

Marine Turtle Newsletter

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EDITORIAL

Readers of this newsletter receive it free; nothing is asked except an interest in the subject. This time, however, we ask readers not to give money but to write to Mrs. Ghandi about the slaughter of turtles in India.

Huge numbers of olive ridleys nest along the coast of Orissa and West Bengal. At Digha, West Bengal, thousands of animals are killed each year (Bobb, D. 1982, India Today, 31, 64-65) and this has been confirmed by reliable sources. Not only are the turtles being killed despite legislation against commercial use, but in some cases unnecessary suffering is caused by cutting up the turtles before killing them (Dilip, op. cit.; see also "Turtle Slaughter in India", below). Off Gahirmatha, Orissa, "annually about 500 Ridley carcasses, the flippers of most of which are securely tied by iron, plastic or nylon wires are being washed ashore within our study area. This of course, represents a tiny fraction of the actual offshore catch" (Kar, C.S., ms.).

However, the situation is not straightforward. Meat from these turtles, and eggs from the beaches also, find their way into the markets in Calcutta. Here they go to feed, if not the very poorest people, at least people who need better nutrition. The price of turtle meat and eggs is not especially high; they are not just luxury items. Moreover additional nesting beaches for olive ridleys in Orissa have recently been discovered (see article by Kar, below).

We have here a classic clash between the immediate needs of people and the conservation of resources. In the long run, of course, these are compatible. There will be less food available if these ridley arribadas go the way of those at Tlacoyunque and Mismaloya in Mexico.

What is needed is not total prohibition but rational, or at least controlled, utilization. For instance, it might be better to concentrate on harvesting quotas of eggs, and leave the adults alone. During arribadas turtles often dig up eggs of other turtles. Many eggs are also destroyed by predators. A combination of protecting some of the eggs while taking others could leave as many or more hatchlings entering the water as if no intervention had occurred.

Other people will doubtless have different views about what should be done. But we do not feel that because this issue is complex the Marine Turtle Newsletter should remain silent about it. So we urge you, whatever your conservation philosophy, to write to Mrs. Ghandi, even if it is just a short

letter asking her to look into the matter, and devote more research funds to devising ways of improving the situation. Nearly anything would be better than the present uncontrolled inhumane slaughter.

Letters should be respectfully worded for greatest impact, and should be addressed to:

Shrimati Indira Gandhi
Prime Minister of India
South Block
Central Secretariat
New Delhi 110011 India

There are still many olive ridleys left in the world. There is still great scope for conservation initiative and wise management to be effective now--before the species is reduced to a remnant. If you have found this newsletter useful, whatever your views, please write to Mrs. Gandhi. And please send a copy of your letter to the editor of this newsletter. Please write now. The next arribadas of olive ridleys will soon be arriving on the west coast of Bengal.

N.M.
P.C.H.P.
H.F.H.

TURTLE SLAUGHTER IN INDIA

During the winter months, fish markets in West Bengal become turtle slaughter houses. Both freshwater and marine turtles arrive by train, lorry and bicycle in the early morning by the hundreds. Turtle meat is relished by Bengalis: nowhere else in India (except at Tuticorin in the southern state of Tamil Nadu) is there such a scramble for turtles.

At 7am on a Thursday morning January, 1982 we arrived at a market in Calcutta, carrying out routine survey work for the Freshwater Chelonian Group of the IUM. Several Pacific Ridleys were on their backs, eyes bulged from the pressure of being overturned for several days with flippers wired together. Three or four customers wanted sea turtle meat so a female was slid across the slippery, gouged concrete floor next to the scales. The young cutter drained his tea cup, and picked up the just sharpened knife. He bent over and deftly cut around the margin of the plastron, avoiding the flailing flippers and the sudden desperate attempts to reach and bite the knife hand. The dark blood overflowed onto the cement as the plastron was ripped off, all of the pulsating innards exposed. The flapping and biting action continued, but feebler now as the reptile was eviscerated and the important meat carved out for weighing. The female ridley didn't die for 10 minutes. The mounds of fully formed but unshelled eggs were put in a basket for separate sale. Only the carapaces were thrown away. NO one was concerned about the suffering, nor was there any worry about the Indian Wildlife Act, under which sea turtles receive the "highest" protection!

