CROCODILE NESTING BIOLOGY PROFORM

(Crocodylus palustris / Crocodylus [illegible] s [illegible] icus)

1. LOCATION & NAME OF HABITAT : Kotigyne nes Kamaleswar Lake, Sasan Gir Sanctuary Junagadh Dt, Gujrat

2. DETAILS OF HABITAT (River/Tank/Reservoir/other) Reservoir on HIRAN RIVER

NEST :

1. Nest Number. (Serial number if more than one nest is located in the same habitat) : One

2. DATE OF LOCATING THE NEST & NAME & ADRESS OF LOCATER : 1st week of April 1977 ~~[illegible]~~ Jina Han (Maldhari) Fg. Crocodile project Sasan Gir Junagadh Dt. Gujrat

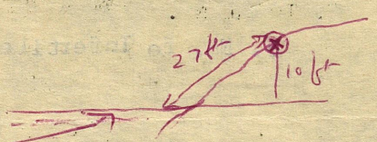
3. TRIAL NESTS (IF ANY) AND DETAIL : Two trial nest almost of equal dimension.

4. POSITION OF NEST IN RELATION TO WATER LEVEL NB - See Map

a) Distance from Water. 27ft on 20.5.77

b) Height of nest from Water. 10ft

c) Profile of nesting site.



5. DATE OF LAYING. 1st week of April

6. CONDITION OF NEST. (If any disturbance by predacters human natural causes like flooding etc.) no vegetation of significance Vegetation around the nest. open ground.

7. NEST TEMPREATURE AT DIFFERENT DEPTH. At the time of collection. (7.80 hrs)

SURFACE. 32°C
25. C.M. 35°C ~~outside~~.
50 C.M.
bottom. 36°C

8. AMBIENT TEMPREATURE (Air) 32°C

9. HUMIDITY.

10. Ist. Layer of Eggs at depth — 25 C.M. 4 eggs.

E G G S :

1. No. f of Eggs layers. 2 1st layer 4
2nd layer - 22

2. SIZE & WEIGHT OF EGGS (Average & Range).

3. TOTAL NO. OF EGGS IN THE NEST (CLUTCH SIZE) 26

4. NO. OF Cracked eggs (of which layer) (1st layer 1 + 4 2nd layer)

5. No. of Rotten Eggs.

6. No. fo Infertile eggs.

7. No. of eggs damaged otherwise.

8. Abnormal eggs (if any) & description(layer etc.)

9. Total Number of eggs. collected. 26

10 Nest dimension.
depth - 33
width / mouth - 20
shape - 34

10. DATE OF COLLECTION & TIME OF COLLECTION. 20.5.77

11. DATE OF TRANSFER & MODE OF TRANSFER.

12. NAME OF HATCHERY TO WHERE THE NEST IS TRANSFERED. WPP. Hyderabad.

COLLECTED BY. Bharat Chandra

SUPERVISED BY

Remarks - human habitation
2 cattle grazing nearby

Signature: Bharat Chandra

Date : 20/5/77

FMK/*

CROCODILE NESTING BIOLOGY PROFORMA

(Crocodylus palustris / Crocodylus [illegible] ticus)

1. LOCATION & NAME OF HABITAT : Kottigune nest, Kamalegwar lake Eastern side. Sajangir forest range Imagalli

2. DETAILS OF HABITAT (River/ ~~Tank~~/Reservoir/other) on tiras river.

NEST :

1. Nest Number. (Serial number if more than One nest is located in the same habitat) : 2

2. DATE OF LOCATING THE NEST & NAME & ADRESS OF LOCATER : 1st week of April Jinu nair (F.S)

3. TRIAL NESTS (IF ANY) AND DETAIL : one trial nest (close by)

4. POSITION OF NEST IN RELATION TO WATER LEVEL

a) Distance from Water. 32ft

b) Height of nest from Water. 8ft

c) Profile of nesting site.

5. DATE OF LAYING. 1st week of April

6. CONDITION OF NEST. (If any disturbance by predacters [illegible] natural causes like flooding etc.) No vegetation open. Water level was almost - a few feet from the nest other land.

7. NEST TEMPREATURE AT DIFFERENT DEPTH.

SURFACE. 32°C
25. C M. 34°C
50 C·M. 35°C
bottom.

8. AMBIENT TEMPREATURE (Air) 32° Centigrade.

9. HUMIDITY.

10. 1st. Layer of Eggs at depth at 25.c.m depth.

E G G S :

1. No. f of Eggs layers. 2 (6 P10 ~~1845~~)

2. SIZE & WEIGHT OF EGGS (Average & Range).

3. TOTAL NO. OF EGGS IN THE NEST (CLUTCH SIZE) — 15 (Fifteen) ~~sixteen~~

4. NO. OF Cracked eggs (of which layer)

5. No. of Rotten Eggs.

6. No. fo Infertile eggs.

7. No. of eggs damaged otherwise.

8. Abnormal eggs (if any) & description(layer etc.)

9. Total Number of eggs. collected.

10. DATE OF COLLECTION & TIME OF COLLECTION. 20.5.77 8.30 pm

11. DATE OF TRANSFER & MODE OF TRANSFER.

12. NAME OF HATCHER TO WHERE THE NEST IS TRANSFERED.

nest - depth - 33 cm
width - mouth - 18 cm
bottom - 34 cm

COLLECTED BY. Binod C. Chaudhury.

SUPERVISED BY - DO -

Remarks - Human disturbance & cattle grazing nearby

Signature: Chaudhury

Date : 20/5/77

FME/*

CROCODILE NESTING BIOLOGY PROFORMA

(Crocodylus palustris / ~~Crocodylus [illegible]~~ icus)

1. LOCATION & NAME OF HABITAT : ~~KHIRAWALI DHAR~~ AREA Khirawalidhar Kamaleswar Lake

2. DETAILS OF HABITAT (~~River/ Tank~~/Reservoir/other)
HIRAN

NEST :

1. Nest Number.
(Serial number if more than One nest is located in the same habitat) : 3

2. DATE OF LOCATING THE NEST & NAME & ADRESS OF LOCATER : April 2nd week 77

3. TRIAL NESTS (IF ANY) AND DETAIL :

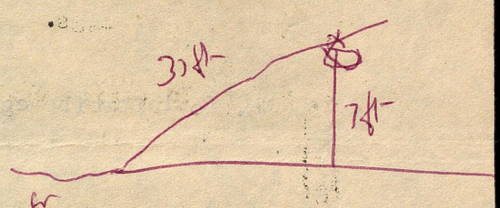
- nil -

4. POSITION OF NEST IN RELATION TO WATER LEVEL

a) Distance from Water. 31ft-

b) Height of nest ~~from Water~~. 7ft-

c) Profile of nesting site.



5. DATE OF LAYING. 8.4.77

6. CONDITION OF NEST.
(If any disturbance by predacters ~~human~~ natural causes like flooding etc.) open - no vegetation cover at all

7. NEST TEMPREATURE AT DIFFERENT DEPTH.

SURFACE.
25. C M.
50 C.M.
bottom.

8. AMBIENT TEMPREATURE (Air)

9. HUMIDITY.

10. Ist. Layer of Eggs at depth 25. C.M.

..p..(2)..

