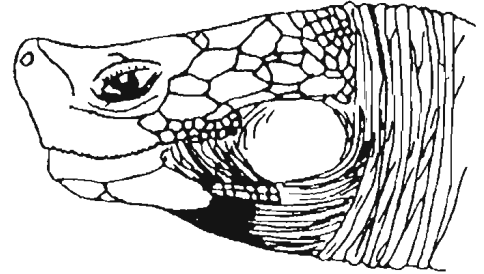


Rhodin

# IUCN/SSC FRESHWATER CHELONIAN GROUP

## NEWSLETTER



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Number 1  
February 1981

### NEWSLETTER

The FCSG newsletter will be issued irregularly as sufficient material accumulates. It will serve both as an organ of communication for the group and as a means of updating recent happenings in freshwater turtle conservation. In this regard, I encourage every member to submit news from their area including newspaper clippings, recent publications, and unpublished reports on turtles.

Send all materials for the newsletter to me (address listed above).

### FCSG ORGANIZATION, OBJECTIVES AND MODE OF ACTION

The Freshwater Chelonian Specialist Group comprises a Chairman (Edward O. Moll), a Vice Chairman (Russell Mittermeier) and three categories of membership -Regional Coordinators, Members, and Consultants-representing five geographical regions, 1) Nearctic, 2) Neotropical, 3) W. Palearctic and Ethiopian, 4) E. Palearctic and Oriental, 5) Australian). A list of tentative members for these regions has been submitted to Sir Peter Scott, Chairman of the IUCN Species Survival Commission who will make the final selections for membership (names and addresses of the nominees have been appended to the newsletter).

A chief responsibility of the Group is to keep informed of IUCN programs and annually to provide data on which the Species Survival Commission (SSC) Action Program may be based. This requires that we continually review the status of endangered and threatened chelonians, determine what actions are most necessary and practical and assign priorities to these actions. Our highest priority projects will receive first consideration for IUCN/WWF funding.

We are strictly an advisory group for the IUCN/SSC and are not authorized to adopt policies or positions for the SSC or make commitments on behalf of the SSC.

To accomplish the above, we will adopt a procedure that Russ Mittermeier has used successfully with the Primate Specialist Group. Members from each region will prepare and submit abstracts of each needed project, to their Regional Coordinator and Chairman. In so far as possible, the abstract should include the following information:

1. The title of the project.
  2. Where it will be done.
  3. When it will be done
  4. The personnel who will do the project.
  5. The amount of funding estimated.
  6. The objectives of the project.
  7. The justification of the project.
- (Sample abstract is attached)

Annually the coordinators will poll their membership to determine the priority of projects in their region. These priorities will then be submitted to the Chairman who, with the five regional coordinators, will determine global priorities for action which are submitted to the IUCN/SSC.

Once a project has been given a priority by consensus of the membership, the next step is implementation. As Chairman, I can assist you in this by suggesting sources of funding (and/or personnel), and by providing letters recommending the project in the group's name.

As the group was not completed in time to carry out this procedure for this year, the Chairman along with Russ Mittermeier, Anders Rhodin and Karen Bjorndahl recommended a list of projects to place on record with the SSC. A copy of this list has been appended to the newsletter.

We are not limited by this list, but it can be useful in promoting funding for these projects in the coming year. Quite likely, this list of priorities will be altered when the entire group has an opportunity to vote. However, these will serve as examples of the types of projects which we endorse.

Specific responsibilities of membership are:

Members:

1. Identify threatened species in their region.
2. Recommend needed conservation actions for these species.
3. Seek personnel and funding to implement needed action.
4. Vote on priorities within their region.

Regional Coordinators:

1. Direct the action of members within their region to avoid duplication of effort.
2. Advise the Chairman on problems within the region.
3. Annually poll the members on the priority of actions suggested for the region.
4. Vote on global priorities for action.

Consultants (persons having either political or scientific expertise useful to the group):

1. Advise the group on their recommended actions, but have no vote on the priorities.

#### IUCN/SSC AND CITES MEETINGS

The IUCN/SSC will next meet from 19 to 24 February in New Delhi, India. These meetings will immediately precede the Third meeting of the Conference of the Parties to CITES (Convention on International Trade in Endangered Species) from 25 February to 8 March. I will be attending both meetings and will report on any actions related

to freshwater chelonians in the next newsletter.

The only turtle related action of which I am now aware is that Dermatemys mawii will be proposed by the United States of America as an addition to CITES Appendix II (Threatened species).

