

Relocation of Crocodile Farm to Corner Crab Creek and Broome roads, Broome

Mr M Douglas

**Report and recommendations
of the Environmental Protection Authority**

**Environmental Protection Authority
Perth, Western Australia
Bulletin 619
March 1992**

THE PURPOSE OF THIS REPORT

This report contains the Environmental Protection Authority's environmental assessment and recommendations to the Minister for the Environment on the environmental acceptability of the proposal.

Immediately following the release of the report there is a 14-day period when anyone may appeal to the Minister against the Environmental Protection Authority's recommendations.

After the appeal period, and determination of any appeals, the Minister consults with the other relevant ministers and agencies and then issues his decision about whether the proposal may or may not proceed. The Minister also announces the legally binding environmental conditions which might apply to any approval.

APPEALS

If you disagree with any of the assessment report recommendations you may appeal in writing to the Minister for the Environment outlining the environmental reasons for your concern and enclosing the appeal fee of \$10.

It is important that you clearly indicate the part of the report you disagree with and the reasons for your concern so that the grounds of your appeal can be properly considered by the Minister for the Environment.

ADDRESS

Hon Minister for the Environment
18th Floor, Allendale Square
77 St George's Terrace
PERTH WA 6000

CLOSING DATE

Your appeal (with the \$10 fee) must reach the Minister's office no later than 5.00 pm on 10 April 1992.

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Summary and recommendations

The proponent, Mr M Douglas, proposes to construct and operate a crocodile farm and tourist facility on the corner of Broome and Crab Creek roads, Broome. The proponent is seeking about 25ha of crown land which is mostly salt-marsh, includes some high ground with pindan vegetation and is within about 40m of mangroves which form part of Dampier Creek.

The proponent intends to develop the crocodile farm over several years and would develop the high ground first. Ultimately 3 300 crocodiles would be held on the site and the proponent expects up to 15 000 visitors per annum.

The Environmental Protection Authority has assessed the environmental impact of the proposal by way of a Consultative Environmental Review which included a four-week public submission period and an opportunity for the proponent to respond to issues raised by public submissions.

Major issues

The appropriateness of the site given that it is environmentally sensitive

The Authority does not favour development in sites such as this unless there are particular locational requirements associated with the development that require or make it suited to those environments. This proposal fits those criteria. Environmental acceptability of this proposal should not be considered as a precedent for development on this, or any other salt-marsh. Future development at this site must consider cumulative impacts.

The loss of salt-marsh could be detrimental

There is no doubt that the proposal will benefit some species such as birds and reduce the population of other species such as mud-crabs. Overall the Authority is satisfied that the changes would not be significant in a regional context.

Wastewater disposal could affect the ecology of the area

The Environmental Protection Authority intends to ensure that discharge of crocodile or sewage wastewater into Dampier Creek does not occur under normal climate and operating conditions and this can be managed through works approval and licensing under Part V of the Environmental Protection Act.

Alteration of stormwater drainage patterns needs to be adequately addressed.

The Authority considers the environmental impacts of altering the stormwater drainage are manageable and can be significantly reduced by appropriate design features.

The Environmental Protection Authority has recommended that the proponent be required to prepare a drainage management plan to address outstanding issues such as separation of wastewater from stormwater and potential impacts on the mangroves.

Mangroves may be damaged by indirect effects

No significant loss of mangroves is acceptable because mangroves are important ecologically and to off-shore fisheries. The proposal will not involve removing any mangroves, but is located within 40m of mangroves. Concerns have been raised that some indirect effects may occur.

The proponent intends to establish mangroves along the levee which could result in a net increase in mangroves. Mangroves have been successfully established elsewhere but success has been variable.

Stormwater drainage impacts on mangroves is addressed above.

The Authority has recommended that the proponent be required to monitor the health of and changes to nearby mangroves and the success of mangrove plantings along the levees. Both direct and indirect effects are unacceptable and the proponent is required to prevent them. Any affected areas would need to be stabilised and rehabilitated.

Groundwater issues need to be adequately addressed

Some submissions expressed concern that the quantity of water required and the impacts of groundwater extraction were not adequately detailed or addressed. The Water Authority of Western Australia has advised that a groundwater extraction licence is required which would specify the amount which can be safely drawn and monitoring required.

The site could look unattractive visually

Until vegetation is established the site may look unattractive visually. When the vegetation (primarily local species) is established the Authority expects the visual impact to be softened. The Authority is confident vegetation can be successfully established. Appearance of the buildings is managed by the shire through building regulations.

The site should be rehabilitated if the project fails

The proponent has made a commitment to rehabilitate the site if the project fails. Rehabilitating salt-marsh is not costly.

The most frequent issue raised by the public was the possibility that crocodiles may escape and re-establish in the Broome area given the location of the farm adjacent to densely-vegetated habitat suitable for crocodiles, the past record of escapes and the likelihood of cyclonic weather conditions and spring tides affecting the security of the site. Re-establishment of crocodiles could affect recreational fishing in the area and the tourist industry.

The proponent has proposed the following design measures to ensure crocodiles do not escape;

- Levees would be constructed and stabilised to withstand cyclones and tides;
- Triple fencing able to withstand salty conditions would be used and the two outside fences would be inspected daily;
- Pens for young crocodiles would be fully enclosed, designed to prevent escape by human error and be located on the high pindan area.

The proponent has stated that mature crocodiles are territorial and would return to their pen if they escaped.

The Authority considers measures proposed should ensure no crocodiles escape.

Based on its assessment of the proposal and additional information provided by the proponent the Authority makes the following conclusions and recommendations:

Recommendation 1

The Environmental Protection Authority concludes that the proposal by Mr M Douglas to locate a crocodile farm at the corner of Crab Creek and Broome roads, Broome is environmentally acceptable.

In reaching this conclusion the Environmental Protection Authority identified the main environmental factors requiring detailed consideration as:

- **escape of crocodiles;**
- **loss of salt-marsh;**
- **wastewater disposal; and**
- **surface water drainage and protection of mangroves.**

The Environmental Protection Authority concludes that the environmental factors mentioned above have been addressed adequately by either environmental management commitments given by the proponent or by the Environmental Protection Authority's recommendations in this report.

Accordingly, the Environmental Protection Authority recommends that the proposal could proceed subject to:

- the Environmental Protection Authority's recommendations in this Assessment Report; and
- the proponent's commitments given in the Consultative Environmental Review (Appendix 1).

Recommendation 2

The Environmental Protection Authority recommends that prior to construction commencing works approval and licence conditions be set under Part V of the Environmental Protection Act to ensure that groundwater under the site does not become polluted and that under normal climatic and operating conditions there is no discharge of wastewater into Dampier Creek.

Recommendation 3

The Environmental Protection Authority recommends that prior to completion of the levee bank the proponent design and subsequently implement a stormwater drainage system that separates wastewater and excess stormwater flows and maintains adequate freshwater flows to nearby mangroves, to the satisfaction of the Environmental Protection Authority on advice of the Shire of Broome.

Recommendation 4

The Environmental Protection Authority recommends the proponent be required to monitor the health of and changes to nearby mangroves and the success of the mangrove plantings along the levees to the satisfaction of the Environmental Protection Authority.

A monitoring report should be forwarded every year until the Authority is satisfied that further changes to mangroves are unlikely.

