The 1979 nesting season for the Atlantic ridley has closed with mixed auguries. There were 540 encounters with adult turtles on the beach at Rancho Nuevo and 361 animals were tagged. Of these 111 were seen again during a second nesting; 53 turtles carried tags from previous years, mostly from 1978. These figures were supplied by Peter Pritchard of the Florida Audubon Society before the season was quite over and may be subject to minor revisions.

Tagging has been carried out for many years on this Population. The small number of tag returns, 53, is puzzling. Perhaps tag loss is high, perhaps there is a large mortality, perhaps many ridleys do not nest every year as supposed or perhaps maturation is relatively fast. Nevertheless only a few hundred turtles came ashore this year, a figure similar to that of recent years. There is no sign that the Atlantic ridley is recovering.

The number of eggs protected, however, almost 98,000, was greater this year than last year (see Márquez, R., Marine Turtle Newsletter No. 9. Dec. 1978). Most eggs were reburied in the sand; only about 5,500 were incubated above ground in styrofoam boxes. Unfortunately the impact of this hard work by the joint Mexican-USA team might be offset by the huge oil slick offshore.

With so few adults nesting and the strains imposed by shrimping and perhaps pollution, it is not merely pessimistic but also prudent to wonder if this species can survive in its natural habitat. And if it cannot, what then? A number of people have considered it wise to establish a small captive breeding stock as an insurance policy. This could serve as a gene pool until prospects for this species in the wild are better and knowledge of turtle biology advanced sufficiently to make reintroduction possible. The Cayman Turtle Farm has offered to provide some facilities and help. Printed below is a Statement of Intent for the establishment of such a gene pool there. Because turtle farming remains controversial (see also USA Department of Commerce press release below), it is necessary to mention that this statement is not a legally binding document implying any very particular arrangement, but rather a statement that a number of people would like to see such a scheme tried. The details remain to be worked out. Opinions on farming, and on other matters that may be just as important to turtle...

* Address all correspondence to: N. Mrosovsky, Departments of Zoology and Psychology University of Toronto Toronto, Ontario M5S 1A1, Canada
conservation, often are divided, but there is little doubt now that notable progress has been made at the Cayman Farm in breeding farm raised turtles. Some of their results will be presented by Jim Wood at the Sea Turtle Symposium in Tampa, Florida, this December (see Marine Turtle Newsletter No. 11, March 1979). There is much to be said for using their facilities and expertise if available.

Also printed below is another proposal, by George Balazs, for breeding Atlantic ridleys in captivity, in this case in zoos and aquaria. These two plans are not mutually exclusive. Certainly zoos should be encouraged to cooperate in breeding with any ridleys they already hold. However, if hatchlings have to be taken from headstarting operations there may be constraints on how much can be attempted.

Whatever the relative merits of these plans, and their chances of success, they reflect the fact that the once bounteous and magnificent arribada of Atlantic ridleys is a thing of the past and the danger of losing this species forever is real.

Ending on an even more pessimistic note, while people are worrying about the extinction of the Atlantic ridley, this process appears to be repeating itself elsewhere, in India. We have rather little information about the turtle situation there, partly because of lack of funds for fact finding, but reprinted below is an item on the mass slaughter of olive ridleys in Orissa. According to one correspondent the number killed was not near a million, but nobody seems to know what the figure was. We hope the Indian authorities are familiar with the dismal chronicle of the Atlantic ridley.

N.M.

STATEMENT OF INTENT

To whom it may concern:

Recognizing the vital importance of the current and ongoing efforts by the Departamento de Pesca, Mexico, to restore and perpetuate the only known breeding colony of the endangered Kemp's Ridley Turtle (Lepidochelys kempi [Garman]) and motivated by the desire to assist this laudable effort in every possible way, acknowledging the essential approval and cooperation of Mexico, we are agreed that it appears desirable at this time to establish a captive breeding colony of Kemp's Ridley Turtle to ensure preservation of this genetic entity, if efforts to preserve the species in the wild should fail. Also the establishment of this captive colony should in no way lessen the vigour of the efforts to preserve the species in the wild.

