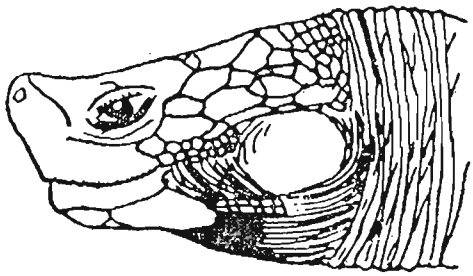
IUCN/SSC FRESHWATER CHELONIAN GROUP

Rhodin

NEWSLETTER



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This number of the FCSG Newsletter is being issued along with the January Hamadryad: the Newsletter of the Madras Snake Park Trust. Members having an interest in reptiles and conservation in India and South East Asia will be interested in subscribing to this ~~tri-yearly~~ publication.

Vol.8 No.1

IUCN/SSC MEETING-MALAYSIA

The 58th meeting of the IUCN/SSC was held October 4-6 in Kuala Lumpur, Malaysia. In addition to regular business Russ Mittermeier organized a symposium entitled Species Conservation Priorities in the Tropical Forests of South-east Asia. This was followed by an informal mini-symposium on concepts, definition, interpretation and useage of categories of species status and threats.

Considerable discussion accompanied the latter subject particularly as to how one should define "endangered ". The term has been equally applied to populations having but a few members to others that number in the thousands. No consensus was reached and the chairman appointed a committee to study the subject further.

Following the meetings two different fieldtrips were offered one of which was particularly productive to turtle enthusiasts. This trip included the Department of Wildlife's new Batagur hatchery and nursery facility at Batu Gajah, Perak. This facility includes an artificial sand beach for hatching eggs, a series of concrete holding pens for raising hatchlings and a larger concrete pond for a group of near adults which have been raised in captivity since hatching in 1967. Also on this trip, we visited my former study area for Batagur and Callagur at Telok Anson and were treated to seeing a male Callagur in full breeding colors basking within good camera range.

IN: HAMADRYAD - Newsletter of the Madras Snake Trust VOL.8, NO.1 January, 1983

On 5 October the Freshwater Chelonian Specialist Group met following the regular session. Considering the distances that most of us had to travel, the turnout was quite good. Members attending included: Kiew Bong Heang of the University of Malaya, Kuala Lumpur; Russell Mittermeier, World Wildlife Fund-US, Don Moll, Southwest Missouri State University; Luis Fernando Padua, Dept. of National Parks and Equivilent Reserves; Brasilia, Brazil; Anders Rhodin, Fitchburg, Mass; Siow Kuan Tow, Malaysian Fisheries Department, Kuala Lumpur and myself. S. Biswas of the Zoological Survey of India, Calcutta could not attend but sent two reports for the meeting.

In addition to the aforementioned members, several guests also attended the meeting. Ms. Misliah Mohamed, Basir, Dept. of Wildlife and National Parks, Trenggaru; Admiral Ibsen Camara, Brazilian Foundation for Conservation of Nature; Ms. Isabelle Constable, Boston, Mass; Encik Mohamed Khan bin Nomin Khan, Director General of Wildlife and National Parks, Kuala Lumpur; Ms. Susan Rodin, Fitchburg, Mass;and Mr. Robert Scott, Executive Officer IUCN/SSC Gland, Switzerland. Dr. R.C. Sharma of the Zoological Survey of India arrived too late for the meeting but participated in subsequent discussions.

Six reports were presented during the evening. These are briefly summarized below or in the case of Biswas and Camara reports where typed copies were provided, the entire text has been appended.

Mohamed Khan discussed the history, accomplishments and future of Batagur conservation in Malaysia. The Batagur conservation program was initiated by the Game Department of Malaysia on the Perak River in 1967. The program started with a hatchery and later added a head starting program where the young are raised for one year in captivity prior to release. Early set backs due to flooding and inexperience have been largely overcome. The perak hatchery has now released some 20,000 young into the wild and new programs have been started in two additional States- Kedah and Trengganu. All of the projects now have permanent staff (1 ranger and 3 assistants) which are provided with housing, a vehicle, a boat and the necessary rearing facilities.