In the event that monitoring shows that any areas of the existing mangrove ecosystems have been adversely affected by the proposal the Environmental Protection Authority recommends that the the proponent submit and implement a plan for the stabilisation and rehabilitation of affected areas to the satisfaction of the Environmental Protection Authority.

1. Introduction and background

The proponent has been interested in establishing a site for a crocodile farm and tourist facility since at least 1987. In December 1988 the proponent obtained approval in principle for the currently proposed site from the Shire of Broome, subject to the submission of precise plans and the approval of the Department of Conservation and Land Management. Between 1988 and 1990 the proponent sought and obtained permission to undertake some site investigations such as soil analysis and groundwater testing.

The proponent and the Kimberley Conservation Group referred the proposal to the Environmental Protection Authority almost simultaneously in June 1990. The Environmental Protection Authority decided a Consultative Environmental Review level of assessment was required because of concerns that the site proposed was located on salt-marsh near mangroves, that waste water disposal could affect the ecology of Dampier Creek and that the proposal was controversial because of fears that crocodiles could escape, particularly if the crocodile enclosures were damaged by natural phenomena such as cyclones and spring tides.

Release of the Consultative Environmental Review document was deferred for several months after its preparation whilst other issues and the need for other approvals were sorted out.

2. Description of proposal and existing environment

The approximate area required by the proposal is shown on Figure 1.

Part of the site is high ground covered with pindan vegetation and it is intended that this area would be utilised for pens to hold hatchlings, young and immature crocodiles (ie one to three year olds), a car park and various buildings. This area is proposed to be developed first.

Most of the site is intertidal mudflats covered with samphire vegetation and sporobolus grasslands (ie salt-marsh), and this part of the site would be used to hold up to two hundred mature crocodiles for breeding and public display.

Mangroves occur adjacent to the site proposed and the proponent intends to establish mangrove stands along the levee banks.

Construction is planned to take place over several years. A section of levee bank through the salt-marsh would be constructed at least one wet season prior to construction of the remaining bank to verify bank stability.

Three fences would be built; an 2.3m outside security fence, a 1.2m internal fence and the fence around each pen to prevent crocodile escape. Crocodiles less than three years old would be in fully enclosed pens with gates which have their base one metre up from the ground to prevent accidental escape.

Local plant species would be used for landscaping.

Wastewater from the crocodile ponds and some stormwater were to be directed to a large evaporation/settling pond. The proponent intended to discharge excess water on a high ebbing tide.

The farm would ultimately hold about 3 300 crocodiles and a total of about 15 000 visitors per annum are anticipated. Crocodiles will be displayed in conditions close to their natural habitat.

3. Consultation

The Consultative Environmental Review document was available for public review for four weeks, closing on 24 February 1992. The availability of the document was well advertised in Broome. Eleven submissions were received, six from community groups and individuals, four

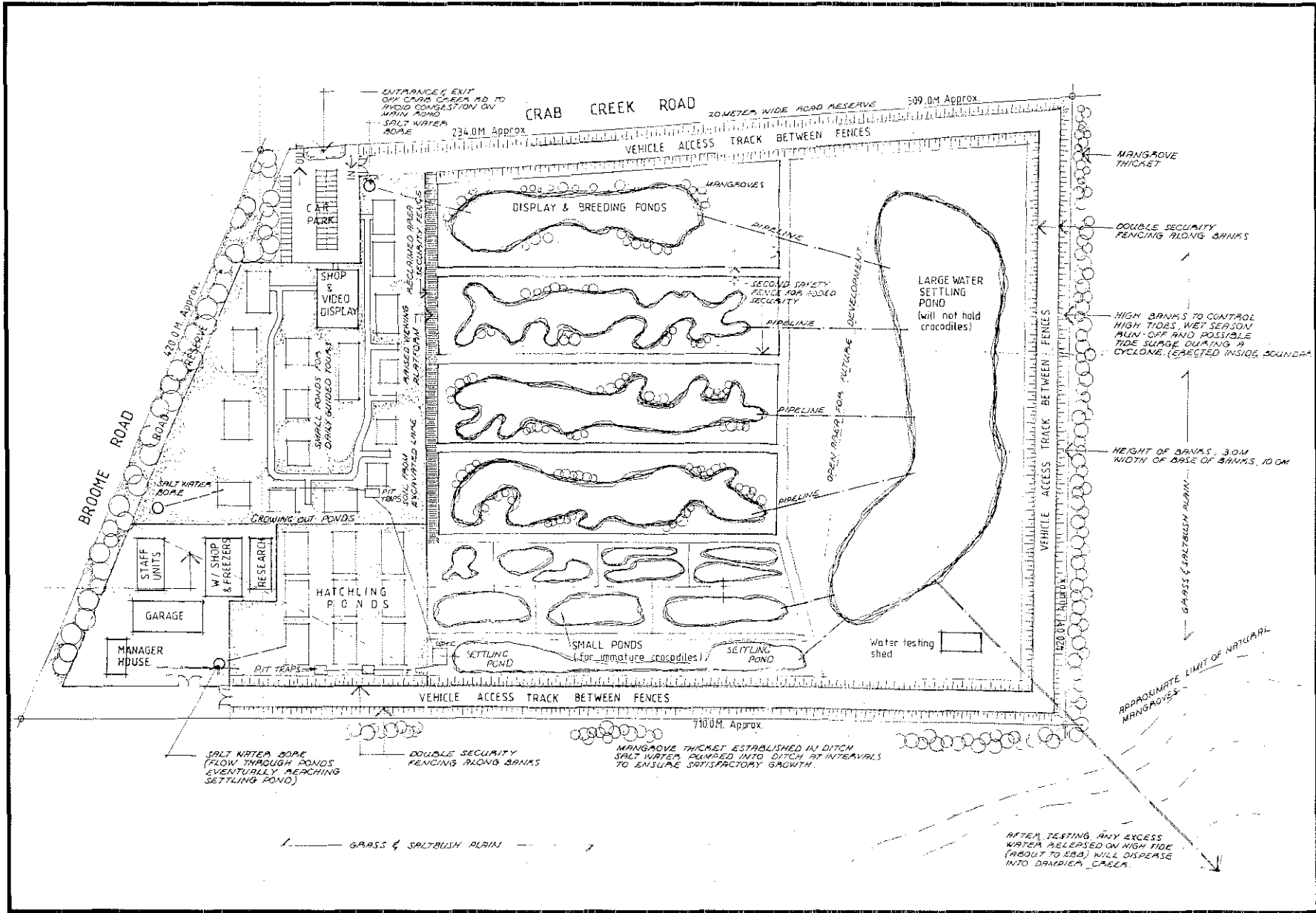


Figure 1. Location and sketch map of proposal

from state government agencies and one from the local authority. One submission enclosed a petition with about 471 signatures.

The Authority prepared a summary of issues raised in submissions and this, together with the proponents response to issues raised appears in Appendix 2.

4. Environmental impacts and management

4.1 Escape of crocodiles

It is clear from the public submissions that the impacts of crocodiles escaping and re-establishing in Dampier Creek and around Broome are of major concern. The location of the farm adjacent to suitable crocodile habitat, the past record of crocodile escapes in the industry and the likelihood of cyclonic weather conditions and spring tides affecting the security of the site heightened concern about the possibility of escapes occurring.

