AMENDMENTS TO APPENDICES I AND II OF THE CONVENTION

Proposals submitted pursuant to Resolution on Ranching

A. PROPOSAL

Maintenance of the South African population of Crocodylus niloticus in Appendix II.

B. PROPONENT

The Republic of South Africa.

- C. SUPPORTING STATEMENT
 - 1. <u>Taxonomy</u>
 - 11. <u>Class</u>: Reptilia
 - 12. Order: Crocodylia
 - 13. Family: Crocodylidae
 - 14. <u>Species</u>: Crocodylus niloticus
 - 15. <u>Common Names</u>: English: Nile crocodile French: Crocodile du Nil Spanish: Cocodrilo del Nilo Afrikaans: Nyl krokodil
 - 16. <u>Code Numbers</u>: A-306.002.001.006

2. Biological Data

21. <u>Distribution</u>: The Nile crocodile in South Africa was formerly extensively distributed in all eastward flowing rivers from the Limpopo in the North (Transvaal) to the mouth of the Keiskamma River (some 76 km West of East London, Cape Province) in the South. Westward distribution in these rivers being restricted by climatic conditions.

Current distribution is still in the eastward flowing rivers from the Limpopo in the North (Transvaal) to the Tugela River in the South (Natal). Westward distribution is restricted by climatic conditions as well as human pressure. Major and fully protected populations occur in the Kruger National Park, (Transvaal), Ndumu Game Reserve and Lake St Lucia (Natal).

- 22. <u>Population</u>: The crocodile population of South Africa can be broken up into the following groups:
 - i) The Transvaal population
 - ii) The Kruger National Park population
 - iii) The Natal population

Here it should be noted that crocodiles have never occurred naturally in the Orange Free State and no longer occur naturally in the Cape Province.

i) <u>Transvaal</u>: N. Jacobsen (1984) estimated the Transvaal population at some 1 000 crocodiles. This was based on aerial surveys of the major rivers of the Transvaal over a three year period 1979 - 1981. A total of 2 256 km of river was flown and a total of 602 crocodiles counted (see Table 1). The population is probably a lot higher as the counts were done in the dry season when rivers were low. Crocodiles would have at this time of year, moved down stream to better water, and into their traditional breeding areas. Most of the rivers flow into the Kruger National Park, which was not covered in the survey.

During the years 1988/89, a further survey was carried out by N. Jacobsen (1991) and a total of 896 crocodiles were counted, an increase of 48.8%. This survey was encouraging because it indicated an increasing population despite human pressures on the crocodile habitat. From the 1991 report, the Transvaal population is probably nearer 1 500 (op. cit.) (see also Blake & Jacobsen 1992).

- ii) <u>Kruger National Park</u>: The crocodile population of the Kruger National Park is estimated at c 3 500. Table 2 reflects 2 453 crocodiles from counts in respect of the rivers only flowing through the Park and not the dams and water holes within the Park (Viljoen 1992). It also does not take into account juvenile crocodiles that would not be seen from the air. The counts were also made in conjunction with a hippopotamus count. Apart from migration up the rivers into the Transvaal, and down the rivers into Mozambique, the crocodile population is fully protected and there are no plans to utilize it.
- iii) <u>Natal</u>: Blake (1989) estimated the Natal crocodile at some 4 500. This population can be broken up into three major groups. The Ndumu Game Reserve with a population of some 1 250 crocodiles, the St Lucia Lake system with some 1 500 crocodiles, and other areas some 1 750 crocodiles (see Table 3).

<u>Regular Monitoring</u>: It is the policy of each of the Provinces to carry out regular monitoring of their crocodile populations (see Section 79.).

The Authorities in Natal have a policy of annual monitoring of their crocodile populations (see Appendix Three) as do the authorities in Kruger National Park.

Annual monitoring in the Transvaal is financially prohibitive due to over 2 000 kms of river to be monitored. In this Province therefore monitoring has to be on a selective basis and this is carried out annually. Research on known breeding populations is being carried out (see Section 79.).

<u>Captive populations</u>: Since 1968 crocodiles have been reared successfully on farms in the following three provinces - Transvaal, Natal and the Cape. As at 1 October 1993 there were 36 registered crocodile farms in South Africa.

H. Kelly (1993) estimated the total stock on all registered crocodile farms to be in the order of 46 800 crocodiles. This includes 4 711 mature breeding stock held as at 1 October 1993 (Appendix One).