### TECHNIQUES

The newsletter should serve the group as a forum for new techniques. The conservation and management of turtles is a relatively new field and for the most part the methodology has been little tested. Therefore information of both your successes and failures with different techniques will benefit all of us concerned with turtle conservation. Any contributions whether they be personal observations, publications by you or others, or newspaper articles will be most welcome.

For example, our group is usually working with threatened populations which necessitates obtaining data in ways that will not harm the animals. This presents an obvious handicap when trying to obtain precise data on subjects, such as diet and reproduction which traditionally have been studied by dissection. Such handicaps have been alleviated in the last few years by publications such as Legler (1977) which describes a stomach flushing technique and Ewert and Legler (1978) which describes hormonal induction of egg laying. Neither method requires expensive equipment.

We also must be cognizant of potential dangers involved in using new techniques for which long term effects are not known. For example, the use of styrofoam boxes and plastic garbage cans for incubating eggs has steadily increased because of the simplicity and high hatching success of these methods. We now find that sex determination of many turtles is temperature dependent and eggs incubated at relative low temperatures (as is often the case with styrofoam boxes) may produce only males. All members that presently utilize or plan hatcheries as a conservation technique should be familiar with the recent literature on this subject. Good reviews are given in the papers of Mrosovsky and Yntema (1980) and Bull and Vogt (1979).

Another controversial procedure is head starting (i.e. raising hatchlings in captivity for a period prior to release). The object of this procedure is to allow the hatchlings to grow larger and thus be less vulnerable to predators. On the other hand it is not known how a period of captivity effects those instinctive patterns of behavior necessary for survival or reproduction under natural conditions. An editorial in the Marine Turtle Newsletter (No. 15, May 1980) concerning this topic requested readers to send in their views. You will be kept posted on their comments and I would like to hear your views as well.

Hatcheries for Batagur baska in Perak, Kedah and Trengganu, Malaysia headstart hatchlings for one year. I am not aware of any other conservation project for freshwater chelonians that uses headstarting. If there are others, I would like to hear about them.

Techniques for capturing turtles are also of interest. While working with estuarine species in Malaysia, I was introduced to an effective technique that utilized tidal fluctuations of the river. Large riverine species such as Batagur and Callagur move into small streams at high tide to forage on bank vegetation and at ebb tide return back into the rivers. A low net, placed across the mouth of the stream, allowed turtles to swim over it at high tide but prevented them from returning to the main river at low tide. The trapped turtles buried themselves shallowly in the mud near the net and could be located with a rod or one's feet.

Additional techniques (old and new) have been reviewed by Vogt (1980). Let's hear about your special technique.

### LITERATURE CITED

- Bull, J.J. and R.C. Vogt. 1979. Temperature-dependent sex determination in turtles. Science 206: 1186-1188.  
(Lab of Genetics, Univ. of Wisconsin, Madison, Wis. 53706 USA).

Ewert, M.A. and J.M. Legler. 1978. Hormonal induction of oviposition in turtles. Herpetologica. 34: 314-318.  
(Dept. of Biology, Indiana Univ., Bloomington, Ind. 47401).

Legler, J.M. 1977. Stomach flushing: A technique for chelonian dietary studies. Herpetologica. 33: 281-284.  
(Dept. Biology, Univ. of Utah, Salt Lake City, Utah 84112, USA).

Mrosovsky, N. and C.L. Yntema. 1980. Temperature-dependence of sexual differentiation in sea turtles: Implications for conservation practices. Biol. Conservation. 18: 271-280.  
(Dept. Zool., Univ. Toronto, Toronto M5S 1A1, Canada)

Vogt, R.C. 1980. New methods for trapping aquatic turtles. Copeia 1980: 368-371.  
(Sect. Amphib. and Reptiles, Carnegie Museums of Nat. Hist., Pittsburgh, PA 15213, USA).

#### RED DATA BOOK REVISION

The turtle part of the IUCN Red Data Book (RDB) is currently being revised by Dr. Brian Groombridge, the new compiler for amphibians and reptiles. A list of the freshwater chelonia being considered for inclusion is appended to the newsletter. Following each name is its CITES designation (I= Endangered, II= Threatened), then the former RDB designation (E= Endangered, B= Vulnerable, R= Rare, I= Indeterminate). A dash (-) represents no previous designation.