E G G S :

1. No. f of Eggs layers. 2 (10+12)

2. SIZE & WEIGHT OF EGGS (Average & Range).

3. TOTAL NO. OF EGGS IN THE NEST (CLUTCH SIZE) 22 (Twenty two)

4. NO. OF Cracked eggs (of which layer)

5. No. of Rotten Eggs.

6. No. fo Infertile eggs.

7. No. of eggs damaged otherwise.

8. Abnormal eggs (if any) & description(layer etc.)

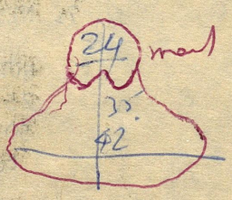
9. Total Number of eggs. collected. ~ 21

10. DATE OF COLLECTION & TIME OF COLLECTION. 20.5.77 9.15 AM

11. DATE OF TRANSFER & MODE OF TRANSFER.

12. NAME OF HATCHER TO WHERE THE NEST IS TRANSFERED.

nest depth - 15 cm
width - 24
bottom - 42 cm



COLLECTED BY. Bimal C Chandhury

SUPERVISED BY DV

Signature: B Chandhury
Date : 20/5/77

FME/*

CROCODILE NESTING BIOLOGY PROFORMA

(Crocodylus palustris / Crocodylus [illegible] s [illegible] ricus)

1. LOCATION & NAME OF HABITAT : Khijjawalli hill (Kemaleswar block)

2. DETAILS OF HABITAT (River/ Tank/Reservoir/other)

NEST :

1. Nest Number.
(Serial number if more than One nest is located in the same habitat) : 4

2. DATE OF LOCATING THE NEST & NAME & ADRESS OF LOCATER :

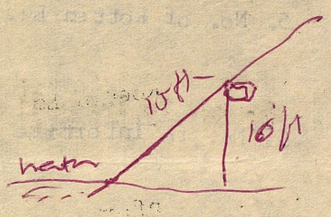
3. TRIAL NESTS (IF ANY) AND DETAIL :

4. POSITION OF NEST IN RELATION TO WATER LEVEL

a) Distance from Water. 15 ft-

b) Height of nest from Water. 10 ft

c) Profile of nesting site.



5. DATE OF LAYING. 8.4.77

6. CONDITION OF NEST.
(If any disturbance by predacters human... natural causes like flooding etc.) open - no shade no vegetation

7. NEST TEMPREATURE AT DIFFERENT DEPTH.

SURFACE. 34°C
25. C M. 36°C
50 C.M. 36°C
bottom. 36°C

8. AMBIENT TEMPREATURE (Air) 34°C

9. HUMIDITY.

10. Ist. Layer of Eggs at depth 24 cm.

E G G S :

1. No. f of Eggs layers. 2 (10 + 20)

2. SIZE & WEIGHT OF EGGS (Average & Range).

120gms

3. TOTAL NO. OF EGGS IN THE NEST (CLUTCH SIZE) 30 (Thirty)

4. NO. OF Cracked eggs (of which layer)

5. No. of Rotten Eggs.

6. No. fo Infertile eggs.

7. No. of eggs damaged otherwise.

8. Abnormal eggs (if any) & description(layer etc.) nest
width - 24 cm
depth - 30
bottom - 40 cm

9. Total Number of eggs. collected. 30 ✓

10. DATE OF COLLECTION & TIME OF COLLECTION. 20.5.77

11. DATE OF TRANSFER & MODE OF TRANSFER. Headload, Jeep, train.

12. NAME OF HATCHER TO WHERE THE NEST IS TRANSFERED. NIP Hyderabad.

COLLECTED BY. Bhandhuya

SUPERVISED BY Dr

Hatchling weight 85 gms at the time of hatching 1/280 mm length

Signature: Bhandhuya

Date : 20/5/77

FME/*

CROCODILE NESTING BIOLOGY PROFORMA

(Crocodylus palustris / Crocodylus [illegible] icus)

1. LOCATION & NAME OF HABITAT : Babalwalla Tapar Babalwalla Tapar Kamaleswar Lake

2. DETAILS OF HABITAT (River/ Tank/Reservoir/other)

NEST :

1. Nest Number.
   (Serial number if more than One nest is located in the same habitat) : 5

2. DATE OF LOCATING THE NEST & NAME & ADRESS OF LOCATER :

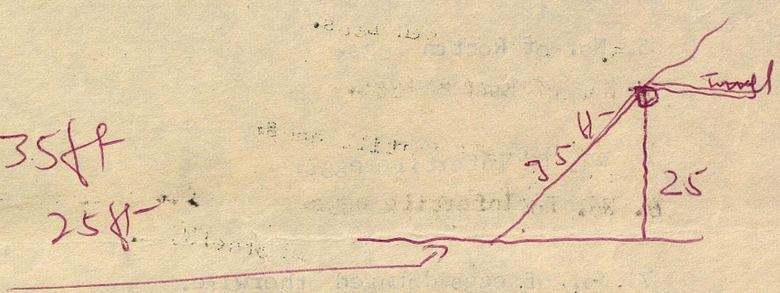
3. TRIAL NESTS (IF ANY) AND DETAIL :

4. POSITION OF NEST IN RELATION TO WATER LEVEL

   a) Distance from Water. 35ft

   b) Height of nest from Water. 25ft

   c) Profile of nesting site.



5. DATE OF LAYING. 10.4.77

6. CONDITION OF NEST.
   (If any disturbance by predacters human natural causes like flooding etc.) Open, no shade but inside the termite nest mound

7. NEST TEMPREATURE AT DIFFERENT DEPTH.

   SURFACE. 35°c
   25. C M. 37°c
   50 C.M. 37°c
   bottom. 37°c

8. AMBIENT TEMPREATURE (Air) 35c at 10.00 Am

9. HUMIDITY.

10. Ist. Layer of Eggs at depth 22cm

..d..p..(2)..

E G G S :

1. No. f of Eggs layers. 2 (8 + 24)

2. SIZE & WEIGHT OF EGGS (Average & Range).

3. TOTAL NO. OF EGGS IN THE NEST (CLUTCH SIZE) (31) 32

4. NO. OF Cracked eggs (of which layer)

5. No. of Rotten Eggs.

6. No. fo Infertile eggs.

7. No. of eggs damaged otherwise.

8. Abnormal eggs (if any) & description(layer etc.)

9. Total Number of eggs. collected.

nest width | nest bottom → 24 cm 34 cm 38 cm

10. DATE OF COLLECTION & TIME OF COLLECTION. 20.5.77

11. DATE OF TRANSFER & MODE OF TRANSFER.

12. NAME OF HATCHER TO WHERE THE NEST IS TRANSFERED. N2F Hyderabad.

COLLECTED BY. Binod I. Khanthaman

SUPERVISED BY -do-

Remarks - deep Creek (nest on the main of a tunnel (nagger Funnel - of more than 20' deep)

Signature: [signature]

Date : 20/5/77

FMK/*

1972

CROCODILE NESTING BIOLOGY PROFORMA

(Crocodylus palustris / Crocodylus porosus)

1. LOCATION & NAME OF HABITAT : Dholewala area of Kamaleswar Lake

2. DETAILS OF HABITAT (River/ Tank/Reservoir/other)

NEST :

1. Nest Number.
(Serial number if more than One nest is located in the same habitat) : 6

2. DATE OF LOCATING THE NEST & NAME & ADRESS OF LOCATER : 12 April 77

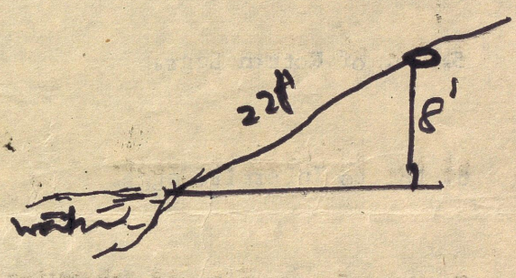
3. TRIAL NESTS (IF ANY) AND DETAIL : one

4. POSITION OF NEST IN RELATION TO WATER LEVEL

a) Distance from Water. 22 ft

b) Height of nest from Water. 8 ft

c) Profile of nesting site. →



5. DATE OF LAYING. 1st week of April

6. CONDITION OF NEST.
(If any disturbance by predacters human natural causes like flooding etc.) open to vegetation close by

7. NEST TEMPREATURE AT DIFFERENT DEPTH.

SURFACE. 32°C at 6.00 pm
25. C M.
50 C.M. 32°C at 6.1 pm
bottom.

