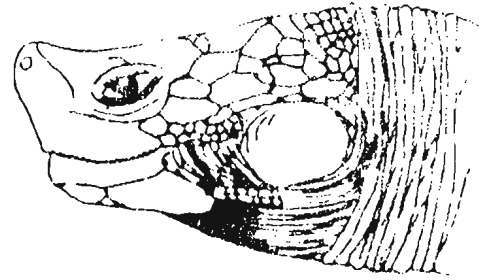


# IUCN/SSC FRESHWATER CHELONIAN GROUP

Editor: E.O. Moll  
Dept. of Zoology  
Eastern Illinois University  
Charleston, Illinois 61920  
USA

## NEWSLETTER

Number 6  
September 1984



### A SURVEY OF INDIA'S FRESHWATER TURTLES

E.O. Moll

#### INTRODUCTION

The chelonian assemblage of India is both diverse and unusual. The freshwater turtles comprise two families the Trionychidae (6 species) and the Emydidae (16 species). They range in size from the tiny terrestrial cane turtle (141 mm shell length), up to the giant Asian softshell (Pelochelys bibroni) and the narrow-headed soft shell (Chitra indica) which can well exceed a meter in shell length. From the conservation standpoint little is known about most of this assemblage. Therefore one of the FCSG highest priority projects on the 82/84 Action Plan has been to conduct a status survey of these species on Indian rivers and in the market places.

In August of 1982, I received an Indo American Fellowship allowing me to conduct such a survey. I immediately left for India and spent the next 10 months traveling over much of the country. My host institution during this visit was the Bombay Natural History Society. My headquarters was in Madras where thanks to the kindness of Rom and Zai Whitaker, I was able to live and conduct my research at a small field station on the grounds of the Madras Crocodile Bank Trust. A typical schedule was to spend two weeks in the field followed by a week in Madras.

I was fortunate to have as companions on these trips Ms. J. Vijaya research officer of the Madras Crocodile Bank and Mr. Satish Bhaskar, a sea turtle researcher for World Wildlife Fund- India. My companions were both enthusiastic about turtles and excellent field workers. We travelled over the country by train, bus, and sometimes locally by jeeps provided by the State Forestry Departments. I was greatly aided in my work and travels by Mr. Samar Singh Joint Secretary for Wildlife in the Department of Environment. His office continually provided letters of introduction, advise and help to obtain permits.

In the course of my stay we visited the states of Tamil Nadu, Kerala, Andhya Pradesh, Madhya Pradesh, Uttar Pradesh, Orissa, Bihar and West Bengal. Although in a two week trip it was only possible to survey these states to a very superficial degree, I feel that we were able to gain a handle on which species are being most heavily exploited and which are in need of conservation action. The following summarizes the findings of the study.

#### EXPLOITATION

Turtles are used for a variety of ways in India: People often keep Lissemys in their wells to clean them of insects and algae; pieces of shell are hung from the neck of cows in Madhya Pradesh to ward off spirits which will decrease the milk supply. Various ailments are treated with concoctions made from turtles and/or their shells including tuberculosis, stomach aches and menorrhagia. Various types of scoops and baskets are made from turtle shells I even saw a stringed instrument that used a turtle shell as a sounding drum. Easily the most important useage of turtles in India is as food. However, it is only in the north-eastern states such as West Bengal and Assam that turtle meat is popular in this capacity.



Nevertheless, the demand in this region is so great that turtle catching has become big business in many of the other Indian states. A complex marketing channel consisting of turtle catchers, jobbers, secondary wholesalers and retailers has become established in states such as Bihar, Uttar Pradesh and Orissa. Local dealers pack the turtles in large wicker baskets with their forefeet sewn to their hind feet with stout cord to prevent movement. They are then shipped by rail to one of the main marketing centers such as Howrah, a suburb of Calcutta. Here retailers obtain turtles to sell in local markets by attending daily auctions.

Softshells are in greatest demand but hardshells are regularly traded as well. Table 1 lists the frequency of occurrence of the ten most common species that we found being sold in 35 markets and villages that we visited. In the typical turtle stall seen in the West Bengal markets, turtles are butchered with the head and viscera left intact. Thus if a customer questions the age of the meat, he can be shown a beating heart a blinking eye or the jerk of the neck muscles that indicates it's freshness.

