

Freshwater Turtles of Pakistan

Dera Ismail Khan, North West Frontier Province
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A View of *Dera Ismail Khan*

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Uzma Noureen

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List of Participants of Survey

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1 Introduction:

1.1 Global Importance of Freshwater Turtles

Freshwater turtles are heavily exploited for food and in some cases for medicine, particularly in Southeast Asia and China, where harvesting levels are unsustainably high and include protected and trade regulated species. Many species are now threatened with extinction because of this unstable trade ¹. As a result of this decline, the span of practice has increased to the neighboring countries.

Online publication by Cambridge University Press on September 4, 2006, revealed the fact that China has one of the world's most diverse freshwater turtle fauna but is also a major consumer of freshwater turtles. In 1980s over-collection, illegal trade, and habitat destruction increased dramatically, pushing almost all Chinese turtles towards extinction. The main factors that lead to illegal trade include the cultural belief that turtles are viable food / medicine product ².

The 2000 IUCN Red List includes conservation status assessments of 89 species of Asian turtles. Of these 89 species, 87 species are listed as threatened, meaning critically endangered (CR), endangered (EN), or vulnerable (VU). 21 species are considered low risk, near threatened (LR:nt) and low risk, least concern (LR:lc) or data deficient (DD) ,This is a remarkable increase from the 1996 IUCN Red List, which listed only 33 Asian Turtle species as threatened ³.

1.2 Status of Freshwater Turtles in Pakistan

Pakistan has eight species of freshwater turtles (see table 1), some of them are not evaluated by IUCN. All species are under threat of illegal hunting for meat and shell.

Table 1: Freshwater Turtles of Pakistan and their Conservation Status

#	Species	Distribution in Pakistan	IUCN status
1	Spotted Pond Turtle (<i>Geoclemys hamiltoni</i>)	River Indus	Vulnerable
2	Smith's Turtle (<i>Kachuga smithii</i>)	River Indus	Low Risk, Near Threatened
3	Brahminy or Crowned River Turtle (<i>Hardella thurjii</i>)	River Indus	Vulnerable
4	Indian Roofed Turtle (<i>Kachuga tecta</i>)	River Indus	Vulnerable
5	Ganges Softshell Turtle (<i>Aspideretes gangeticus</i>)	River Indus	Vulnerable
6	Peacock Softshell Turtle (<i>Aspideretes hurum</i>)	Lower reaches of River Indus	Vulnerable
7	Indus Mud Turtle (<i>Lissemys punctata</i>)	River Indus, In Ponds,	Low Risk, Least Concern
8	Chitra Turtle (<i>Chitra chitra</i>)	River Indus	Endangered

In both the Sindh and Punjab Wildlife legislation all freshwater turtles are protected. If a turtle meat or shell consignment is found then it is confiscated. The offender is given an option, either to go to court or solve the matter internally with the department by paying some fine.

At times the offender prefers to settle the matter with the department itself to save time in court hearing. The Wildlife Department fines depend on the gravity of crime and on the protection status of area where the offence was committed. In court, the compensation varies; usually the offenders get away with a minor penalty. The penalties for offenders are meager, trade itself is so lucrative, and it is worth taking the associated risks. Both departments provide for the appointment of community guards that may be paid by Community Based Organizations (CBOs) or projects.

In Sindh, fishermen are involved in turtle hunting. They are paid Rs. 50-100 per turtle. Turtles are usually captured using a line and hook.

In Punjab, vagrant groups have been observed that are paid about Rs. 100 for a carapace of 30 cm length and Rs. 200 for the one with a length of 60 cm or more. Turtles are even hunted when they are hibernating and the techniques involved use of a spear to locate turtles in sand, upon detection a hibernating turtle is stabbed and is pulled out.

Undoubtedly, a connection exists between livelihood of local people and this trade with profit making middleperson⁴.

1.3 Visit of Dera Ismail Khan in the Context of Pakistan Wetlands Programme

Central Indus Wetlands Complex (CIWC) is one the four Demonstration Sites of Pakistan Wetlands Programme and sustainably conserving wetlands biodiversity in the CIWC is the major output of CIWC. It consists of wetland resources along the main stem of the Indus River, between the town of *Chashma* in the North and city of *Sukkur* in the South.

Controlling illegal hunting and improving livelihoods are integral parts of Central Indus Wetlands Complex (CIWC) outputs.