8. AMBIENT TEMPREATURE (Air) 32°C

9. HUMIDITY.

10. Ist. Layer of Eggs at depth 18 cm

E G G S :

1. No. of Eggs layers. one only

2. SIZE & WEIGHT OF EGGS (Average & Range).

3. TOTAL NO. OF EGGS IN THE NEST (CLUTCH SIZE) 21

4. No. OF Cracked eggs (of which layer)

5. No. of Rotten Eggs.

6. No. fo Infertile eggs. (one only)

7. No. of eggs damaged otherwise.

8. Abnormal eggs (if any) & description(layer etc.)

9. Total Number of eggs. collected. 21

10. DATE OF COLLECTION & TIME OF COLLECTION. 20.5.77 nest domain

11. DATE OF TRANSFER & MODE OF TRANSFER. w:dth Mouth bottom } same 35.gm debts - 25cm

12. NAME OF HATCHER TO WHERE THE NEST IS TRANSFERED. N2P Hyderabad

COLLECTED BY. D.M.P. Thanks

SUPERVISED BY do

Hatching date 18/6/77 - 20 hatchs.

Signature: D.M.P. Thanks

Date : 20.5.77

FMK/*

GUJRAT SCHEME at Sasan (Gir)

TAcl Cost for 76-77 & 78-79

Rs 1,85,654 , (N.Rec - 1.50.000/-
Rec 33.654/-

Andhra Pradesh Crocodile
Project, C/o Nehru Zoological Park,
Hyderabad - 500 002 (A.P.)

Binod C. Choudhury,
Research Scholar/Spl. Crocodile Surveyor.

27/5/77

To
Mr. S.A. Chavan, I.F.S.,
Dy. Conservator of Forests,
Gir Lion Sanctuary,
Sasan (Gir),
Junagadh, Gujrat.

Dear Mr. Chavan,

I arrived at Hyderabad on 25th morning without any major difficulty on way and all the eggs (6 nests) have been implanted in the simulated nest in our hatchery. We hope to achieve a good hatching percentage of the Gir (Kamaleshwar) eggs.

I have left some nesting biology proformas with Mr. Babarya and hope to receive them filled up after the collection of the nests from site. I may perhaps have to seek your help in this connection. I would also like to have a map of Kamaleshwar lake with the markings of this seasons (1977) nesting sites.

I would be sending you some information about early care of hatchlings and relevant details soon. And finally I must not forget to thank you and your staff for their co-operation during my stay and showing me the famous Gir Lions more than once.

With sincere regards.

Yours sincerely,

(B.C.Choudhury)

Binod c choudhury,

Research Scholar,
Andhra Pradesh Crocodile Project,
C/O Nehru Zoological Park ,
H Y D E R A B A D 500 002.

To
Mr S A Chavan, IFS,.
Dy. Conservator of Forest,
Gir Lion Santuary,
SASAN (Gir),
Dt- Junagarh,

28.x.77

Dear Mr Chavan,

I am indeed sorry not to have written you after my return from Gir with the Crocodile eggs. However , Dr Bustard told me that he has written you about the hatching. Out of 145 eggs collected 103 hatched and to this date we have 100% survival . Now the hatchlings are fed with live fish and a supplementary diet of insects attracted by a electric bulb fixed one feet above the water surface of the pools during the night.

May I request you for some info. about your Crocodile Project ? I would like to know the details of 1977 egg collection and hatching in Gir. You may perhaps take a little pain to send me the information in the following proforma.

Place of Collection	Nest no. Serial	Date of collection	No. of eggs in each nest	Date of hatching	Total no hatched from each nest	Place of rearing

May I also request you to ask your Crocodile Project officer Mr Babariya to send me the Nesting Biology Proformas which I had given him to fill up during collection of the rest of the eggs from Kamaleswar Lake after my collection.

I am sending by separate cover a booklet which we released on the eve of the Wild life Week Celebration on 1st October at our project site.

I thank you on my behalf for the kind assistance given to me during my stay at Sasan.

With sincere regards,

Yours Sincerely

(B C Choudhury)

GUJRAT

YEAR	GHARIAL	S.W. CROC	MUGGER
1977	X	X	ESB - 145 (AD) already 160 Siv 135
1978	X	X	240 - 135
1979	X	X	

GIR (GUJRAT) CROCODILE REARING STATION .

Year	Total no. of nest collected	Total no. of eggs	Total hatched	Present stock on.....	Present Size Length Average	Weight and Range
1976-77	—	—	—	1		
1977-78	15	358 / 162	131	3		
1978-79	10	240	135	36		
1979-80	11	253	35	12		
1980-81	9	218	—	—		

Information given By. DCF, Sasan Gir

D. S. Narve DCF (Wildlife)
Gir Wildlife Sanctuary
Sasan

अन्तर्देशीय पत्र कार्ड
INLAND LETTER CARD

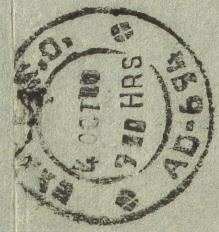
To,
B.C. Choudhury
Andhra pradesh crocodile
conservation project,
N.Z.P. Hyderabad
[Nehru Zoological park]
पिन PIN

तीसरा मोड़ THIRD FOLD

इस पत्र के भीतर कुछ न रखिए NO ENCLOSURES ALLOWED

प्रेषक का नाम और पता :— SENDER'S NAME AND ADDRESS :—

R.N. Chaudhary
Sasangir
Gujarat
पिन PIN



पहला मोड़ FIRST FOLD

दूसरा मोड़ SECOND FOLD

Yours faithfully
R.N. Chaudhary
Gujarat
c/o Deputy conservator of
Forests Wild life
Sasangir.

Shri R.N. Chaudhari
C/o Deputy conservator
of forests (wild life)
Sasangir
Dist: Junagadh.

Dear sir,

I have been posted at Sasangir as Receptionist. Depart is going to give charge of crocodile complex. but so far I have not received the charge.

I request to you please send me feeding schedule for hatchlings ~~and~~ yearlings & juvaniles of mugger

Here I have found mouth canker (disease) in few hatchlings. we have given treatment of pottassium permaganate to wash the base of teeth. please write to me any other effective treatment for the mouth canker.

I request to you ~~write to~~ send me information as early as possible.

B.C.Choudhury,

Crocodile Project,
Nehru Zoological Park,
Hyderabad -500 264.

6th October 1980.

Dear Mr. Choudhury,

Thanks for your letter enquiring about the problems you have with the muggers there at Gir Crocodile Rearing Station. Mouth canker is usually a problem in those places which are ill ventilated and therefore tend to be damp most of the time. They also spread due to poor hygenic condition in the pools. I suggest you the following:

1. Take Acriflavin solution 1:1000 (1 1ml Aciflavin added in 1000ml water) and try to clean the puss accumulated base of each tooth socket, (Do this for each crocodile). I hope you have this problem with the small crocodiles only.
2. See if you can allow more sunlight to your pools(This will be very necessary due to the severe winter over there) . You must also ensure winter night time covering for all pools (with gunny bags) but remove the coverings in the day time to allow more sunlight.
3. Try to change the pool wwater once every week and surub and clean each pool. Rinse each pool with a diluted solution of Pottassium permanganate, every time you clean the pools. If you can work out a timetable for cleaning a certain number of pools every day than you can always keep your pools neat and clean.This is very important .
4. Try to feed your stock daily in separate feeding areas(If fed with dead meat or fish) and keep the feeding areas clean every day. Your diet for the crocodiles must have at least 25% fish.(Or else they will develop hunched backs due to calcium defficiendy).
5. The feeding scheduled for hatchlings should be at least 10gms per day,but this will gradually increase as they become older and bigger but even for a one and half meter crocodile you will not require more than 200gms/day. Keep a wastage of about 10% in each pool and you will know how much you should feed your crocodiles.