#### CONSERVATION STATUS

The extensive turtle trade in north eastern Indian markets can not help but to have taken its toll on the chelonian populations of the country. We were told by market vendors that turtle populations in West Bengal have been depleted to the point that it is no longer profitable to fish for them in most of the state. This has been corroborated by Dr. S. Biswas of the Zoological Survey of India. Most of the turtles in the markets, now come from Uttar Pradesh, Bihar, Madhya Pradesh and Orissa.

As there is little in the way of base line data it is difficult to tell how species in these areas are faring. One indication comes from a survey made on the Ganges near Rajmahal by the Zoological Survey of India in 1958 (Acharji 1958). Four species of turtles (Kachuga dhongoka, K. kachuga, Hardella thurgii and Trionyx gangeticus) were listed as common. When we visited this same site in 1983, only the K. dhongoka could still be called common. Trionyx gangeticus was taken by fishermen occasionally and the remaining two were rarely seen.

Based on our survey and information obtained from fishermen and turtle dealers, I tentatively classify the following species as endangered and threatened.

##### Endangered

1. Batagur baska - Restricted to small area of the Sunderbans in West Bengal
2. Kachuga kachuga - Ganges River drainage
3. Geoclemys hamiltoni - Indus and Ganges drainage
4. Melanochelys tricarinata - Forested areas of Bihar, West Bengal and Assam
5. Pelochelys bibroni - Estuaries and coastal waters from West Bengal to Tamil Nadu

##### Threatened

1. Heosemys silvatica - Hill forests of Western Ghats particularly Kerala
2. Hardella thurgii - Indus and Ganges drainage
3. Morenia petersi - Bihar, West Bengal, Assam
4. Chitra indica - Indus and Ganges drainage

#### PRESENT AND RECOMMENDED CONSERVATION ACTION

Indian turtles are now protected in three separate ways. First the Indian Wildlife (Protection) Act of 1972 (IWPA) contains a series of Schedules that protect wildlife within the country. Turtles appear on two of these (Schedule I and Schedule IV). Schedule I is

the most endangered category. These species are totally protected by law. Four turtles, Lissemys punctata, Trionyx gangeticus, T. hurum and Kachuga tecta are on Schedule I. Schedule IV species are categorized as small game and can be traded if a permit is obtained. All softshell tortoises and Melanochelys tricarinata are listed here.

Presently this law has two shortcomings where turtles are concerned: Enforcement is lax partly due to the fact that few wildlife officers have been trained to identify the species involved. Hence three of the most common species seen in West Bengal Markets are the three softshells listed on Schedule I. The other problem is that the species listed on Schedule I are not the most endangered but rather are still moderately common throughout their range. Of the species I have categorized as endangered only one Melanochelys tricarinata is on any schedule and this is Schedule IV. The IWPA also give a certain degree of blanket protection for unlisted wildlife. In order to ship or trade any species permission must be obtained from wildlife officials.

India is a signatory of CITES which further protects her wildlife in international trade. Again there is the problem that certain common species are listed as endangered on Appendix I of the Convention. Lissemys punctata, Trionyx gangeticus, Trionyx hurum are examples. However, Batagur baska and Melanochelys tricarinata are appropriately listed on Appendix I.

Besides this above, turtles are benefitting from two types of sanctuaries. One is a religious sanctuary. Various Hindoo temples situated along rivers promote large populations of turtles not only by protecting the animals in that area but also by feeding them. Persons coming to the temple bring dough balls, puffed rice or other fare to feed the animals. Less appetizing but equally important to the carnivorous species, aquatic burials take place at many of these temples. At other temples, turtles may be kept in a large tank (pond) but these are unlikely to be of any conservation benefit to wild populations unless they are free to move between the tank and natural habitats.

The second type of beneficial sanctuary is actually for crocodiles. India has an elaborate and impressive conservation program for crocodiles consisting of hatcheries, nurseries, and sanctuaries. To date eleven sanctuaries have been established. As most of these protect all animals in the sanctuary, the benefits far exceed the crocodiles and turtles are prime beneficiaries.