The Authority acknowledges that there are genuine concerns regarding the social and economic impacts of crocodiles re-establishing in Broome. The proponent has acknowledged that there were escapes from the Cable Beach Road farm and has therefore proposed the following measures to ensure crocodiles do not escape:

- levees constructed around the farm would be constructed in accordance with the engineering report to withstand adverse conditions (See Appendix A of the CER) and would be stabilised to the satisfaction of the Environmental Protection Authority and Shire of Broome. The levees are significantly higher than the highest recorded tide and wave heights combined (ie 5.45m AHD plus 0.2m waves);
- triple fencing (two fences on the levee and one around each pen) is proposed and fences would be constructed, inspected daily and repaired to the satisfaction of the Department of Conservation and Land Management; and
- crocodiles less than three years old would be held in pens with one metre high brick walls all the way around, fully enclosed with arc mesh and with a gate which opens above the brick wall only so that human error cannot lead to escape. All such pens would be located on the high pindan area.

The proponent notes that mature crocodiles held in the salt-marsh area would rapidly become territorial to their feeding area and return to their pen if they escaped.

The Authority considers that the measures proposed to prevent crocodiles escaping should ensure that no crocodiles escape. The Authority expects that fears about crocodile escape would diminish over time and lessen the effects of the proposal on the level of recreational fishing in Dampier Creek.

4.2 Loss of salt-marsh

The proponent contacted the Authority in March 1991 to determine the Environmental Protection Authority's most likely position in respect to development on the saline flats of Crab Creek. In summary the Authority's response stated:

- in general terms the Environmental Protection Authority does not favour development in sites such as this, unless there are particular locational requirements associated with the type of development that require, or make it suited to those environments; and
- the Authority may consider cumulative effects in general areas and may wish to signal that other proposal affecting the same habitat, including further expansion of the crocodile farm may require detailed study of the saline flats and the impacts of development on the flats.

The Environmental Protection Authority considers there are several aspects of this proposal which require or make this proposal suited to the salt-marsh environment including the fact that the crocodile is an estuarine animal, the need for clay based ponds and the need to use and dispose of saline water.

The proponent received advice from the Royal Australasian Ornithologists Union (RAOU) regarding bird usage of the site and the potential impacts of the proposal on birds, and this is reproduced on page 30 of the Consultative Environmental Review document. In summary, the conclusions and recommendations reached by the RAOU included:

- bird use of the saline flats had increased as a result of human disturbance to the flats which had caused stormwater and tidal waters to remain in pools on the site. Birds, including some listed as requiring protection in the Japan Australia Migratory Bird Agreement (JAMBA) used the pools for feeding and roosting;
- the proposed ponds would in all probability provide much larger areas of habitat for wading birds (including those listed in the JAMBA agreement) if the ponds were constructed to provide roosting areas and stocked with local fauna which birds could eat;
- it would be considerable advantage to the birds if islands were constructed in the settlement pond; and
- local plant species should be used (ie mangroves and samphire for the levees and pindan vegetation on the pindan).

The proponent has adopted these recommendations.

The salt-marsh has, in parts, been significantly affected by human activity. Vehicle tracks traverse the area and an area has been excavated.

The Authority does not expect that there would be off-site impacts to salt-marsh from this proposal.

The Environmental Protection Authority considers that, consistent with its advice in March 1991, this proposal is an acceptable use for the salt-marsh. However the acceptability of this proposal should not be considered as a precedent for further development on this, or any other salt-marsh. Any future development must have due regard for cumulative impacts.

4.3 Wastewater disposal

Works approval and licensing will be required under Part V of the Environmental Protection Act for the wastewater disposal system. The Environmental Protection Authority requires ponds for this sort of facility to be designed so that under normal climatic and operating conditions there is no discharge of wastewater into Dampier Creek. As the ponds would be clay lined, both sewage (ie toilet) and crocodile wastewaters could be treated using a system of sedimentation and polishing ponds. Issues such as pond leakage rate (ie permeability) and the need for monitoring bores to check that ponds are not polluting groundwater would need to be addressed at this time.

Works approval must be sought and given prior to commencement of construction.

4.4 Drainage

The proponent intends to capture stormwater originating on-site and direct it to the crocodile ponds to reduce the salinity of the ponds. If excess stormwater is collected the proponent intends to discharge the water on the high ebbing tide. However the stormwater would have been mixed with the wastewater and therefore, as indicated in Section 4.3 above, discharge of this water would not be acceptable.

The proponent has incorporated a pipe in the levee bank to handle the extreme possibility that water levels behind the levee would rise to overtop the levee.

It is likely that surface runoff, from the north and west flows through the site to Dampier Creek. The consulting engineer's report recommended to the proponent that a diversion ditch or levee be constructed along the west and north of the site to prevent flooding of the site from stormwater runoff.

The Authority is confident that stormwater drainage can be acceptably managed but considers that drainage issues are yet to be satisfactorily resolved in detail. Design criteria need to be determined based on local conditions which ensures excess stormwater is diverted away from the wastewater system and disposed of properly.

Also, as noted below in Section 4.5, freshwater flooding is likely to be important for mangroves. The Authority has recommended that the proponent be required to address these matters.

4.5 Mangroves

Mangroves are fundamentally important in the biological production cycle of the coastline and are vital for the maintenance of the off-shore fisheries (Kenneally 1982). The Environmental Protection Authority has concluded in previous assessments that no further significant loss of mangrove ecosystems from direct or indirect impacts would be environmentally acceptable.

The Environmental Protection Authority notes that the proposal would not have any direct impacts on mangroves as the proposal is located about 40m from mangroves. However indirect loss of mangroves could result from changes to the site hydrology.

Little research data are available to document the degree of importance of the periodic freshwater flushing, but it is likely to be important as it has been observed that mangrove communities can be severely affected by changes to hinterland drainage (Semenuik, 1983). Effects such as decreased biomass production under salinity stress have also been documented for some species of mangrove (Field, 1985) and mortality of mangroves due to the restriction of hinterland drainage and changes to seawater flushing has also been documented in many parts of northern Australia (Gordon, 1987).

The proponent should consider the potential impact of the proposal on surface freshwater flows to the mangroves when designing the stormwater drainage system.

The proponent intends to establish mangroves along the levee banks to protect the banks from wave action and erosion. The Authority understands that efforts to establish mangroves in new locations have met with varying levels of success. If the proponent is successful in establishing mangroves along the levees the proposal could result in a net increase in mangrove.

If mangroves are lost as a result of changes to site hydrology there may be a need to stabilise or rehabilitate these areas.

The proponent should be required to monitor the health of and changes to nearby mangroves and the success of the mangrove plantings along the levees to the satisfaction of the Environmental Protection Authority.

A monitoring report should be forwarded every year until the Authority is satisfied that further changes to mangroves are unlikely.

In the event that monitoring shows that any areas of the existing mangrove ecosystems have been adversely affected the proponent should submit and implement a plan for the stabilisation and rehabilitation of affected areas to the satisfaction of the Environmental Protection Authority.