We are agreed that Cayman Turtle Farm Ltd. facilities with its existing scientific and technical personnel appear to offer the best prospects at this time, for the housing of this captive colony. We are agreed that this colony should not be drawn from the Mexican adult turtles, but that this stock should be derived from existing aquarium specimens, accidentally caught individuals, and/or individuals from the 1978 hatch currently in the hands of the U.S. National Marine Fisheries Service.
We are agreed that the management of the captive colony should be guided by a non-profit corporation dedicated to the propagation of the species, which shall establish overall policies for the colony in accordance with technical advice by the scientific director of Cayman Turtle Farm Ltd. This corporation shall be managed by a board of directors, which shall as a minimum include the Chief of the Nacional Sea Turtle Project of the Mexican Instituto Nacional de Pesca, Mexico, as an ex-officio member, as well as representatives of major non-governmental conservation organizations. It is considered important that the corporation shall have the endorsement of the bodies represented by the individual directors. The number of individual Ridleys kept by Cayman Turtle Farm Ltd. shall be mutually agreed upon by Cayman Turtle Farm Ltd. and the board of directors. This stock will be held in trust for the corporation only for propagation of the species. The sole intent of the signatories of this agreement, the proposed corporation, and its described activities is the safeguarding and augmentation of the species in its natural, wild state and no animals shall be disposed of for any other ultimate purposes.

We are agreed that the services provided for this purpose by Cayman Turtle Farm Ltd. shall not be utilized for promotional purposes, but that open channels of communication with all concerned scientists shall be maintained.

We are agreed that the costs of maintaining the initial captive stock for at least the first year of operation shall be arranged by Cayman Turtle Farm Ltd., and that subsequently, when the incremental costs of housing and maintaining those animals have been determined, discussions will be entered into for subsequent funding.

The actual investigations of the mechanics of this agreement shall be pursued by Prof. L.D. Brongersma, London, and Dr. P.C.H. Pritchard, Oviedo, Florida.


Signers: Prof. L.D. Brongersma Dr. G.H. Hughes
Dr. P.C.H. Pritchard Ross Witham
Prof. L. Ehrhart Prof. J.R. Hendrickson
Prof. N. Mrosovsky Dr. J.R. Wood
Dr. J. Mittag Herr Dr. H. Mittag
Dr. R. Marquez Millan

AN ADDITIONAL STRATEGY FOR POSSIBLY PREVENTING THE EXTINCTION OF KEMP'S RIDLEY, LEPIDOCHELYS KEMPI

The Kemp's ridley sea turtle is seriously endangered with extinction, having declined at its sole rookery of Rancho Nuevo (Mexico) from an estimated 40,000 nesting females in 1947 to 500 in 1978. While the reasons for this decline have not been fully documented, drownings in shrimp trawls appear to be a significant factor.

In 1978, intensive but nevertheless experimental management efforts to save the species were jointly initiated by government agencies of the United States and Mexico. These efforts include the captive rearing of hatchlings to a juvenile size prior to release.
(headstarting), and exposure of eggs and hatchlings to the sand and beach environment of Padre Island (Texas) with the objective of establishing a new rookery. Even under ideal conditions, a number of years will be required to fully assess the effectiveness of such trial manipulations. Considering the small remaining breeding population, the rate of decline, and the length of time likely required to reach sexual maturity, the species could very well become extinct before an accurate determination can be made of the results of these recovery efforts.

An additional strategy needs to be implemented immediately that will provide some hope for the survival of the species in captivity, should it not prove possible to maintain the naturally occurring population. A reservoir of captive Kemp's ridleys should be established through the dissemination of hatchlings to responsible and consenting aquariums, oceanariums and appropriate zoological facilities in the United States, Mexico and other countries. Such a survival plan could involve 50 or more different facilities each being consigned a small group of hatchlings (4-10) for rearing and permanent maintenance in captivity. The actual number accepted would be dependent upon available holding and display space, as well as individual budgetary constraints.

Such a plan for establishing what will hopefully be a future captive breeding stock has several important advantages. For instance, financing would be minimal because each facility would absorb the small additional costs involved in caring for the number of turtles they have agreed to accept. Furthermore, the dispersal of turtles to many facilities would provide a valuable safeguard against a high percentage stock loss from an unpredictable disaster (i.e. disease, storm, vandalism) such as could take place if all the turtles were housed at only one or two locations. Dispersal to many facilities would also foster widespread public awareness as to the plight of the species, thereby possibly stimulating conservation efforts with other sea turtles in their natural habitat.

The number of hatchlings (200-500) needed to implement this plan would be relatively small, representing 6-16% of the hatchlings used in the 1978 headstarting effort. In addition, as a last remaining hope for the survival of the species, the plan should experience only minimal difficulties in securing the necessary permits or permit waivers under the U.S. Endangered Species Act or other protective laws currently in effect.