Upon my departure from India, I presented Mr. Samar Singh and the Wildlife Wardens of each state visited a report of my findings including a series of recommendations. The more important of these are:

1. Revise the schedules of the Indian Wildlife (Protection) Act of 1972 and the Appendices of CITES to better reflect the truly endangered species.
2. Establish a system of closed seasons to exploitation during the time the desirable market species are nesting. My preliminary studies suggest that this could be done relatively simply by having only two closed seasons. The soft shells seem to have a peak period of reproduction from August–November whereas most of the important hard shells nest from January to May. Recruitment in these populations could be much benefitted by stopping exploitation at these two periods.
- The system would have several advantages. It would be more simple to enforce than the IWPA as wildlife officers only have to distinguish between a soft shell and a hard shell not several different species. Enforcement could also be centralized at the main receiving areas of West Bengal such as at Howrah Market. Vendors would not suffer greatly as they could always trade in hardshells during the closed season on softshells and vice versa.
3. Establish additional multipurpose sanctuaries on those rivers where none presently exist.
4. Develop a unit in the curriculum of India's Wildlife Institute that will teach wildlife officers about the identification and conservation of reptiles.

Currently follow-up action on these recommendations is being conducted with the help of Mr. P. Kannan and Romulus Whitaker, FCSG members in India and Dr. J.C. Daniel Curator of the Bombay Natural History Society.

Table 1. The most important food species based on occurrence and relative abundance of specimens in 35 markets and villages. N is the number of sites where each species was found, FO the frequency of occurrence, and MN the number of sites where that species was most numerous. Trionyx sp. lumps the three species of Trionyx which occupy somewhat exclusive ranges. All others are individual species.

| <u>Species</u>                   | <u>N(35)</u> | <u>FO(N/35)</u> | <u>MN</u> |
|----------------------------------|--------------|-----------------|-----------|
| <u>Trionyx</u> <u>sp.</u>        | 23           | .66             | 13        |
| <u>Lissemys</u> <u>punctata</u>  | 22           | .63             | 9         |
| <u>Trionyx</u> <u>gangeticus</u> | 17           | .49             | 9         |
| <u>Chitra</u> <u>indica</u>      | 11           | .31             | 3         |
| <u>Trionyx</u> <u>hurum</u>      | 9            | .26             | 2         |
| <u>Hardella</u> <u>thurjii</u>   | 9            | .26             | 2         |
| <u>Kachuga</u> <u>dhongoka</u>   | 7            | .20             | 4         |
| <u>Kachuga</u> <u>tentoria</u>   | 7            | .20             | 3         |
| <u>Kachuga</u> <u>smithii</u>    | 3            | .09             | 1         |
| <u>Kachuga</u> <u>kachuga</u>    | 3            | .09             | 1         |
| <u>Trionyx</u> <u>leithii</u>    | 2            | .06             | 2         |



### THE INDIAN FLAP-SHELLED TURTLE (*LISSEMYS PUNCTATA*) - DELISTED:

The U.S. Fish and Wildlife Service has removed the Indian flap-shell from the United States List of Endangered and Threatened Species. The turtle was placed on the list in 1976 because of its inclusion on Appendix I of CITES. Bangladesh had recommended the species for Appendix I at a time when little was known about its numbers. From subsequent work including my own survey, it is now evident that the flap-shell is one of India's most wide spread and numerous turtles. The U.S. action is thus correct. Hopefully this action will add impetus to FCSG recommendations that the turtle also be delisted from Appendix I of CITES.

### THE FLATTENED MUSK TURTLE (*STERNOTHERUS DEPRESSUS*) CONTROVERSY:

Both the range and numbers of this unusual turtle have been greatly reduced in recent years. Sedimentation and pollution of its habitat are thought to be major causes of the decline. The turtles range happens to be in the heart of Alabama's coal mining districts and run off from the extensive strip mines in the area may well be one of the most damaging factors.

In 1982 the U.S. Fish and Wildlife Service considered listing of the turtle as a threatened species. Coal industry officials fearing that the listing would lead to more stringent environmental controls on their operation lobbied the Secretary of the Interior James Watt and convinced him to stop the services plan.

Next local press attention inspired by the coal industry drew commercial collectors to the area who collected as many of the remaining turtles as they could find.

The Environmental Defense Fund has now entered the picture and has formally petitioned Watt's replacement, William P. Clark to list the turtle as threatened. Recent amendments to the Endangered Species Act require that Clark must rule promptly on this petition and that it must be decided solely on biological criteria.