Dera Ismail Khan is a city in North West Frontier Province; connecting NWFP with Punjab. The town is situated in the West bank of Indus River, and one of the potential sites for freshwater turtles. As the threats to freshwater turtles due to illegal hunting are increasing in Punjab and Sindh, a preliminary survey is conducted to assess the status of freshwater turtles of Pakistan in the Indus River in *Dera Ismail Khan* (see figure 1 for map of study sites, showing location of communities along River Indus, D.I.Khan, at page 7).

2 Purpose of Visit:

- Meeting with Divisional Forest Officer Wildlife (DFO) Dera Ismail Khan Wildlife Division. Identify one person from Wildlife Department with the field knowledge, organize a team comprising of Wildlife and PWP's staff to assess the field situation to find out greater details.
- Identify areas to define scope of field work involving freshwater turtles.
- Establish baseline data of freshwater turtles.
- Identify threats to freshwater turtles.
- Acquire information on the wildlife offence cases from Wildlife Department.

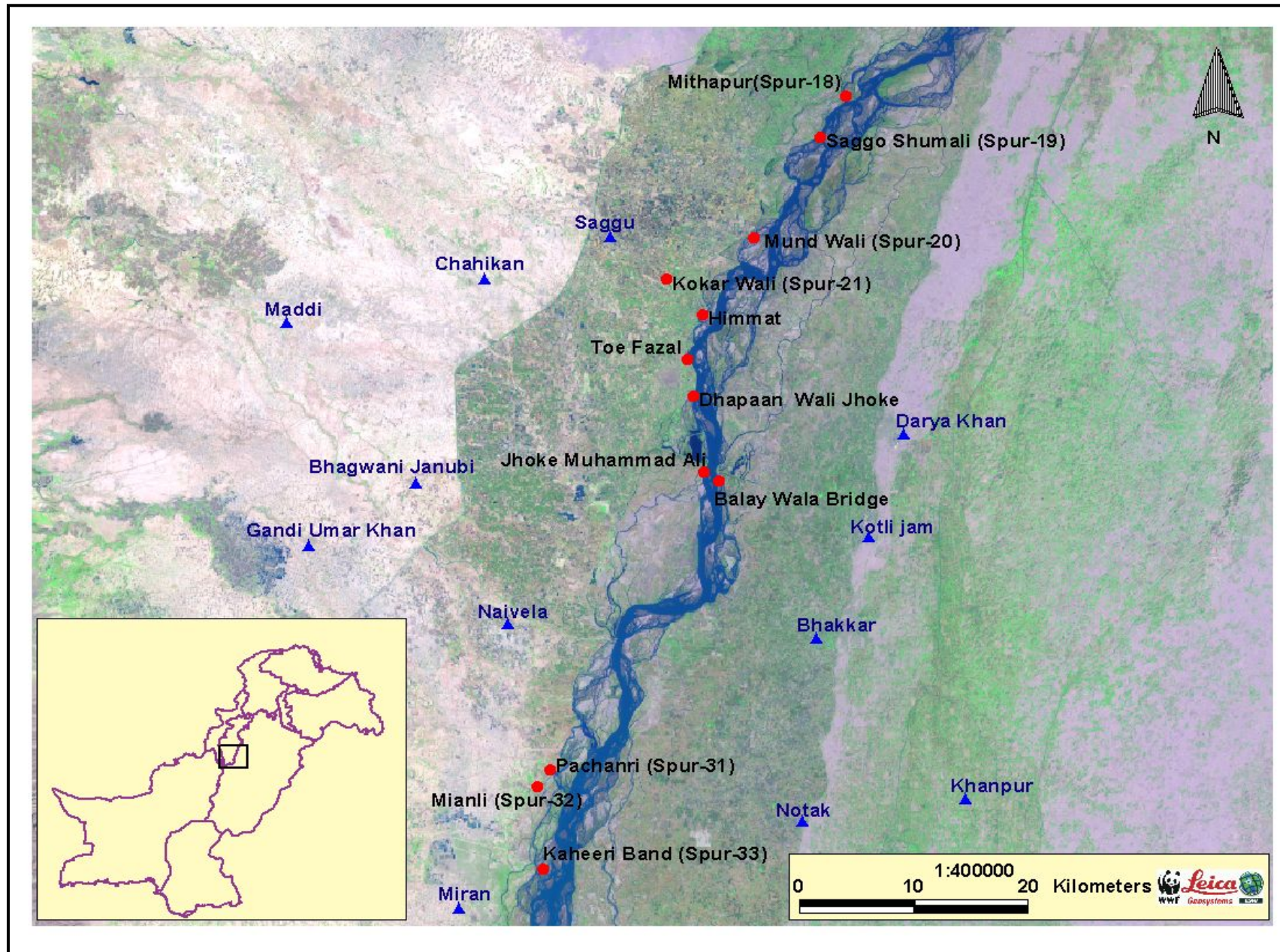
3 Methodology:

Methodology adopted includes the combination of both direct and indirect observations.

