

On the status of marsh crocodile in Balochistan

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Abstract

The paper describes population of marsh crocodile (*Crocodylus palustris*) in Balochistan, an area known for its extreme aridity. Marsh crocodile was observed in four major rivers i.e. Dasht, Hingol, Nari and Hub of which Hub possibly has the largest population among the four rivers. The paper also describes some of the major threats being faced by the marsh crocodiles in Balochistan.

Key Words: Marsh crocodile, status, Balochistan, *Crocodylus palustris*,

Introduction

Out of three species of crocodylian known from Indian sub-continent, only one species i.e. mugger or marsh crocodile (*Crocodylus palustris*) is known to occur in Pakistan (Ahmad, 1986; Ghalib *et al*, 1981; Javed *et al*, 2004; Khan and Mirza 1976). Marsh crocodiles are widely distributed in their former wide range from Dasht in the extreme west of Pakistan to Assam in north eastern India and also, in Sri Lanka. Mugger is distributed in Balochistan including Hub and Dasht Rivers (Minton, 1966).

The species is regarded as endangered, exterminated in most of its range, rare in Iran and near extinction in Pakistan (Whitaker and Daniel, 1978). It is listed in IUCN Red Data Book and is included in Appendix 1 of CITES. Present paper describes the distribution of mugger in Balochistan.

Material and Methods

For the estimation of the marsh crocodile population direct and indirect methods were used during the present study (Javed *et al*, 2004). The survey was conducted in four areas of Balochistan i.e. Dasht, Hingol, Hub and Nari Rivers.

Results and Discussion

The population of marsh crocodile was observed in four rivers of Balochistan is presented in Table-I. The data indicates a comparatively thin population of marsh crocodile in Balochistan.

Dasht River: It is one of the largest river of Balochistan which starts from northern Balochistan and culminates in the Gwater Bay (Fig. 1). This river was surveyed in December 2001. This river only flows after rains thereafter water remains in a number of impoundments along its course. Rains are scanty in the area (>2 inches/year). Marsh crocodile was observed near Mining village 95 km north of Jiwani. The vegetation of the area consists of *Tamarix spp.*, *Indigofera oblongifolia*, *Sesbania sesban*, *Saccharum spp.*, *Typha spp.*, *Cynodon dactylon* and *Acacia Senegal* etc.

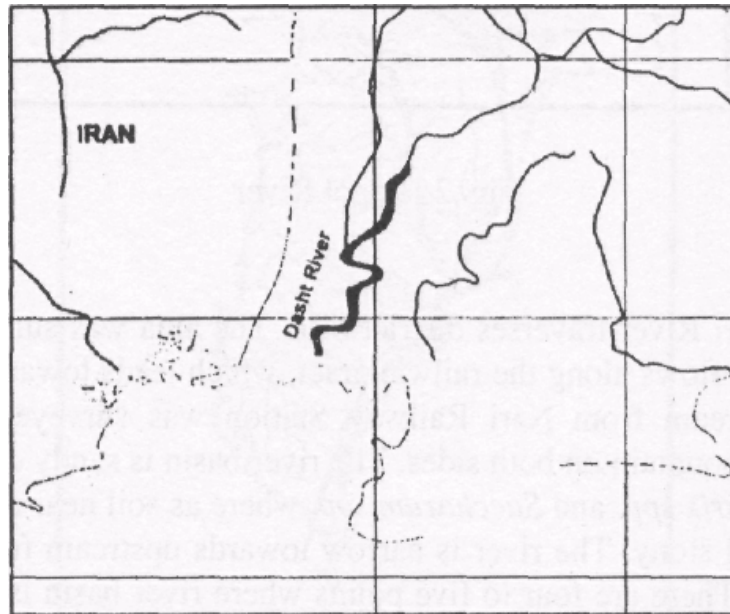


Fig. 1. Dasht River

Hingol River: This river which flows in the middle Balochistan is also seasonal except perennial at its lower reaches (Fig. 2). The high mountain along major part of the river course surrounds one side of the river. From mountain range wild goat (*Capra hircus*) come down for drinking water and seem that sometimes attacked by crocodiles because during this survey skeleton of a juvenile was found near bed of the river. There were many signs of paws, foot, claws and tracks of heavy tail near bed of the River. *Tamarix spp.*, *Acacia spp.*, *Prosopis spp.* and *Typha spp.* were found at the base of the river which provides good shelter or hiding place for crocodile. Nearly 15 km area of Hingol River from Agor camp upstream was surveyed.



Fig. 2 Hingol River

Nari River: Nari River traverses district Sibi. The area was surveyed in March 2003. This river flows along the railway tract, which leads toward Nari. An area of 10 km upstream from Nari Railway Station was surveyed. The river is surrounded by mountain on both sides. The river basin is sandy cum muddy with vegetation *Tamarix spp.* and *Saccharum spp.* where as soil near road and railway tract is hard and stony. The river is narrow towards upstream from Nari station toward Harnai. There are four to five points where river basin is wide including Dewarwala Bridge, Sarsoonwala Nara, and Bux AH Nara where crocodile group consisting of 4-5 crocodile each were reported.

