation

55. Direct damage to vegetation can also result from the movement of people or vehicles, especially in the absence of established walking tracks and roads. In some areas of heavy and continuous use, particularly on sandy surface soils, plant cover may be destroyed. This in turn can result in run-off erosion. In such cases, as CSIRO suggested in its submission, duplicate facilities such as alternative walking tracks may eventually be required to allow for periods of recovery. In extreme cases the temporary closure of certain areas will be necessary.

### Fauna

56. Tourism can affect the local fauna in a number of ways. Since vegetation communities provide habitats and food sources for wildlife, damage to the region's vegetation may have adverse effects on the animal population. Noise arising from tourist activities may also have undesirable consequences. There is some evidence for example that noise from two-stroke motors on tourist boats disturbs birdlife in certain locations.<sup>86</sup> The submission from CSIRO also mentioned possible damage to aquatic fauna in the small creeks and waterholes in the escarpment complex. Many reptile and frog species of the escarpment contract to the vicinity of these pools during the dry season. The pools are also attractive to tourists however, and CSIRO considers that 'their



regular use by even a small number of people could profoundly alter the status of endemic escarpment animals.<sup>87</sup> Such threats to the region's fauna will require careful monitoring of rising tourist numbers.

#### **Impact of recreational fishing**

57. A major issue in this context is the impact on the region's fish fauna of tourists engaged in recreational fishing. As indicated in paragraph 19 above, recreational fishing is a popular activity in the Park. ANPWS estimates that 37 per cent of private visitors take fishing gear to the Park, and the Amateur Fishermen's Association of the Northern Territory commented that 'perhaps more than 50%' of the recreational fishing in the Top End takes place in the Park.<sup>88</sup> A variety of species is caught although the most popular is barramundi.

58. The first plan of management permitted recreational fishing throughout the whole Park provided that relevant Northern Territory regulations, including bag limits, were observed. The current plan has introduced new arrangements, the major change being the proposed closure of the upstream parts of six of the major creek systems. The area concerned coincides in part with the section of the Park which has been designated a wilderness zone. ANPWS has adopted this new policy in response to what it sees as growing pressure on fish populations from recreational anglers. Submissions which commented on this topic generally supported the change, the main opposition coming from the Amateur Fishermen's Association of the Northern Territory. The issues involved require some detailed examination.

59. The major river systems in the region are those of the East, South, and West Alligator Rivers, and the Wildman River - all of which flow north through the Park into Van Diemen Gulf, and also the Mary River, part of which forms the south-western border of the Park but which reaches the Gulf west of its

boundary. Each of these river systems is readily accessible through the Arnhem Highway and, compared with other river systems in the Territory, each is subject to a high level of recreational fishing (see Table 2.4). On the basis of the ANPWS estimate that 37 per cent of private visitors bring fishing gear with them, the numbers of recreational fishers in the Park, excluding any who may come as part of an organised tour, would be about 40 500 in 1986 and 61 000 in 1987. These numbers are not evenly spread across the river systems but tend to concentrate on the East and South Alligator river systems, particularly in their lower reaches.

60. There are relatively few data available on the numbers of fish caught by recreational anglers. Estimates vary considerably. A report to the Northern Territory Government in 1985 from a Barramundi Task Force stated that as a 'suppositional estimate' the average annual amateur catch over the preceding five years comprised about 20 per cent of the Northern Territory barramundi catch.<sup>89</sup> However, another report estimated that 58 per cent of the total catch in the Territory in 1985/86 was made by non-commercial fishers; 43 per cent by Territory residents and 15 per cent by tourists.<sup>90</sup> Despite the discrepancy between the two sets of figures, it seems clear that the recreational catch is large, and, as Table 2.4 indicates, the popular river systems of the Park are likely to account for a major part of this. The current Park plan of management quotes a partial survey conducted by the Northern Territory Fisheries Division which shows that for the 1978/79 financial year, approximately 45 tonnes of barramundi were taken in the Park by amateur fishers resident in the Darwin area. The survey team concluded that 'the amateur component of the total barramundi yield, at least for this popular area, is highly significant.'<sup>91</sup> The growth in visitor numbers over recent years suggests that quantities of fish caught by recreational anglers may have increased substantially since this survey was conducted.

TABLE 2.4

## STATUS OF MAJOR FISHING AREAS IN THE NORTHERN TERRITORY

RIVER (and or system)	1984 COMMERCIAL YIELD (TONNES)	% N.T. TOTAL COMMERCIAL CATCH	RECREATIONAL USE
VICTORIA Incl. Fitzmaurice	26	4	Low
DALY Incl. Reynolds	64	10	High
FINNISS Incl. Darwin, Adelaide	56	9	High
MARY Incl. Wildman	127	20	Very High
ALLIGATORS	100	16	Very High
ARNHEM	64	10	Negligible
ROPER	85	14	Med - Low
MCARTHUR	55	9	Med - Low
OTHER	40	7	Very Low

Note: Source Table 10 from Barramundi Task Force Report of the Northern Territory Department of Ports and Fisheries.