Hope this answers all youtr questions. Feel free to write whenever you want to. May I ask you some information? Please fill in the proforma and send it back to me.

Year	No.of Nests collected	Total no of Eggs	Total incubated (No. of Eggs)	Total hatched	Surviving as on Oct 1980	Remarks
1976						
1977						
1978						
1979						
1980						

Best wishes

A N Chaudhary
C/O Deputy conservator
of Forests (W-life)
Sasangir
Dated: 17-12-80

To,
crocodile project,
Hyderabad (N.A.P.)

Respected Sir,

I am Laxmy here. So far I am working as Receptionist. Crocodile Breeding & Management work is being done by other R.F.O. due to problem of disbursement power.

I am sending information of crocodile farm upto '81

S No	Year	collection of eggs	crocodile hatched	Remarks
1	1977/78	162	131	(1) crocodile supplied to maharashtra state 51 eggs. (2) A.P. 145 eggs at the rate of Rs 10/

2,	1978/~~79~~	240	135	(a) Maharashtra State – 25 hatchlings ~~to~~ (b) Maharaja Fatehsingh Trust, Baroda 25 hatchlings.
3,	1979/80	253	35	N.H.M. Gandhinagar 40 babby crocodile
4,	1980/81	343	286	(1) 50 hatchlings supplied to Sakarbaug Zoo, ~~Jnd~~ Junagadh (2) 150 - - - hatchlings to N.H.M. Gandhinagar.

Mr. J.F. Parmar has come for ~~c~~ training. Convey my sweet regards to him.

Yours truthfully

[signature]

R.F.O Receptionist

Sasan Gir

Releases:

On 2nd February 1987 the All India Forest Service Officers on ~~training~~ as part of their camp exercise ~~for the 8th Diploma~~ Course in Wildlife Management at Wildlife Institute of India organised and released 53 (11 males & 42 females) captive reared muggar crocodile into Hadmundri reservoir within Gir National Park. While organising this exercise they were taught capture, measurement, sexing and marking of crocodiles and also methods to asses crocodile habitats. With this release the total number of captive reared crocodiles reintroduced into Gir National Park have gone upto ~~268~~ (Table II)

Table I Reintroduction status of captive reared muggar in Gir National Park

Date of Release	Location				Year wise total
	Kamaleswar lake	Kamleshwar reservoir	Shingoda reservoir	Rawal reservoir	
6 May 84	36	–	–	–	53
15 June 84	16			–	
16 June 84	27	–	–	–	92
May 85 (?)	48 (?)			–	
31 May 85	—	44	–	—	
30 May 86	–	–	30		67
2 June 86	–	–	–	37	56
3 ~~Feb~~ 87	–	56	–	–	~~Total~~
Total	137	100	30	37	268

Captive Rearing Programme:

The Gujarat Forest Department initiated a crocodile conservation project with financial assistance and technical advice of Madras Crocodile Bank Trust at Vadanthangal in the year 1977 taking advantage of the naturally breeding muggar crocodile (Crocodylus palustris) populations in Kamaleswar, Shingoda, Hadmundri & Rawal and Sinai Dunas (Permanent water bodies) reservoirs within Gir National Park. Dharan (1979) estimated the population of muggar in and around Gir National Park water bodies ~~around~~ to be around 250.

The Crocodile rearing complex at Tarsan was designed with initial arrangements of a hatchery, hatchling pits & breeding pits, and later additional holding-cum-breeding pits were added. The complex was designed to facilities can accomodate upto 300 new hatchlings every year provided at the end of 2nd year all stocks are taken out of the rearing complex for reintroduction into the wild.

PHASE II : FROG RESEARCH PROJECT REPORT**

Duration: November 1986 to April 1987.
Location: Madras, Tamil Nadu.

Investigator: B.C. Choudhury
Research Asst.: V. Sekar

A STUDY OF THE RELATIVE ABUNDANCE, BREEDING BIOLOGY AND THE DIET OF THE INDIAN BULL FROG *RANA TIGERINA* (DAUDIN) AND INDIAN POND FROG *RANA HEXADACTYLA* (LESSON) DURING THE NORTH-EAST MONSOON IN MADRAS, TAMIL NADU.

APRIL 1987

(Prepared at the Crocodile Research Centre of the
Wildlife Institute of India, Hyderabad)

**The report was submitted to the Bharathidasan University, Trichy as part fulfilment of M.Sc. dissertation in Wildlife Biology Course (Academic session 1985-87) by Shri V. Sekar, the Research Asst. of this Project.

From the year 1977 to 1986, a period of ten years the Gujarat forest deptt crocodile conservation Project has collected 3021 eggs from the wild and successfully hatched 2023 mugger for rearing at the Sasan crocodile Rearing Centre. ~~At Tantalis (1)~~ This project Centre has also helped other ~~state~~ crocodile conservation projects by giving mugger eggs and hatchlings and yearlings for conservation programmes (Table II).

Table II Mugger Crocodile Rearing ~~regard~~ at Sasan crocodile Complex Gujarat.

(Information supplied by Gujarat forest department)

year	no of nest	~~total no of~~ eggs collected	no hatched	no of eggs given to other states	no of hatchlings/yearlings given to other states	~~Place where~~ mugger have gone
1977	16	358	131	196	—	145 eggs to ~~Kaira~~ 51 to Maharashtra
1978	10	240	135	—	50	Maharashtra-25 Baroda — 25
1979	11	253	35	—	40	NHM Gandhinagar 40
1980	14	343	286	—	200	NHM Gandhinagar 150 Junagadh 200 — 50
1981	12	280	221	—	—	
1982	24	545	440	—	—	
1983	9	209	130	—	25	Bombay 20
1984	15	287	180	—	—	
1985	14	300	225	—	—	
1986	14	307	240	—	30	Diu Municipality 30
Totals	139	3022	2023	196	345	

PHASE II : FROG RESEARCH PROJECT REPORT**

Duration: November 1986 to April 1987.
Location: Madras, Tamil Nadu.

Investigator: B.C. Choudhury
Research Asst.: V. Sekar

A STUDY ON THE RELATIVE ABUNDANCE, BREEDING BIOLOGY AND THE DIET OF THE INDIAN BULL FROG *RANA TIGERINA* (DAUDIN) AND INDIAN POND FROG *RANA HEXADACTYLA* (LESSON) DURING THE NORTH-EAST MONSOON IN MADRAS, TAMIL NADU.

APRIL 1987

(Prepared at the Crocodile Research Centre of the Wildlife Institute of India, Hyderabad)

**The report was submitted to the Bharathidasan University, Trichy as part fulfilment of M.Sc. dissertation in Wildlife Biology Course (Academic session 1985-87) by Shri V. Sekar, the Research Asst. of this Project.

Reintroduction success in Kamalesvaran Lake:

Kamalesvaran Lake formed by impounding Aliyar river is located almost in the middle of Gir national park, holds perhaps the single largest population of mugger crocodile in India. Population estimates by day and night censes have been carried out by various workers prior to reintroduction of mugger into this lake. The first ever count was carried out by Joseph et al (1974) in June 1974 and they estimated the population to be around 25 to 30. The next year Whitaker (1975) carried out a census in May 1975 and counted 51 crocodile and estimated a population of 75 mugger. In 1977 the present author carrying out a night census in May 1977 estimated the population to be around 70-75 (Chandra 1977 field reports). Chauhan (1979), however, estimated the population to be around 200 mugger of all six class in Kamaleswar Lake.