J. VIJAYA
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DISCOVERY OF SECOND MASS NESTING GROUND FOR PACIFIC RIDLEY SEA TURTLES
IN ORISSA, INDIA

Bustard (1974, 1976) reported on an enormous Pacific ridley sea turtle rookery at Gahirmatha Orissa, where over 1,50,000 nesting females were estimated to have laid in the 1975-76 nesting season. Subsequent nesting figures for this beach for the years 1977-79 were provided by Kar (1980) and Kar and Bhaskar (in press). Bustard pointed out that this was only one of a number of potentially important nesting areas for the Pacific ridley in Orissa. A second mass nesting ground has now been discovered during the 1981 nesting season at the other end of Cuttack District of Orissa, between Nadiakhia muhana and Akasia muhana (lat. 19° 51' N - 20° 11' N and long. 86° 41' E - 86° 45' E) approximately about 100 km south of the Gahirmatha rookery. This nesting ground extends over about 3 to 4 km and about 1,00,000 female ridleys have been estimated to lay annually.

The addition of this nesting population to the area already discovered at Gahirmatha, which has been monitored by me since 1977 together with important areas of nesting beaches between Hukitola Island, Paradeep, Astaranga, Konark (Chandravaga beach), Puri, Paluru and Gopalpur on sea, brings the nesting population of this species in Orissa alone to 3,00,000 per annum, conservatively estimated. The Gahirmatha population is protected by its inclusion in the Bhitarkanika Wild Life Sanctuary declared by the Government of India/FAO/UNDP Project, Crocodile Breeding and Management in 1975.

- Bustard, H.R. 1974. India: a preliminary survey of the prospects of Crocodile Farming (Based on the work of Dr. H.R. Bustard). F.A.O., Rome, 1-50.
Bustard, H.R. 1976. World's largest sea turtle rookery? Tigerpaper 3, 3.
Kar, C.S. 1980. The Gahirmatha turtle rookery along the coast of Orissa, India. Marine Turtle Newsletter 15: 2-3.
Kar, C.S. & S. Bhaskar. In press. The status of sea turtle in the eastern India Ocean. In: Biology and Conservation of Sea Turtles. Bjorndal, K. (Ed.) Smithsonian Institution Press, Washington, D.C.

CHANDRA SEKHAR KAR

Gahirmatha Marine Turtle Research and Conservation Centre, Forest Department, Government of Orissa, P.O.: Satabhaya-754 225, Via: Rajnagar Dist: Cuttack, Orissa, India.

ATLANTIC RIDLEY PROJECT, 1982: PRELIMINARY ACCOUNT

This was the 16th year of the Mexican project for restoring this species and the 5th year of cooperation with the U.S. Marine Fisheries Service. Out of a total of 874 nests, 753 were translocated; around 12.2% were lost to predators, poachers and in other ways. 67,571 eggs were transplanted to corrals and 10,332 to styrofoam boxes. This year there were no serious storms (see Marquez, R. 1982. Marine Turtle Newsletter 21, p. 3). Preliminary data on hatching success are: 63.5% from the corrals and 76% from the boxes at Rancho Nuevo, with an overall hatch rate of 69.5%. More than 47,000 hatchlings were released on the beach.

Twenty boxes with 2020 eggs were sent to Padre Island, and from there 1524 hatchlings went to the Galveston Laboratory, Texas, for head-starting. The hatching rate was 75.5%. Head-started turtles are released at around the

age of 9 months in the Gulf of Mexico. Up till now, over the past 4 years, 6694 turtles, less than a year old, have been released. About 190 have been kept as a potential breeding stock in several U.S. aquaria and at the Cayman Turtle Farm (Mexus-Gulf's Sea Turtle Working Group's Accomplishments and Plans for 1978-85, ms. Veracruz, Mexico, 1982).

This year between 2 April and 18 July there were 61 emergences of females for nesting, some grouped some solitary. An unusual thing in 1982 was that there was only one important arribazon with around 300 turtle tracks; 251 nests from these were located and reburied the same day. Monel tags were applied to 197 turtles and 15 of these were double tagged with blue plastic jumbo tags on the opposite front flipper; 44 of these turtles nested twice and 4 thrice. Also 44 turtles tagged in previous years laid eggs and 5 of these turtles nested twice. 66 turtles with what looked like tag scars were retagged.

Temperature was monitored in 6 corral and 7 box clutches for studies of effects on sex ratio.

The work in the turtle camp began in the 2nd week of April and lasted till the 2nd week in September. The first turtle was seen laying on 11th April and the last on 18th July. The U.S. team was on the beach from 10 May till 16 August. An airplane was invaluable for surveying nesting turtles. Also to support the goals of the Western Atlantic Turtle Symposium (scheduled for July 1983 in Costa Rica), aerial surveys of shoreline characteristics and nesting activity were made 28 June--2 July.

Again the incidental catch of turtles by shrimp trawlers is the most serious obstacle to increasing this population.

RENÉ MARQUEZ M.

C.I.P. Manzanillo, c/o Delegación Federal de Pesca, Manzanillo, Col. 28200 Mexico.