61. While this general situation is clear enough, it is less easy to determine the nature and extent of the impact which recreational fishing is having on fish stocks. Evidence presented to the Committee on this point was somewhat inconclusive. The Northern Territory Government argued that existing regulations concerning matters such as bag limits and other measures were sufficiently effective to preserve fish stocks and that closure of areas within Kakadu National Park was unnecessary.<sup>92</sup> The

Territory's submission contended that ANPWS had not produced any evidence to contradict this view. The submission suggested that the closure of the designated areas would place greater pressure on other fishing spots within the Park and that rather than close certain areas, a research program should be undertaken in conjunction with Northern Territory fisheries authorities to establish whether controls on recreational fishing are necessary and what form they should take.<sup>93</sup> In a similar vein Mr W. A. Thomas of the Conservation Commission of the Northern Territory commented that:

[i]n my discussions with the department [of Ports and Fisheries], or amateur fishermen, I have never had any indication that the particular area of Kakadu National Park which is proposed to be closed is under any particular threat from recreational fishing.<sup>94</sup>

Mr Thomas supported the view that closures would increase pressures on other areas.

62. The Amateur Fishermen's Association of the Northern Territory (AFANT) also opposed the closure. Mr A. Julius, a committee member of the Association, explained that AFANT was well aware of the need to protect fish stocks from over-exploitation and supported the existing regulations on bag limits. Mr Julius argued however that there was a lack of evidence to support the closure of the designated areas and that he saw 'no justification whatsoever' for the decision. The Association argued that so little fishing was done in the area concerned that they could not see 'why ANPWS would bother to close it.' A better policy would have been to declare the area 'a catch and release' zone and require fishers to use lures only.<sup>95</sup>

63. The rationale for the closure which is presented in the current plan of management lays emphasis on the increasing numbers of visitors to the Park and the finding, mentioned above, that more than one third come with intent to fish. The plan

quotes the Fisheries Division 1978-79 survey referred to above and comments that by 1985 the number of amateur fishers in the Park was twenty times that of the period 1978-79. Even allowing for diminishing individual catches, the plan argues, 'it is evident that the barramundi populations in the Park are under growing pressure.'<sup>96</sup>

64. ANPWS has also been influenced by research conducted by the Alligator Rivers Region Research Institute which highlighted the importance of dry season refuges for some of the freshwater species. The submission from ANPWS quoted a statement from the Supervising Scientist for the Alligator Rivers Region that:

[r]ecent improved access to escarpment Dry Season refuges in Kakadu National Park has possibly introduced threats to the continued survival of some fish populations, for example, the threat of amateur overfishing of prespawning refuge populations. Black bream (Hephaestus fuliginosus) is most prone to this as it is extremely easy to catch, withdraws almost totally to refuges in the Dry, spawns in the early Wet Season and moves downstream at this time in closely packed schools. Fishing is allowed in some accessible escarpment refuge areas within the National Park. For unstated reasons fish are not afforded the same protection as other fauna in the Park. This policy should be carefully examined, particularly for Dry Season refuge areas.<sup>97</sup>

ANPWS had also noticed that in some waterways visible shoals of fish are becoming a popular tourist attraction. It was considered important to preserve this opportunity for tourists to see fish in large numbers, and this required the exclusion of fishers in those areas.<sup>98</sup>

65. In the Committee's view the closure proposed by ANPWS is minor. All parties are agreed that the numbers of recreational anglers visiting this area is relatively small. The inconvenience caused is therefore likely to be limited and any resultant

increase in pressure on other fishing areas should be slight. The more important point to emerge from an examination of this issue however, is that there is an obvious lack of relevant information about fish populations and behaviour in the river systems of the region. As CSIRO pointed out in its submission, the rational control of fishing in the region 'requires detailed knowledge of fish stocks, the dynamics of fish populations and the consequences of various types of disturbances on these populations.'<sup>99</sup> The information relied upon by supporters of the closure and by its critics would seem to fall well short of this. In view of the steadily increasing tourist numbers in the region and the consequent growing pressure on fish stocks, it would seem vital to remedy this deficiency. The Committee believes that studies should be conducted which can be of direct benefit in reaching decisions about recreational fishing policy within the Park and that ANPWS should regard this as a priority research topic. The proposed closure of the areas listed in the current plan of management may assist this work by establishing a region in which fish are largely free from human interference. The proposed closures do not encompass any complete river system and this further step may eventually be desirable, as Professor Ovington intimated in the course of the inquiry, as a means of ascertaining the natural balance of fish numbers and species, and discovering how fish stocks recover after fishing has ceased.<sup>100</sup> Such information could well prove invaluable in the management of recreational fishing throughout the region.