23. <u>Habitat</u>: The Nile Crocodile occurs in rivers, lakes, swamps and estuaries of South Africa which are climatically suited to their distribution. Some habitat has been lost to crocodiles due to human pressures and extensive land use resulting in silting up of some rivers. However, their habitat is fully protected in the Kruger National Park and most of north-eastern Natal from the Mozambique border to the Umfolozi River in the South, this

area being in the main nature reserves falling under the protection of the Bureau of Natural Resources (KwaZulu) and the Natal Parks Board.

TABLE 1

SURVEYS OF CROCODILE POPULATIONS TRANSVAAL 1979 - 1981 AND 1988 - 1989

River		Size 1979 - 1	Class 981 Surve	θγ	Not	Total	Total
	<1m	1-2m	2-3m	3m +	fixed	79/81	88/89
Sand River	0	0	0	0	5	5	8
Komati River	8	5	3	0	7	23	4
Klaserie River	1	0	0	0	1	2	0
Lower Olifants (KNP to Strydom Tunnel)	21	43	13	0	49	126	63*
Upper Olifants (Strydom Tunnel to Loskop)	45	21	2	0	14	82	
Loskop Dam	0	2	3	1	0	6	76
Upper Olifants (above Loskop)	0	3	3	2	0	8	
Blyde River	1	4	0	0	10	15	0**
Letaba River (KNP boundary to Letaba Station)	7	14	18	2	7	48	76
Pongola River (Commondale to Dam)	2	3	2	3	1	11	16
Mogol River (Limpopo Junction to dam)	2	5	0	0	0	7	16
Limpopo River (KNP to Messina)	28	12	10	1	3	54	77
Limpopo River (Messina to Shashi River)	0	1	0	0	0	1	58
Limpopo River (Shashi to Swartwater)	23	29	11	0	3	66	
Limpopo River (Swartwater to Mogol confluence)	28	17	6	0	0	51	382
Limpopo River (Mogol confluence to Crocodile confluence)	14	10	1	0	0	25	43
Crocodile River (East)	0	1	1	0	0	2	0
Sabie River (KBP to Hazyview)	0	0	0	0	2	2	0
Levhuvhu River	7	9	20	2	5	43	32
Mutale River	5	2	7	2	2	18	12
Magalakwena River	1	6	0	0	0	7	5
Sub-Total	193	187	100	13	109	602	868

River		Size 1979 - 19	Class 981 Surve	Not	Total	Total	
	<1m	1-2m	2-3m	3m +	fixed	79/81	88/89
Marico River	-	-	-	-	-	-	0
Crocodile River (West)	-	-	-	-	-	-	3
Palala River	-	-	-	-	-	-	24
Blockland River	-	-	-	-	-	-	1
Total	193	187	100	13	109	602	896

* Poorly Surveyed

** Not Surveyed

TABLE 2

NUMBER OF CROCODILES : KRUGER NATIONAL PARK : 1989 MAIN RIVERS ONLY

	LU	SH	LE	OL	SA	CR	TOTAL
Very big	4	4	13	51	18	12	102
Big	25	26	190	298	47	66	652
Medium	98	58	150	220	42	52	620
Small	54	56	159	107	28	46	450
Unclassified	154	23	204	248	-	-	629
Total	335	167	716	924	135	176	2 453

LU Luvhuvhu/Limpopo Complex - 112 km

SH	Shingwedzi River	-	99 km	
LE	Letaba River		-	98 km
OL	Olifants		-	108 km
SA	Sabie		-	106 km
00	o "' o'			

CR Crocodile River - 115 km

3. Trade Data

31. National Utilization

- i) <u>Transvaal</u>: While the Transvaal currently has a policy of non-utilization, problem crocodiles are either relocated or provided to crocodile farms as breeding stock. This is especially the case where rivers run through, or are adjacent to, tribal areas. Consideration is being given to limited harvesting of nests (see 73. and 712.).
- ii) <u>Natal</u>: As in the Transvaal, problem crocodiles are captured and either relocated, or supplied to crocodile farmers as breeding stock. Natal also has a utilization policy in respect of egg collection from the wild. Collection is limited to "doomed" nests, and is only carried out by the staff of the Natal Parks Board. A "doomed" nest is defined as a nest which, due to a number of factors, is unlikely to be successful (see Appendix 1).

iii) <u>Inter-provincial</u>: It should be noted that movement of crocodiles, crocodile parts and derivatives between the Provinces of South Africa, are subject to import-export permits.