### IUCN/FCSG MEETING - NORMAN OKLAHOMA

Taking advantage of the large number of FCSG members attending the recent combined herpetological society meetings at Norman, Oklahoma, an impromptu FCSG meeting was held on July 31, 1984. Attending members and consultants included: J. Behler, M. Ewert, J. Iverson, D. Jackson, Don Moll, E. Moll, P. Pritchard, R. Wood, and R. Vogt and various guests.

Topics discussed included the Action Plan, the IUCN wet lands program and the upcoming World Conference on Herpetology. These topics are also included in this newsletter. At the conclusion of the meeting there was a discussion concerning holding a symposium on turtles next year similar to the highly successful Powdermill Turtle Conference held in Pittsburgh, Pennsylvania by the Carnegie Museum in 1980. Possible sites include the E.S. George Reserve of the University of Michigan and the Estacion de Biologia Tropical Los tuxtlas Instituto de Biologia in Vera Cruz Mexico.

### IUCN WETLANDS PROGRAM PROPOSED:

As part of its conservation program, the IUCN is beginning a concentrated effort to promote the conservation of wetlands. I have had an opportunity to review a draft and it would appear that there are excellent opportunities for the FCSG to become involved.

One of the goals is "to establish and maintain information on wetland ecosystems, the species contained therein and the threats to these species and ecosystems." An objective listed under these goals is "to assess the status and trends of species conservation concern within wetlands." to achieve this objective \$100000 has been proposed for action by those SSC specialist groups concerned with wetland fauna other than birds to provide information on status and trends for species of conservation concern. When and how this money will be allocated has not been decided but I will inform the group when more information is available. Also three of our highest priority projects were submitted for possible inclusion in the program (see Appendix I).

### FCSG ACTION PLAN:

Appended to this issue is our revised action plan for 85-87. This plan was prepared from proposal abstracts submitted to me by group members and consultants in response to my request of last year. This 3 year plan has now been filed with the Species Survival Commission of IUCN. Members submitting proposals to funding agencies should send me a copy and I in turn will write a letter of support to the agency indicating that your project is on our list of priorities. We can add to this list of projects as needed so feel free to submit additional abstracts as appropriate projects are identified.

Over the last triennium these projects (by group members or individuals sponsored by the FCSG) were funded and are in various stages of completion:

| <u>Funding Agency</u>    | <u>Title</u>   | <u>Investigator</u>  |
|--------------------------|--|--|
| ARC                      | Population Study and Education Project for the Cat Island Turtle ( <u>Pseudemys felis</u> )                  | J. Perran Ross   |
| Indo/American Fellowship | Survey of the Status and Distribution of the River Turtles of Eastern India                                  | E. O. Moll   |
| WWF/US                   | Status Survey of the Central American River Turtle, <u>Dermatemys mawi</u> in Belize                         | Don Moll   |
| ARC                      | The Ecological Requirements of the Pig-nosed Turtle <u>Carettochelys insculpta</u> in Arnhem Land, Australia | John Legler  |
| WWF/US                   | Status Survey of the Kikori River Pitted Shell Turtle <u>Carettochelys insculpta</u> in New Guinea           | Mark Rose  |
| FCSG<br>WWF/India        | Status of the Cane Turtle, <u>Heosemys silvatica</u> in Kerala   | J. Vijaya  |
| WWF/US                   | Studies on the Biology and Conservation of <u>Podocnemis expansa</u> in the Rio Caqueta of Eastern Colombia  | Patricia Von Hildebrand<br>German Ignacio Andrade<br>Thomas Defler |

### WORLD CONGRESS OF HERPETOLOGY

Plans are underway for an international conference in herpetology. Although sites and dates are still being debated it will probably come within the next 2 years.

This would seem to be logical time to schedule a major FCSG meeting and symposium. World Wildlife Fund-US has expressed a concern that most of our projects to date have been status surveys. They would like to have us get together and discuss what management strategies and techniques are best applied to freshwater chelonians. Such a plan would

then be available to follow up status surveys when the species studied proves in need of conservation action. This would be an excellent topic to address at the symposium.

Please send recommendations of other topics you would to have included in such a symposium and any other comments you might have concerning a meeting at the World Congress of Herpetology.

