Souvenir, 6th All India Congress of Zology, Oct. 1984, Gwalior, M.P.

Wildlife in National Chambal Sanctuary

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The National Chambal Sanctuary is the longest riverine sanctuary in the country devoted since its creation in 1978 to the management of a highly endangered crocodilian species, the gharial—*Gavialis gangeticus*.

Gharial are specialised fish-eaters, entirely innocuous to human being and live in the Chambal, Girwa and Ramganga tributaries of the Gangetic system, the Mahanadi of Orissa and a few tributaries of the Brahmaputra system. Outside India its continued survival is reported only from Nepal (rivers Karnali, Narayani, Kali and Koshi), Bhutan (Koshi) and Bangla Desh (Padma). Occurrence of gharial in Pakistan is doubtful at present. In 1974 when crocodilian conservation programme was mooted to be taken up at the levels of various states through a collaborative venture by the Government of India, United Nations Development Programme and Food and Agriculture Organisation of the United Nations, the estimate for the Indian population of gharial was 230 including about 72 adults.

The National Chambal Sanctuary holds the best gharial population in the country. At present there are at least 53 resident adults in a total of about 1160 which includes 912 gharial restocked through the management programme.

The sanctuary includes about 30 km of the river Parbati, 15 km of the Yamuna and 585 km of the Chambal. The sanctuary begins at Jawahar sagar dam in Rajasthan and after traversing through varying distances in this and the states of Madhya Pradesh and Uttar Pradesh ends at Pachhnada in Uttar Pradesh.

Besides the gharial, the mugger crocodile (*Crocodylus palustris*) and six species of turtles (*Trionyx gangeticus*, *Chitra indica*, *Lissemys punctata*, *Kachuga kachuga*, *K. dhongoka* and *K. tentoria*) also occur in the river.

The other important reptilian fauna include the land monitor, a variety of other lizards and snakes. Two prominent aquatic mammals are the otters and the gangetic dolphin. Through the bushes in the ravine dominated river banks some of the common mammals are the Jackal, Hyena Sambar, Spotted deer, porcupines, hares and desert cat.

The avain-fauna characteristic is interesting as the sanctuary offers a semi-arid bank and also a wet land. Knowledgeable sources indicate the occurrence of over three hundred species of birds in the area.

The major species that is under active management is the gharial. Besides provision of full protection to it and its food, under a 'grow and release programme' eggs are collected from the river banks, incubated and hatched in hatcheries, the young ones are grown in captivity, and when the young ones attain a length of over 1.2 m are released into the sanctuary. This method renders 60-100% survival of the eggs and 60% of the hatchlings. These figures are better appreciated when compared to the survival in nature which is about a single animal out of a thousand eggs reaching adulthood.

In connection with the above programme the Madhya Pradesh component of the National Chambal Sanctuary has a nominal captive gharial rearing centre at Deori, about 45 km north-west of Gwalior beside the Bombay-Agra National Highway no. 3.

Gharial grow to a length of 7m but start laying eggs after about ten years from hatching or at a length of 3 m. They lay about 35 eggs during March-April when the water level in the river is low. The eggs, 80x55 mm size, are laid in a pit dug on high slopy sand bank. After laying the pit is covered back with sand. At a temperature of about 30°C and a moisture content of about 10% by weight the eggs hatch after eleven weeks.

The Crocodile Research Centre of Government of India's Wildlife Institute established a field camp in Deori during June 1983 in collaboration with the Wildlife Wing of the Madhya Pradesh Forest Department. The purpose of the camp is to study in the National Chambal Sanctuary the population dynamics of the gharial. Radio-tracking is a modern procedure to study behaviour and other biological aspects in nature. The equipments consist of a radio-transmitter that is fitted to the animal to be studied. A receiving set with an antenna receives signals emitted from the transmitter and provides the required information. The signals are received as sound beaps and light. Simple modifications in the transmitters also

provide messages like rest, movement etc. The transmitters were shown to the tail of the gharial. The results have indicated that with rise in water level up to about 2m, relocated gharial move toward upstream or into tributaries, otherwise the movement is toward downstream Based on these studies recommendations have been made in better planning and in redelineating the sanctuary boundaries.

Based on census surveys proportions of restocked gharial in the total population have been determined. Aspects like group size, survival among hatchlings, home ranges and habital pressures have also been studied. Breeding groups needing special attention have been demarcated and zones needing to be developed to a level of acceptance by juveniles entering adulthood have been identified.

Besides the above, some of the other studies that were initiated during 1983 are on turtles, dolphin, otter, mugger crocodile and non-resident birds.