66. Finally, it should be noted that some witnesses questioned whether any fishing should be permitted within the Park. This view is reflected in the statement by the Office of the Supervising Scientist quoted above which notes that 'for unstated reasons fish are not afforded the same protection as other fauna in the Park'. The issue was raised more directly by Dr J. Baker of the World Wildlife Fund Australia who commented in relation to national park polices that:

[o]ur human judgment of aquatic resources is quite different from that of terrestrial resources. For example, we would never think to go out and shoot a kangaroo, or a wallaby, or a koala bear or the natural terrestrial species, yet for some unknown reason we believe it is quite okay to go out and catch indiscriminately the barramundi, the yellow-belly or other naturally occurring aquatic species. It is my personal opinion, and I think one shared by the majority of WWF people, that the aquatic species should be considered much more carefully by all management authorities and a more consistent approach be developed between the two - terrestrial and aquatic.

We would stand very firmly behind our recommendation that the aquatic natural species deserve the same protection as do those most valued natural species of the Australian terrestrial environment.<sup>101</sup>

The World Wildlife Fund also quotes the International Union for the Conservation of Nature which lists fishing as one of the forms of 'exploitation of natural resources' which should be prohibited in national parks'.<sup>102</sup> These views received support from the Australian Heritage Commission which recommended that ANPWS 'extends the waterways to be closed to recreational fishing, with the ultimate aim of prohibiting fishing in the Park.<sup>103</sup> Dr J. Mosley, then Director of the Australian Conservation Foundation, noted that '[s]tandards vary around Australia whether fishing is allowed in a national park or not,' but expressed the view that 'from the point of view of the ideal approach fishing does not really belong [in national parks]'.<sup>104</sup> This proposition would presumably apply even more strongly to areas such as Kakadu which have been included on the World Heritage List.

67. The Committee has some sympathy with these views. Logic would seem to require, as Dr. Baker suggests, that aquatic animals within national parks receive the same protection as all other species. Recreational fishing in other words might quite reasonably be seen as a form of hunting, which would disqualify

it as a legitimate activity within Kakadu National Park. The Committee is nevertheless aware of the important role which recreational fishing plays in tourism in the Kakadu region and is not prepared at this time to recommend complete closure of the Park to this activity. There is a pressing need however for more information about the aquatic fauna in the Park so that ANPWS is in a position to describe the situation accurately, identify undesirable trends, and take any necessary remedial action. If the research required to collect this information cannot be carried out without the closure of certain areas, including an entire river system, this measure should be adopted with the minimum of delay.

### Recommendation

The Committee recommends that ANPWS should, as a matter of urgency, carry out a study of the fish populations of the Park with a view to determining the impact on them of recreational fishing. If in order to complete the study it is necessary to close areas of the Park to fishing, this should be done.

### Fire

68. A further possible consequence of increasing tourism is a greater incidence of unwanted fires. Fire has traditionally been an important management tool for the Aboriginal inhabitants of the region who used it to modify and shape the landscape and to maintain a variety of plant communities.<sup>105</sup> ANPWS continues to make use of fire in Park management, in part to reduce the frequency, extent and intensity of wildfires and also to protect species and habitats particularly sensitive to fire. The general aim of fire management policies is to re-establish as far as possible the traditional Aboriginal patterns of burning.<sup>106</sup> Considerable damage to the environment can result from the lighting of unwanted fires at inappropriate times or places. The risk of such damage is increased by the growth in tourist



numbers. Designated fireplaces are provided but some fires are caused through carelessness or ignorance. According to CSIRO 'there is an obvious need for an education program aimed at both tourists and Northern Territory residents'.<sup>107</sup> The Committee notes that ANPWS provides educational information concerning fires to visitors and residents, and that there are plans to develop this further.<sup>108</sup>

#### **Littering and vandalism**

69. Littering and occasional instances of vandalism can also be a consequence of tourist pressure. Prior to the creation of the Park, damage of this kind had reached serious levels in the Alligator Rivers region, and a planning committee in 1969 commented that 'the countryside is already defiled with empty cans and stubbies ... Names have been scratched on white gum trees, and shotgun cartridges beside waterholes tell their own story.'<sup>109</sup> It appears to the Committee that this situation is now well under control, due largely to the activities of Park staff. However increasing visitor numbers could see a change for the worse unless there is a continuing campaign to alert people to their responsibilities in the area.

#### **Wilderness quality**

70. Some witnesses regretted the impact of tourism on what was termed the 'wilderness' quality of the Park. Mr T. Winter from the Darwin Tourist Promotion Association reported occasional complaints about this from some tourists. The Australian Conservation Foundation also expressed concern on this issue and supported the concept of dividing the Park into zones, including some as wilderness areas.<sup>110</sup> The Foundation opposed the concept of providing substantial tourist infrastructure within the Park, and criticised the proposal to provide hotel/motel accommodation in Jabiru. In the Foundation's view, additional accommodation of this kind should be located to the west of the Park boundary.<sup>111</sup>

71. The Committee notes that the current plan of management introduces zone planning to the Park and provides for four categories - intensive management zones, intermediate management zones, minimum management zones, and a wilderness zone. Substantial areas, particularly in the south east of the original Stage 1, have been designated as wilderness. The Committee believes this is a sensible approach which takes account of the varying pattern of visitor usage of the Park area and also allows for a more efficient use of management resources. The effectiveness of these arrangements, and the possible need to alter the boundaries of the different zones, will need to be monitored over time.