Following reintroduction of 137 mugger by May 1985, a census was carried out by the present author assisted by Ravi Chellam (WII research fellow) and N.R.R. Pandya ACF of Gir National park in May 1986. During the night counts a minimum of 111 and a maximum of 178 mugger of all six class (0.8m to 3.5m) were counted (Chellam 1986), indicating a population estimate to be around 200 following ~~release~~ reintroduction.

In February 1987, during a day count the author counted over 35 mugger in a small stretch of Kamaleswar Lake in one hour field work.

The results confirm a successful reintroduction of catfish named mugger into Kamalesvara Lake. The last systematic count (by both day count and night shining) from to reintroduction by the author in May 1974 estimate was 70-75 mugger. Hatching of eggs from Kamalesvara Lake stock during the same year and perhaps all eggs were harvested. Reintroduction started in the year 1980-81 and after two year of reintroduction a count estimate of 200 mugger reinforces the belief of successful reintroduction.

~~Other~~ Reintroduction locations in Gir:

Unlike Kamalesvara, the other reservoirs in and in the Gir National Park area are not well protected habitats. A certain amount of illegal fishing takes place and since they are close to the boundary of the park utilisation of the reservoir by human as livestock population are quite high. Both Snyoda and Rawal can take another 50-70 more mugger. Allowing which all reservoirs in Gir has to be closed for reintroduction. further during continuous dry spells is typical, which is fairly common. These habitats become almost dry with just a puddle of water in the lake. High concentration of mugger in such low volume of

Table-2

White-winged Wood Duck

Breeding Results at J.W.P.T. 1976-1985

Year	No. ♀♀ laying	No. eggs laid	No. fertile eggs	% Fertility	No. hatched	% hatched	No. reared	% reared
1976	1	8	0	0	0	0	0	0
1977	1	9	0	0	0	0	0	0
1978	1	10	4	40	0	0	0	0
1979	1	12	9	75	3	33.3	0	0
1980	1	20	12	60	10	83.3	6	60
1981	1	8	6	75	0	0	0	0
1982	2	15	5	33.3	0	0	0	0
1983	2	26	17	65.3	6	35.29	6	100
1984	2	37	27	72.7	10	37.03	9	90
1985	3	54	38	70.37	27	71.05	27	100
Total		199	118	63.78	56	47.45	48	85.71

water will be difficult to manage - even with such adaptation of human to live in a [drought] as the people to avoid severe drought.

Suggestions:

1. The Gujarat Coastal conservation project should now start collection of wildlife eggs and monitor the fate of all wildlife eggs which were being collected earlier to study natural hatching, predation, survival of hatchlings etc.

2. Additional nesting localities in Gujarat state should be surveyed and protected for reintroduction.

In this connection several reservoirs / lakes in Kutch district are considered to be ideal mugger habitats - [Rudramata (dam) S.S. Tank Bhimasar etc.] among them are Rudrani dam on Khari river and Chadwa inside Chadwa forest. Whitaker in 1977 suggested the following crocodile habitats for survey.

1. Bhadar dam near Gondal, Saurashtra.
2. Machhu dam near Wankaner
3. Sat-muji dam near Palitana.
4. Kalu river, Vanakbari reservoir, Una Dt
5. Mahi river, Kadna reservoir near Rajasthan border
6. Panchmahal - Hills lake near Baroda
7. Vagmati River, Rajit Sagar, Jamnagar water supply.

PHASE II : FROG RESEARCH PROJECT REPORT**

Duration: November 1986 to April 1987.
Location: Madras, Tamil Nadu.

Investigator: B.C. Choudhury
Research Asst.: V. Sekar

A STUDY ON THE RELATIVE ABUNDANCE, BREEDING BIOLOGY AND THE DIET OF THE INDIAN BULL FROG *RANA TIGERINA* (DAUDIN) AND INDIAN POND FROG *RANA HEXADACTYLA* (LESSON) DURING THE NORTH-EAST MONSOON IN MADRAS, TAMIL NADU.

APRIL 1987

(Prepared at the Crocodile Research Centre of the Wildlife Institute of India, Hyderabad)

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Ref:

Chellam. R (1986): Crocodile Survey of Gir Sanctuary, Gujarat. Hamadryad. 11(3): 17-18.

Chavram S. (1979):

Chandra B.L. (1977): Field notes & Reports to A.P. Forest Dept. on Crocodilians in Gir Wildlife Sanctuary, Gujarat.

Joseph et al (1974): Marsh Crocodile Crocodylus palustris in the Gir. J. B. N. H. S. 72(3): 862-863.

Whitaker R (1977): Notes on the Status of the Gir Crocodiles J. B. N. H. S. 75(1): 224-227

Charles McCann ( ): The Reptiles of Amphibia of Kutch State.

Nawzin B. Amin
4. Mallard way
Kingsbury
N. W. 9 London U.K
Tel - M - 01247707L
Res - 01205-7539

Pre-release estimates of population in Kamalgwa Lake.

Joseph et al (1974): A population of about 80 mugger during March 1974.

Whitaker (1975): A count of all mugger of all size class as well as some made an effort to estimate of about 75-76 mugger, with the help of keen at least 25 crocodile may have been missed during count.

Seth (1977): Field count in May 1977 counted about 70 mugger (adult & sub-adult & small-size) of all size classes.

Chavan (1979): Estimated a population of about 200 mugger of all size classes in 1979.

In June 1984 a total of 51 (fifty one) mugger were sanctioned during 1985 another 48 mugger were released in Kamalgwa Lake after capture

In 1988 the author, Ravichandran & Dy. Dir. of Kamalgwa National Park made a census of mugger in Kamalgwa Lake which provided us with an estimate of ..... indicator the pre-release population estimate to be around 70 - 80.

with the permission of Gujarat Forest Department

On 3rd Feb 1987 the author organised and released
53 (11 male & 42 female) captive reared mugger crocodiles from the Gharial Crocodile Breeding
Centre, into Kachendri reservoir within the Gir National Park.
This was part of the field training program for the trainee Asst. Range
Forest officers of the Gir Forest College & Research Institute
at Wildlife Institute of India, Dehra Dun.

Year	No of days	Total No of eggs collected	No hatched	Eggs or hatchlings given to other projects	
1986	14	307	240	30	Alleged Mismanagement
1985	14	300	225	–	
1984	15	287	180	–	
1983	9	209	130	25 –	Sanctuary 25
1982	24	545	440	–	
1981	12	280	221	–	
1980	14	343	286	200 – Gandhinagar 150 (150+50) Junagadh – 50	
1979	11	253	35	40 –	NHM/Gandhinagar
1978	10	240	135	50 – (25+25)	Vadodara – 25 Baroda – 25
1977	16	358	131	* Eggs given to Madras * Eggs given to Mahabaleshwar 196 eggs	
	138	30 2[illegible]	2023	19[illegible]	3[illegible] –

Re-introduction by Release of Captive-reared Stock for Si-

LOCATIONS

Date of Release	Kamaleswar Lake	Madhavendra reservoir	Singoda reservoir	Rawal reservoir	
6 May 84	36	—	—	—	
15 June 84	26				
16 June 84	27	—	—	—	
31. May 85	48 (?)	44	—	—	
30 May 86	—	—	30		
2 June 86	—	—	—	37	
4 April 87	—	56	—	—	
Total	[illegible]	100	30	37	258

Dear Shri Yadav,

During my visit to Kutch areas along with the wildlife Institute of India officer trainees, you have given some brief account of presence of crocodiles at various location of Kutch district. Such locations were Chadva, Harvey at Bandrani dam in Khari river. I should be grateful if you could let me know the details of occurrence of crocodile in Kutch district, especially in your division.