4.6 Groundwater extraction

A licence is required from the Water Authority of Western Australia to extract groundwater. The Water Authority have indicated that licence conditions would include the amount of water that can be drawn and some salinity monitoring. The proponent has stated his belief that adequate supplies of water would be available in the Consultative Environmental Review document and has indicated that if this is not the case then the facility would not be developed to the extent indicated or alternative sources of water may be sought.

4.7 Landscaping/revegetation and aesthetics

Several public submissions indicated concern about the likely appearance of the site and the likelihood of successful vegetation establishment on the saline soils of the salt-marsh. The proponent's response (see Appendix 2) should alleviate several of the concerns.

The proponent acknowledges in the Consultative Environmental Review that until vegetation is established the appearance of levee may cause concern.

The proponent intends using local species for re-vegetation and this is endorsed by the Environmental Protection Authority. The Authority expects that although some persistence may be required, re-vegetation would ultimately be successful and significantly soften the visual impact of the proposal.

The appearance of the buildings is a matter for the proponent and Shire of Broome.

4.8 Restoration if project fails

The proponent has made a commitment to rehabilitate the site to the satisfaction of the Environmental Protection Authority and Shire of Broome if the project fails. The Environmental Protection Authority notes that where earthworks are not required rehabilitation of salt-marsh has been successfully achieved at little cost in other parts of Western Australia.

The Shire of Broome may wish to consider requiring a bond or bank guarantee to cover the cost of site rehabilitation if the proposal fails.

4.9 Other issues

4.9.1 Construction impacts

The Authority agrees with the proponent's assessment that construction impacts such as noise and dust would be minor and easily controlled.

4.9.2 Odours

The Authority agrees with the proponent's assertion that odours are not likely to be a problem.

4.9.3 Existing uses

The Environmental Protection Authority considers that existing uses of the site, such as recreational fishing, would ultimately not be adversely affected by the proposal. The Authority expects that fears about crocodile escape would diminish over time and recreational fishing would return to former levels.

The Authority agrees with the proponent that the proposal would not affect other adjacent land uses.

4.9.4 Project detail and approval period

The Authority's experience is that it is common for details of a proposal to alter through the detailed design and construction phase. In many cases alterations are not environmentally significant or have a positive effect on the environmental performance of the project. The Authority believes that such non-substantial changes, and especially those which improve environmental performance and protection, should be provided for.

If the proponent has not substantially commenced the project within five years, then any approval to implement the proposal should lapse and be void. The Minister for the Environment should determine any question as to whether the project has been substantially commenced. Any application to extend the period of five years should be made before the expiration of that period, to the Minister for the Environment. On expiration of the five year period, further consideration of the proposal should only occur following a new referral to the Environmental Protection Authority.

5. Concerns to be addressed by other approvals

Other concerns raised by public submissions included Aboriginal issues, food source for the crocodiles, traffic and parking.

The proponent is required to comply with the Aboriginal Heritage Act.

The proponent would require approval from the Fisheries Department to harvest fish to be used as a food source for crocodiles. The Fisheries Department should ensure that the harvest is sustainable.

Traffic and parking issues should be considered by the Shire of Broome when it considers the development approval required under planning legislation.

6. Conclusion and recommendations

The Environmental Protection Authority considers that, subject to the recommendations below, the proposal is environmentally acceptable.

Recommendation 1

The Environmental Protection Authority concludes that the proposal by Mr M Douglas to locate a crocodile farm at the corner of Crab Creek and Broome roads, Broome is environmentally acceptable.

In reaching this conclusion the Environmental Protection Authority identified the main environmental factors requiring detailed consideration as:

- escape of crocodiles;**
- loss of salt-marsh;**
- wastewater disposal; and**
- surface water drainage and protection of mangroves.**

The Environmental Protection Authority concludes that the environmental factors mentioned above have been addressed adequately by either environmental management commitments given by the proponent or by the Environmental Protection Authority's recommendations in this report.

Accordingly, the Environmental Protection Authority recommends that the proposal could proceed subject to:

- the Environmental Protection Authority's recommendations in this Assessment Report; and
- the proponent's commitments given in the Consultative Environmental Review (Appendix 1).

Recommendation 2

The Environmental Protection Authority recommends that prior to construction commencing works approval and licence conditions be set under Part V of the Environmental Protection Act to ensure that groundwater under the site does not become polluted and that under normal climatic and operating conditions there is no discharge of wastewater into Dampier Creek.

Recommendation 3

The Environmental Protection Authority recommends that prior to completion of the levee bank the proponent design and subsequently implement a stormwater drainage system that separates wastewater and excess stormwater flows and maintains adequate freshwater flows to nearby mangroves, to the satisfaction of the Environmental Protection Authority on advice of the Shire of Broome.

Recommendation 4

The Environmental Protection Authority recommends the proponent be required to monitor the health of and changes to nearby mangroves and the success of the mangrove plantings along the levees to the satisfaction of the Environmental Protection Authority.

A monitoring report should be forwarded every year until the Authority is satisfied that further changes to mangroves are unlikely.

In the event that monitoring shows that any areas of the existing mangrove ecosystems have been adversely affected by the proposal the Environmental Protection Authority recommends that the the proponent submit and implement a plan for the stabilisation and rehabilitation of affected areas to the satisfaction of the Environmental Protection Authority.

Appendix 1

Proponent's commitments

8.0 COMMITMENTS

The proponent is committed to ensuring that the Crab Creek Road Crocodile Farm and Tourist Facility has minimum environmental impact and to ensuring that it will be aesthetically pleasing.

Consequently the proponent:

- 1) Makes the commitment, if the crocodile and tourist venture fails, to rehabilitate the site to the satisfaction of the Environmental Protection Authority and the Shire of Broome.
- 2) Makes the commitment that, to the satisfaction of the Environmental Protection Authority, there will be no disturbance to the mangroves of Dampier Creek and Roebuck Bay
- 3) Makes the commitment that the monitoring and replanting of the 30 metre road reserve with endemic species will be carried out to the satisfaction of the Department of Conservation and Land Management.
- 4) Makes the commitment to establish, with minimum disturbance to existing habitat, a crocodile farm and tourist facility that will be aesthetically pleasing and environmentally acceptable, to the satisfaction of the Environmental Protection Authority and the Shire of Broome.
- 5) Makes the commitment that sound management practices will ensure no odour to the satisfaction of the Shire of Broome Health Inspector and the Environmental Protection Authority.
- 6) Makes the commitment to complete the work in a period of five years and to minimise disturbance to the adjoining properties and the community to the satisfaction of the Environmental Protection Authority.
- 7) Makes the commitment to construct, stabilise and landscape the levee to the satisfaction of the Environmental Protection Authority and the Broome Shire Engineer.
- 8) Makes the commitment to construct the security fences and to daily monitor all fences and ensure that repairs associated with the fencing are completed promptly to the satisfaction of the Department of Conservation and Land Management.
- 9) Makes the commitment that at any time (eg during a period of cyclonic rain) excess water is released only on the high ebbing tide and only then after an analysis of the water has been completed by the Water Authority of Western Australia. Records of the water analysis and amount of water released will be sent annually to the Environmental Protection Authority and the Department of Conservation and Land Management.