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IMPORT RESTRICTIONS ON MARINE SEA TURTLES AND TURTLE PRODUCTS NOW IN EFFECT (U.S.A. DEPARTMENT OF COMMERCE, PRESS RELEASE 20 JUNE 1979)

Regulations prohibiting the importation of all marine turtles and marine turtle products produced in mariculture operations are now in effect. Import restrictions went into effect May 25, 1979, by order of the U.S. District Court for the District of Columbia. The regulations provide that supplies of turtle meat and products may be sold in interstate commerce until September 6, 1979. After September 6, 1979, it will be unlawful under the Endangered Species Act to deliver, receive carry, transport, ship, sell or offer for sale, marine turtles or marine turtle products in interstate commerce. The purpose of this Notice is to allow persons the opportunity to dispose of present stocks of marine turtle meat and products.


INDIA: MASS SLAUGHTER OF SEA TURTLES
(reprinted from Hamadryad, Newsletter of the Madras Snake Park Trust, 3, No. 3, September 1978, p. 8).

T.A. Davis and Rajesh Bedi have very disturbing news about the widely publicized sea turtle rookery (one of the world's largest) at Gahirmatha in Orissa state. Their report, published in the Jan.-March '78 issue of "Environmental Awareness" states that though the 176 nesting season (Jan.-March) brought over 1,58,161* nesting female Lepidochelys olivacea ashore, not a single turtle nested on this beach in '77. The authors visited Gahirmatha on 12 February of this year, and saw hundreds of Ridleys carcasses on the beach. Forest officials counted 478 dead turtles on a 14 km coastal stretch.

The carcasses, of both males and females, were 7-10 days old, and the fore-flippers of some were tied with wire. It is obvious that launches were responsible for this slaughter and the rotting animals at Gahirmatha must have been abandoned turtles that had died on board due to overcrowding and suffocation. The total number of Ridleys captured (apparently while mating) must be staggering.

This report again brings home the question of whether it is wise to publicize the habitats, nesting locations, etc. of commercially valuable and endangered animals such as sea turtles. (In '76, several newspapers carried extensive reports about this nesting beach, which incidentally lies within the Bhitar Kanika Wildlife Sanctuary). The Forest Department alone cannot handle this problem since the poachers have power launches operating several miles offshore. The Fisheries and naval personnel could provide valuable assistance in apprehending poachers and it is hoped that this possibility will be seriously investigated and implemented well before the '79 nesting season begins.

* (this figure appears to be misprinted - N.M.)
ASCENSION ISLAND: INTERIM REPORT

Following an appeal by Jeanne Mortimer in a previous Marine Turtle Newsletter (No. 10, Jan. 1979, p. 7-8) for people to express their views on a proposal to develop Ascension Island as a resort area, about 40-50 people have written to the British authorities. This is an estimate based on the copies of 38 letters or equivalent information received by your editor. In addition conservation organizations in the U.K. have been alerted to the situation, partly through the efforts of K.E.L. Simmons (Dept. Psychology, University of Leicester, Leicester, England). Copies of the Marine Turtle Newsletter have also been sent to the press in Britain. The response from the Netherlands has been particularly vigorous; more than half the letters of which your editor has copies have come from that country, including one from a teacher and her class. By comparison, considering the number of people concerned with sea turtles in the United States, the interest in this matter there has been rather modest. Overall, however, there has been enough input to the authorities in Britain to alert them to the concern felt about building hotels near the small beaches used by green turtles on Ascension Island. An official sent there as part of the pre-feasibility study had extra time to study the situation first hand after being trapped on the island by gales. From replies received from the Foreign Office to letters and other information, it seems likely that the views of conservationists about Ascension Island will be given serious and fair consideration. The final outcome, however, still remains uncertain.

N.M.

PERU

Presently I am conducting a marine turtle survey of the Peruvian coast which is funded by the New York Zoological Society. While we have found turtles nesting only to a limited extent in northern Peru, and evidence of past breeding areas, we are documenting the extent of exploitation among the four species of turtles that occur. The study has been hampered to a certain extent by a limited access to literature. I would greatly appreciate any help concerning reprints related to marine turtles as well as corresponding with anyone conducting research on eastern pacific turtles.

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Support for this newsletter came from World Wildlife Fund Canada and the University of Toronto.
RIDLEY WITH V MARK

An olive ridley turtle with a v mark on its carapace was found at Escobilla, Oaxaca, Mexico, on 25 Nov. 1978. This turtle has now been tagged, C-02805. If anyone knows the origin of this mark, please contact Biol. R. Marquez, Apdo Postal 79-052, Col. Doctores, Mexico 7, D.F.