To update the above reports I worked with the Game Department on a study of Batagur and their conservation program in 1975-1976. Results of these studies have been provided in an unpublished reports and several scientific and popular articles. Last year the Malaysian Department of Wildlife and National Parks asked me to prepare a recovery plan for Batagur. Based on this experience, the plan has been completed and was presented to Mohamed Khan at the IUCN/SSC meeting. One of the main points of the plan was that artificial hatcheries by themselves are inadequate to save Batagur; problems of habitat destruction must also be solved. I have just heard from Mohamed Khan and he is taking immediate steps to implement the recovery plan. The plan will be printed and distributed to appropriate personnel and agencies. He is assigning a research officer to work particularly on Batagur baska. This officer will be provided with supporting staff and equipment. According to Mohamed Khan

this is the easy part, the hard part will be securing the cooperation of all the relevant agencies necessary to protect the turtles (the river) environment. The involvement is quite massive. He closes by saying: "we will have to do our best. We have no choice if the project is to succeed".

Siow Kuan Tow tate Director of Fisheries Trengganu then discussed the Callagur hatchery program which he and I began in 1978 at Kampong Mankok near the Setiu River in the Besut District of Trengganu. Callagur like Batagur is heavily exploited for its eggs. As it usually lays along sea beaches where most stretches are licensed to sea turtle egg collectors, almost all of the eggs are taken and sold in local markets. The hatchery was established to assure some recruitment. In the initial year 1000 eggs were collected or purchased from collectors for the hatchery. Several hatching techniques were tried i.e. reburying on a fenced area of beach, styrofoam boxes and plastic buckets. Although hatching success was greater in the latter two methods (Ca. 85%) no evaluation was made of the sex ratios produced.

In a later experiment Siow investigated the feasibility of rearing hatchlings in floating cages prior to release. The hatchlings were fed vegetables and fish but seemed to prefer the former. The experiment was cut short when the cage was destroyed by a flood but results prior to this were discouraging in that the hatchlings grew extremely slowly.

Recently the project has slowed due to difficulties in getting egg collectors to bring in eggs for the hatchery. In 1981 268 were purchased 219 hatched in the beach hatchery. In 1982, 173 eggs were taken and 139 hatched.

In the next report Kiew Bong Heang discussed one of the most serious current threats to riverine life in Malaysia- dam construction. Malaysia is investing heavily in hydroelectric power. At present some 20 projects have been completed about 3 more are under construction and somewhat more than 20 additional projects are planned.

Many of these projects are useful and well planned others are ill conceived such as the proposed dam on the Tembling River which would flood much of the lowland forest habitat in Peninsular Malaysia is only National Park.

Whether useful or not most of these dams involve alterations in the riverine habitats which can affect turtle populations.

Potential problems include the following:

1. Siltation, due to earthwork, destroys nesting sites and makes more shallow allowing species such as softshell to be more easily exploited.
2. Sand taken for construction frequently comes from favoured nest sites of certain species (e.g. Batagur)
3. Those species dependent on land based food supplies (e.g. Batagur feeds heavily on fruits and vegetation of bank species) may have their food supplies destroyed when the water rises.

4. The lentic habitat formed with its high organic content may not be suitable habitat to lotic habitat forms.

The Malay Nature Society is currently campaigning to stop ill conceived dams such as the Tambeling. However, a large dam on the Trengganu River is almost complete and its effects on the large Batagur population there will soon be known.

Two reports of Dr. S. Biswas concerning turtle conservation problems in India and recommendations for action were read by the Chairman, these have been appended to the newsletter.

Admiral Ibsen Carrera followed with a report on Brazil's efforts in river turtle conservation. A copy of this report has also been appended.

Moll then presented a review of the group's accomplishments over the last year a report of which would be submitted to the general meeting in the specialist group reports. As most of this information has already appeared in previous newsletters, I have not reproduced it here. However a subgroup report presented at the general meeting by Anders Rhodin and Russell Mittermeier concerning the status of Chelid turtles has been appended.