A LEATHERBACK HATCHERY IN FRENCH GUIANA

Study of Dermodochelys coriacea in French Guiana has shown that two principal factors are responsible for egg destruction: erosion of the beaches by the sea and infiltration of water from the coastal marshes. In 1979, for example, 4410 leatherback nestings were counted in April and May at Les Hattes--Ya: lima: po. During the corresponding hatching time only 4.3% of the eggs produced hatchlings. With assistance from the French Ministry of the Environment, WWF, Greenpeace and the Guianese administration, a hatchery was established near the village of Les Hattes--Ya: lima: po. This hatchery was built from the ruins of an old penitentiary 70 m from the water. It has a living area and a large incubation room. A laboratory and a seawater tank will shortly complete the facility. The hatchery has been operating since 1981 and at present has the capacity for artificially incubating about 7000 eggs a season. The eggs are collected after laying from females who have nested too near the sea or have badly injured back flippers. Eggs are immediately put in polystyrene boxes between 2 layers of wet sand, following the techniques used by STINASU in Surinam. Even without control of temperature and humidity, the average hatch rate is almost 65%. Viable newborn turtles are placed on the beach at night in artificial sand tunnels from which they emerge. They are

watched to prevent attacks from predators.

Aided by the French Ministry of Overseas Departments and Territories, we are going to equip the hatcheries with precise temperature control. one of us (with Claude Pieau, University of Paris) is studying the influence of temperature on the sex of leatherback embryos and on the natural sex ratio. The optimal temperature for hatchery incubators will be based on results of these investigations. Humidity which is responsible for rotting of some of the eggs, is more difficult to control in a country as humid as French Guiana.

"L'Association pour la gestion des écloseries d'oeufs de Tortues marines de Guyane" has been formed to administer the hatchery. Among the administrators of this association are the Presidents of the World Wildlife Fund --France, Greenpeace-France, the Société herpétologique de France, the Fédération française des Sociétés de Protection de la Nature and the director of the Reptile and Amphibians laboratory of the Museum of Paris.

JACQUES FRETEY AND JEAN LESCURE

Laboratoire de Zoologie (Reptiles et Amphibiens), Muséum national d'Histoire naturelle, 25, rue Cuvier 75005, Paris, France.

RECENT PAPERS

- BLAIR, D. and LIMPUS, C.J. 1982. Some digeneans (platyhelminthes) parasitic in the loggerhead turtle, Caretta caretta (L.), in Australia. Aust. J. Zool., 30:653-80. D. Blair, Department of Zoology, University of Canterbury, Christchurch 1, New Zealand.
- CARR, A., MEYLAN, A., MORTIMER, J., BJORNAD, K. and CARR, T. 1982. Surveys of sea turtle populations and habitats in the Western Atlantic. NOAA Technical Memorandum NMFS-SEFC-91, U.S. Department of Commerce. A. Carr, Department of Zoology, University of Florida, Gainesville, Florida, 32611 U.S.A.
- DODD, C.K. 1981. Nesting of the green turtle, Chelonia mydas (L.), in Florida: historic review and present trends. Brimleyana 7:39-54. C.K. Dodd, Office of Endangered Species, U.S. Fish and Wildlife Service, Washington, DC 20240, U.S.A.
- FRAIR, W. 1982. Serum electrophoresis and sea turtle classification. Comp. Biochem. Physiol. 72B:1-4. W. Frair, Department of Biology, The King's College, Briarcliff, NY 10510, U.S.A.,'
- NUITJA, N.S. and LAZELL, J.D. 1982. Marine turtle nesting in Indonesia. Copeia, 708-710. N.S. Nuitja, Department of Fisheries Management, Bogor Agricultural University, Bogor, Indonesia.
- SHOOP, C.R. and RUCKDESCHEL, C. 1982. Increasing turtle strandings in, the southeast United States: a complicating factor. Biological Conservation 23:213-215. C.R. Shoop, Department of Zoology, University of Rhode Island, Kingston, RI 02881, U.S.A.
- WITKOWSKI, S.A. and FRAZIER, J.G. 1982. Heavy metals in sea turtles. Marine Pollution Bulletin, 13:254-255. J.G. Frazier, Department of zoological Research, U.S. National Zoological Park, Smithsonian Institution, Washington DC 20008, U.S.A.
- WOOD, F., PLATZ, C., CRITCHLEY, K. and WOOD, J. 1982. Semen collection by electroejaculation of the green turtle, Chelonia mydas. Brit. J. Herpetol. 6:200-202. F. Wood, Cayman Turtle Farm Ltd., Box 645, Grand Cayman, B.W.I.