## REGIONAL NEWS

### Oriental and Eastern Palearctic

Bangladesh—Dr. Charles Fugler recently conducted an FAO sponsored survey of chelonian exploitation in Bangladesh. Fugler found that exports of turtles have been growing rapidly in recent years. There were virtually no exports from 72-75. Then beginning in 1976 some \$50,000 worth of turtles were exported. By 1981 this amount had increased to \$950,000. The principal species exported were Trionyx gangeticus, T. hurum and Lissemys punctata which are all presently listed on Appendix I of CITES.

The major importing countries are Hong Kong and Singapore. The Chinese have a great gustatorial fondness for softshell and much of these imports are for food. Another important commercial value is using of turtles in medicinal preparations (see FCSG #3).

India—The Madras Crocodile Bank has received a grant from the Jersey Wildlife Preservation Trust to construct a captive breeding facility for endangered Indian chelonians. The proposed enclosure measures 30' - 40' feet and will include a pond and nesting beach. The complex will be used initially for breeding of rare softshells.

### Neotropical

Belize—Don Moll has completed an initial WWF sponsored status survey of Dermatemys mawei and other freshwater chelonians in Belize. He determined that Dermatemys is common to abundant in many areas of northern and central Belize. However, there is a large demand for its flesh and the turtle has declined seriously in some areas near human population centers and other easily accessible habitats. Major threats to the species include that it is unprotected by law and is vulnerable to escalating exploitation by the rapidly increasing human population of Belize.

Staurotypus triporcatus and Pseudemys scripta venusta, two other marketed species, are still common and widely distributed throughout the country.

Columbia—Our colleague and FCSG member Professor Federico Medem died of cancer on 1 May 1984 in Bogota. Dr. Medem was director of the Instituto Roberto Franco in Villavicencio. An author of over 70 publications, Medem was well known for his research and conservation efforts with crocodilians and turtles.

Caribbean—Dr. Michael Seidel of Marshall University has been studying the slider populations (Pseudemys=Trachemys) in the West Indies for several years now. Concerning their conservation status he reports the following:

On Hispaniola, P. decorata and P. vicina are being heavily exploited for food. There are persons whose entire incomes depend upon selling these turtles in the market. Seidel found both difficult to obtain and believes they may now be relatively rare.

Only a few Puerto Rican populations of P. stejnegeri appear strong and their status and distribution needs investigation.

The Jamaican P. terrapen does not appear abundant. Farm ponds are a common habitat but none seem to support large populations. However, the local people do not seem to be utilizing them as food.

Populations of P. decussata on Grand Cayman appears to be reasonably stable.

Although a small island, there appears to be an abundance of habitats. On Cuba the species is very abundant in certain areas according to a Cuban biologist.

Columbia—Patricio von Hildebrand submitted a progress report for the WWF sponsored "Study on the biology and conservation of Podocnemis expansa in the rio Caqueta of Eastern Colombia." Achievements of the project begun last November are summarized in four general aspects.

1. A field camp was constructed to house the research personnel that will study four nearby intensively used beaches. Mark-release efforts were begun on female P. expansa and data were collected on eggs and incubation times.
2. Local indians traditionally involved in exploiting the turtle were included in the study. Agreements were signed by 75% of the family heads stating that they approved of and will help in conservation measures to prevent extinction of P. expansa.
3. Preliminary evaluations were made of P. expansa commerce including prices, routes used by poachers, and strategies to avoid government control.
4. Involvement of Universidad Javeriana in Bogota with 4 biology student's theses directed toward conservation measures based on embryological and population aspects of the ecology of P. expansa.

#### Nearctic

U.S.—Dr. Michael A. Ewert has joined our group as a consultant. Ewert is an expert in turtle eggs and embryology. Members with questions concerning eggs, development or incubation procedures can contact Ewert at the:

Department of Biology  
Jordan Hall 138, Univ. of Indiana  
Bloomington, Indiana 47405 USA

U.S.—Dr. Peter Pritchard has prepared a report entitled - The biology and status of the Alligator snapping turtle Macrochelys temminckii. He concludes that the turtle though not on the brink of extinction is heavily depleted throughout most of its range. The species has been particularly heavily exploited for food in Louisiana and is "uniformly depleted" there. To satisfy the demand for the turtle's flesh, commercial concerns have turned to importing snappers from surrounding states. Pritchard recommends that the US Department of Interior list the turtle as threatened and that integrated conservation and management actions be carried out on a river basin or state-wide basis.