3.1 Direct Observations

The potential sites were visited and transect walk was made to see turtles in wild. The use of binocular was found necessary as the turtles have sharp senses and any disturbance can make them jump suddenly into water. Most of the turtles were found along the river bank while basking but the local response noted was, turtles are best studied during winter season when water is low in the river. Visits to the areas, identified by the local community were also made to find out the signs of turtle killing and capturing groups.

Figure 1: Map of Study Sites Showing the Location of Communities along River Indus, D.I.Khan



3.2 Indirect Observations

Interviews were conducted following an open questionnaire to obtain information about status and local use of freshwater turtles, from the community. Species identification card was shown during interviews to identify the species, and to record local names of freshwater turtles found in the Indus River. Questionnaire and species identification card is attached as Annex 1 and Annex 2 respectively.

The local communities were asked for turtle capturing techniques and the instruments they use to capture turtles.

4 Results and Discussion:

4.1 Introduction to Kail Community

The *Kail* community is living along the sides of Indus River for years. The main sources of income are basket weaving and begging. Some of them work as tenets and few are involved in fishing on commercial level. They have been capturing turtles for eating purposes for long but now they have started selling them to earn money.

The total number of communities visited in *Dera Ismail Khan* was 13 along the river bank (see table 2). The river bank was divided into upstream and downstream from the main bridge on River Indus (*Dera Ismail Khan Bridge*). The *Kail* communities upstream are more actively involved in the trade of selling parts of softshell turtles than the communities living downstream but they have the knowledge of turtle parts that are being sold in the markets along with their market rates.

4.2 Business of Turtle Parts Started in Dera Ismail Khan

It has been observed that selling turtle parts is a recently adopted profession by the *Kail* community in *Dera Ismail Khan*. They have been involved in this business since last year (winter 2006).

4.3 Root Cause

There are many reasons to start selling turtle parts but the root cause is poverty as for as *Kails* are concerned. The groups of fishing community don't allow these people to go for fishing which was the major source of income for them in the past. Groups of turtle traders contact these people and offer them handsome amount of money in advance to start the business and adopt it as their profession.

4.4 Turtle Capturing Techniques and Instruments

The *Kails* are expert in capturing the turtles therefore the groups or persons involved in the trade of turtle's parts, contact these communities, and make deal with them.

Their techniques of capturing turtles are traditional. They use spear rod (*Sangola*), net with hooks called (*Teend*) to capture turtles. They fit nets in shallow water and check them for turtles, twice a day; early morning and at evening.

4.5 Abundantly Found Turtle Species

According to the communities, all the eight species of freshwater turtles are found in River Indus in *Dera Ismail Khan*. Ganges softshell turtles, Smith's turtle, Indian roofed turtle, and Indus mud turtles are in abundance in River Indus.

Breeding season of freshwater turtles starts in September and ends in December. The female lays eggs in sand and small turtles come out from eggs in summer season, starting from April, (detail is given in table 3).

