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For your info

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IUCN - THE WORLD CONSERVATION UNION, PAKISTAN
Coastal Ecosystem
Karachi

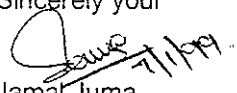
MEMORANDUM

To: Zakir Hussain (Bangkok office)
From: Jamal Juma
Date: January 7, 1999

Dear Zakir,

I am trying to fax the enclose document to Ms. Monica Aureggi, CHELON Researcher she is in Golden Buddha Beach Resort, P. O. box 4, Kura Buri, Phang Nga, 82150 Thailand Tel / Fax # 66.1.2304744 but unfortunately we can't connect on that fax number I therefore, request you to kindly send this fax to Monica on above address and kindly confirm the same to me.

Sincerely your


Jamal Juma
Secretary
CEU

Country Office

1, Bath Island Road,

Karachi 75530

Pakistan

Tel.: ++92 21-5861540/41/42

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IUCN
The World Conservation Union

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FAX

To : Monica Aureggi
CHELON Researcher
Golden Buddha Beach Resort

From : M. Tahir Qureshi, IUCN – Pakistan
Programme Director
Coastal and Ecosystem

Fax # : 66 1 2304744

Page : 05

Date : January 5, 1999

Reply Fax #. : 5870287/5861448

I am directed to send you the status report of the turtles in Pakistan and also to organise your visit to the turtle nesting site near Karachi during your visit to Pakistan in coming February.

In this connection I am in touch with Mrs Fahmida Firdous who is incharge of Turtle project in Sindh Wildlife Department.

For you information Aban Marker Kabraji, IUCN Country Representative is of the pioneer of the scientific studies / works on marine turtle in Pakistan. I hope you will have the chance to discuss with her about the plight of green turtle in Pakistan.

Yours sincerely

A handwritten signature in black ink, appearing to be 'M. Tahir Qureshi'.

C:Jamal/CEU/FAX/Monica - CHELON

Present status of Shrimp-Marine Turtle interaction in Pakistan

1. Marine turtles in Pakistan

1.1 Introduction

Marine turtles spend almost their entire life-cycle out at sea, where they prey upon slow drifting marine organisms such as jelly fish, scavenge on dead benthic animals, or feed on macro algae. Mature female turtles mate in the open ocean with multiple partners to optimise the chances of her offspring (Wuethrich, 1994). In order to lay her eggs female turtles need to come ashore to make a nest, this is accomplished by constructing a sand pit in the soft sediment close to the high water line. Only a limited number of beaches are suitable nesting sites for marine turtles. During the incubation period the eggs develop and hatch after 6 to 8 weeks. After emerging at the beach-surface turtle hatchlings crawl to the shoreline to enter their marine habitat.

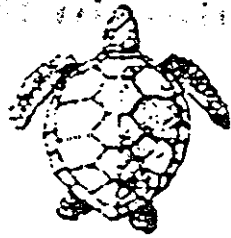
The mortality during this journey is high. Females which make it to maturity after approximately 15 years and which get impregnated will try to make to the same beach where it hatched to lay her eggs. Only 0.1 to 0.2% of the hatchlings survive to reach maturity.

1.2 Pakistan

The green turtle (*Chelonia mydas*), olive ridley turtle (*Lepidochelys olivacea*) and possibly the hawksbill turtle (*Eretmochelys imbricata*) inhabit Pakistan coastal waters. Hawkesbay and Sandspit beaches in the province of Sindh are internationally recognised nesting habitats of marine turtles. Although less documented the Balochistan province also has a number of nesting sites for turtles. Literature sources report nesting sites at Jiwani, Astola Island and the Sonmiani area. Unpublished reports from 1975 suggest that mass nesting occurs in the Omara area. A preliminary survey in January 1987 confirmed that large number of green turtles nest on beaches near the four main towns of Balochistan (Groombridge et al, 1987). The Balochistan nesting populations have been subject of intense exploitation until the mid-1980s (Groombridge, 1988).

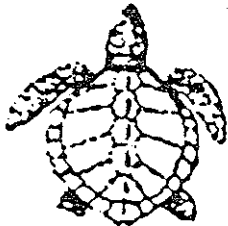
In October 1979 a turtle conservation/research project was started on the beaches of Hawkesbay and Sandspit under the authority of WWF. Later this project was taken over by the Government of Sindh. On these beaches legal protection of turtles was implemented and a hatchery programme was set up. Eggs from endangered nests were transferred to protected enclosures and hatchlings were released near the shoreline.