### **Jabiru**

72. As indicated earlier the township of Jabiru will begin to play a more significant role in tourism following completion of the crocodile-shaped motel. This development appears to mark the beginning of Jabiru's transition from a mining town with a limited life to a permanent centre for tourism and related activities. In view of this, a consideration of the environmental impact of tourism in the region needs to take account of the emerging role of Jabiru as a tourist centre. The impact of Jabiru, both in terms of its role as an adjunct to the Ranger mine and in terms of tourism, is considered separately in Chapter Four.

### **Tourism and Mining**

73. The following chapter of this report addresses the issue of mineral activity in the Park region and it is worth noting here that a number of witnesses sought to compare the effects of mining and tourism on both the environment of the region and the Aboriginal residents. The burden of several of these comments was that tourism is potentially the greater threat to the environment and to the Aborigines. The implication in some cases appeared to

be that this constituted an argument in favour of increased mining activity in the region. The Northern Territory Chamber of Mines for example referred to certain 'negative and destructive' aspects of tourism which it saw as inevitable such as 'the fishing out of waterholes, creation of new tracks by four-wheel drive vehicles, desecration of Aboriginal Sacred Sites', and a number of other problems. By contrast, the Chamber said, 'mineral exploration and mining is, generally speaking, carried out by highly professional people' and is strictly controlled by legislation. This being the case, the Chamber urged, if the negative impacts of tourism are to be accepted in the Park 'it would be intellectually dishonest to reject mineral exploration and mining in the area.'<sup>112</sup>

74. Not all witnesses shared this perception of mining and, as indicated in Chapter Three, the Committee received considerable evidence concerning potential short and long-term dangers associated with mineral operations in the Park. There is in addition the question - also discussed in Chapter Three - of whether the exploitation of mineral resources is incompatible with the concept of a national park, particularly one which is in part a World Heritage area. The important point for present purposes however is that tourism should not, in the Committee's view, be permitted to cause the kind of damage which the Chamber of Mines describes. As one witness commented in relation to this point, 'the degree to which tourists are going to damage the environment depends on the degree to which tourism is controlled and regulated'.<sup>113</sup> Tourism which leads to consequences such as the fishing out of waterholes and the desecration of sacred sites is not being adequately controlled. Aberrations of this kind would not constitute an argument in favour of mining in the Committee's view, but rather, an indication that tourist management arrangements had gone seriously awry.

## NATURE AND EXTENT OF TOURIST DEVELOPMENT

75. The present chapter has discussed tourism in the Kakadu region in terms of its role in the Northern Territory economy, its impact on Aboriginal residents, and its effects on the environment. These are the three key issues to consider in deciding how much tourist infrastructure should be permitted in the Park and where it should be located. This topic produced some marked differences of opinion among witnesses.

76. One view was that tourist infrastructure within the Park should be substantially improved with the minimum of delay. The Northern Territory Government for example argued that the strong growth rates in tourism in the Kakadu region demanded improvements in the provision of accommodation, the road system, and in aviation and boating facilities. The Territory's submission claimed that accommodation in the Park is 'lagging behind demand' and that motels were being forced to turn away bookings in peak periods.<sup>114</sup> The Northern Territory Tourist Commission claimed that tour operators:

have been hurt as clients have been forced to cancel trips to the NT due to lack of accommodation - and therefore unavailability of tours - in Kakadu.<sup>115</sup>

The Commission also pointed out that almost half of the tours conducted by commercial operators to Kakadu are for one day only, and suggested that this was partly a result of the lack of accommodation. The Territory's submission criticised ANPWS for causing delays in the commencement of the new motel at Jabiru<sup>116</sup> and contended that the 100 rooms planned for this motel will be insufficient to meet the anticipated growth in demand.<sup>117</sup> In relation to roads, the submission urged the construction of an 'all-weather road network giving convenient access to the Park's main attractions.'<sup>118</sup> It argued that greater emphasis should be given to loop roads and a grid-like system instead of the present

'fish-bone pattern' which requires backtracking.<sup>119</sup> The submission also called for a new regional airstrip in the vicinity of Jabiru with 'facilities for Boeing 737 jet and night operation,' as well as greater use of the waterways in the Park by small, shallow-draft passenger cruise vessels.<sup>120</sup> In the Territory Government's view, Kakadu has now assumed the status of one of Australia's major tourist destinations and the number of visitors will grow steadily whether or not extensive promotion campaigns are undertaken. The worst scenario for the Park, it was argued, 'would be a build up of tourist pressure not matched by suitable planning and developed infrastructure.' This would lead to 'lost economic opportunity, frustrated tourists and an endangered environment.'<sup>121</sup>

77. The Commonwealth Department of Sport, Recreation and Tourism also saw a need for improved facilities in the Park. Representatives of the Department considered that the Park should offer a full range of accommodation facilities 'from the basic tent, caravan sites and through basic motel-type accommodation up to five star accommodation.'<sup>122</sup> In addition to Jabiru, they saw a need for 'satellite developments ... where people can stay a day or a couple of days as they move through the Park.'<sup>123</sup> These developments would need to be accompanied by an upgraded road system at a standard which would allow tourists to visit the Park in the wet season.<sup>124</sup>