Following the reports the group discussed problems of funding the action plan and of compoting with mammals and birds for a share of the conservation dollar. Russ Mittermeier recommended that the group prepare their action plan in the form of a booklet containing abstracts of needed projects and RDB sheets for each species. Such booklets have proven very effective for the Primate Group in their efforts to fund important projects. The FCSG members present generally approved of the recommendation.

The meeting was adjourned at 8 PM.

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REPTILE RED DATA BOOK - PART- I

The first part of the IUCN Amphibia-Reptilia Red Data Books in the new hard-bound format was displayed at the IUCN/SSC meeting in Kuala Lumpur. This volume of this series which has been compiled by Dr. Brian Groombridge concerns turtles, crocodilians and rhyncocephalians. Threatened turtles covered include 5 species of Kinosternidae, 1 Dermatemydidae, 12 Emydidae, 22 Testudinidae, 5 marine turtles, 1 Trionychidae, 6 Pelomedusidae and 6 Chelidae. In addition to the revised data sheets the book lists the included species in systematic order, by Red Data Book category and by country and zoogeographical region.

The Red Data Books are published by IUCN, Gland, Switzerland

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Oriental Region

Currently I am in India on a 9 month survey, collecting data on the distribution and status of Indian turtles. In the first third of this survey, I have visited the evergreen forests of Kerala, the Godaveri River in Andhra Pradesh and the Gompti and Ghagra River of the Ganges drainage in Uttar Pradesh.

One of the most interesting trips thus far has been the trip to Kerala. The purpose of this trip was to survey the status of the recently re-discovered Heosemys silvatica and to select a site where it can be studied ecologically.

H. Silvatica was described in 1912 from specimens taken in evergreen forest at about 2000 altitude by J.R. Henderson (Records of the Indian Museum VII) but it was not reported again until in July 1982 when Ms. J. Vijaya of the Madras Snake Park obtained one from a local inhabitant near the type locality (1982 Hamadryad 7 No.3) A second specimen was obtained in similar fashion by Mr. P. Kannan (FCSG Member-Oriental Region) in September of 1982.

In late October, Ms. Vijaya, Dr. Brian Groombridge (Editor- Reptile Red Data Books) and I visited the type locality and spent a week in the vicinity. We found twelve of these small terrestrial turtles (5 males, 2 females, 1 female immature and 4 juveniles). Considering the large percentage of juveniles the population appears to be healthy and reproducing. In the search time, we found about equal numbers of Heosemys and Geochelone travancorica, the only other chelonian in the habitat. It appears that at present the turtle is still relatively common within its habitat. Some are being eaten by tribals but because of their small size they are seldom hunted but rather are usually taken incidentally. The greatest danger lies in lumbering of the habitat which is occurring throughout the area. The cut-over areas that we observed lacked turtles.

Ms. J. Vijaya will be studying the ecology of the turtle as well as the effects of lumbering on its abundance over the next year.

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PROPOSAL FOR CONSERVATION OF CHELONIANS OF INDIA

By
S. Biswas

Turtle conservation and management in India is a big challenge for Indian conservationists. There are many social and economic problems connected with conservation work which are difficult to solve without active government help. It also requires coordinated efforts of all other organisations and institutions to make a conservation programme successful.

The Malaysian conservation program for Batagur baska as described by E.O Moll (1980) is an example of one such programme which has been successful. The Perak River population of Batagur was declining rapidly due to the great demand for its eggs. Fortunately the Malaysian government intervened and created a hatchery for Batagur eggs which are purchased from local egg collectors. In this way the Batagur population is being protected without bringing financial hardship to the egg collectors.