N.M.

MUTILATED LOGGERHEADS


More than 60 dead loggerheads have been washed ashore along the Texas coast this year. About 45-50% of these appeared to have been mutilated, with cuts in the throat, neck and flippers, and flippers missing sometimes. Most of the turtles were juveniles (about 18-27 kg). This suggests the incidents occurred at sea. The U.S. National Marine Fisheries Service is investigating the matter. If anyone has further information about this, the editor of this newsletter would appreciate hearing.

N.M.

RECENT PAPERS

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(scanning electron microscope study shows egg shells from farm reared turtles have blocks of calcite and aragonite spherulites, eggs from feral turtles only have the aragonite).


(what happens to the green turtle and to the cultures that use it when shifts occur from harvesting for local subsistence to exploiting for foreign markets).


(sphincters on pulmonary arteries described; speculates that shunting regulates heat flux with the environment).


(more data showing leatherbacks maintain temperatures above ambient., maximum differential >7ºC in this study; loggerheads on same beach up to 4ºC warmer than the sea).

MISCELLANEOUS PUBLICATIONS

Ehrhart, L.M. 11 Jan. 1977, 30 June 1977, 20 Jan. 1978, 25 July 1978, 2 Jan. 1979. A continuation of base-line studies for environmentally monitoring space transportation systems (STS) at John F. Kennedy Space Center. Five reports to NASA, John F. Kennedy Space Center, Biomedical Office, Code MD-B. These reports include data on interesting intervals and morphology of turtles nesting at the Kennedy Space Center, and their eggs. Dimensions of 143 cold stunned turtles found in lagoons which may serve as nurseries for immature turtles. Discussion of incidental catch by shrimpers, hibernation in Canaveral shipping channel and recommendations for Critical Habitat designation. The reports mainly concern loggerheads but data on green and Atlantic ridleys also included. Copies may be obtained from L.M. Ehrhart, Florida Technological University, P.O. Box 25000, Orlando, Florida 32816, U.S.A.

Henderson, G.E. (Editor), 1978. Proceedings of the Florida and Interregional Conference on Sea Turtles, 24-25 July 1976, Jensen Beach, Florida. Florida Department of Natural Resources, The Chelonia Institute (P.O. Box 9714, Arlington, Virginia 22209, U.S.A.), a non-profit organization concerned with the preservation of sea turtles, was primarily responsible for publication of these proceedings and will supply a reasonable number of copies free of charge upon request.
BOOK REVIEW: TURTLES: PERSPECTIVES AND RESEARCH


This book attempts to survey all aspects of chelonian biology and behaviour, a formidable task that has produced an adequate but not outstanding general text on turtles. There are 30 contributed papers, grouped under 6 major headings: 1) Methods, 2) Vital Functions, 3) Sensory Processes, 4) Reproduction & Development, 5) Behaviour, and 6) Population Dynamics, with an introductory paper on Taxonomy, Evolution, and Zoogeography.

The Methods section is straightforward, giving general information on collecting and mark-recapture techniques, photography (superficial treatment), maintenance in captivity, growth rates and population dynamics. This section is a review of field and laboratory techniques generally acquired in undergraduate training and is also applicable to a large number of non-chelonian species. Within the methods section is an informative paper on anaesthesia and surgery which gives a synopsis of drugs and their dosages, as used by various workers. Most of the data pertain to freshwater and terrestrial turtles. Problems associated with anaesthesia and surgery are examined.

The Vital Functions section is adequate and covers the cardiovascular system, CNS, a good paper on respiration (mainly dealing with freshwater turtles), thermoregulation and a useful paper on feeding, drinking and excretion. The section on Sensory Processes is relatively comprehensive with an interesting paper on Behaviour and Olfaction. Within the Reproduction and Development section is a major paper on The Embryo and Its Egg, with extensive tables on egg characteristics, incubation periods and a discussion on morphological variations and deformities and a description of the development of the egg.

The section on Behaviour deals with learning, locomotion, social behaviour, rhythms and a paper on nesting habits with a heavy bias towards marine turtles. The final section on Population Dynamics devotes a paper to marine turtles, one to terrestrial and the last to freshwater turtles. These papers are somewhat discouraging in that they illustrate how little is known about population dynamics of turtles.

Considering the number of contributors, the book has emerged as relatively cohesive, drawing together, as well as might be expected at this time, the many and varied aspects of turtle biology into one text. It has attempted with dubious success to synthesize a subject that is still very much fragmented. Time and again various papers illustrate by lack of sufficient data just how much remains to be learned about turtle biology and behaviour.