TABLE 3

CROCODILE COUNTS IN NATAL: 1985 - 1993

Area	1985	1986	1987	1988	1989	199 0	1991	1992	1993	Estimated Population
St Lucia Lake	545	286(a)	851(b)	579	743	833	673	806	965	1 500
Ndumu Game Reserve	515	503	296(c)	505(d)	420	732	NC	789	833	1 250
Umfolozi Rivers	99	128	122	135	NC	NC	110	NC	189	338
Hluhluwe Rivers	37	33	41	95	NC	NC	34	NC	53	238
Lake Sibaya	67	75	67	96	57	104	NC	NC	52	240
Mzingazi Lake	-	1	6	5	3(e)	NC	18	24	6	30
Pongolapoort Dam - Upper Pongola River Lower Pongola River	-	-	-	121 23	NC NC	NC NC	NC NC	NC NC	40(f)	303 58
Other areas - estimates only - not counted	-	-	-	-	-	-	-	-	-	500
TOTAL								4 472		

a) Count Eastern Shores only

b) Count following drought - no available water adjacent to Lake

c) Count combined with hippo count - not accurate

d) Reserve now in hands of KwaZulu Government

e) Count aborted due to bad weather

f) Count combined with hippo count and bad weather resulted in low count.

NC Not counted

32. <u>Legal International Trade</u>: While the first crocodile farm was established in 1968 the majority of farms were only established in the mid- 1980's, with the result that international trade has been limited to date.

The reason for this apparent low skin production is that when these farms were established they had limited access to breeding stock and therefore bought up farm produced hatchlings and juveniles for rearing as future breeding stock. As this stock has matured, breeding production has increased.

Import of both adult and juvenile stock have been made from Botswana, Mozambique, Namibia and Zimbabwe. It should be noted that these imports were done under valid CITES export permits from the exporting country.

There has been a significant increase in international trade since 1985 and Kelly (1993) has estimated that total trade up to the end of 1993 would be in the region of 40 627 skins. Skin trade should increase significantly in the future.

The export of skins, heads and mounts, etc. derived from crocodiles killed as problem (nuisance) animals or from sport hunting has been limited by the Department of Environmental Affairs to not more than four animals per annum (Conf. 8.22).

TABLE 4

SKINS EXPORTED : 1975 - 1993

1968 - 1984	Nil
1985	579
1986	83
1987	658
1988	1 884
1989	4 625
1990	5 387
1991	4 189
1992	10 722
1993*	12 500

- * Estimated export (Kelly [1993]).
- 33. <u>Illegal Trade</u>: On the international side, no known illegal trade is taking place. Such trade, if it did take place, would be extremely limited due to the small crocodile populations in South Africa and the protection afforded them.

The implementation of the "Universal tagging system for the identification of crocodile skins" (Conf. 8.14) as adopted by South African Management Authorities in October 1993 further discourages illegal trade.

A limited amount of poaching is known to take place in South Africa to supply the traditional healers market, within South Africa, with parts and derivatives. With stricter law enforcement, a value placed on the crocodile in the wild and better co-operation between crocodile farmers and the trade in the supply of parts and derivatives to the trade, poaching and illegal trade should fall away.

34. Potential Trade Threats

- 341. <u>Live Specimens</u>: As stated previously, all live trade is subject to CITES permits being issued in both importing and exporting countries. Therefore, no trade threat is foreseen.
- 342. <u>Parts and Derivatives</u>: Again, all import/exports are subject to CITES certificates and no trade threat is foreseen.

- 4. Protection Status
 - 41. <u>National</u>: In terms of the legislation of the Provinces of South Africa, crocodiles are afforded the status of protected game. They may only be hunted or captured under permit issued by the relevant conservation authority (Jacobsen & Blake 1992).
 - 42. <u>International</u>: The Nile Crocodile is widely distributed throughout Africa in suitable habitat. Since 1983, twelve African States have transferred their populations from Appendix I to Appendix II in order to utilize their crocodile populations. This has led to enhanced protection of the Nile Crocodile throughout Africa and internationally, through stricter control on import/export, especially as prior to transfer, a large number of these countries had reservations in respect of crocodile, as did some of the major importing countries.

It can safely be said therefore, that internationally the Nile Crocodile has been afforded greater protection status than in the past.

- 43. Additional Protection Needs: None considered necessary.
- 5. Information on Similar Species

Only the Nile crocodile occurs naturally in South Africa.

6. Comments from Countries of Origin

The general consensus of the African States, has been that the Nile crocodile was placed in Appendix I without consultation of the States concerned, and should have been placed under Appendix II because, while the species is vulnerable, it is not endangered. Twelve African States have thus far had their populations transferred from Appendix I to Appendix II.