Hub River: (Fig. 3) Hub River is an important perennial river of Balochistan. It was surveyed in January 2004. This river receives many tributaries at different points. At Arypir Shrine a tributary of Hub River has a reasonable population of marsh crocodile. The Hub River crosses Hub Duriji Road near Hanidam and from that point 10-12 km upstream there is place called 'Sore' which is another area inhabited by marsh crocodile. Population of marsh crocodiles at 'Sore' is confined at two places i.e. 'Gut' and 'Guhar'. Hanidam to Hub dam is about 45 km. The vegetation of the area consists of *Tamarix sp.*, *Acacia spp.*, *Salvadora spp.*, *Prosopis spp.*, *Ziziphus spp.*, *Saccharum spp.*, and *Typha spp.* The soil near water channel and riverbed is sandy and muddy whereas it is mainly hard and stony.

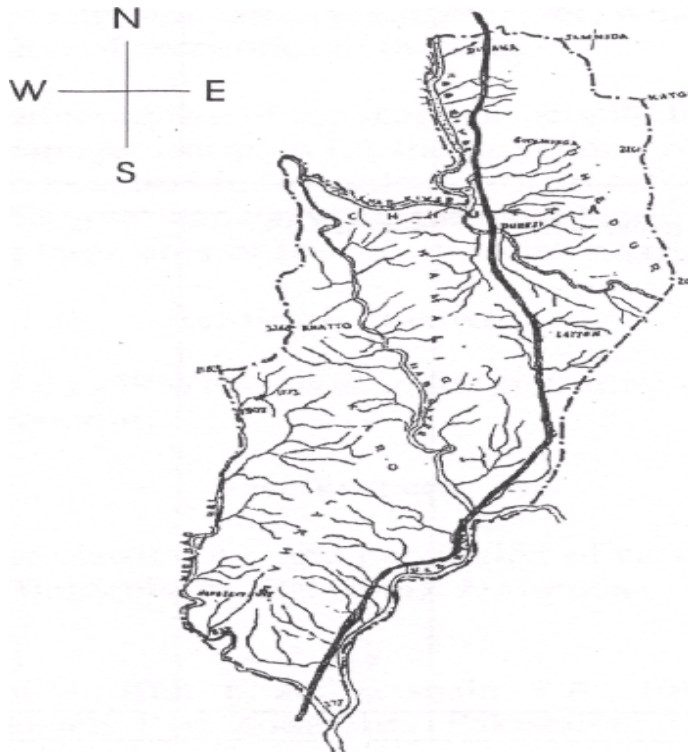


Fig. 3. Hub River

Table-I. Data of Marsh Crocodile in Balochistan

S.No.	Date	Name of the Rivers	Approximate Crocodile population	Crocodile population seen.	Remarks
Dasht River (District Gwadar)					
1.	20-12-01 to 01-01-02	Dasht River	4	1	Survey team observed footprints of three crocodiles
Hingol River (District Awaran and Lasbella)					
2.	20-08-02 to 27-08-02	Hingol River 18 km up stream Agor Camp	18+	18	Actually counted
Nari River (District Sibi)					
3.	16-03-03 to 18-03-03	Nari River 10 km upstream from Nari Railway station.	20-25	1	Local guide Khuda Dad Luni confirmed the presence of four groups of crocodile comprising 4-5

					crocodile each. This was reconfirmed by Payrai Khan of Pakistan Railway who was checking the railway tract.
<u>Hub River (District Lasbella)</u>					
4	03-01-04 to 06-01-04	Hub River Aripir to Hub dam	40-45	4	The staff of Duriji Game Reserve area confirmed the presence of 10 crocodiles at Sore and 4 in between Sore and Hub Durji Road (about six km from Sore area). Sindh Wildlife Watcher at Khar Breeding Centre confirmed the presence of a group about 20 crocodile near Hub Dam a few km from Khar Centre
	TOTAL		82	24	

Province of Balochistan is mostly arid and most of the rivers of the area are small and seasonal still these rivers support population of mugger. Some of the impoundments in these rivers have substantial large population of crocodile, which is now facing serious threat of both natural and man made factors. It has been reported that a number of impoundments have been dried up during the long drought of four to five years between 1999 and 2004 which is believed to a major decline in the population of muggers in these rivers.

Despite rarity, mugger are considered by general public to be threat for human and livestock, therefore, a substantial population of mugger is killed. There were reports of killing of muggers for their hides but during the survey this impression was dispelled as no one reported any such activity in Balochistan.

Marsh crocodile population is threatened mainly because of habitat alteration and human intervention. Construction of coastal highway has made access to those remote areas of Balochistan which previously was inaccessible especially population at Hingol River and to a lesser extent at Dasht Rivers. Construction of dam at Mirani on Dasht River will affect the population of marsh crocodile because some of the impoundments are known as crocodile abode, will be submerged. Similarly population existing downstream the Mirani Dam will be affected due to stoppage of flow of water. There is a plan in offing, though

shelved at present to construct a dam on Hingol River, which, if constructed, will also affect the population of crocodiles in the area.

Considering vulnerability of the marsh crocodile in Balochistan, there is a need to develop a management plan for the protection of the species. There is also a need to regular monitor the population of marsh crocodile in rivers of Balochistan. With effective management, the population of muggers, which is very small considering large area of Balochistan, can be protected.

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