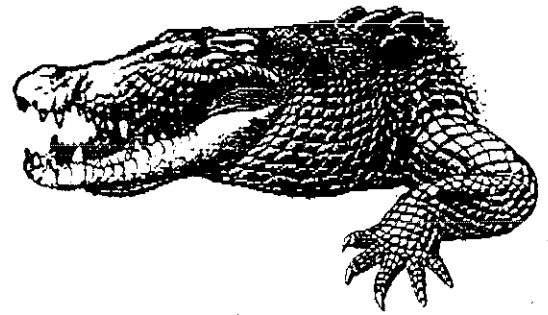
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COMMITMENT (additional) TO THE CONSULTATIVE ENVIRONMENTAL REVIEW
FOR EXTENSION TO THE BROOME CROCODILE FARM - CRAB CREEK ROAD, BROOME

- 10) The proponent makes the commitment to establish large ponds and especially the settling pond which will be constructed in such a way that the shoreline of the ponds is able to be utilised by the wading birds of the area as roosting sites. The ponds will be stocked with species representative of the fauna currently found in the salt marsh ponds of the area, enabling them to be used as feeding areas. Islands will be constructed in the ponds for safe refuge for the birds. Plant species indigenous to the area will be planted around the levee banks to provide suitable habitat for bush birds that otherwise may be displaced by the development.

Appendix 2

Summary of submissions and proponents response

1 Support for proposal

- 1.1 The document is clear and concise; Mr Douglas has displayed remarkable insight and knowledge of his intended project. We hope this worthy project may come to fruition.*
- 1.2 Complement proponent on document. With guidance and support of Shire and Broome Planning Task Force the proposal will be of benefit to all.*
- 1.3 Pleased that the proponent selected local native plant species, however concerned that soil salinity may prevent establishment of desired species.*

Local native plant species will be planted extensively on the high ground, which is a typical pindan area, where salinity is not a problem.

The native plant species that will be planted where soil salinity is high have been developed specially by Dr Paul van der Moezel. (See diagram of levee attached and also the CER pages 14 & 15.)

- 1.4 The commitments are endorsed.*

2 Adequacy of document

- 2.1 Reasons not listed why important to display crocodiles in a natural environment.*

The term "natural environment" in the CER referred to ponds of muddy, saline water that replicates the habitat of wild crocodiles.

The crocodile farm is a commercial operation and this type of environment best encourages crocodiles to breed.

It is no longer acceptable to the public to have animals kept in small cages in zoos. The most progressive facilities are primarily concerned with providing a natural environment to reduce stress and encourage normal behaviour in captive animals.

- 2.2 Concerned sandfly and mosquito populations could increase as a result of this development; this has not been adequately addressed.*

The Proponent doubts that the sandfly population will increase. Sandfly infestation is a natural phenomenon, especially at sunrise and sundown and during periods of high tide, in all mangrove/mudflat areas.

The mosquito population, on the other hand, will be carefully monitored and controlled naturally using local fish species. This method has been successfully applied at Koorana Crocodile Farm on salt marsh at Rockhampton in Queensland. The farm was established eleven years ago and has not introduced a mosquito problem.

John Lever owner of the Koorana Farm recently stated, "it is amazing how many species of fish have established themselves in the ponds even when, at times, the water is super-saline. You have to accept that mosquitos breed in mangroves and salt marshes after big tides, so when they get out of hand we spray with Abate." (see letter attached)

2.3 *Consider it is ambiguous, and appears deceptive and misleading to state that "The Crab Creek Road farm will be merely and extension of the Cable Beach operation".*

The Crab Creek Road facility is an extension of the Cable Beach Road operation. It will have the same owners, the same manager and the same management plan. The Proponent does not understand how it could be anything else.

The current management plan is restricted by the Cable Beach Road site. There is a need for a number of the immature and sub-adult non-display animals to be located in large open lakes. The Crab Creek Road extension will allow the Broome Crocodile Farm to establish this operation. There is literally no more room at the Cable Beach block.

From the beginning of the 1993 breeding season the Cable Beach operation will be producing 600 eggs per annum. These hatchlings will then have to be moved to a second site, that is, the Crab Creek Road extension.

2.4 *Consider that water salinities of 9 000 to 10 900 ppm should be described as hypersaline, not brackish.*

Water salinity of 9000 ppm to 10,000 ppm is described as saline. When the Proponent used the word 'brackish' it was in reference to salty water that is suitable for crocodiles. Crocodiles will tolerate hypersaline water providing they have access to fresh water to drink. (see page 23 CER)

2.5 *Height of inner and outer fences not specified.*

The boundary security fence for the farm and the security fencing around each pen will be 2.3 metres high. This is standard for Australian crocodile farms. The inside security fence will be 1.2 metres high. No other crocodile farm in Australia has this second security fence but the Proponent is prepared to erect it as an added safety measure to allay the fears of the community.

2.6 *No documentation to show consultation with adjacent landholders.*

2.7 *The report has failed to address the issue of employment statistics particularly for local traditional people.*

The Proponent has employed local traditional people in the past (1991 tourist season in the capacities of shop assistant/tour guide and farm hand) and will employ local traditional people in the future. This is not an environmental issue.

3 Existing uses

3.1 *Fear of escaped crocodiles would prevent use of a large area around the farm by local aboriginals.*

3.2 *Structures in this area would alienate Aboriginals who use the area for recreation, hunting and fishing.*

3.3 *The approval of this development would stop the locals from visiting this area.*

3.1, 3.2 & 3.3

The Proponent realises that there is an unrealistic fear of crocodiles within a section of the local Broome community. It has been difficult to arrange a meeting with this group so that the proposal could be discussed. If the application is successful, the Proponent believes that when the boundary is clearly defined, these people will see that the proposed development will not prevent their use of the Dampier Creek and associated mangroves in any way. As far as the Proponent can ascertain the 25 hectares (approx) under consideration has never been used in recent times for recreation, hunting or fishing. Some local people are of the opinion that the crocodile farm will include the mangroves and sections of Dampier Creek. This is not correct.

3.4 *It is agreed that the impact on recreational fishing is likely to be minimal.*

3.5 *Concerned proposal may affect horse and riding club next door.*

The local Pony Club was contacted by telephone and their response was so positive that it was not considered necessary to have their support submitted in writing. They stated that they were pleased to have tourists visiting the area so that in the future the Pony Club could benefit by arranging rides for the tourists.

There has been considerable consultation with the local aborigines. Correspondence is available.

Peter Howell, a developer, who has an industrial sub-division opposite opposes the Crocodile Farm extension. He stated recently to the Proponent "I have a gut feeling that crocodiles could escape."

The proponent is aware that during construction of the farm continuing liason with the community must be a priority.

4 **Location of proposal/value of salt-marsh/alternatives considered**

4.1 *Alternative sites have not been adequately discussed. We consider there are adequate supplies of brackish water widely available, so alleged constraints have not been fully explained.*

Alternative sites have been well documented in the CER 3.0 (pages 5 & 6).

The availability of water has been discussed in detail with the Water Authority of Western Australia. The amount of water needed is only available close to the coast. It is the opinion of the Water Authority of Western Australia that this salt, brackish or saline water will have minimum effect on the water resources in the area.

4.2 *The CER fails to list the criteria used for site selection.*

The criteria for site selection are indicated in the CER (page 6).

They are:

A combination of high and low ground to facilitate drainage of pens. This operation takes place daily.