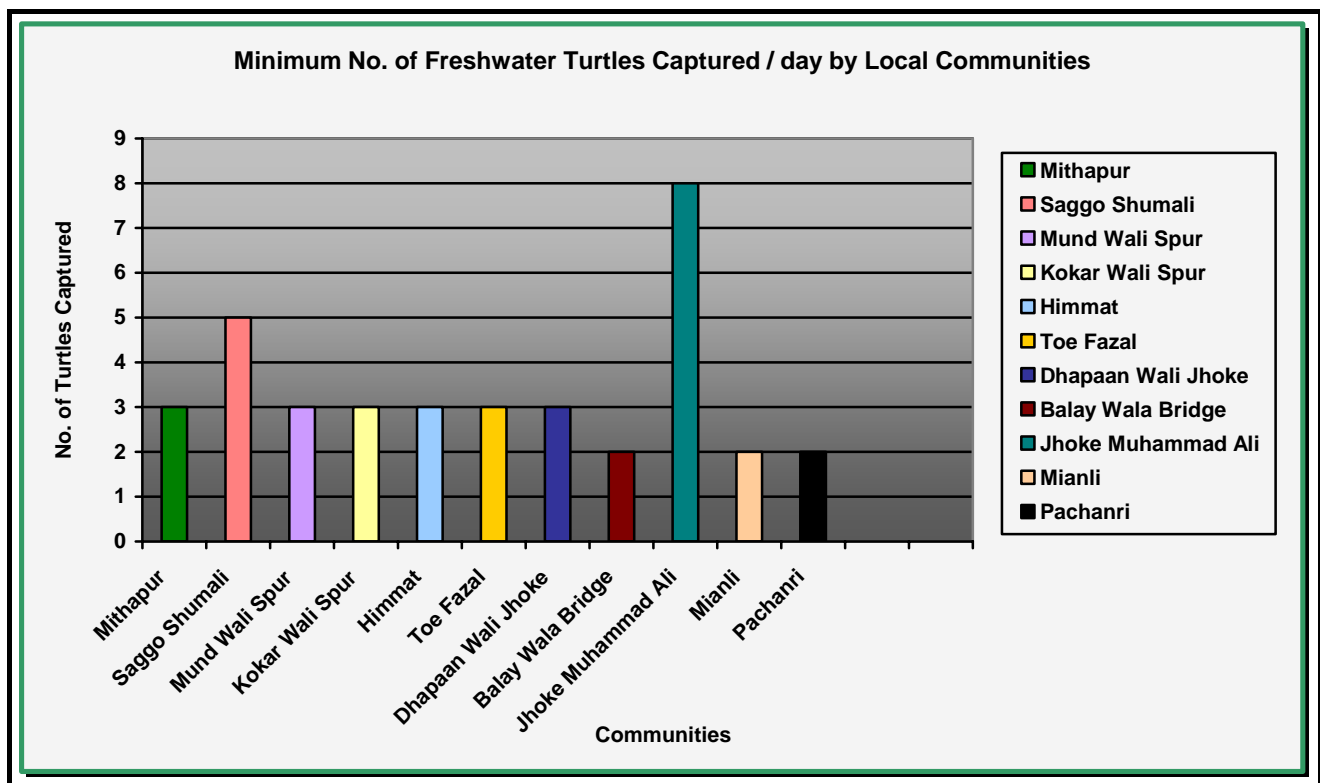
4.6 Softshell Turtles in Danger

These communities are involved in capture of two species of softshell turtles found in the River Indus; Ganges softshell turtles and Peacock softshell turtle, while the abundantly found hard shell species are not commercially important for them. According to IUCN red list both of these species are vulnerable. They cut the Plastron (The bony plates covered with scutes that make up the lower shell of a turtle) called *See/a*, and Chest Pellicle called *Tar* in local language and sell them at different rates to local agents. The local agents collect the parts of turtles from different communities and inform the main dealers, who belong to Punjab. Dealers visit the area at regular intervals, collect the turtle's parts, and give them money in return. Local community is provided with cell phones to contact these agents (see table 4 for details). These two parts are used in medicine and transported to China (according to locals). Most of these people use meat of softshell turtles for eating purposes. The shell is thrown away. The eggs of softshell turtles are also eaten.

Plastron and the chest pellicle cost minimum of Rs 50-60 and maximum of Rs 250, if the size of plastron is six inches. The price reduces to half if the size of plastron is less than six inches. The rates at which turtle parts are sold to local agents are given in table 5.

Kails move in groups to capture turtles and cover the area of at least 4 km upstream and downstream. The average number of turtles captured per day by each community is 3-5 (see figure 2).

Figure 2: Minimum Number of Freshwater Turtles Captured/day by Local Communities



On average, 3.3 turtles (Range 3-5 turtles/day) are caught by a community each day, which reaches total catch of 37 turtles per day for the communities involved.

12 Ganges softshell turtle and one Peacock softshell turtle was found in captivity. Sizes of Ganges softshell turtles found in captivity are given in table 6.

5 Conclusion and Recommendations:

5.1 Scope of Survey

The scope of survey of freshwater turtles should be expanded to the provinces other than NWFP and the status of trade in freshwater turtles should be studied in Punjab and Sindh. This would help in identifying market chains and trade routes.