78. Some witnesses believed that development within the Park should be minimised. As noted earlier, the Australian Conservation Foundation (ACF) opposed the concept of Jabiru as a permanent centre for tourism. The Foundation's view is that a township such as Jabiru is not appropriately located within the Park boundaries and that it should continue to be regarded solely as a mining town which is required only as long as the Ranger mine is in operation.<sup>125</sup> Dr. Mosley, Director of ACF at the time, likened the location of Jabiru within the Park to 'having a shop in the middle of a golf course or some incompatible activity

stuck in the middle of a golf course.'<sup>126</sup> The Foundation argued that major tourist accommodation should be kept outside the Park boundaries, although camping facilities<sup>127</sup> or simple cabin accommodation<sup>128</sup> would be acceptable inside the Park.

79. Opposition to extensive tourist accommodation within the Park was also expressed by Mr T. Winter from the Darwin Tourist Promotion Association. Mr Winter felt that Jabiru was 'an ideal place' to build a motel, but argued that 'the rest of the tourist infrastructure should be on the outside edge of the Kakadu National Park, not on the inside.'<sup>129</sup> Urging the retention of the wilderness aspect of the region, Mr. Winter added that '[i]f you build bitumen roads, two-lane highways and an international airport in the Park, you will destroy the last frontier we have in the Top End...'<sup>130</sup> A general caution against rapid infrastructure development was also given by the Northern Territory Environment Centre. Ms L. Allen, Co-ordinator of the Centre, expressed particular concern at pressure for the upgrading of roads. She agreed that Kakadu has world class attributes which people should be able to appreciate but felt that 'we should not jeopardise these things by letting people walk and drive all over it.'<sup>131</sup>

80. ANPWS argued that it is steering a middle course between opposing views such as these. Responding to the claim that development had been too slow, Professor J. D. Ovington argued that Park management policies were now less restrictive than they had been, and allowed, among other things, for expanded hotel accommodation and the upgrading of roads.<sup>132</sup> ANPWS rejected as 'without foundation' the view that it had been responsible for delays in the construction of the new motel in Jabiru.<sup>133</sup> The Service cautioned however against the possibility of accommodation running ahead of demand, arguing that:

[t]ourist accommodation is best developed in a balanced way and at a rate matched to the nature and scale of visitor needs and demands. At Kakadu the expansion of accommodation facilities must also match a level of visitation which can be managed effectively without environmental damage and undue stress on traditional owners.<sup>134</sup>

Similarly, ANPWS pointed to improvements in road, air and water access and claimed that these have kept pace with visitor needs while ensuring protection for the environment and the interests of traditional owners. In relation to calls for a new airport at Jabiru, the current plan of management states that the:

possibility will be fully investigated following receipt of a formal proposal.<sup>135</sup>

81. The conclusions one draws from this debate depend in part on the perspective from which one approaches it. The Northern Territory government is conscious of the importance of tourism in the Territory's economy and is understandably anxious to gain the maximum possible advantage from the attractions which the Kakadu region has to offer. The Territory government claims that it is fully aware of the need to protect environmental and Aboriginal interests, and that to do otherwise would be to destroy the reasons for which tourists come to the region. The Territory contends however that the development of well-planned tourist infrastructure assists in the protection of environmental and Aboriginal interests, while a build-up of tourist pressure (which is seen as inevitable) without adequate facilities will lead to 'frustrated tourists and an endangered environment.'<sup>136</sup> This argument finds some support in the results of the research by Professor F. Gale into the protection of Aboriginal rock art sites, which was discussed earlier. Professor Gale suggested that the art sites were more effectively protected when facilities such as information signs and fences were provided and when visitor numbers were quite substantial. The presence of other tourists and tourist facilities appeared to act as a controlling

influence on visitor behaviour. A similar argument may be applicable more generally to protection of the Park's natural and cultural resources from the impact of tourism.

82. The perspective of a body such as the Australian Conservation Foundation is quite different. The Foundation regards the question of tourist potential as a secondary consideration and is interested above all in the preservation of the natural and cultural heritage of the Park. This emphasis is reflected in the Foundation's comment that:

[m]otivation for tourism is primarily for purposes other than for the maintenance of Park values. Tourism is a park use not a park purpose. We must first get our philosophies straight...<sup>137</sup>

Tourism as an industry, the Foundation argues, 'must remain as a by-product' of the other essential purposes of the Park.<sup>138</sup> A somewhat similar approach was evident in the submission from the Environment Centre, Northern Territory, which cautioned against 'exploitation' of the Park by the tourist industry and stated that:

too much emphasis has been placed on provision of tourist infrastructure with insufficient regard given to addressing basic management requirements...<sup>139</sup>

Ms L. Allen of the Environment Centre mentioned two places in the Park - Barramundi Gorge and Nourlangie Rock - where in her view tourism had resulted in 'obvious degradation due to over-use.'<sup>140</sup>