There must be an area extensive enough for pens, ponds and lakes.

A clay base is vital for the larger ponds and lakes.

There must be ample supplies of water, brackish to saline.

There must be vehicle access in both the dry and wet seasons.

It must be easily accessible from town for visitors and for tourist operators to include the farm in their programmes.

Town water and town power must be available.

4.3 The implied necessity of having to use a clay base for the ponds is refuted; large ponds have been constructed on red pindan soil at the zoo and existing crocodile farm.

A clay base is necessary for large ponds. The pond constructed at the Broome Zoo has not been satisfactory and because the plastic liner leaks, an extraordinary amount of fresh water is needed to maintain an adequate level.

The ponds at the existing crocodile farm are not large and to hold water satisfactorily have had to be cement lined. The Proponent intends to excavate ponds at the Crab Creek Road block that will hold up to 200 crocodiles. It would be impossible and uneconomic to line these ponds either with plastic or cement or a combination of the two. (see page 6 para 2 of the CER).

4.4 Consider no need to use a 'natural' environment for crocodile display; Of the 10 crocodile farms in Australia, all have been situated in locations other than the natural habitat of crocodiles.

The need for a "natural" environment is explained in 2.1 above. It is not correct to state "Of the 10 crocodile farms in Australia all have been situated in locations other than the natural habitat of the crocodile."

To name a few:

1) Edward River Crocodile Farm in Queensland is owned by the Pormpuaan Aboriginal Community of Cape York Peninsula. It is situated in typical crocodile habitat on natural wetlands behind the sand-dunes. This crocodile farm is the largest in Australia.

An extension of this farm has recently been established at Redbank, an outer suburb of Cairns. This complex will eventually hold 9000 crocodiles. The boundary fence is within metres of the mangroves that surround Cairns Harbour.

2) Koorana Crocodile Farm was established on salt marshes at Rockhampton in Queensland. This too is typical crocodile habitat (see photos in CER and description of farm on page 23).

3) Janamba Crocodile Farm, at Humpty Doo near the Adelaide River, in the Northern Territory is in the heart of crocodile habitat.

4) Labele Downs Crocodile Farm in the Northern Territory, owned by Hilton Graham, specialise in ranching eggs from the

surrounding wetlands. The hatchling and growing out ponds are on high ground adjacent to the vast wetlands frequented by wild crocodiles.

5) The Yirrikala Aboriginal Community is currently establishing a new crocodile farm specialising in ranching the surrounding wetlands.

4.5 Alternative sites considered limited to saline flats and salt-marshes.

Buckleys Plains and various sites on each side of the main BroomeDerby Road are not saline flat and salt marsh sites (see CER pages 5 & 6).

4.6 Consider that the salt-marsh is an integral and important part of the Roebuck Bay marine/coastal wetlands system contributing to several strategic food chains, and the wetlands (through the RAMSAR agreement) are of international significance.

The Proponent considered carefully the application for the small section of the salt marsh below the high pindan area along the main Broome Road before the Crab Creek Road turnoff. Research eventually justified this application when it was established that a large settling pond on the salt marsh would create a predatorfree refuge for many species of birds (see page 30 of the CER).

The salt marsh is currently zoned as Reserve (Common) and "can be used for townsite development." With this zoning, the Proponent felt justified in applying for a lease.

4.7 The halophytic ecosystem (Sporobolus grasslands and various samphires) needs to be researched and also be given special protection.

The Sporobolus grassland and various samphires cover an exceptionally large area around Roebuck Bay, the majority of which has been given or will be given special protection by various zoning restrictions such as "for the use and benefit of Aborigines" and the proposed Roebuck Bay Marine Park will further protect an extensive area.

4.8 We question whether any studies have been done during the heavy wet season when the flats have come alive with a variety of crabs of different colours.

The Proponent accepts that the south-east section of the proposed crocodile farm, quite possibly, is the habitat of some species of crabs. The area of land affected is small compared with the total salt marsh area and it is likely that only a very small proportion of the total crab population will be affected. By establishing a new mangrove buffer beside the high bank an extra habitat will be created for many crab species.

4.9 Note that EPA recognises value of mangroves but not the halophytic marshes which complement the mangrove ecosystem - consider this to be a critical oversight.

The Proponent believes that the Environmental Protection Authority and the Department of Conservation and Land Management recognise the overall importance of halophytic marshes. For this reason these matters have recently been discussed in the Kimberley Plan Study Report.

4.10 *Implication in CER that salt-marsh is of low value and therefore suitable for some sort of development is disturbing. Role of salt-marsh as buffer zone between terrestrial and marine environments must be recognised. Concerned this development may set an undesirable precedent.*

This concern has been answered in 4.7, 4.8 and 4.9 above.

4.11 *Development of salt marsh will compromise its value as "town common"*

There has already been considerable degradation of the proposed site. See INTRODUCTION on pages 30 & 31 of the CER. Report by wardens of the Broome Bird Observatory.

The fact that Crab Creek Road runs across the salt marsh indicates that the area has been considerably altered by human intervention.

4.12 *The recreational value of the salt-marsh to the Broome community will increase significantly in future years, and the zoning of the common should be changed to reflect this.*

The "zoning of the common" is not a responsibility of the Proponent

4.13 *Given the importance of mangrove stands to the development of fish stocks mangroves should not be damaged.*

The Proponent has noted the comment and the mangroves will not be damaged in any way. (See pages iv, 9, 26, 42 & 44 of the CER)

5 Crocodile farming & tourism - general comments

5.1 *I am against the commercial exploitation of native animals.*

5.2 *Opposed to proposal on animal welfare grounds - consider keeping crocodiles in captivity is cruel - crocodiles should be rehabilitated and released into their natural environment.*

5.1 & 5.2

The Proponent accepts that there are individuals and groups opposing the commercial exploitation of native animals. The keeping of crocodiles is not cruel provided that conditions of their captivity are satisfactory and adhered to according to requirements of the responsible authorities (see page 7 and page 45 of the CER).

"Problem" and "rogue" crocodiles cannot be relocated (see page ii of the CER).

5.3 *Existing facility at Fremantle is appalling.*

The Proponent believes that the Fremantle Crocodile Farm has been extremely successful. The mature females are breeding, which is a positive sign that the crocodiles are not stressed.

5.4 *Tourism should not be placed ahead of local community needs.*

The Proponent was unable to address this point as "local community needs" were not specified.

6 Crocodile escape and fence construction

- 6.1 *Past record of crocodile escape from escape-proof pens at Cable Beach facility raises concern.*
- 6.2 *The positioning of the farm close to the town-site and mangroves increases fear of escaped crocodiles establishing around Broome.*
- 6.3 *The certainty of capture would be most unlikely and difficult if an crocodile escaped into the adjacent mangroves.*
- 6.4 *Young crocodiles which are not territorial would escape and tourism would suffer.*
- 6.5 *Human error would lead to crocodile escape.*

6.1, 6.2, 6.3, 6.4 & 6.5

The issues have been answered in the CER in detail on page 17 and page 40.

The Proponent stresses that knowledge of captive crocodiles has increased over the last 10 years.