Look over these species, if you have recent information or feel species should be added or excluded, contact Dr. Groombridge at the following address:

SCMU/ 219 C Huntingdon Road  
Cambridge CB3 0DL  
England

#### OFFICE OF U.S. ENDANGERED SPECIES: PROGRESS AND SETBACKS

In 1977, the U.S. Fish and Wildlife Service announced that it was reviewing the status of 12 species of freshwater turtles to determine whether any or all should be proposed for listing as Endangered or Threatened Species (Federal Register 6/6/77). These species were:

<u>Common name</u>	<u>Scientific Name</u>
Alabama red-bellied turtle	<u>Pseudemys alabamensis</u>
Suwannee cooter	<u>Pseudemys concinna suwanniensis</u>
Red-bellied turtle	<u>Pseudemys rubriventris</u>
Cagle's map turtle	<u>Graptemys caglei</u>
Yellow-blotched turtle	<u>Graptemys flavimaculata</u>
Ringed sawback	<u>Graptemys oculifera</u>
Sabine map turtle	<u>Graptemys pseudogeographica sabinensis</u>
Texas map turtle	<u>Graptemys versa</u>
Key mud turtle	<u>Kinosternon bauri bauri</u>
Illinois mud turtle	<u>Kinosternon flavescens spooneri</u>
Flattened musk turtle	<u>Sternotherus depressus</u>
Black-knobbed sawback	<u>Graptemys nigrinoda</u>

To date only one subspecies of this group, Pseudemys rubriventris bangsi, has been listed. This subspecies was designated endangered (Federal Register

4/2/80) with "Critical Habitat" designated in Massachusetts.

Another species gained considerable notoriety, but was not listed. The Illinois Mud Turtle exists today in a few scattered localities in SE Iowa, NE Missouri, NW and Central Illinois. Other than a large population (est. 1000+) in Iowa had a moderately sized one in Missouri (est. 100+) most populations comprise only a few individuals. Their most serious threat appears to be habitat destruction resulting from farming activities.

The proposal to list the animal as endangered was met with opposition from Monsanto Chemical Company whose plant grounds fell within the proposed "Critical Habitat". Fearing government interference in their operations, Monsanto spent half a million dollars on study and conservation of the turtle. Results from the study were used to challenge the listing.

Public hearings were held in early 1980 along with a review of the available data by a panel of specialists on 7/6/80. The turtle, despite being the subject of one of the most intensive studies ever conducted on a freshwater chelonian, was not listed by the U.S. Fish and Wildlife Service on the grounds that insufficient information was available.

According to present law, if listing has not occurred within two years of being proposed, the species is withdrawn from consideration. This is now the case with the Illinois Mud Turtle as well as the Key Mud Turtle.

In recent action, Drs. C.J. McCoy and R.A. Vogt of the Carnegie Museum have submitted status reports to the OES concerning Graptemys flavimaculata, G. nigrinoda, G. oculifera and Pseudemys alabamensis. Based on fieldwork conducted in 1979, they recommended that the former and latter be considered threatened. Dr. Robert Mount of Auburn University is conducting similar studies on the Flattened Musk Turtle Sternotherus depressus.

#### STATUS OF CAT ISLAND TURTLE TO BE STUDIED

Dr. Garrett Clough as an adjunct to his project, "Conservation and biology of the Bahamian Hutia, an endangered mammal" will survey the present status, habitat, condition and human use of the rare Cat Island turtle, Pseudemys felis. Dr. Clough is being funded by the New York Zoological Society and World Wildlife Fund U.S. This marks the first project from our list of priorities to be funded.

#### REPORTS AND PUBLICATIONS:

Members are encouraged to submit copies of their own publications and citations of any publication dealing with conservation and/or ecology of freshwater chelonians. These will be assembled periodically and listed in this section of the newsletter. When available, the address of the senior author will be included in parentheses following the citation to facilitate sending requests for reprints.

The following is a selection of recent publications which I felt may be of general interest to the Group.