U.S.—Pet turtle trade statistics for 1980 were recently published by Traffic (USA) Vol 5(4). The most common imports were Chinemys reevesi with 4531 animals followed by Cuora amboinensis 2168, Malayemys subtrijuga 964 and Hieremys annandalei with 713.

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#### THE BACTERIAL DISEASES OF REPTILES

The Institute for Herpetological Research is pleased to announce that its new publication, The Bacterial Diseases of Reptiles, will be available in May 1984. Over 100 pages in length, this book contains the most advanced and up to date information on the epidemiology, diseases. Information on the newest antibiotics including proper antibiotic selection and drug dosages is included. Identification of simple and resistant forms of the common diseases of reptiles, as well as detailed techniques of treatment of each



disease are covered by this book. There are also descriptions of the fundamental husbandry techniques for treating reptile diseases, including preparation and calculation of antibiotics. A section of full color photographs of all of the diseases is also present.

The Bacterial Diseases of Reptiles is available for \$20.00, book rate postage included. Please add \$1.25 for first class postage. Copies may be obtained by writing to the Institute at P.O. Box 2227, Stanford, CA 94305.

### IN THE NEWS

#### KL tortoise nibbles wrong bait

Kuala Lumpur: A tortoise bit off a man's penis while he was swimming, a newspaper report said yesterday.

The STAR newspaper said the 27-year-old man was fishing in a disused swimming pool in Batu Arang, near Kuala Lumpur when the attack took place.

"While squatting in the water he felt a sudden sharp stinging pain in his private parts and when he looked down, he discovered his reproductive organ missing" the newspaper said.

"He then saw a tortoise swimming away from him", the report continued.

The STAR said the wounded man made a futile search for his missing organ before getting help.

He was recovering yesterday in a Kuala Lumpur hospital.-UPI.

#### Hundreds of turtles saved from poachers - By A Staff Reporter - From Times of India Dec 20, 1983

New Delhi, December 19: Hundreds of lucky turtles splashed to freedom in the Yamuna thanks to the timely intervention of the Department of Environment today.

On a tip off from Mr. S.K. Mukherjee, deputy director of department of environment, the wildlife protection staff of the Delhi administration conducted a raid on the Delhi main railway station and siezed eight baskets containing 872 Indian soft shell turtles booked for Howrah.

The turtles were produced before the additional chief metropolitan magistrate, Mr. Subhash Wason. The court ordered that the turtles be released into the Yamuna.

It may be pointed out that soft shell turtles packed from North Indian rivers are smuggled out and taken to Eastern India where they are considered a table delicacy.

The Indian soft shell turtle is specified in Schedule I of the Wild Life (Protection) Act, 1972. Its killing, possession and trade is banned. The minimum punishment for unlawful possession of turtles is imprisonment of six months and Rs. 500 fine for the first offence. It can be extended to two years' imprisonment and a fine of Rs 2,000 for a subsequent offence. For a third offence the punishment could go upto imprisonment for six years.

But the wildlife workers could not succeed in nabbing partridge poachers before the birds were actually killed for food. This month they recovered 200 partridges, killed and cut for cooking, from various eating houses in the Capital. The partridge too is a protected species.

## Goal 2 Objective 4. Afrotropical

## Activity 4 —

Status and conservation of the Malagasy freshwater turtle, Erymnochelys madagascariensis. Responsibility: IUCN/SSC C. Blanc. Timing 1985 & 86 Budget: 30 in 1985; 10 in 1986; total 40. Outputs: Estimate of numbers, identification of important habitats and nesting sites, establishment of an effective management program.

## Goal 2 Objective 4. Indomalayan

## Activity 4 —

Conservation and management of the river terrapin Batagur baska and related species in southeastern Asia. Responsibility IUCN/SSC/ E. O. Moll. Timing 1985 and 86 Budget: 21.0 in 1985; 16 in 86; Total 37 Outputs: Census of last remaining Batagur populations in Sunderbans of India and Bangladesh. Establishment of hatchery and protective legislation for populations in peninsular Thailand Evaluate the effectiveness of techniques used in the river turtle (16 year old) management program in Malaysia.