5.2 Coordination among Provinces

The conservation actions should be taken on national level. Enhancing coordination among provinces and organizing consultative meetings of Wildlife Departments should be a top priority. Workshops should be organized to discuss the legislation and policy instruments to conserve freshwater turtles in Pakistan.

5.3 Strict Law Enforcement by NWFP Wildlife Department

There is no provision in the NWFP Wildlife Act of 1975, to stop killing of turtles and trade in turtle parts. It is recommended that legal cover be provided to the freshwater turtles under the NWFP Wildlife Act, 1975, through modification/amendment. Also, the legal coverage in provincial Wildlife laws be reviewed for stricter measures in this regard.

5.4 Awareness and Education

Awareness and education campaigns should be started, highlighting the ruthless killing of the turtles and needed actions.

5.5 Information Dissemination

Report should be published in the newspapers and on internet to highlight the issue. The information should be shared among provincial wildlife authorities for their understanding and appropriate actions.

5.6 Population based survey of Freshwater Turtles

The species of Freshwater turtles found in Pakistan are well known but the freshwater turtles in context of their population size range and status are not yet studied. It is recommended to initiate population based survey of freshwater turtles to study the occurrence, abundance, status and hotspots of all species of freshwater turtles found in Pakistan. On the basis of this information the conservation plan or strategy should be developed.

5.7 Establish Community based Organizations

Community based organizations (CBOs) should be established in collaboration with Wildlife Departments to conserve freshwater turtles. Nest protection during breeding season can be promoted through CBOs. A freshwater turtle sanctuary should be established at identified hotspots.

5.8 Lack of Livelihood Opportunities

Kail community has adopted selling of turtles parts as their profession because of no other option of livelihood. Most of them are willing to leave this profession if any other alternative is provided. The community traditionally involved in making several items from *Typha*, however, due to poor quality and no proper marketing, this is not a profitable profession for them.

Enterprise development and marketing trainings should be organized for *Kail* community to promote the cottage industry and develop market for their products.

6 Sources

1. Turtle Survival Alliance, Specialist Group Profile, <http://www.iucn.org>
 2. Illegal trade and conservation requirements of freshwater turtles in Nanmao, Hainan Province, China, 2006, <http://journals.cambridge.org>
 3. An Overview of the Trade in live South-east Asian Freshwater Turtles, 2001, <http://www.traffic.org>
 4. Freshwater Turtles in Pakistan-Conservation Plan, First Draft, developed by Uzma Khan, WWF-Pakistan, 2006
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Table 2: Communities visited

	Location	Coordinates	Population	No. of Individuals
Upstream	<i>Mithapur Spur-18</i>	N 32 03.686 E 071 04.183	30 Houses,	250 Individuals
	<i>Saggo Shumali Spur-19</i>	N 32 01.698 E 071 02.728	6-Houses,	30 Individuals
	<i>Mund Wali Spur-20</i>	N 31 56.835 E 070 58.945	7 houses,	30 Individuals
	<i>Kokar Wali Spur-21</i>	N 31 54.043 E 070 56.812	40 Houses	200-250 Individuals
	<i>Himmat</i>	N 31 53.071 E 070 56.048	15 Houses,	80 Individuals
	<i>Toe Fazal</i>	N 31 50.860 E 070 55.144	6 Houses,	35-40 Individuals
	<i>Dhapaan Wali Jhoke</i>	N 31 49.064 E070 55.437	25 Houses,	100-120 Individual
	<i>Balay Wala Bridge</i>	N 31 44.887 E070 56.738	1 House	8-10 Individuals
	<i>Jhoke Muhammad Ali</i>	N 3145.288 E070 55.912	4 Houses	30-40 Individuals
Downstream	<i>Kaheeri Band Spur-33</i>	N 31 25.877 E 070 46.688	-	-
	<i>Mianli Spur-32</i>	N 31 29.938 E 070 46.413	3 Houses,	25-30 Individuals
	<i>Pachanri Spur-31</i>	N 31 30.741 E 070 47.151	6 Houses,	40-45 Individuals

Table 3: Information obtained from community regarding species of Freshwater Turtles