1.2.1 Green turtle



In 1984 Kabraji and Firdous estimated that roughly 6000 green turtles nest on Hawkesbay and Sandspit beaches each year and between 24 000 and 36 000 green turtles live in Pakistan's coastal waters. Groombridge and Luxmoore (1989) suggest that the total number of green turtle females, which nest each year on these beaches, may be lower: 2000-3000. Nevertheless, combined with the suspected numbers of green turtles nesting at the Balochistan sites make Pakistan one of the world's more important nesting areas

1.2.2 Olive ridley turtle



The number of olive ridley turtles nesting at the research beaches were estimated at approximately 200 per year, the amount of olive ridley turtles inhabiting the coastal waters is estimated to number between 800 and 1200 (Kabraji and Firdous, 1984).

From October 1979 till December 1996 almost 1.5 million green turtle and 77,000 olive ridley turtle eggs were protected on the projects' beaches. During this period 359,000 green turtle hatchlings and 21,000 olive ridley hatchlings, emerging from the enclosures, were released to the sea (Fehmida F. Asrar, 1996).

2. Marine Turtle Mortality

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2.1 Introduction

Mortality of marine turtles at sea is caused by a number of factors: natural causes of death are predation by sharks (esp tiger-shark (*Galeocerdo cuvier*)), old age disease or parasites and collision with rocks during storms. Human induced mortality comprises of turtle hunting (for meat, shell, bone, oil and leather), pollution-induced diseases (chemical or biological contamination), pollution-induced suffocation (plastic bags etc), turtle-boat collisions and fisheries mortality.

2.2 Literature on mortality

- Japanese Customs statistics indicate that in 1985 2925 kilo of turtle skins were imported from Pakistan, the value of these imports are estimated at 3044 000 Japanese Yen. It is not known what turtle species this refers to, but Green turtle skin was probably also included (Groombridge and Luxmoore, 1989)
- The item No. 133 on the export list of the Export Promotion Bureau (EPB) is: Worked Tortoise Shell/Articles. The shell however is an internationally protected thing. (...) Tortoise Shell is a terminology for Hawksbill turtle shell or any other manne turtle shell (Ali, 1993).

2.3 Literature on fisheries mortality

- Although fishing activities are not directly associated with turtle harvesting, they can have significant adverse effects through incidental entanglement and entrapment gear such as trawls, set nets, pound nets and gill nets. In the United States, an estimated 432 green turtles per year are caught in shrimp trawls with an estimated mortality of 97 (Bacon et al, 1984). Trawling activities also reportedly cause significant mortalities off the Pacific coast of Panama, the Western Mediterranean (possibly 1,000 per year), Colombia, Honduras, Australia, Ecuador, Peru, the Guianas and Pacific Central America (Groombridge, 1982). Turtles are also incidentally taken in net fisheries, trap fisheries and by hook and line (Crouse, 1982). Hatchlings attracted to deck lights may suffer significant mortality through enhanced predation. Green turtles are also affected by fishing methods using dynamite and chionne bleach. Miscellaneous impacts of fishing-related activities include ingesting and entanglement in litter such as styrofoam, plastic, line and discarded netting (Andreas Mager, 1985)
- Incidental capture of turtles during other fishing activities is possibly the major form of direct mortality. Hillstead et al. (1982) reviewed incidental catch and concluded that shrimp trawling posed the major threat, probably because it is usually carried out in shallow, warm seas which are also the feeding areas used by most sea turtle species (Groombridge and Luxmoore, 1989)

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- Accidental capture of turtles in nets of Korean trawlers operating under licence in Oman (at least 586 per year; Hare 1991), and in the drift nets of Omani fishermen is an extremely serious problem (Salm et al, 1993).
- Turtles also become entangled in jettisoned pieces of trawl net. One live female olive ridley turtle caught in this way was released back to the sea, but was severely weakened and had poor prospects of survival. Deliberate killing or maiming and accidental drowning of turtles caught in trawls and drift nets may already have set the turtle population of the Sultanate of Oman into decline though the results may not become obvious for years to come (Salm et al, 1993).
- Todd Steiner (1996), Director from the Sea Turtle Restoration Project, estimates that at least 124 000 marine turtles may be captured and killed every year in the nets of foreign shrimp boats.
- The average number of females nesting on the Gahirmatha beach in Orissa, India used to be 200 000 to 600 000 individuals. In 1997 the mass nesting of olive ridley turtles (*Lepidochelys olivacea*) did not take place on this beach. One explanation for this is offshore fishing. Although between October and April the fishing is prohibited within 20 km of the coast hundreds of trawlers and gill-nets are observed operating in the area. Thousands of dead turtles washed up on the beach which were presumably drowned in the nets of the fishermen (Behary Das, 1996).