The book is not up-to-date. Some authors have tried to remedy this by adding addenda at the end of their papers. However one paper published in 1974 is cited as being in press. It is perhaps unfortunate that one big bibliography was used instead of a separate one for each paper. The savings in time to the reader might well have outweighed the cost to the publisher. Nonetheless the bibliography is extensive and a good place to start if one wants to get a handle on the literature.
Turtles: Perspectives and Research would be most useful for the beginning student of turtle biology as a general reference text. An added bonus for the beginning student is that many authors identify the problems that require more research. However, keep in mind that the literature after 1974-5 is not well covered.

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WORLD CONFERENCE ON SEA TURTLE CONSERVATION

The World Conference on Sea Turtle Conservation is being held under the joint auspices of the following U.S. government agencies and private organizations which comprise the Conference Steering Committee: World Wildlife Fund - U.S., Defenders of Wildlife, New York Zoological Society, National Marine Fisheries Service, U.S. Fish & Wildlife Service, U.S. Department of State, Center for Environmental Education. Russell E. Train, President of World Wildlife Fund - U.S., is Chairman of the Steering Committee. The Conference will assemble for the first time an international forum of scientists, conservationists and government officials for catalytic efforts directed at finding solutions to sea turtle conservation problems, as well as focusing public attention on an urgent species and resource conservation problem. The Conference will be held at the Conference Center in the U.S. State Department, Washington. D.C., November 26-30, 1979. A final agenda including the titles of sessions, panels and invited papers is available from the Conference Coordinator.

Proposed session: topics include: Value and importance of sea turtles, present knowledge of sea turtle biology, major threats to survival, review of the status of world populations of sea turtles, review of existing protective legislation and management, conservation strategy: recovery plans, treaties, etc.

Conference scientific committee: George Balazs (Hawaii Institute of Marine Biology), Mona Bjorklund (United Nations Environment Program), Archie Carr (University of Florida), Ken Dodd (U.S. Fish & Wildlife Service), David Ehrenfeld (Rutgers University), Wayne King (Florida State Museum), Tom Lovejoy (World Wildlife Fund - U.S.), Peter Pritchard (Florida Audubon), James Tyler (National Marine Fisheries Service).

Scientific papers: Papers related to topics above will be invited by the Scientific Committee. Time will preclude the presentation of unsolicited papers. The official conference language is English.

Attendance: Participant & Observer Status: All persons wishing to attend the Conference should write to the Conference Coordinator (Vivian Silverstein, 1244 19th Street, N.W., Washington, D.C. 20036, U.S.A., Tel. 202-659-9510) by Oct 15. Space is limited and participants' names must be listed at the State Department prior to the Conference opening.
Lodging: Participants requiring hotel accommodations must make their own reservations.

Transportation: Travel assistance is available only to invited speakers.

Address all correspondence to: Vivian Silverstein, 1244 19th Street N.W., Washington, D.C. 20036, U.S.A.

SEA TURTLE PROTECTION NEEDED AT THE CAPE VERDE ISLANDS

During my last visit to the Cape Verdes in summer 1977, I had a chance of obtaining information on the capture and trade of sea turtles. The Cape Verde Islands, lying about 500 km west of Africa, is an independent republic and includes about 15 reasonably sized islands, 9 of them inhabited. Hawksbill and loggerhead turtles are the species mostly caught. I talked with fishermen bringing in an adult female loggerhead at Boa Vista and they told me that they caught about 10-12 large sized turtles a month. Extrapolating from this figure for one island, probably about 1000 adult turtles are caught per year around the whole archipelago. This rate of exploitation does not take into account the losses in eggs resulting from daily searches made on the wide sandy beaches by inhabitants of the islands. The trade in turtle products is mainly accounted for by one European country, Belgium; preserved turtle shells and jewelry are frequently exported there. A turtle shell costs about $20 USA.

Consultations have taken place with the Cape Verdels Minister of Fisheries, Mr. Bettencourt. He is agreeable to the idea of a protection plan for sea turtles, if international interest and assistance would be forthcoming. For planning this project, reports on successful sea turtle conservation systems, reprints of relevant papers and suggestions are wanted.

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STOP PRESS

About 75% of this season's Atlantic ridley hatchlings at Rancho Nuevo were released before the oil spill arrived. The air-lifting of hatchlings beyond the spill by Pemex helicopters is designed to prevent the last 25% from hitting the spill. The intention is to locate mats of Sargassum offshore well away from the oil and put the turtles down there.