I am forwarding herewith a performa for your convenience.

Information on crocodile distribution

Location Nearest town/district	Habitat River / Lake / Pond / Dam	Estimated Population	Whether observed personally or information collected from other sources

CROCODILES

CARACAS 1986

Crocodile Areas in Kutch District

① Chadwa forest (Estimated popln 70-80)

② Rudrani dam . Khari river

Information from S.S. Yadav, Dy C.F. on
(Kutch wildlife Division . Bhuj . Kutch)
14 Feb 1987.

Reintroduction of Mugger Crocodiles in Gir Wildlife Sanctuary

The reintroduction of 56 ~~mugger crocodiles~~ (11 male & 45 female) in the state in Hiranchundi dam ~~excellent~~. mugger crocodiles on 3rd Feb 1987 ~~served as an~~ within the Gir wildlife sanctuary served as an excellent wildlife management exercise for the 8th Diploma course ~~of~~ in tourism from the wildlife Institute of India. The reintroduced mugger ~~were~~ were aged between ~~4~~ to ~~6~~ yr as ~~mugger~~ their sizes ranged from 90 cm to 110 cm in length, weighing between 4.5 to 7.5 kg. All the released ones were individually marked by ~~scute~~ scute clipping. During the ~~9~~ crocodile project officials had ~~released~~ reintroduced 44 mugger into Hiranchundi dam. All the reintroduced stock originated ~~from~~ from ~~Gir~~ Kamaleswar dam (Triveni Lake) from within Gir sanctuary and were captive reared at the rearing centre of Gujarat Forest Deptt at Sasan.

Mugger Releases in Gir Wildlife Sanctuary

Releases

Kamaleswar Dam

6.5.84	-	36	(from Sakkarbaug Zoo)
15/10.6.84	-	53	(from Sasan Captive)
? 85	-	48	(from Sasan)
		137	

Hiranchundi Dam

31/5/85	-	44 (from Sasan)
3/2/87	-	56 (from Sasan)
		100

IUCN PUBLICATION NEW SERIES ISBN2-88032-306-1

C R O C O D I L E S

Proceedings of the 7th Working Meeting of the Crocodile Specialist Group of the Species Survival Commission of the International Union for Conservation of nature and Natural Resources

C O C O D R I L O S

Memorias de la Séptima Reunión de Trabajo del Grupo de Especialistas en Cocodrilos de la Comisión de Supervivencia de Especies de la Unión Internacional para la Conservación de la Naturaleza y de los Recursos Naturales.

Caracas-Venezuela
21 al 28 de Octubre de 1984

International Union for Conservation of Nature and Natural Resources IUCN.
Fundación para la Defensa de la Naturaleza FUDENA.
Universidad Experimental de Los Llanos Occidentales UNELLEZ.
Ministerio del Ambiente y de los Recursos Naturales Renovables MARNR.
Florida State Museum (U.S.A.)
New York Zoological Society (U.S.A.)

1.986

Low Hills on the border of the Great Rann at Nir Wand, Pachum Island, Cutch.

The condition of the Great Rann, 15 miles north of Nir Wand, in Septembe-

THE REPTILES AND AMPHIBIA OF CUTCH STATE.

BY

CHARLES MCCANN, F.L.S.

(*With two plates*).

Cutch State is at certain times of the year isolated from the mainland. The periodical isolation takes place in the years of good rains, when the Great Rann and the Little Rann are flooded. During the dry season the Ranns are dry and perfectly hard, but quite uninhabitable as not a blade of grass is to be found in any part of them. The ground, in fact, is in many places covered with thick incrustations of salt. The fauna of the State is chiefly composed of desert and semi-desert species met with on the neighbouring mainland.

The records and specimens at my disposal indicate that little is known of the amphibian and reptilian faunas of Cutch State. This paper is an attempt at putting together such data as are available. The records are drawn from the collections of the Bombay Natural History Society, the *Fauna of British India* (Reptilia, 2nd Ed), and from specimens and observations made by the author during a three-weeks' tour to the Great Rann during the latter portion of September and the early part of October 1935. Most of the material in the Society's collection is from Mr. C. A. Crump, who surveyed the mammals of the State on behalf of the Society in 1912.

ORDER: LORICATA: Alligators and Crocodiles.

FAMILY: CROCODILIDÆ: Crocodiles.

Crocodilus palustris Lesson. The Mugger, Marsh Crocodile or Broad-snouted Crocodile.

This crocodile is found in some of the inland lakes. I have seen specimens in the artificial lake at Chawa. The Benas River enters the Eastern or Little Rann and, as crocodiles are fairly nu erous in this river, their presence in the lakes is easily understood. They also occur in Kathiawar.

ORDER: TESTUDINES: Turtles, Tortoises and Terrapins.

FAMILY: CHELONIDÆ: Marine Turtles.

Caretta caretta. The Logger-head Turtle.

According to Captain V. C. Steer-Webster this species comes ashore at Mandvi to breed.

FAMILY: TRIONYCHIDÆ: Freshwater Turtles.

Lissemys punctata granosa (Schoepff.) Soft-shelled Turtle.

'The Bombay Presidency, including Cutch' (*F.B.I.*, 2nd Ed.).

17. A SNAKE-TOAD INCIDENT

Humayun Abdulali's note [*J. Bombay nat. Hist. Soc.* 68(2):463] reminds us that during the rainy season of 1966, a male Green Keelback (*Macropisthodon plumbicolor* Cantor) was found struggling inside the campus of the Veterinary Dispensary at Chandaka, Puri District, Orissa. The animal was secured and found to be about 51 cm long and had the left forelimb of a Common Toad (*Bufo melanostictus*) piercing the right abdominal wall at the 66th ventral scale.

It would appear that such accidents occasionally happen and we may also, refer to an interesting note on 'The Biological Control of Dung' in the *Scientific American* for April 1974, p. 179, where D. F. Waterhouse mentions a Dung Beetle (*Onthophagus cunniculatus*) which broke through the body of a small Australian toad which had swallowed it!

ZOOLOGICAL SURVEY OF INDIA, S. BISWAS
CALCUTTA 700 013.

NANDANKANAN BIOLOGICAL PARK, L. N. ACHARJYO
P.O. BARANG, DIST. CUTTACK,
ORISSA,
September 12, 1974.

18. MARSH CROCODILE *CROCODYLUS PALUSTRIS* IN THE GIR
(With a photograph)

The Indian marsh crocodile (*Crocodylus palustris*) has been wiped out in most of its former range. It survives now in only the most remote and protected areas. The following information was obtained through a three day survey of the crocodile population in Kamleshwar Lake inside the Gir Sanctuary, Gujarat, in June, 1974.

Night counts were made on 13-vi-1974 and 16-vi-1974 by slowly walking around the banks of the lake and shining a powerful torch from eye level to catch the eye reflection of crocodiles. On 13-vi-1974 a total of 27 crocodiles were observed from midnight to 4 a.m., 15 on the banks and 12 in the water. On 14-vi-1974 observations made during daylight from the top Kamaleshwar Dam showed seven crocodiles. On the night of 16-vi-1974 a total of 29 crocodiles were spotted between 6 p.m. and midnight, 14 were on land ('night basking') and 15 were in the water.