- 7. Additional Remarks
 - 71. <u>Transfer</u>: In making the original proposal, the Natal Parks Board with support of the other conservation bodies in South Africa, strongly believed that it was necessary to re-evaluate current policies and, to this end, submitted that the transfer of the South African population of *Crocodylus niloticus* from Appendix I to Appendix II would help to ensure that the objectives of all conservation authorities are achieved, that the interest of future generations are taken into account and to ensure the survival of the Nile crocodile in the wild.
 - 72. <u>Farming</u>: The first crocodile farm was started in South Africa in 1968. As at October 1993, there were 36 registered crocodile farms in South Africa (see Appendix 1). Adult stock for these farms has originated as follows:
 - i) Problem crocodile caught by the various conservation bodies and supplied to the farms.
 - ii) Adult crocodiles imported from Botswana, Mozambique, Namibia and Zimbabwe.
 - iii) Immature stock imported from Botswana, Namibia and Zimbabwe.
 - iv) Immature stock obtained from other farmers in South Africa and from the Natal Parks Board.
 - v) Adult stock reared from the immature stock obtained by importation or obtained within South Africa (sub-paragraphs iii and iv above).

Those farms that have reached the stage of export of skins, have been registered with the CITES Secretariat in Switzerland.

73. <u>Utilization</u>: Both the authorities in Natal and Transvaal are investigating various populations of crocodiles in those provinces with the intention of utilizing them for ranching purposes. This is especially the case in the Transvaal where there is a definite need for a restocking programme. The ranching of crocodiles in both provinces would place a value on wild populations and act as an incentive for their protection, as occurred in Zimbabwe.

As stated in section 31., Natal Parks Board Policy is based on eggs obtained from "doomed" nests. These are nests which are identified as having little chance of hatching, or the hatchlings would have no chance of survival (see Appendix 2).

This utilization was implemented in the 1988/89 season. To date, a total of 2 897 eggs have been collected (see Table 5). In each of the seasons up to 1991/92, c 90 hatchlings have been retained at the St Lucia Crocodile Centre for exhibit and rearing. The balance were sold to crocodile farms on condition that these, or a corresponding number, are reared for future stock. With the down listing of South Africa's crocodile population in 1992, this restriction has been allowed to lapse.

- 74. <u>Collection of Eggs</u>: The collection and incubation of eggs from the wild is only carried out by the Natal Parks Board staff stationed at the St Lucia Crocodile Centre.
- 75. <u>Quota</u> (In respect of utilization only Conf. 7.14): In order to allow hatchlings from Natal Parks Board utilization programme to be raised for skin, a quota of one thousand (1 000) skins per annum was agreed to when the South African population of *Crocodylus niloticus* was down listed in terms of Conf. 7.14.

The quota was based on collection of 35 nests per annum in Natal. The actual number collected annually has proved a lot lower (see Table 5) and is likely to remain so due to collection being restricted to "doomed" nests (see sections 31. and 73.).

While the quota was in respect of skins obtained from utilization, some countries have considered it to be the total annual authorized number of skins to be exported from South Africa. This has led to problems in exporting of skins, and the CITES Directorate have had to be called on to clarify the position on a number of occasions.

TABLE 5

Year	No of nests	No of eggs collected	No of eggs incubated	Total hatched	Hatching %
1988/89	7	371	371	293	79,0
1989/90	15	677	677	507	74,9
1990/91	13	648	648	530	81,8
1991/92	20	844	844	687	81,4
1992/93	9	357	357	298	83,5
Total	64	2 897	2 897	2 315	79,9

"DOOMED" NESTS COLLECTED BY NATAL PARKS BOARD

76. <u>Restocking</u>: While there are no current proposals for restocking in Natal or Transvaal, serious consideration is being given to the restocking of dams and rivers in the Transvaal based on a ranching basis (see 73.).

Restocking has taken place in the past both in Natal and the Transvaal. In Natal between 1967 and 1976, a total of 486 juvenile crocodiles were released into the Lake St Lucia system. In 1992, six crocodiles were released into the Itala Game Reserve (Natal) as part of a restocking experiment.

In the Transvaal, limited restocking has taken place, mostly crocodiles being released into private dams. The translocation of problem crocodiles into other areas has also taken place.

As a result of holding back some 90 hatchlings each year, the St Lucia Crocodile Centre has an annual supply of 50 - 80 three-year-olds which can be utilized for restocking purposes. If not required, these crocodiles are sold to farmers as future breeding stock. The sale price precludes them being utilized for skin.