- Dodd, C.K. 1979. A bibliography of endangered and threatened amphibians and reptiles in the United States and its territories. Smithsonian Herpetological Service (46): 1-35.  
(Office of Endangered Species, U.S. Fish and Wildlife Serv., Washington D.C., 20240 USA)
- Dunson, W.A. and E.O. Moll, 1980. Osmoregulation in sea water of hatchling emydid turtles, Callagur borneoensis, from a Malaysian sea beach. J. of Herpetology 14: 31-36.
- Graham, T.E. 1980. Red-belly blues. Animals 113(1): 17-21. (A popular account about the endangered Plymouth Red bellied turtle- Dept. of Biol., Worcester State College, Worcester, MA, 01602 USA)
- Harless, M. and H. Morlock (eds) 1979. Turtles: perspectives and research. John Wiley and Sons, New York.
- Hall, R.J. 1980. Effects of contaminants on reptiles: A review. U.S. Dept. Interior FWS, Special Scientific Report (228): 1-12.  
(U.S. FWS, Patuxent Wildlife Research Center, Laurel, Maryland 20811 USA).
- Iverson, J.B. and S.A. Iverson. 1980. A bibliography to the mud and musk turtle family Kinosternidae. Smithsonian Herpetological Service (48): 1-73.  
(Dept. Biol., Earlham College, Richman, Indiana 47374 USA)
- Landry, J.L. 1979. A bibliography of the bog turtle, Clemmys muhlenbergii. Smithsonian Herpetological Service (44): 1-21.  
(NY State Dept. of Environmental Conservation, Delmar, N.Y. USA)
- Legler, J.M and J. Cann. 1980. A new genus and species of Chelid turtle from Queensland, Australia. Contrib. Sci. Natur. Hist. Mus. Los Angeles Co. 324: 1-18.
- Moll, E.O. 1980. Tuntong laut, the river turtle that goes to sea. Nature malaysiana 5(2): 16-21.  
(a popular account of the Asian river turtle Callagur)
- Pritchard, P. 1979. Encyclopedia of turtles. T.F.H. Publ. Inc., Neptune, N.J.
- Smith, H.M. and R.B. Smith 1979. Synopsis of the herpetofauna of Mexico. Vol VI. Guide to Mexican turtles. John Johnson, North Bennington, Vt.
- Wirot, N. 1979. The turtles of Thailand. Siam Farm, Bangkok.

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SAMPLE ABSTRACT

Status Survey of the Painted Terrapin  
(Callagur borneoensis)

Area: Peninsular Thailand, W. Malaysia, Sarawak, Sabah, and Sumatra.

Inclusive Dates for the Project: 1982-83.

Personnel: Edward O. Moll  
Department of Zoology  
Eastern Illinois University  
Charleston, IL USA

Funds Requested: Approx. \$10,000

Project Rating: Highest Priority

Objectives: The study seeks to determine what populations are most in need of conservation action and to identify those factors responsible for the problems.

Specific procedures will be:

- 1) Visit major nesting areas throughout the range.
- 2) Interview egg collectors to obtain estimates of turtles numbers and information on mortality.
- 3) Identify suitable sites for hatcheries and sanctuaries
- 4) Create public awareness of problems through articles and lectures.

Justification and Background:

Callagur borneoensis is a large (500 mm CL) estuarine turtle that usually nest on sea beaches along with sea turtles (Moll 1980, Dunson and Moll 1979). Reproductive potential is low (10-12 eggs/clutch, 2 clutches/year) compared to most large river turtles.

The species is heavily exploited for its flesh and eggs. In peninsular Malaysia where it is best known, the latter is most important. Turtle eggs are much in demand due to their reputed aphrodisiac qualities. Callagur eggs are preferred over those sea turtles due to their larger size (65x42mm) and superior taste.

Siow and Moll (In Press) estimated the annual egg production for the East coast states of peninsular Malaysia (Kelantan, Terengganu Pahang and Johore) as 16000 eggs per year. This would translate into approximately 650 nesting females. Although no base line data were available for comparison, egg collectors of these states generally agreed that the numbers of nesting females had greatly declined in the last two decades.

Primary causes for decline in this region of Malaysia seem to be overexploitation of eggs. Most East Coast nesting areas are licensed to egg collectors. The egg harvest is very efficient and nearly all eggs laid are removed. Even in areas where Callagur have become quite rare, the concurrent egg production of sea turtle species is sufficient to make continued collection profitable.

Needed conservation actions include the establishment of hatcheries and/or sanctuaries. In the Malaysian hatchery system, eggs are purchased from egg collectors and are reburied in fenced areas of beach. Sanctuaries prohibit visitors and disturbance of nesting females. However, egg collection is allowed by a licensed collector in return for a percentage of the eggs for reburying.

To date one hatchery has been set up for Callagur at Mangkók, Trengganu. This hatchery established in 1978 is administered by the Trengganu Fishery Department. Approximately 1000 eggs per year are purchased for the hatchery (Siow and Moll, In Press).

A heavy demand for turtle eggs coupled with low reproductive potential, and stereotyped reproductive habits make Callagur one of the most seriously threatened river turtles in SE Asia.