In India one special organisation is urgently needed at the present moment to undertake the responsibility of research connected with the conservation of Chelonians such as, survey, ecology, biology, prospective planning and management. Some institutions or organisations like Tiger Project, Crocodile Research Institute and many fishery departments are doing good work in their field in collaboration with International and national scientific bodies. Though Zoological Survey of India is carrying on efficiently general faunistic survey research on systematics and some scientists of the survey are interested in turtle conservation, its present strength, resources, mobility and flexibility are not sufficient to undertake such a big task alone. There should be an institute where applied research in the field of chelonian research will be carried on as is being done on fish by the Central Inland Fisheries Research Institute. Nearly 25 species of freshwater turtles, 5 sea turtles and 4 land tortoises are occurring in the Indian subcontinent and each species require careful attention. These species should be surveyed extensively and intensively for preparing a realistic status map. Our present knowledge on most of these species is insufficient to suggest any realistic plan. There is no other organisation in India which is at present entirely interested and devoted of such a magnitude of turtle research problem, nor is able to take up the responsibility. Therefore, I wish to propose for setting up a central organisation of Chelonian research which should be named as Chelonian Research Institute or Centre of India. This organisation will also implement the following four proposals of turtle conservation in cooperation with the Government and other institutions interested in the conservation of Chelonians.

If it is adopted and agreed upon, it will be the first step for a successful turtle conservat on in India.

1. A programme of mass education to make the people conscious for conservation of turtle in its natural condition should be carried out through all the available mass media.

2. Capture or exploitation in nature should be banned totally or partially and where implementation of ban is not possible due to social or economical reason it should be actively discouraged.

3. Reared captive turtle fishery should be encouraged to meet the market demand and should be expanded to such an extent that the pressure of turtle capture in the natural condition is released.

4. Study on each species especially the rare ones should be carried out in captivity as well as in natural condition and habitat. They should be bred, reared and releasef in their original protected habitat, A system should be developed for periodical monitoring the reintroduced or rehabilitated population.

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CONSERVATION AND STATUS OF CHELID TURTLES
FCSG SUB-GROUP REPORT - IUCN/SSC MEETINGS, KUALA LUMPUR

By
Anders Rhodin and Russell Mittermeier

In conjunction with the preparation of the Red Data Book, and the development of a global conservation strategy for freshwater chelonians, the status of all chelid turtles has been reviewed.

The Western Australian swampturtle, Pseudemydura umbrina possibly the single most endangered freshwater chelonian in the world, though closely monitored and well protected, has failed to make significant population gains. Captive breeding is slow due to low fecundity and delayed maturation, and one of the two wild populations is continuing to decline in numbers. The total world population remains below 100.

As a preliminary step to delineating the status of South American chelid turtles, an extensive taxonomic and distributional review of the group has been undertaken. Previously felt to contain 18 non-endangered taxa, our work indicates the presence of at least 28 taxa, with as many as 11 of those endangered or extremely rare. Many of these new species are currently being described, and should probably be added to the Red Data Book and CITES listings upon publication. A new species of Phrynops from Rio Grande do Sul in southern Brazil and northern Uruguay is known from less than 20 specimens, none collected within the last 30 years. A new

species of Platemys from southern Bolivia and northern Paraguay, until recently only known from 2 specimens collected over 100 years ago, is currently showing up in small numbers in pet trade shipments from that area, the total number of known specimens now up to 13. A relatively cryptic species of Phrynops from southern Paraguay has also been identified, in this case known from less than 10 museum specimens and one live animal. In addition, several previously described species have had their population status clarified. For example, Phrynops hogei from the Rio de Janeiro area of Brazil, previously known from only the single type specimen has had its range delineated through museum and field work which has identified an additional 16 specimens, including the first 4 live animals ever known. The population occurs in the Rio Parabia drainage, an area of heavy siltation and habitat destruction where the creation of a natural reserve is unlikely. A program of captive breeding has been recommended. The e tremely rare Phrynops dahli from the Sincelejo region of Colombia may be on the verge of extinction due to severe habitat destruction. Live animals have not been observed in the wild for over 20 years and suitable habitat within the species' known range is almost non-existant. An immediate status survey and specific conservation recommend ations are desperately needed.

This work has demonstrated that when a poorly-known group of animals is subjected to rigorous taxanomic analysis, the results may demonstrate that several members of that group are in actuality endangered and will require specific conservation efforts.

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RIVER TURTLE PROTECTION IN BRAZIL

By
Ibsen G. Camara

Brazilian river turtles include atleast nineteen species, belonging to nine genera and four families. The ecology and size of the surviving populations of these species are little known, but in the most developed areas of the country illegal capture, environmental degradation and water pollution are certainly producing negative results.