Some crocodiles were approached within 3 metres but most fled when 12 to 15 metres away. There has been no previous census or studies undertaken on the crocodiles in this lake but it appears to be an

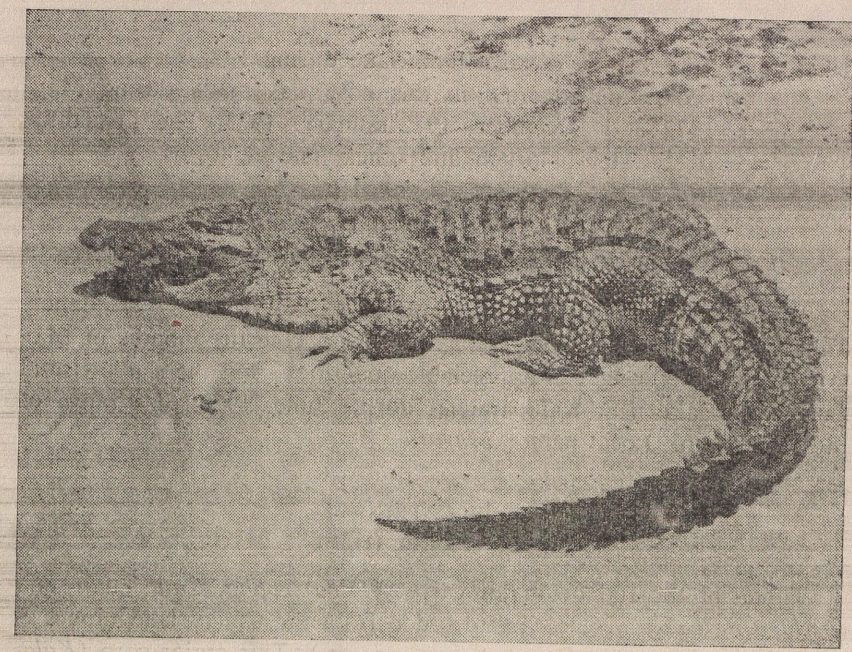


Photo. *Crocodylus palustris* (adult male).

important population that deserves more attention and management as a natural gene pool for this rapidly dwindling reptile.

INDIAN YOUTH ASSOCIATION FOR CONSERVATION. ANN JOSEPH
EKLAVYA CHAUHAN
KUSHAL KHANNA
R. WHITAKER

MADRAS SNAKE PARK TRUST,
MADRAS 600 022,
December 3, 1974.

19. FURTHER ADDITIONS TO THE FISH FAUNA OF THE CHILKA LAKE

A list of the fish fauna of the Chilka lake numbering 118 given by Hora (1923). Jones & Sujansinghani (1954) considered only 112 as valid species out of the 118 species listed by Hora as six were synonyms of recorded species. Koumans (1941) added one Gobiid fish from the lake, thus bringing the number to 113. Jones & Sujansinghani (op. cit.) presented 25 new records, raising the total number of species recorded from the lake to 138. Later Roy & Sahoo (1957) added 14 more species, bringing the total to 152.

We recorded the following eight additional species from the Chilka lake while operating gill nets in the outer channel, inspecting catches

CROCODILE SURVEY IN THE GIR SANCTUARY, GUJARAT

I am writing to give you the results of some crocodile counts done in the Gir by Binod Choudhury, B.K. Pandya and myself in May. This year Saurashtra has had one of the worst droughts of this century and the water level in all the reservoirs is very low. In the censused area, Kamleshwar, water has been reduced to two small pools and a single large U-shaped lake. Here are the figures:

Results of 7 counts

Date	Time	Duration	Location	No. of crocs		Remarks
13.5.86	2200-2330 hrs	90 min	Lake	112		Cloudy, dark night. Torchlight.
14.5.86	2200-2330 hrs	90 min	2 small pools	14		Cloudy, dark night. Torch-light
17.5.86	0945-1230 hrs	165 min	Lake 2 small pools	82 7		Bright sunny day
18.5.86	1700-1905 hrs	125 min	Lake 2 small pools	91 7		
18.5.86	2010-2230 hrs	140 min	Lake 2 small pools	93 18	111	Torchlight
18.5.86	2010-2230 hrs	80 min	Lake 2 small pools	146 28	174	Torchlight
21.5.86	2145-2345 hrs	120 min	Lake 2 small pools	125 14	139	Torchlight

:17::

FRAMEORHAD : 11(3) Sept 1988

Independent counts by BC, RC and BRP

Date: 17.5.86

Time: 2130 - 1230 hrs

Location: Kamaleshwar Hiran dam

Remarks Half moon, brightly lit, partially cloudy

Surveyor	Lake	Small pools	Total no. crocs
B C	148	23	171
B R P	113	18	131
R C	146	17	163

Average count - 17.5.86

Lake : 136
Small pools: 19

Average of 7 counts (13-21.5.86)
Lake : 108
Small pools: 15

Total: 123

17 nests were located in the reservoir, (making it the largest known single nesting population of mugger in India) 4 in another location (Muggeria Gunna on the Macchundheri river) and one by the side of a deep pool at Pilipat.

Ravi Chellam
Research Fellow
Wildlife Institute of India
Gir Lion Sanctuary
Sasan Gir 362 133

~~CAPTIVE BREEDING AT THE KUKRAIL CROCODILE BREEDING CENTRE, LUCKNOW, U.P.~~

SR NO (1)	Length (Cms) (2) Gives (3) SV	TBL	Sex (4)	Weight (5)
1	53	107	F	7 kg
2	51	97	(M) [Hunch back]	5.100 gm
3	52	102	F	5.300
4	50	98	(M)	4.800
5	50	97	F	4.450
6	49	95	F	4.700
~~7~~	43	85	F	6.150
7	53	102	F	
8	53	105	F	5.900
9	47	93	(M)	4.100
10	48	95	(M)	4.400
11	~~51~~ 51	~~99~~ 99	F	5.550
12	49	91 (tail cut)	F	6.050
13	50	100	F	4.800
14	49	95	(M)	5.200
15	53	103	F	5.800
16	50	100	F	5.750
17	47	92	F	4.20

SR NO	Length SV	Length TBL	Sex	Weight
~~16~~ 19 (18)	47	94	F	5.000
18 (19)	59	113	F	7.450
20	52	102	F	5.250
21	47	91	F	3.650
22	53	106	(M)	5.850
23	53	104	F	6.150
24	50	100	F	5.350
25	55	105	(M)	6.450
26	52	102	F	5.400
27	57	103	F	7.250
28	50	97	F	4.900
29	54	105	F	5.600
30	49	98	F	4.650

SR No	length SV	length TBL	Sex	weight
31	56	108	F	6·35
32	55	108	F	
33	50	97	F	6·150
34	50	98	F	4·650
35	51	97	F	4·400
36	56	111	F	4·400
37	55	114	(M)	6·600
38	47	95	F	6·500
39	56	108	F	4·350
40	54	100	F	6·450
41	51	100	F	6·00
42	52	100	F	4·650
43	56	109	F	4·700
44	52	99	(M)	5·900
45	50	97	F	5·05
46	51	100	F	4·450
47	56	107	F	4·900
48	53	104	F	5·750
49	54	97	(M) Tail cut.	5·900
50	52	102	F	4·950
				5·400

G/R REQUIREMENTS

1. MONEY
2. LETTERS
3. TICKETS - ACCOMODATION
4. GUJRAT MAP OR INDIA POLITICAL
5. SPOTLIGHT - 4 spare bulbs + 4 batteries
6. THERMOMETER
7. TAPE, COMPASS, SPRING BALANCE
   PLASTIC BOTTLES
8. PROFORMAS (INTERIM)
9. CAMERA (FILM)
10. BINACULARS
11. PAD & PAPER PEN

12. To transfer the ~~app~~ permit from C.W.W is required

Ahmedabad Zoo

Mr GOR

Asstt Zoo Superintendent.