- 6.6 *Would like to establish if crocodiles located in the "small ponds for immature crocs", "display and breeding ponds" and hatchling ponds" are able to be carried by birds of prey/ crows/ seagulls and so escape and establish around Broome. Suggest proponent make a commitment to only hold large crocodiles in these locations.*

In reference to the SMALL PONDS (for immature crocodiles) marked on the map. These crocodiles are over 3 years of age. At this age a crocodile is too large and too heavy for any bird to grab or pick up and drop in another location in Broome. For details of the totally enclosed pens for hatchlings see page 17 of the CER.

- 6.7 *The recommendations in the consulting engineers report relating to survey levels and depth of water at high tide levels, diversion ditch construction and incorporating a flat slope or stone rip rap should be implemented to ensure the facility will contain crocodiles in all circumstances, including freak storm events.*

The Proponent is committed to constructing a high bank as per the constructing engineers specifications.

- 6.8 *No mention made of design to withstand tsunamis (tidal waves), as occurred in 1883 with the eruption of Krakatoa, which could liberate crocodiles.*

See page 30 of the CER for "Official data on tides, storm surges and tide heights". This is also addressed in Appendix A - Coffey Partners International Pty Ltd Report.

- 6.9 *As the levee is to be constructed over several years, a temporary internal boundary fence should be constructed to satisfaction of the Department of Conservation and Land Management.*
- 6.10 *It could be assumed that construction at the proposed site would be the same as at the Cable Beach Road, which is adequate, however more detail is needed in the descriptions of the fences around the farm and of cage construction to ensure the construction is to standard.*

6.9& 6.10

The Proponent has noted the comment and is committed to discussing these details with the Department of Conservation and Land Management.

6.11 Concerned that over time quality of management control by authorities would decrease leading to escape.

Government authorities will not allow this to happen.

6.12 Manufactures claims regarding salt resistance not substantiated in practice; Frequency of inspection and replacement need to be given to ensure pens remain escape proof.

In 4.4 of the CER (pages 13 & 18) manufacturers claims are stated. The Proponent has substantiating correspondence from companies such as DBS Fencing and Koppers. It would not be in the best interests of reputable companies to supply false figures.

6.13 All fence posts should be hot dipped galvanised.

All fencing will be supplied by DBS Fencing of Perth, who now have a policy of hot dipping all metal.

6.14 Would compensation be available from proponent if an escaped crocodile killed somebody.

This matter is being discussed with SGIO who currently handle all insurance, including public liability, for the Broome Crocodile Farm.

7 Drainage

7.1 Existing stormwater drainage routes should not be impeded.

This has been noted. The Proponent has already had discussions with Shire of Broome Engineers regarding storm water drainage.

7.2 Alteration to drainage patterns, tidal inundation and species composition after construction of the levees has not been adequately covered in the CER.

The drainage pattern during a high spring tide will be altered only very marginally by the construction of the levee.

Alteration of the salt marshes due to tidal inundation will be negligible due to the vast area of salt marsh that is inundated during spring tides. There is also considerable natural variation in high spring tides. A levee preventing the tide to cover approximately 20 hectares will not affect total inundation in any way.

7.3 Concerned that surface run-off from the proposed 25 ha site will be confined behind the proposed external 3 m high levee banks. During monsoonal rains a substantial lake could be created over the lower half of the lot. How will this water be released into Dampier Creek.

It would be beneficial if the main ponds were filled with fresh water during heavy monsoonal rains (see page 24 of the CER, Koorana Crocodile Farm). During periods of excessive rain the water will be released by motorised pumps lifting the water over the wall (see page 44 of the CER). During the construction of

the levee, heavy duty stormwater piping will be laid into the wall to ensure that if the settling pond ever filled to capacity excess water could be released. The piping would at all other times be capped.

8 Water and waste water

8.1 Caretakers house is appropriate, however staff units are not acceptable - no sewerage system.

If staff units were not acceptable to the relevant authority on the proposed block, the units would have to be constructed on an alternate town housing block.

8.2 Reference is made to treating sewage waste in the same manner as the Broome Caravan Park, but the Environmental Protection Authority have recently recommended changes to the Caravan Park's operating practice.

The Proponent will seek advice from the Shire of Broome and the Environmental Protection Authority as to the most appropriate manner of treating sewerage on the proposed site.

8.3 The proposal should have minimal impact on water resources in the area. If the development proceeds the proponent will need to apply to the Water Authority of Western Australia for a groundwater licence. Conditions would include the amount of water that can be drawn and some salinity monitoring.

The Proponent is aware of the groundwater licencing conditions.

8.4 Report does not provide details regarding bore construction and volumes of water required so the proponent, Water Authority of Western Australia and the public are unable to estimate groundwater impacts, the acceptability of those impacts and adequacy of any proposed management program to regulate drawdown. Water Authority of Western Australia correspondence should on this matter should form part of the Consultative Environmental Review. Our estimate is that use would be between 565 to 1 151 kl/day.

A test bore was sunk in October 1990 (see page 35 of the CER). The bore was the standard 4" plastic tubing normally used for shallow bores. The bores used to supply saline water to the ponds will be 6" plastic tubing.

Correspondence to the proponent from the Water Authority of Western Australia stated that there is an ample supply of saline water available and the proposed crocodile farm will have minimum affect on the Broome groundwater supply. (see letter attached)

8.5 No details provided on pond volumes, so it is difficult to predict water quantities needed to maintain water and salinity levels.

The pond levels and water salinity will vary throughout the year depending on whether it is the wet season or the dry season. As the salinity will not trouble the crocodiles the pond levels will be allowed to drop before the wet season in anticipation of the rain. If rains do not arrive or the wet season is poor then the ponds will be "topped-up". (see page 23 of the CER, Koorana Crocodile Farm). Salinity is not a problem for crocodiles

providing that some fresh drinking water is available. (see Appendix C - photograph of Koorana Crocodile Farm)

8.6 *Due to evaporation salinity levels must increase to the extent that ponds need flushing; the frequency of this need is not mentioned in the CER.*

This concern has been answered in 8.5 above. The only areas that will need flushing are the small hatchling and growing-out pens

8.7 *Report notes evaporation to be 2 300 mm on pages 8 & 27 and 3 m on page 37. Which is correct?*

This was a proof reading error and should read 3m on pages 8 and 27 of the CER. The source of the information was the Water Authority of Western Australia.

8.8 *The report fails to give design details for discharge outlets.*

This has now been answered in 7.3 above.

8.9 *Concerned that other sewerage pipes have damaged recreational pastimes such as cockling and that the waste water, which may contain crocodile fungal diseases, new plants or slugs could adversely affect the marine environment here.*

See page 22 of the CER.

Wyndham Crocodile Farm has no settling ponds and no provision for treating water. The water flushed from the hatchling ponds flows out onto the area adjacent to the Cambridge Gulf mangroves. At this stage there is no attempt to stop the untreated water flowing into the mangroves.

8.10 *Increased groundwater nutrient levels may result from pond leakage hence appropriately sited monitoring bore(s) would be useful.*

The Proponent has noted that a monitoring bore would be useful.

8.11 *The proponent should be responsible for carrying out an appropriate monitoring programme with reporting to the Environmental Protection Authority. The monitoring sites, sample frequency, key parameters and reporting regime need to be identified.*

This concern has been covered in the CER on page 44.