PUBLICATIONS AVAILABLE FREE FROM THE CHELONIA INSTITUTE

1. Behavioral and Reproductive Biology of Sea Turtles. 1980. Amer. Zool. 20. (proceedings of the symposium held at Tampa, 1979).
2. Florida marine Research Publications No. 33, 1978 (proceedings of the conference held at Jensen Beach, 1976).
3. For Spanish speaking readers: Cliffton, K. Podran salvarse ..? 1981, Technica Pesquera 167, 22-29 (with colour photos by G.H.H. Huey).

Obtain from Chelonia Institute, P.O. Box 9174, Arlington, Virginia 22209, U.S.A.

THE WESTERN ATLANTIC SEA TURTLE SYMPOSIUM (WATS)

This is scheduled in San Jose, Costa Rica, for 18-22 July 1983. For details write to Frederick H. Berry, National Marine Fisheries Service, 75 Virginia Beach Drive, Miami, Florida, 33149 U.S.A.

NEW RED DATA BOOK PUBLISHED

The IUCN Amphibia-Reptilia Red Data Book Part 1, Testudines, Crocodylia, Rhynchocephalia, 1982, compiled by Brian Groombridge, has recently been published. It contains revised sheets for all the sea turtles, except the flat-back which does not fulfil the criteria for inclusion. The other sea turtles are listed as "endangered", except the loggerhead which is "vulnerable". The reference lists and information provided are far more extensive and valuable than in previous editions. For further information write to the IUCN Conservation Monitoring Centre, 219c Huntingdon Road, Cambridge CB3 0D1, U.K.

STOP PRESS: MORE PROM INDIA

An article by S. Biswas, entitled "A report on the olive ridley, Lepidochelys olivacea (Eschscholtz) (Testudines: Cheloniidae) of Bay of Bengal" has just appeared in Rec. Zool. Surv. India 79: 275-302 (1982). Among interesting points are that on the basis of stomach contents the adult is herbivorous and that many fully formed hatchlings are unable to get out of their nests on account of overcrowding and obstructions. The catch of adults from the Digha and the Sunderban coast of West Bengal is thought to exceed 20,000 per season. "There is a government ban for turtle catching which is not strictly enforced". But the author says that a total ban on exploitation for this species is not necessary as it is the most abundant sea turtle in the Bay of Bengal. He recommends annual quotas of turtle catch and egg collection, with the State Departments enforcing and supervising the exploitation. For reprints write to S. Biswas, Zoological Survey of India, 34 Chittaranjan Av., Calcutta 700 012, India.

Cattle slaughter, especially cow slaughter is a controversial topic in India because of the cattle's traditional status as an endeared and respected living being to some sects of Hinduism, Sikhism, Jainism, Buddhism, and Zoroastrianism while being considered an acceptable source of meat by Muslims as well as adherents of other non-Dharmic Religions in India, such as the Animistic and Abrahamic religions. More specifically, the cow's slaughter has been shunned because of a number of reasons such as Authorities in southern China have opened an investigation into the slaughter and sale of a protected leatherback sea turtle by local fishermen. The case grew to national prominence after cellphone video circulated showing the 200-kilogram (440-pound) turtle being sliced into pieces and sold to eager villagers in the southern province of Guangdong. The official Xinhua News Agency said Sunday that six villagers have been referred to investigators. China's growing animal rights movement has sought to raise awareness of abuses ranging from the slaughter of canines for an annual dog meat festival in a southern city to the farming of bears milked for their bile to be used in traditional Chinese medicine. The Indian Express is now on Telegram. turtle *Nilssonia leithii*, Indian black turtle *Melanochelys trijuga coronata* and Indian soft-shelled turtle *Lissemys punctata punctata* are reported to occur. However, sea turtles are not at all sighted in Cochin backwaters. The number of turtles nesting along the Kerala coast is also very less. Sea wall covers about 70% of the state's coastline. Ridley turtles in India. The coastal resources of India is very much utilized for the conservation of world's sea turtle population and therefore, the US import ban on shrimps from India is untenable. Appropriate actions that will prove the regulatory mechanisms to conserve sea turtles in India are comparable to those in the USA will have to be done. Indian officials have said Chinese soldiers crossed the boundary in Ladakh in early May at three different points, erecting tents and guard posts and ignoring verbal warnings to leave. That triggered shouting matches, stone-throwing and fistfights, much of it replayed on television news channels and social media. Since then India has accused China of invading 20 square miles of its territory. China also accused Indian troops of crossing its border and attacking its soldiers in the tit-for-tat border row. The border dispute covers nearly 2,175 miles of frontier, and India accuses China of occup