## Goal 2 Objective 4. Neotropical

## Activity 4 —

Survival recommendations for five rare species of Phrynops (sideneck turtles of the family Chelidae). Responsibility IUCN/SSC/P. Pritchard. Timing 1985. Budget: 28.5 Outputs: Status surveys of 5 rare Phrynops. Negotiate voluntary restraint agreements with major land holders to protect key habitats. Initiate captive breeding efforts for each species.

SSC Action Plan Summary  
Recommended Priority Projects

Source: Freshwater Chelonian Specialist Group (FCSG).

Submitted by: John Iverson

- |   |   |                         |       |       |   |
|---|---|-------------------------|-------|-------|---|
| 3 | Status and distributional surveys of four rare Mexican mud turtles ( <u>Kinosternon</u> ).  | Mexico                  | 12000 | 2 yrs | A distributional census is proposed for four rare, newly described species and subspecies: Jalisco Mud turtle ( <u>Kinosternon</u> Sp.); Durango mud turtle ( <u>K. flavescens durangoense</u> ); Oaxaca mud turtle ( <u>K. oaxacae</u> ); Alamos mud turtle, ( <u>K. alamosae</u> ). |
| 2 | Status and distribution of Creaser's mud turtle ( <u>Kinosternon creaseri</u> )             | Yucatan Mexico          | 5000  | 1 yr  | Project will census this rare and little known species of the Yucatan peninsula   |
| 2 | Status and distribution of Dunn's mud turtle ( <u>Kinosternon dunnii</u> )                  | Columbia, South America | 5500  | 1 yr  | Project will census this very rare species (known from 10 specimens in six localities) in Choco region of Columbia.   |
| 1 | Status and distribution of the narrow-bridged mud turtle ( <u>Kinosternon angustapons</u> ) | Central America         | 4500  | 1 yr  | Project will census this rare Central American species (known from 8 localities from Nicaragua to northern Panama) in Costa Rica. Draining of wetlands appears to be seriously endangering two already rare forms.  |

Source: FCSG

Submitted by: Michael Seidel

- |   |   |            |      |      |  |
|---|---|------------|------|------|--|
| 2 | Status and conservation of threatened Hispaniolan sliders, <u>Pseudemys decorata</u> , <u>P. vicina</u> | Hispaniola | 6000 | 1 yr | Survey existing populations of Haiti and the Dominican Republic. Record levels of exploitation. Make recommendations for conservation. |
| 4 | Status survey of the Jamaican slider ( <u>Pseudemys</u> , <u>terrapen</u> )                             | Jamaica    | 4000 | 1 yr | Determine abundance and distribution of this rare Jamaican species   |

Source: FCSG

Submitted by: William Brown

- |   |  |          |      |      |  |
|---|--|----------|------|------|--|
| 2 | Status and conservation of the of the endemic turtles of the Cuatro Ciénegas Basin, Coahuila, Mexico— <u>Pseudemys scripta taylori</u> , <u>Terrapene coahuila</u> , <u>Trionyx ater</u> | Coahuila | 5000 | 1 yr | Determine population size and present environmental threats to these highly restricted and vulnerable species. |
|---|--|----------|------|------|--|

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Source:: FCSG

Submitted by: Robert Parmenter

|   |   |           |        |      |   |
|---|---|-----------|--------|------|---|
| 3 | Status and distribution of Fitzroy's turtle, <u>Rheodytes leucops</u> | Australia | \$3000 | 1 yr | Census known populations and define distribution of this newly described species. |
|---|---|-----------|--------|------|---|

Source: FCSG

Submitted by: Peter Pritchard

|   |   |               |       |       |   |
|---|---|---------------|-------|-------|---|
| 1 | Survival recommendations for rare species of <u>Phrynops</u> (Chelydidae) | South America | 28000 | 2 yrs | Status surveys of 5 rare <u>Phrynops</u> . Negotiate voluntary restraint agreements with major land holders to protect key habitats. Initiate captive breeding efforts for each species |
|---|---|---------------|-------|-------|---|