In co-operating with the conservation authorities in South Africa, the two farming associations in South Africa have given an undertaking on the part of their members that crocodiles will be made available for restocking purposes should the need arise.

- 77. <u>Sport Hunting (Conf. 8.22)</u>: On application to the controlling authority, consideration will be given to allowing sport hunting of crocodiles both on private land and in areas zoned for controlled hunting. Such hunting will only be allowed if it is considered that the destruction of the animals will not effect the population in either the short or long term. The number of animals that will be utilized will limited on an annual basis (see paragraph 5, section 32.).
- 78. <u>Marking</u>: As per (Conf. 8.14) CITES : The "Universal tagging system for the identification of crocodile skins" was adopted by the Management Authorities from 1 October 1993 and is presently being implemented in South Africa.
- 79. <u>Register</u>: The Management Authorities in South Africa in accordance with Resolution Conf. 8.14, para n., submits reports on a regular basis to the Secretariat correlating information listed in a national register which specifies full details of all exports, imports or re-exports.

Each of the provinces issuing CITES permits in respect of skins or live crocodiles for export, will keep a register. This register will reflect details of all tags issued to farmers and will reflect details of all tags utilized for export purposes.

710. <u>Research</u>: Each of the conservation bodies in South Africa monitors its crocodile populations on a regular basis.

Natal has, since the early sixties not only monitored its population, but in 1966 set up a Crocodile Research Centre at Ndumu Game Reserve. This was subsequently moved to Lake St Lucia where it acts not only as a Research Centre, but also as an Interpretative Centre for crocodiles. From this Centre, all crocodile farming in Natal is monitored and advice and assistance given.

Management of the crocodile populations outside of formal conservation areas are presently being studied in the Transvaal, and long term plans to ensure their survival and utilization in the face of population pressure are being formulated (Blake and Jacobsen 1992) (Jacobsen - Kleynhans 1993).

Research into crocodile biology and diseases is undertaken on a regular basis in close cooperation with the conservation authorities and the various farmers. Institutions and Universities involved on a regular basis are:

Institutions

- 1 Allerton Veterinary Laboratory Pietermaritzburg
- 2 Institute of Veterinary Research Onderstepoort
- 3 Natal Parks Board Veterinary Branch

<u>Universities</u>

- 1 University of Cape Town
- 2 University of Durban-Westville
- 3 Medical University of South Africa
- 4 University of Natal Durban
- 5 Rand Afrikaans University
- 6 University of Stellenbosch
- 7 University of the Western Cape
- 8 University of Witwatersrand

Degree projects

The following Degree projects are known to be ongoing at present:

1 A Doctoral study into the feeding biology and populations of the Nile crocodile in Lake St Lucia, Natal, South Africa.

Miss A Leslie, Drexel University Department of BioScience & BioTechnology Philadelphia, USA In conjunction with the Natal Parks Board.

2 A Master of Science study into temperature sex determination in the St Lucia population of *C. Niloticus*. *Mrs J Maxwell University of Natal - Durban - South Africa*.

3 A Master of Science study into the relationship of the various crocodile populations in Southern Africa.

Mrs A Jurgens Rand Afrikaans University - Johannesburg - South Africa

711. <u>Policy</u>: Each of the provinces in South Africa has a policy of protection of the Nile crocodile by law (Blake & Jacobsen 1992). Both the Natal Parks Board and the Bureau of Natural Resources of KwaZulu (operating within the Natal borders) have clear cut policies in respect of their crocodile populations. That for the Natal Parks Board is included in Appendix 3. The Kruger National Park, with its major crocodile populations falls in the Province of Transvaal, and under its protective policy.

In principle, all the provinces follow the lines of policy regarding Nile crocodiles as that stated by the Natal Parks Board (Appendix 3) where applicable.

712. <u>Rationale for the Proposal</u>: South Africa has a small but stable crocodile population that is well protected in certain areas, and whose future is guaranteed.

While the population as a whole can be classified as vulnerable, it is not endangered and the conservation authorities of South Africa have the interest, expertise and staff to ensure its survival.

As elsewhere in Africa, the only factor in the crocodiles favour is its potential economic value. The adoption of the ranching proposal for the South African crocodile population will result in the wild population outside protected areas assuming a significant economic value which will in turn encourage protection and even tolerance of the animal.