#### LITERATURE CITED

- Dunson, W. A. and E. O. Moll. 1980. Osmoregulation in sea water of hatchling emydid turtles, Callagur borneoensis from a Malaysian sea beach. J. Herpetol. 14:31-36.
- Moll, E. O. 1980. Tuntong taut, the river turtle that goes to sea. Nature Malaysia. 5(2): 16-21.
- Siow, K. T. and E. O. Moll (In Press, 1981). Status and conservation of estuarine and sea turtles in West Malaysian waters. in Bjorndal, K. A., ed. Proceedings of the World Conference on Sea Turtle Conservation Smithsonian Institute Press, Washington D.C.



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Freshwater Chelonian Specialist Group

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\* Suggested as Regional Coordinator

Notify me of **changes** needed in your  
address or title.

FCSG PRIORITIES  
FRESHWATER CHELONIAN PROJECTS  
1981

HIGHEST PRIORITY

Conservation of the endangered endemic turtles of the Cuatro Ciénegas Basin, Coahuila, Mexico (Terrapene coahuila, Trionyx ater, Pseudemys scripta hiltoni)

Conservation and captive breeding of Pseudemys umbrina

Status survey of river turtles in West Bengal, India

Conservation of Bahamian Pseudemys

Management of river turtle populations of West Bengal

Current status and distribution of the endangered chelid Phrynops dahlia in northern Columbia

Ecology and conservation of the Magdalena river turtle (Podocnemis lewyana) from northern Columbia

Status survey of the river terrapin, Batagur baska in South and South East Asia

Conservation of Batagur baska in Thailand

Ecology and conservation of the giant Amazonian river turtle, Podocnemis expansa and related species (e.g., P. unifilis, P. sextuberculata, P. erthrocephala in Brazilian Amazonia)

Systematics, distribution and ecology of eastern and central Brazilian chelid turtles

Status survey of the painted terrapin, Callagur borneoensis and the Bornean terrapin Orlitia borneensis in the Malay archipelago

Status survey of the Central American River turtle Dermatemys mawii in Mexico

HIGH PRIORITY

Economic potential of long-term management and conservation programs for Carettochelys insculpta

Ecology and reproduction of Carettochelys insculpta

Status survey of the short-snouted softshell, Pelochelys bibroni in Malaysia and Thailand

Ecology and conservation of the giant Amazonian river turtle, Podocnemis expansa and related species (e.g. P. unifilis, P. sextuberculata in Peruvian Amazonia).

HIGH PRIORITY (cont.)

Ecology and conservation of the spiny turtle, Heosemys spinosa

Status survey of big headed turtle, Platysternon megacephalum

Captive breeding of the endangered endemic turtles of the Cuatro Ciénegas Basin Coahuila Mexico

Status survey of rare Mexican kinosternids

PRIORITY

Distribution and status of freshwater turtles in Northern Argentina and Uruguay (e.g., Platemys pallidipectoris, P. spixi, Pseudemys dorbigny and others)

Captive breeding of rare and endangered eastern and central Brazilian chelid turtles

Ecology and conservation of Podocnemis voglii in the llanos of Columbia and Venezuela

Distribution, ecology and conservation of rare and little known Rhinoclemmys in Central and South America (e.g., Rhinoclemmys nasuta, R. areolata, R. pulcherrima spp. etc.)

FRESHWATER CHELONIA BEING CONSIDERED FOR RED DATA BOOK

Carettochelyidae

Carettochelys insculpta

Dermatemydidae

Dermatemys mawii -/V

Kinosternidae

\* Kinosternon flavescens spooneri -/-

Emydidae

Batagur baska I/E

Callagur borneoensis -/-

Clemmys muhlenbergii II/V

Geoclemmys hamiltonii -/-

Kachuga tecta tecta I/-

Melanochelys tricarinata I/-

Morenia ocellata I/-

Pseudemys felis -/-

P. malonei -/R

P. rubriventris bangsi -/-

P. scripta callirostris -/-

Trionychidae

Lissemys punctata punctata I/-

Trionyx gangeticus I/-

T. hurum I/-

T. nigricans I/-

T. ater I/-

Pelomedusidae

Erymnochelys madagascariensis II??/?

Peltocephalus tracaxa II?/-

Podocnemis expansa II/F

P. lewyana II??/?

P. erthrocephala II/-

P. sextuberculata II/-

P. unifilis II/V

P. vogli II/-

Chelidae

\* Phrynops dahli -/-

\* P. hogei -/-

\* Platemys pallidipectoris -/-

\* P. rufipes -/-

Pseudemydura umbrina I/E

\* No previous listing.