83. ANPWS appears to see its own position as attempting to satisfy both conservation and tourist interests. The Service's submission to the inquiry stated that 'national parks generally are not regarded as treasure houses to be kept locked up and unused by people.' While ensuring that natural features are not endangered, a responsible managing authority should, in ANPWS's



view, treat a park as 'a multiple use area' intended to satisfy a range of interests including 'tourism through the provision of recreation facilities.'<sup>141</sup> ANPWS believes this approach is reflected in its plans of management for the Park which seek to protect the environment and Aboriginal interests, as well as to develop tourist facilities. Professor J.D. Ovington told the Committee that in his view the ultimate purpose of the protective measures taken within national parks was to provide for 'the enjoyment of people.' He added:

[t]his is where I think there are misunderstandings. I believe that if you have a large park you can do this in different ways. Different people who go to national parks have different interests. Some want a wilderness experience, some want to look at art sites, some want to fish and so on. Within the objectives, you have to try to combine these in some kind of balanced way. A fundamental purpose is to maintain the beauty and integrity of the area for future generations whilst allowing public enjoyment, inspiration and relaxation. That is why there is this very close link between national parks and tourism, because in a sense that is what tourism is based on.<sup>142</sup>

84. While the need to balance the competing interests of different visitors to the Park is of fundamental importance, the Committee believes that this can be achieved only if the facilities required by the different groups are available as needed. There seems to be no doubt that the spectacular increase in visitor numbers is already beginning to subject some areas of the Park, and some facilities such as camping grounds, to near maximum acceptable usage level. Action is clearly necessary to control and ameliorate some of the problems that are beginning to arise. In the longer term this will require the preparation of a detailed tourist strategy, as discussed in the following section. More immediately, there are other mechanisms available to limit the damage and problems being caused by excessive visitor numbers.

85. One obvious way of controlling visitor impact is to introduce the zoning provisions contained in the plan of management and discussed above. This could be associated with the introduction of a series of charges for entry into the Park and for the use of facilities within the Park. Entry fees are payable at national parks and nature reserves elsewhere in Australia and the Committee is aware that ANPWS has announced that a \$10 entry fee for the Park will come into force on 1 January 1989. It is the Committee's view that the introduction of fees at Kakadu is unlikely to reduce the level of visitor numbers and that the revenue ANPWS would receive from the fees could assist in the provision of new facilities and in the improvement and maintenance of existing facilities. The introduction of fees should be accompanied by a requirement for advance booking, at least in the peak season. This would enable limits to be placed on the numbers of people allowed in designated areas and, if necessary, it could be used to impose limits on the number of days visitors could remain at any one site. Such a system could help ensure as many people as possible are able to see the Park without overloading the facilities that are available.

#### Recommendation

The Committee recommends that, as a matter of urgency, ANPWS introduce a series of charges for entry into Kakadu National Park and for the use of facilities such as camping grounds. The fees levied should be related to the provision, improvement and maintenance of services and facilities in the Park. The introduction of fees should be associated with an advance booking system that can be used to ration access to the most popular areas of the Park in a fair and equitable manner.

86. In addition to fees charged for entry to the Park and the use of facilities, the Director should impose a realistic scale of fees on the permit which it is recommended should be imposed on tour operators. The conditions imposed can be used to

restrict tour operators to specific areas and times, and to place conditions on vehicle type, numbers of people, and other matters. Given that around 25 per cent of the visitors in the Park are members of tour groups, this provides another mechanism which may eventually need to be used to control visitor levels in different areas of the Park.

## **PLANNING**

87. This chapter has described a range of potential dangers which tourism poses for Aboriginal interests and for the Park environment. Excluding the effects of recreational fishing which, for reasons stated earlier, are difficult to assess, these dangers do not as yet seem to have resulted in serious damage and seem unlikely to do so in the immediate future. The numbers of visitors are nevertheless continuing to rise quite rapidly and the popularity of the Park as a tourist destination shows no signs of having reached its peak. In these circumstances there are obvious advantages in forward planning to ensure that the potential threats posed by tourism are kept in check. This is one of the functions of the Park plans of management which set out management prescriptions for successive five year periods. It is worth considering however whether there are any possible improvements to the planning process.

88. One proposition put to the Committee was that there has been insufficient consultation between ANPWS and other bodies interested in tourism in the Park and that ANPWS pays insufficient regard to the views of other bodies. It was also argued that interested organisations should have a greater opportunity on a continuing basis to influence decisions relating to tourism in the Park. One example mentioned earlier is the view expressed by the Northern Land Council that Aboriginal residents in the Park should play a more important role in determining management policies. A further instance is the suggestion by the Northern Territory Government that there should be 'a meaningful

consultative mechanism' between ANPWS and other tourist interests in the Territory.<sup>143</sup> The Committee agrees that the question of consultation is important, but is aware that Park management policies affect other interests in addition to tourism. In view of this the issue of appropriate consultative mechanisms is considered separately in Chapter seven where the Committee has developed proposals which seek to have a broader reach.