According to Brazilian legislation, the capture and trade in river turtles are nominally prohibited, but the size of the country and lack of adequate controls make it very difficult to enforce the law to the full extent. Several species belonging to the genera Podocnemis, Kinosternon and Chrysemys still are illegally captured in considerable numbers, the first two for food, the last one for the pet trade.

In spite of the large number of Chrysemys and Kinosternon that are captured each year, these species don't seem to be endangered. The situation of the turtles of the genera Podocnemis and Paltocephalus, the big Amazonian river turtles, is somewhat different. The genus Podocnemis is represented in Brazil by four species (P. expansa, P. unifilis, P. erythrocephala and P. sextuberculata)

and Peltocephalus by only one (P. tracaxa), all found exclusively in Amazonia. The five species, specially P. expansa the giant South American river turtle, always have been a traditional and important food source for the Indians and for local populations of today. In addition, their eggs were used to produce "turtle oil" for food and ilumination in the past. For those reasons, exploitation of the Amazonian river turtles reached almost incredible levels during the last three centuries.

In the first half of the last century, the British naturalist Bates estimated that atleast 48,000,000 eggs were destroyed each year in Brazil, only for the production of turtle oil. Other writers mentioned boats carrying tons of turtles to the local markets. Such enormous devastation over a period of so many years couldn't be supported even by such prolific animals. Ojasti, studying P. expansa in the Orinoco, estimated that the local population in 1965 was less than 14,000 turtles, whereas Humboldt found more than 300,000 in 1799. There aren't reliable data concerning the size of its populations in Brazil, but the depletion has also been drastic. The giant turtle has become so difficult to find that a large animal is said now to cost as much as US$20,00 in the city of Belem.

During the last fifteen years, the Brazilian Ministry of Agriculture, the Government agency responsible for the protection of fauna, has been trying to prevent the depredation of Amazonian river turtles, particularly P. expansa. As a preliminary measure an extensive survey of possible nesting beaches was carried out and a great number of them have been located and studied all over Brazilian Amazonia. Since the capture of nesting females and collecting of eggs are the most important factors, the protection of all beaches against poachers would be the best course of action, but the great number of sites, the length of incubation and the high cost of extensive surveillance prevented the protection of a very large number of nesting beaches. A selection of beaches couldn't be avoided and a programme for protection of the most promising beaches was enacted.

A second measure of defense was to reduce the enormous proportion of destruction of the young turtles by natural predators during the first days of life, when a number of fishes, birds and caimans catch as much as 95 per cent of the hatchlings. The protection of the young animals inside provisional enclosures for one or two weeks and their later liberation far from the beach gives them a much higher probability of survival.

Using these techniques during the years of 1979, 1980 and 1981, more than 40,000 nests in 71 beaches have been protected and a total of more than 2,600,000 hatchlings of P. expansa were released under controlled conditions. These actions were intended mainly to protect P. expansa, but since other podocnemine turtles reproduce on the same beaches they have also been protected.

The giant river turtle is a most prolific animal. The majority of females deposit 80 to 140 eggs each year, maybe sometimes more than 180. We estimate that a female produces a mean of a hundred eggs a year, over a period of atleast thirty years. If only seventeen percent of the offspring reach mature age and reproduce at the same rate, just one female after thirty years could have more than 210,000 edult descendants. By applying adequate measures of protection and management, to such a fertile animal the threat of extinction can be prevented easily and sustained-yield harvesting is quite possible. The giant river turtle, with careful and scientificly oriented management may become a major source of valuable meat for local human populations. The high level of protein in Podocnemis meat, much appreciated by local people, and the possibility of large scale breeding and control of hatchling's predation leads us to believe that the cautious use of these turtles can lead to the restoration of a very important source of food for the whole region.

In our opinion, facing the present situation, P. expansa shouldn't be considered endangered, at least in Brazil. The situation of the other species of Podochemis and Peltocephalus is rather indeterminate, but it seems to be more or less similar. Besides that, all the Brazilian species of podocnemine turtles are protected inside large national parks and biological reserves created recently. Dozens of nesting beaches have been protected soon and some of them are expected to be converted into national sanctuaries.