8.12 *Responsibility for testing water samples should lie with the proponent using a NATA registered laboratory, not with the Water Authority of Western Australia.*

The Proponent discussed this matter with the Water Authority of Western Australia on the 5th March 1992 and accepts that salinity levels in water can be tested by the Water Authority of Western Australia. Other testing (eg for nutrient loads) would be carried out by a NATA registered laboratory.

8.13 *Concerned settling ponds will be a mosquito breeding site and pesticides will have to be used which could harm the environment.*

Mosquitos and biting midges (sandflies) breed to plague proportions at times on the salt marshes and in the mangroves. The development of the farm will make virtually no difference to overall insect populations.

People living and working in coastal areas learn to live with this problem.

If it were absolutely necessary to spray an area, the insecticide, (Trade Name ABATE) would be used. (see letter attached).

The Proponent's general philosophy is against using pesticides.

Salt tolerant local fish species will be established in all ponds to control mosquitos (this has been the Cable Beach facility policy). Koorana Crocodile Farm in Queensland has successfully established numerous species of fish in ponds which at times are hypersaline.

9 Landscaping/re-vegetation and aesthetics

9.1 No soil salinity analysis has been provided nor a table showing soil salinities that the species proposed would be able to tolerate. It is therefore conjecture to assume that landscaping/tree planting will be successful.

See diagram attached.

9.2 Saline soil conditions will prevent establishment of proposed trees (eucalyptus, melaleucas and casuarinas) which will hardly replicate the 'natural habitat' of crocodiles.

On page 15 of the CER the salt tolerant species suitable for the Broome climate are listed. There is no reason to believe that this plantation will be unsuccessful.

9.3 Consider there is no scientific proof for leaching or non leaching of salts from bund walls to permit vegetation to establish. Understand that soil leaching of salts depends on a sandy substrate but material for bunds is a clayey sand.

Further information regarding the levee has now been presented in the accompanying diagram. The sides and top of the levee will not be planted with trees and bushes, as the ground would be too compact. The salt tolerant trees and shrubs planted beside the levee will be established in relocated pindan soil and organic matter and occassionally watered with fresh water. Swales between the trees and the settling pond will retain fresh water from natural rainfall.

9.4 Concerned no mention is made as to whether Dr van der Moezel has made or will make field trials. Understand that Dr van der Moezel no longer works for the Department of Botany and UWA.

The Proponent is still in contact with Dr van der Moezel. He is now working with a private company;

Alan Tingay and Associates
Environmental Scientists
Perth WA

Their programme of developing salt tolerant trees is in the process of expansion (eg recent shipment of melaleucas to Saudi Arabia).

9.5 There is no separate plant list for planting on saline areas.

An extensive list is on page 15 of the CER, the details of which were supplied by Dr van der Moezel.

9.6 *The success in actually planting and establishing mangroves, as proposed along the levee, has not been scientifically proved.*

The details of planting of mangroves is on page 9 of the CER. M/s Pat Hutchings is PRINCIPAL RESEARCH SCIENTIST, DIVISION OF INVERTEBRATE ZOOLOGY, THE AUSTRALIAN MUSEUM.

There are many examples around Australia (eg extension to runway, Brisbane Airport) where mangroves have been established successfully on and beside man-made levees.

9.7 *Conditions should be established to clarify what would occur in the event of non-performance of phases or stages of work. Suggest a bond be placed with Shire of Broome.*

This is not an environmental consideration. The Proponent has discussed this matter (per phone) with the President of the Shire of Broome and the Shire Clerk.

9.8 *Concerned that if proposal does not proceed rehabilitation will be slow.*

See page 44 of the CER.

9.9 *Visual impact of development would be high and detract from the natural views.*

9.10 *A 3 m high bank with a chain mesh fence on a flat featureless salt-marsh would ruin the aesthetics of the area.*

9.9 & 9.10

This has been discussed in detail on page 9 of the CER. See diagram attached.

9.11 *The open landscapes of the salt-marsh are a scarce resource in the Broome environment and should be protected.*

See answers to 4.6 & 4.7.

10 Food for crocodiles

10.1 *Charter boats selling fish for feed would need to be licensed commercial fishing boats.*

Comments noted regarding licences for charter boats.

10.2 *It is unlikely that the Fisheries Department would issue a permit for the netting of mullet, however these could be purchased from existing licensed fishermen.*

10.3 *Concerned the quantity of mullets which may be required may exceed local stocks; suggest proponent utilises meat from feral animals.*

10.2 & 10.3

The Proponent has at times purchased mullet from existing licenced fishermen. However most crocodile farms now accept that fish is not a preferred diet for young crocodiles and very little fish is fed to crocodiles under three years of age.

The Proponent has discussed the possibility of obtaining feral animals (eg donkeys) from Kimberley property owners. It is now accepted that a farm must be operated with a reliable supply of food (eg chicken heads etc from poultry farms).

11 Standard of development

11.1 The road and cross-overs from Crab Creek road should be sealed and kerbed.

Noted by the Proponent and discussed with the Broome Shire.

11.2 Parking shown on plan inadequate; no provision for tourist busses and based on Cable Beach facility expect there should be 100 bays.

The map supplied is not to scale. Ample parking for buses and small vehicles will be provided.

12 Concerns/considerations regarding other approvals

12.1 Any approval by the Environmental Protection Authority should be conditional on Department of Conservation and Land Management agreeing to the issue licences for both sites (ie Cable Beach and the proposed site). Ministerial direction would need to be sought by CALM prior to agreement.

12.1, 12.2, 12.3 & 12.5

The Proponent has discussed the need for the relevant licences and other matters of consideration with the Department of Conservation and Land Management.

12.2 There is no licensing direction under the Wildlife Conservation Act between captive breeding and ranching and it is not a matter which should concern the Environmental Protection Authority.

12.3 The department of Conservation and Land Management controls the issue of licences to process and export crocodiles and crocodile products and the keeping and movement of farmed crocodiles.

12.4 Access to managers house from Broome Road will need Main Roads Department approval.

Need for approval is noted.

12.5 CALM will require that any slaughterhouse or processing facility be licensed.

12.6 It is the opinion of this group that the proponents should liaise with the newly-founded Aboriginal Consultative Committee.

The Proponent has informed the newly-founded Aboriginal Consultative Committee via Marlene Bruce, the Western Australian Museum Sites Department Officer in Derby and Robyn Hannigan, Broome Councillor who has been nominated by Council to liaise with the local Aboriginal Consultative Committee.

12.7 Aboriginal song line borders the coast line as this would have been the walking trail for aborigines.

The proposed development is 4 kilometres inland from the Roebuck Bay coastline and 1 kilometre inland from the top of Dampier Creek. The Proponent believes that the proposed Crocodile Farm will therefore not affect the Aboriginal song line.

12.8 The number of public toilets required should be assessed with final plans.

The Comment regarding public toilets has been noted.

12.9 Approval of crocodile farm would pre-empt review of Town Plan 2 and 3 and thus compromise the future planning framework.

The Broome Shire Clerk and the Shire President have discussed this matter (per phone) with the Proponent. Town Plan 4 is now under consideration.

The proposed Crab Creek development was discussed with Mr David Smith, the Minister for Lands, during his recent visit to Broome.

The Proponent has been told to continue finalising the CER assessment report with EPA.