Source: FCSG

Submitted by: Charles Blanc

|   |   |            |       |       |  |
|---|---|------------|-------|-------|--|
| 1 | Status survey of <u>Erymnochelys madagascariensis</u> | Madagascar | 40000 | 2 yrs | Census existing populations identifying important habitats and nesting sites. Design conservation plan to submit to Malagasy govt. |
| 4 | Status surveys of <u>Pelusios</u> *                   | Madagascar | 20000 | 2 yrs | Status surveys of the moderate sized Pleurodires of Madagascar.  |

Source: FCSG

Submitted by: E.O. Moll

|   |  |                       |       |       |  |
|---|--|-----------------------|-------|-------|--|
| 1 | Conservation and management of the river terrapin, <u>Batagur baska</u> , and related species in tropical Asia | South Asia<br>SE Asia | 37000 | 2 yrs | Census of remaining <u>Batagur</u> in the Sunderbans of India and Bangladesh. Establishment of hatchery and protective regulation in peninsular Thailand. Evaluation of 16 year old river turtle management program in Malaysia. |
|---|--|-----------------------|-------|-------|--|

\* May be combined with Erymnochelys project which could greatly reduce cost.



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Source: FCSG

Submitted by: E.O. Moll &amp; Don Moll

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|---|---|--------|-------|------|--|
| 2 | Conservation, management and movements of the giant Amazonian river turtle, <u>Podocnemis expansa</u> . | Brazil | 10000 | 1 yr | Evaluate effectiveness of the government conservation program for the turtle. Follow selected females with telemetry gear to determine extent of nesting migrations. |
|---|---|--------|-------|------|--|
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Source: FCSG

Submitted by: Don Moll &amp; Richard Vogt

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|---|--|--------|--------|------|--|
| 1 | Status and conservation of of the Central American river turtle, <u>Dermatemys mawei</u> | Mexico | \$5000 | 1 yr | This heavily exploited food species has shown a steep decline in numbers coming to Mexican markets.  |
|   |  | Belize | \$5000 | 1 yr | Surveys of existing wild populations with recommendations for conservation action are needed. Vogt would carry out studies in Mexico. Moll has made initial surveys in Belize and is ready to begin conservation action. |
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|---|--|------------------------|--------|------|---|
| 3 | Status survey of Mexican musk turtles ( <u>Staurotypus</u> , 2 sp and <u>Claudius</u> , 1 sp.) | Mexico and/or & Belize | \$5000 | 1 yr | These species are commonly eaten throughout their range. The effects of exploitation on wild populations needs study in both Mexico and Belize. |
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Source: FCSG

Submitted by: Charles Fugler

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- |   |   |            |        |      |   |
|---|---|------------|--------|------|---|
| 2 | Status of commercialized trionychid populations in Bangladesh | Bangladesh | \$7000 | 2 yr | Determine the effects of million dollar turtle export industry on turtle populations in Bangladesh. |
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Prioritized Projects without  
Principal Investigators

Priority

- 2 Ecology and conservation of the Magdalena river turtle  
Podocnemis lewyana in northern Columbia.
- 2 Status and conservation of Trionyx triunguis in <sup>Israel</sup>~~Brazil~~.
- 2 Ecology and conservation of the spiny turtle, Heosemys spinosa
- 3 Ecology and conservation of the giant Amazonian river turtle  
(Podocnemis expansa) and related species (e.g. P. unifilis, P. sextuberculata) in Peruvian Amazonia
- 3 Status survey of the big headed turtle, Platysternon megacephalum
- 3 Distribution and ecology of Rhinoclemmys in Mexico.
- 4 Ecology and conservation of the Mucuã, Kinosternon scorpioides,  
in Brazil
- 4 Distribution, ecology and conservation of Pelomedusa subrufa and  
Pelusios subniger in Africa
- 4 Distribution and status of freshwater turtles in northern  
Argentina and Uruguay (e.g., Platemys pallidipectoris, P. spixii,  
Pseudemys dorbigny and others)
- 4 Status survey of Pseudemys scripta on the Yucatan peninsula
- 4 Ecology and conservation of Podocnemis voglii in the llanos of  
Columbia and Venezuela
- 4 Distribution, ecology and conservation of rare and little known  
Rhinoclemmys in Central and South America (e.g., Rhinoclemmys  
nasuta, R. areolata R. pulcherrima sspp. etc.)