Utilization of wild populations has to date been on a limited scale and restricted to Natal (see 73.). The Conservation Directorate of the Transvaal is looking at the possibility of private land holders, on whose property crocodiles breed, harvesting nests for rearing purposes. Incubation and rearing would have to be undertaken by registered crocodile farmers. A percentage of hatchlings would have to be reared for restocking purposes. This scheme would act as an incentive to private land holders to place a value on crocodiles and lead to protection of same. It will also provide an annual supply of crocodiles which can be utilized for restocking purposes.

While the majority of skins produced in South Africa are from captive-breeding operations, the allocation of a quota has led to some confusion in the trade, with some countries recognising the quota as being the total export per annum (see 75.).

The Natal Parks Board, with the support of all other conservation authorities of the Republic of South Africa, acting through the Department of Environment Affairs, consider that the South African population of *Crocodylus niloticus* should be maintained in Appendix II as a Ranching Proposal in terms of CITES Resolution Conf. 3.15 and Conf. 8.22.

8. <u>References</u>

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SOUTH AFRICAN CROCODILE FARMS AND BREEDING STOCK HELD AS AT JANUARY 1993

					Known breeding	stock - C. niloticus
Name	<u>of farm</u>	Owner/Manager	Province	Accordiation		
Africa	n Reptile Park	E Meez	Cape	NCEA	Male	Female
Cango	Crocodile Ranch	A Eriksen	Cape	NCEA	1	0
Crocg	rove Farm	D Slogrove	Transvaal	NCEA	6	47
Croco	dile Creek	P Watson	Natal	NOFA	14	61
Crocw	orld	A Wilmans	Natal	NCFA	15	100
Croc F	Park	H Saver	Cane	NCFA	37	269
Crocov	vanga (Pty) Ltd	A Calcaterra	Transvaal	NCFA	0	0
Emfule	eni Game & Croc Lodge	B Torre	Transvaal	TCFA	40	200
Glenas	shby Crocodile Farm	Dr I Kirk	Cana	NCFA	10	80
Hughe	s Farms	A Hughes	Cape	NCFA	6	38
Iniwe I	Farms	E Graatham	Iransvaal	NA	0	0
Izintab	a Crocodile Farm		Natal	NCFA	0	0
Kamee	Rivier Krokodil Broedery	J Knuiman	Transvaal	TCFA	150	650
Kenilw	orth Farm	Dr CG Coetzee	Transvaal	NCFA	25	150
Kroonk	rok	DK Blake	Natal	NA	0	2
Kwena	Gardens	Dr H Penzhorn	Transvaal	NCFA	45	300
Lebow	a Crocodile Banch (Phy) 1 td	O Kubbi (Manager)	Transvaal	NCFA	28	106
Le Bor	heur Farm	P Coetzee (Manager)	Transvaal	TCFA	68	285
Lomati	landqood	J Prins	Cape	TCFA	110	502
Manya	na Gome Lodee	P Schoeman	Transvaal	TCFA	26	120
Nowen	a Broading Scheme	J Joubert	Transvaal	TCFA	35	130
Noon	a bleeding Scheme	E van Wyk (Manager)	Transvaal	NA	2	55
DU Car	andgoed	Chennell Bros	Transvaal	NCEA	12	10
		PH Botha	Transvaal	NCEA	13	124
Riverbe	and Grocodile Farm	H Kelly	Natal	NCEA	• 30	90
Rivervi	ew Crocodile Farm	T Kelly	Natal	NCEA	41	139
Serone	ra Crocodile Farm	JV Davies	Transvaal	NOFA	0	0
SJ von	Biljon Crocodile Farm	SJ Von Biljon	Transvaal	NUFA	.0.	0
St Luci	a Crocodile Centre	Natal Parks Board	Natal	NA	,• 0	0
Stewar	l's Farm	G Stewart	Natal	NGFA	3	17
Spring	Grove	T Conellan	Cape	ICFA	7	10
Sutton	Crocodile Farm	SJL Roberts	Natal	NCFA	0	0
Thaba	Kwena	A Pretorius	Transvool	NCFA	10	0
Tzanee	n Crocodile Farm	M Darazs	Transvadi	NCFA	50	150
Willer 8	Willers Crocodile Ranch	A Willers	Transvaal	ICFA	8	25
Unknow	/n	G.I Pelzer	Orango Erec Chata	NCFA	46	201
Neos E	state		Transus al	NA	2	4
		Di O Von Delg	mansvaar	NCFA	7	43
				ΤΟΤΑ	L 836	3 875
NCFA	Nile Crocodile Farmers Association	23				
TCFA	Transvaal Crocodile Farmers Association	8				
NA	Not affiliated	5				
	Total farms	36				