We agree that the effort to protect the river turtles has to be a continous one or it will not be effective, and that the high coat of its maintenance is a serious problem to overcome, but the prospects for the future of those important turtles have improved substantialy during recent years.

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PRESENT STATUS OF INDIAN EMYDIDAE AND OUR IMMEDIATE ACTION PROGRAMME

-By-
S. Biswas

One of the main causes of declining turtle population of India is the intensive exploitation for the market consumption. Turtles supply a readily available source of cheaper food for the local tribal as well as the poorer section of urban and rural people. Another cause of some species of turtle being endangered in nature is the change of ecological balance due to human intervention.

The only hopeful feature in the struggle of the hopeless existance in the life of turtle in India is that there still exist some remote inaccessible and difficult places away from human habitation where the hungry hand has not yet reached or in natural waters where turtle exploitation is difficult and uneconomical (Biswas 1982). Another hopeful point for the existance is the religious sentiment of a section of Hindu, Muslim and tribals, some of whom think turtles are representative of God and to others whom turtle meat is forbidden. But this sentiment is not believed by all and the day is fast approaching when whatever restraint these sentiments may hold will vanish. In north and south India a major portion of population is still vegetarian but slowly even this food habit is being limited only to the higher caste of people. Now where turtles are not consumed by vegeterian and religious people they are being exploited for the markets where most people are non-vegetarian and there is demand in the market. Turtle or the meat is sold in most of markets of North Eastern India and people of this area usually prefer meat of freshwater turtle than that of sea turtles.

Therefore to save the turtle of India, first of all we shall have to identify the concerned species and at the same time its present status in nature is to be determined, so that we will be in a position to suggest the appropriate management programme for its conservation.

Out of the two families of freshwater turtle, Emydidae and Trionychidae, in my opinion, the species belonging to Emydidae are placed in a more disadventagous position in their struggle for existance due to their terrestrial, semiterrestrial and restricted or limited aquatic adaptation. The species of this family are more vulnerable and are easily brought to the threatened-status due to predation, exploitation and habitat destruction and that is why I presume comparatively population of Emydids usually have a more restricted distribution than Trionychids. Information on distribution and present status of the following species are necessary as we have little knowledge about them. I have mentioned below only some emydid species of India though there are several other species of the same ~~fait~~ family in the adjoining regions which need careful attention. The survey should be conducted in such a planned manner that that the report should contain species wise area of its distribution, approximate population population of the species in that area, causes of distributional limitation if there is any suggestion of future conservational or management programme etc. Out of all the above

mentioned species Batagur baska is the most endangered or almost extinct in the Sunderban area of West Bengal which was once its typical habitat. So far no information of its occurrence in Sunderban is available though in the Sunderban area of Bangaldesh this species still esists. A survey should be immediately conducted in collaboration with the Tiger Project of that area to find out the status of the species in that area. The survey will also find out the cause of Batagur disappearing from part of Sundarban in West Bengal and suggest future course of action for its rehabilitation.

Species	Status
Cyelemys mouhati Gray,	A few shells only were collected in North Cachar.
C. dentata Gray	Garo and Khasi Hills.
Geoclemys hamiltoni Gray	The distribution is generally known from Sind to Bangaldesh but data is lacking.
Morenia petersi (Blyth)	Jessore, Dacca, Fatehgarh, Bangladesh, Calcutta recorded doubtful.
Kachuga smithi (Gray)	Much rarer in the Ganges river system.
Melanochelys trijuga	Known to occur only from Kerala. Present information nil.
Heosemys silvatica (Henderson)	Only two specimens are known from Cochin (Kerala)
Kachuga sylhetensis (Jerdon)	Once known to occur in Garo, Khasi and Naga Hills but at present no knowledge.
Kachuga kachuga (Gray)	The distribution discontinus and localised and in S.India not confirmed.
Batagur baska (Gray)	Present occurance in India is boubtful.

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