Request

Mr R. S. Bhadauria

Director Kanha Zoo Park

Last of Dinosaurs -

The Geological

Indian forester, Vol 103 No 4

April 1977

P 268 to 285

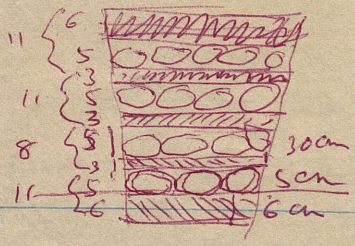
17 mann – Tamagadh – Fr.
straight – – 17/18/19 Collection
20 Seats

Suleman P. Patel
Wild Life Photographer
Thangadh
Dt. Surendranagar
Gujrat (India)

To while for a photograph
I. Parkers will be

Dist of Gujrat

1. VALSAD
2. DANGS
3. SURAT
4. ~~BHARUCH~~ BROCH
5. VADODARA (BARODA)
6. GODHRA (PANCH MAHAL)
7. KHEDA
8. AHMEDABAD
9. SABAR KANTA
10. MAHENSANA ~~MAHESANA~~
11. PALANPUR (BANAS KANTA)
12. KUTCH (KUTCH)
13. JAMNAGAR
14. JUNAGADH
15. AMRELI
16. BHAVNAGAR
17. RAJKOT
18. SURENDRANAGAR
19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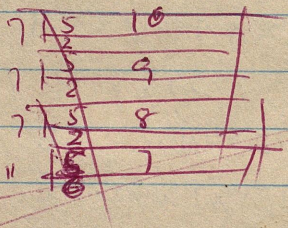
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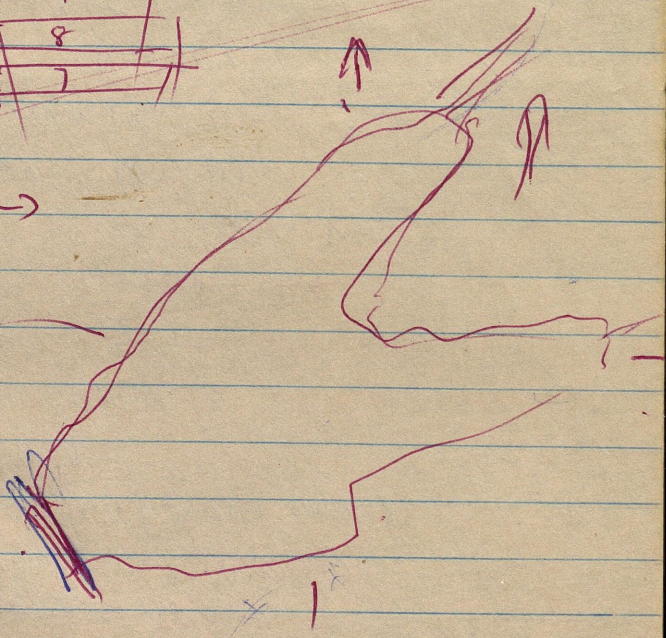


TRIBALS OF GIR SANCTUARY

LIVE IN FOREST.

MALDHARIS / CAN HERDS

IN THE PLAIN

LAVANA

A group of Maldhari hutments are called a nes (NES)

	Tea ~~8.30~~	B.F	Lunch	Tea	dinner
17.5.77	X	X	✓	X	✓
18.5.77			✓	✓	✓
19.5.77	✓	✓	X	✓	✓
20.5.77	✓	✓	✓ + Coke	L. water X	X
21.5.77	X	X	milk biscuit	X	✓
22.5.77	✓	milk	✓		

17.	7.00
18	9.00
19	8.00
20	8.50
21	6.00
22	4.50
	₦42.00

19.5.77

1. BHALKA TIRTH (KRISHNA DEATH)

2. SOMNATH TEMPLE & GITA MANDIR

3. TRIVENI SANGAM

1. Bucket with Lid
2. Marking pencil or pen
3. Rope (plastic or ordinary.
4. Battery - (2 Nos)

PERMIT LETTER.

GIR BOOKLET & BOOK.

GIR PICTURE CARDS.

① Gir to Junagadh 65

① Junagadh to Rajkot —— 103

② Rajkot to VIRAMGAM —— ~~248~~ 181 KMS

③ VIRAMGAM to Bombay Central 22/5 / 7.50 PM

④ Bombay Central to Bombay VT 23/5/77

⑤ Bombay VT to Secunderabad 12.45 23/5/

⑥ Secunderabad to Zuo 6.00 AM 24/5

21/5 ~~morning~~ should leave

Gir evening start from Junagadh

to VIRAMGAM read VIRAMGAM by

early morning of 22/5/77

17 morning

① S. A. Chaudhary By Conservator of Forest (HQ)
Sasan (Gir)
~~Junagadh~~ (Junagadh Dt)
Gujarat

② Mr Ranik Patel ~~(RFO)~~ (RFO)
Sasan Gir

③ Case project ~~Engineer~~ P. ~~(Babariya)~~
Mr Praveen S. Babariya

Present N.P area -
Present Buffer zone -
Proposed Additional area -
Buffer zone width -

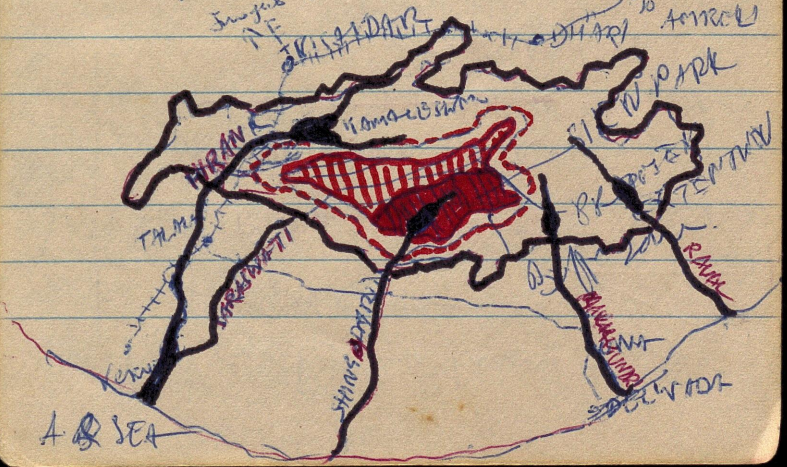
④ Jagdish Patel 1 (RFO)

(I.R. W.L. Sanctuary (14/2. 13 Sq km)

Kamaleswar Lake formed by the dam on the HIRAKI RIVER at Kamaleswar

HIRAKI RIVER has been dammed at Kamaleswar to form the Kamaleswar Lake a water spread of approximately 15 sq kms/acres

Kamaleswar Dam is within the Sir wildlife sanctuary area but not within the proposed additional protected area in the buffer zone of the proposed area.



WESTWARD EASTWARD

1. Kamaleshwar Lake → HARAN RIVER

2. SINGADA RIVER DAM [NEAR JAMWADA]

3. MACHHUNDRI RIVER ~~MACHHUNDRI RIVER~~ DAM (near (MANDVI)

4. RAVAL RIVER DAM near Chikashuba (Taluka Olpad)

1. The 2nd one is inside the National Park

2. Kamaleshwar is touching the southern end of the proposed extension.

3 2 4 are all on the southern fringe boundary of the

Gir Crocodile Rearing Station

Year of hatching	Total no. of nest collected	Total number of Eggs	Total number hatched	Present stock as on.....	Present size: Length Average (Range)	Present size: weight Average (Range)
1976						
1977		163	135			
1978	2	240	135			
1979						
1980						

Information given by Mr

Year of Hatching	Growth Data: Total number hatched (1)	Present stock (5)	Total nests collected (2)	Total number eggs (3)	Present Size: Length (average) (range)	Weight (average) (range)
1976						
1977						