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APPENDIX TWO

Criteria for the identification of "high risk" crocodile nest sites from which doomed eggs may be removed

- 1 High salinity of above 35ppt is measured in the lake adjacent to the nest. At this salinity, most prey items (fish etc) move out of the system, also the young crocodiles are likely to suffer from desiccation. This condition does not apply if there is fresh water within 20 m that they can move into.
- 2 There is no available protection from wave action within 50 m (vegetation, inlets etc). The female crocodile can possibly transport her young this distance to a suitable nursery site when they hatch.
- 3 The nest is so low that it will be flooded by a 10 cm rise in groundwater level. The average nest depth is 40 cm, therefore if the water level is within 50 cm of the surface, the nest can be regarded as "high risk". The depth of the water table is to be measured in a hole dug close to the nest (within 0,5 m).
- 4 The nest is situated along a bank in a site where there is more than an 80% probability of being flooded. The probability is to be calculated from measured water levels.
- 5 The nest is situated where there is a constant daily threat by people in a manner that cannot be controlled by the NPB.
- 6 The nest is in soil so impervious, that the eggs will be saturated by heavy rain falls.
- 7 As well as the above, no crocodile egg collection will be permitted in the area demarcated as wilderness area. The wilderness ethic is such that any interference by man is to be minimised. This therefore precludes egg collecting.

NOTES:

These criteria can be assessed in November or December each year, but if conditions have ameliorated at the time of egg collection, the "high risk" status is no longer valid and egg collection should not take place. Similarly, if conditions have deteriorated, more nests may be placed in the "high risk" category.

There is a need for all these criteria to be considered for each nest, yet only one need to apply for the nest to be placed in the "high risk" category. These criteria are at present rough and research should be conducted to be able to refine them.

With the present lack of understanding of the population dynamics of the crocodiles, it is considered that additional ecological disruption could be caused by releasing 1 m long crocodiles into the system to try and compensate the effects of egg removals. We therefore advise against this action at this stage.

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December 1988



NATAL PARKS BOARD POLICY



SUBJECT: CROCODILIANS

POLICY NO: 4-iv

DATE OF BOARD APPROVAL: 30 October 1987

BOARD MINUTE: 6(a)(ii)

REVISED: 27 March 1992

1. <u>BACKGROUND</u>

It is generally accepted that the crocodile is:

- 1.1 a key component in many aquatic ecosystems;
- 1.2 a valuable natural asset as a source of high-grade leather, if wisely exploited;
- 1.3 a valuable tourist attraction, and is of immense scientific interest as the only surviving member of the long-extinct Archosaurian group of reptiles.

It can be a problem animal and (under certain circumstances) conflicts with genuine human interests, but is vulnerable and comparatively scarce in parts of Natal (and elsewhere in Africa) due to past over-hunting and the modification of its essential habitats.

Natal still has large populations, the conservation of which is sensible, practical and profitable, provided that the resource is afforded adequate protection leading to proper scientific management.

2. <u>NATAL GENERAL</u>

- 2.1 Crocodiles will be protected throughout Natal with a view to nurturing optimum populations commensurate with the availability of suitable habitats. This protection will ensure that significant breeding sites are protected against undue human disturbance. In most recreational areas, crocodiles will be tolerated only insofar as their presence is compatible with the recreational activities permitted in the area.
- 2.2 Problem crocodiles in serious conflict with legitimate human interests will only be destroyed where it is not possible to capture and relocate them elsewhere. Mature crocodiles, and more especially large individuals, represent a considerable biological investment and their destruction under any circumstances will be discouraged. Where they become problem animals, every effort will be made to capture them.
- 2.3 The conservation of wild populations will be encouraged throughout Natal, where appropriate, but where necessary or desirable, the exploitation of any significant wild populations in any waters in Natal will be regulated. These measures will apply especially to those waters having crocodile populations which are shared on a year-round basis by one or more properties or land classes.