89. Commenting on future trends in tourism in the region the Australian Heritage Commission drew attention to the 'dramatic increase in visitation over recent years' and suggested that 'the numbers are going to continue to escalate exponentially'. The Commission felt that the current plan of management for the Park had not responded adequately to this situation arguing that:

[s]ince the Plan is to cater for the next five years, it is imperative that information be provided on visitor growth projections over those years with emphasis on visitor destinations. Only in this way will it be possible to enable national allocation of tourist facilities and other resources.<sup>144</sup>

The Committee notes that ANPWS conducts a Visitor Use Survey and that the current plan of management provides information on visitor numbers from 1982 to 1985.<sup>145</sup> The plan also sets out the general management objectives for the Park which include the provision of 'appropriate recreational opportunities' without impairing natural or cultural values or adversely affecting the interests of Aboriginal residents.<sup>146</sup> As suggested by the Australian Heritage Commission however, the plan does not refer in any specific way to likely visitor numbers over the five-year period or to the probable growth in numbers at particular destinations within the Park. This kind of information would, in the Committee's view, provide a useful basis on which proposed developments could be assessed, and would give a clearer picture of anticipated trends in tourism in the Park.

90. Linked to this is the broader question of whether it may be desirable to produce a long-term plan for tourism within the Park which would describe an optimum pattern of infrastructure and provide an estimate of the maximum carrying capacity of the Park and the major destinations within it. This question of maximum tourist capacity was mentioned by the Environment Centre, Northern Territory, which drew attention to the upgrading of facilities taking place in response to strong tourist interest, and commented that:

[t]o date no assessment of the human carrying capacity of the park has been attempted; nor have any areas had access restricted despite some obvious degradation due to overuse. Instead it would appear that more and more areas of the park are to be opened up for heavy visitor use.<sup>147</sup>

As indicated earlier in this chapter, the question of maximum tourist capacity is also relevant to the protection of Aboriginal interests and in this connection the Aboriginal Sacred Sites Authority expressed the view that:

[m]anagement of Kakadu must take careful account of the impacts of tourism both ecologically and socially. Visitation levels must be carefully balanced against impacts upon physical sites and local communities. It is therefore essential that long-term evaluation and management of visitor numbers be undertaken in full consultation with relevant Aboriginal communities.<sup>148</sup>

91. The Committee sympathises with these comments and believes there could be advantages in anchoring Park management strategies in some form of long term plan. Such a plan might forecast how tourist numbers are likely to evolve, what kind of infrastructure might be provided, where the major facilities might be located and what might be the maximum carrying capacity for the whole Park and for its most popular centres. A long-term

plan of this kind would provide a context and a rationale for the policies adopted in successive plans of management and give a sense of where the Park is ultimately heading. It would provide an overall framework for policies concerning the protection of the region's natural and cultural heritage and also provide the tourist industry with some reasonably clear ideas of the nature and extent of the tourist development which is likely to be possible over time. The latter aspect should help avoid unrealistic expectations on the part of the tourist industry and reduce the potential for friction between the industry and Park authorities. Any such long-term plan would of course need to be subject to periodic review and revision in light of growing understanding of the impact of tourism. The development of the plan and its subsequent review would also need to be carried out in consultation with all organisations whose interests are likely to be affected. The Committee does not underestimate the difficulties which are likely to be encountered in drawing up such a plan, but it believes the effort to be justified in the interests of clarifying the underlying objectives of Park management policies.

#### Recommendation

The Committee recommends that ANPWS take steps to co-ordinate a detailed long-range tourist strategy for the Park which, inter alia, covers expected visitor numbers, the growth in visitor numbers at particular destinations within the Park, the maximum visitor carrying capacity of different areas and the optimum pattern of tourist infrastructure. The development of the strategy should allow for full public consideration and the strategy should be an important element in the subsequent development of the Park plan of management.

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3. ANPWS 1980 Kakadu National Park Plan of Management ANPWS p. 123
4. Evidence p. 1918
5. ANPWS 1980 op cit p. 123
6. ibid p. 117
7. ANPWS 1986 op. cit. p. 27
8. ANPWS 1987 op cit p. 27
9. Kim Brennan 1986. Wildflowers of Kakadu, a guide to the wildflowers of Kakadu National Park and the Top End of the Northern Territory p. 5
10. Evidence p. 1883
11. Letter from Mr Beadman, Department of Aboriginal Affairs, to Chairman dated 25 November 1987
12. Evidence p. 2398
13. Evidence p. 2398
14. P J Hughes and A L Watchman 1983. The Deterioration, conservation and management of Rock Art Sites In Kakadu National Park. The Rock Art Sites of Kakadu National Park - Some preliminary research findings for their Conservation and Management. Compiled by D Gillespie 1983 p. 5
15. Evidence p. 2398
16. Evidence p. 2415
17. ANPWS 1986 op cit p. 82
18. ANPWS 1986 op cit p. 76
19. Evidence p. 2131
20. ANPWS 1986 op cit p. 75
21. Evidence p. 2322
22. ANPWS 1986 op cit p. 81
23. Evidence p. 1109
24. Evidence p. 1108
25. Letter from Mr T Gardner, Ranger Uranium Mines Pty Ltd to Chairman of Committee, dated 18 November 1987 p. 1
26. ANPWS June 1986, Kakadu National Park Visitor Use Summary Report p. 15
27. ANPWS 1986 op cit p. 69
28. Mr D. Gillespie 1988. Tourism in Kakadu National Park. North Australia Research Unit of the Australian National University p. 7
29. Mr D. Gillespie 1988. Tourism in Kakadu National Park, ANPWS Figure 13. 1987 figures personal communication  
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30. Mr D. Gillespie 1988. Tourism in Kakadu National Park, ANPWS Figure 14. 1987 figures personal communication  
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31. Evidence p. 2321
32. M A Forbes and P S Merril 1983 Interim Report, Visitor Use Kakadu National Park, ANPWS Summary p. 19
33. ibid p. 19
34. Letter from the Northern Territory Tourist Commission to Secretary of Commission dated 23 May 1988
35. Evidence p. 1172
36. Evidence p. 1234
37. Evidence p. 1171