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3. NATAL PARKS BOARD GENERAL

- 3.1 Crocodiles will be conserved in all appropriate Natal Parks Board areas an on all land and in any water for which the Board is directly responsible for the control of the wildlife as a resource. Conservation of wild populations as applied in this section shall be directed towards their long-term survival and utilisation.
- 3.2 The Board shall appoint an officer to see to the conservation and management of crocodiles in Natal and the development of a viable crocodile industry.
- 3.3 The Natal Parks Board will strive to educate the public as to the biological and economic value of crocodiles and, in so doing, aim to counteract the stigma the crocodile has in the mind of the public.
- 3.4 The Board will comply with international criteria suggested for the conservation and management of crocodiles where this does not conflict with specific local requirements and see to it that these standards are not lowered by other internationally interested parties. It will consider applications from appropriate foreign government agencies in Africa who require Nile crocodiles for restocking depleted areas of the species' former range.
- 3.5 As a management authority under the CITES Convention, the Board will implement CITES regulations relating to crocodiles.

4. UTILISATION AND HUNTING

- 4.1 The Board will not authorise the harvesting of wild crocodiles in Board areas unless they are satisfied that such removals are necessary for sound management purposes.
- 4.2 Any harvesting of wild-laid eggs will be strictly controlled and in accordance with the criteria laid down in Section 4.3.
- 4.3 The harvesting of wild eggs in any area will be only by permit issued by the Director in relation to a pre-determined quota or quotas for any given season(s).
- 4.4 The hunting of crocodiles for recreational purposes will not be permitted in Board areas, except in areas zoned for controlled hunting.

5. RESEARCH AND MONITORING

Research on crocodiles will be according to the overall research policy of the Board. In addition to monitoring wild populations and investigating the species' biology, it will monitor the production, processing and marketing of the crocodile industry.

6. <u>COMMERCIAL CROCODILE FARMING</u>

6.1 Commercial crocodile farms will be encouraged, but their number will be limited where their activities are dependent upon the tourist trade.

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- 6.2 The Board will lay down regulations for the establishment and running of commercial crocodile farms. Such commercial crocodile farms will operate by permit issued by the Director which will be subject to conditions as laid down by the Board from time to time. Such farms will be required to:
- 6.2.1 provide the Board with such information and statistics on their operations as it may require;
 - 6.2.2 participate in the interpretation of the value of crocodiles and of appropriate aspects of their biology to the general public.

7. PROBLEM CROCODILES

Any problem crocodile captured or destroyed will be dealt with as follows:

- 7.1 crocodiles captured by Board personnel, if not required for restocking by the Board, will be offered for sale to commercial crocodile farmers;
- 7.2 crocodiles destroyed by Board personnel will be disposed of at the discretion of the Director subject to Section 10.2;
- 7.3 the Director may issue permits for the capture or destruction of crocodiles where they are a threat to human life and/or stock and Board personnel are unable to deal with the situation;
- 7.4 crocodiles destroyed or captured without a permit because they were a threat to human life and/or stock, must be surrendered to the Board;
- 7.5 all such crocodiles will be disposed of as in Section 8, or in the case of destroyed crocodiles, at the discretion of the Director, subject to Section 10.2.

8. <u>DISPOSAL OF NILE CROCODILES</u>

Nile crocodiles from Board areas, either wild or reared, when available for restocking or sale, will be disposed of in the following ways:

- 8.1 livestocking in areas under the control of the Board and the KwaZulu Bureau of Natural Resources;
- 8.2 livestocking in areas under other South African conservation organisations' control;
- 8.3 live sale to Natal crocodile farmers;
- 8.4 live sale to South African crocodile farmers or other South African agencies outside Natal;
- 8.5 disposal by such other means as approved by the Board, and in terms of the main Policy 4-ix;
- 8.6 by such other means as the Board may decide;

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PROVIDED that live Nile crocodiles will only be made available for retention in captivity when the Board is satisfied that the ultimate recipient is capable of caring for the animals under acceptable conditions.

.9. INTERNATIONAL BREEDING BANK - NON-INDIGENOUS SPECIES

- 9.1 The Board will offer facilities or facilitate the rearing of other crocodilian species in captivity, with a view to safeguarding them from extinction.
- 9.2 In the case of hatchlings being available from the breeding bank already established at the St Lucia Crocodile Centre, they will be held or disposed of as follows:
- 9.2.1 suitable numbers to be held for breeding and display at the St Lucia Crocodile Centre;
- 9.2.3 sold to other agencies or crocodile farms within Africa;

9.2.4 offered in exchange for other species that the Board may consider holding for exhibit or breeding purposes.

10. <u>RETENTION</u>

10.1 Permits for export or retention of crocodile skins will only be issued to persons who are managing and conserving the resources, who are registered with the Board, and with whose operations the Board is satisfied, or to persons who have acquired skins from registered crocodile producers, or to persons who have acquired skins from the Board, or to licensed trophy hunters.

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