38. Evidence p. 1172
39. Evidence p. 2324
40. Tourist Commission Letter, dated 12 November 1987
41. Evidence p. 1800
42. Evidence p. 1799
43. Evidence p. 1784
44. Evidence p. 1615
45. Evidence p. 1594
46. Evidence p. 1619
47. Evidence p. 1592
48. Evidence p. 1021
49. Evidence p. 1021
50. Evidence p. 2341
51. Evidence p. 1445
52. Evidence p. 1448
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54. Robert Lawrence, Maggie Brady, Aborigines and Tourism, A study of the Impact of Tourism and Aborigines in the Kakadu Region, Edited by Kingsley Palmer 1985 p. 22
55. ibid p. 23
56. ibid p. 87
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58. ibid p. 19
59. ibid p. 21
60. ANPWS 1986 op cit p. 58
61. ANPWS 1986 op cit p. 71
62. ANPWS 1986 op cit p. 72
63. Evidence p. 1519
64. Evidence p. 1458
65. ANPWS 1986 op cit p. 57
66. ANPWS 1986 op. cit. p. 48
67. ANPWS 1986 op cit p. 62, ANPWS 1980 op cit p. 268
68. Evidence p. 1592
69. Evidence p. 1013
70. Evidence p. 1027
71. Evidence p. 1457
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73. Evidence p. 830
74. Evidence p. 995
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78. Evidence p. 1272
79. ANPWS 1986 op cit p. 47
80. Evidence p. 1913
81. Evidence p. 1919
82. Evidence p. 1917
83. Evidence p. 1919
84. ANPWS 1986 op cit p. 23



85. Evidence pp. 2222-2223
86. Evidence p. 1992
87. Evidence p. 1931
88. Evidence p. 1109
89. Department of Ports and Fisheries, Darwin 1985. Report of Barramundi Task Force p. 2.2
90. Touche Ross and Cam Rangie and Associates, Unpublished Report on Recreational Fishing in the Northern Territory p. 12
91. ANPWS 1986 op cit p. 27
92. Evidence p. 1257
93. Evidence p. 2444
94. Evidence p. 1258
95. Evidence p. 1121
96. ANPWS 1986 op cit p. 28
97. Evidence p. 1820
98. Evidence p. 1820
99. Evidence p. 1917
100. Evidence p. 2201
101. Evidence pp. 1383-1387
102. Evidence p. 1379
103. Evidence p. 1517
104. Evidence p. 1448
105. ANPWS 1986 op cit p. 37
106. ibid p. 39
107. Evidence p. 1930
108. ANPWS 1986 op cit p. 39
109. Evidence p. 1768
110. Evidence p. 1456
111. Evidence p. 1457
112. Evidence p. 940
113. Evidence p. 356
114. Evidence p. 2436
115. Information from the Northern Territory Tourist Commission dated 2 February 1988 p. 3
116. Evidence p. 2437
117. Evidence p. 1175
118. Evidence p. 2449
119. Evidence p. 2448
120. Evidence p. 1203
121. Evidence p. 1177
122. Evidence p. 1363
123. Evidence p. 1362
124. Evidence p. 1369
125. Evidence p. 1466
126. Evidence p. 1467
127. Evidence p. 1470
128. Evidence p. 1480
129. Evidence p. 2317
130. Evidence p. 2318
131. Evidence p. 888
132. Evidence p. 2207
133. Evidence p. 1831
134. Evidence p. 1805
135. ANPWS 1986 op cit p. 54
136. Evidence p. 1177
137. Evidence p. 1449
138. Evidence p. 1455
139. Evidence p. 861

140. Evidence p. 889
141. Evidence p. 1743
142. Evidence p. 2247
143. Evidence p. 2435
144. Evidence p. 1518
145. ANPWS 1986 op cit p. 15
146. ANPWS 1986 op cit p. 16
147. Evidence p. 864
148. Evidence p. 824