#	Species Recognized	Local Name	Found Captured	Breeding Season	Clutch Size
1	Smith's Turtle (<i>Kachuga smithii</i>)	<i>Tukni</i>	Six seen along the river side	Sep-Nov	8-10
2	Brahminy or Crowned River Turtle (<i>Hardella thurjii</i>)	<i>Bhir</i>	Nil	Sep-Nov	15-20
3	Ganges Softshell Turtle (<i>Aspideretes gangeticus</i>)	<i>Kachu</i>	12 seen in captivity	Sep-Nov	25-30
4	Spotted Pond Turtle (<i>Geoclemys hamiltoni</i>)	<i>Khatria</i>	Nil	Sep-Nov	15-20
5	Indian Roofed Turtle (<i>Kachuga tecta</i>)	<i>Charohi / Patoi</i>	Seen along the river bank	Sep-Nov	7-10
6	Peacock Softshell Turtle (<i>Aspideretes hurum</i>)	<i>Sateena</i>	One in captivity	Sep-Nov	25-30
7	Indus Mud Turtle (<i>Lissemys punctata</i>)	<i>Kummi</i>	Nil	Sep-Nov	10-12
8	Chitra Turtle (<i>Chitra chitra</i>)	<i>Paalatar / Buth</i>	Nil	Sep-Nov	200-250

Table 4: Agents or Dealers of the Business

Community	Interviewee	Turtle Parts Sold to	Importance of Turtle Parts	Business Started
<i>Mithapur Spur-18</i>	Fateh Khan, Mushtaq, Mustafa, Faiz Ahmad	Arshad (Lahore)	Used in Medicine	Winter, 2006
<i>Saggo Shumali Spur-19</i>	Sher Zaman, Ghulam Qasim	Ditta	Used in Medicine	Winter, 2006
<i>Mund Wali Spur-20</i>	-	People sold the parts of turtles to a person in Punjab.	Used in Medicine	Winter, 2006
<i>Kokar Wali Spur-21</i>	Khadim, Moazzam	Mithoo, Maana,	Used in Medicine	Winter, 2006
<i>Himmat</i>	Ranjho	<i>Maana</i>	Used in Medicine	Winter, 2006
<i>Toe Fazal</i>	Muhammad Hussain, Habib Ullah, Mumtaz, Saleem	<i>Attaullah, Nazir, Falak</i> sell turtles' piece to Arshad who then export them to China.	Used in Medicine	Dec. 2006
<i>Dhapaan Wali Jhoke</i>	Haider	<i>Haider</i> himself collects pieces from surrounding community and sells them to <i>Shahid, Zafar</i> .	Used in Medicine	8-9 months
<i>Balay Wala Bridge</i>	Iqbal (Zeba)	<i>Habib</i>	Used in Medicine	2 Months
<i>Jhoke Muhammad Ali Group 1</i>	Muhammad Nawaz, Naseer Ahmad	<i>Habib</i>	Used in Medicine	3 months
<i>Jhoke Muhammad Ali Group 2</i>	Ghulam Shabir	<i>Habib</i>	Used in Medicine	15-20 Days
<i>Kaheeri Band Spur-33</i>	-	-	-	-
<i>Mianli Spur-32</i>	Yaseen, Haider	-	Used in Medicine	Winter 2006
<i>Pachanri Spur-31</i>	Muhammad Ramzan	<i>Habib, Abdur Rehman</i>	Used in Medicine	2 Months

Table 5: Response of Community about Softshell Turtles Parts and Rates

Community	Commercially Important Species	No. of Turtles captured per day	Parts of Softshell Turtles Sold	Rates of Turtle parts
<i>Mithapur Spur-18</i>	Ganges softshell turtle, Peacock softshell turtle	3-5 turtles	Plastron (<i>Seela</i>), Chest Pellicle (<i>Tar</i>)	Rs 100 for Ganges softshell turtle and Peacock softshell turtle
<i>Saggo Shumali Spur-19</i>	Ganges softshell turtle	5-7 turtles	Plastron (<i>Seela</i>), Chest Pellicle (<i>Tar</i>)	Rs 180 for Ganges softshell turtle
<i>Mund Wali Spur-20</i>	Ganges softshell turtle, (Don't sell but have knowledge)	3-5 turtles	Plastron (<i>Seela</i>), Chest Pellicle (<i>Tar</i>)	Rs 100 for Ganges softshell turtle
<i>Kokar Wali Spur-21</i>	Ganges softshell turtle,	10-20 turtles/trip (they sold 30-35 turtles on 18 th April 2007)	Plastron (<i>Seela</i>), Chest Pellicle (<i>Tar</i>)	Rs 150 for Ganges softshell turtle
<i>Himmat</i>	Ganges softshell turtle, Peacock softshell turtle	25-30 turtles / trip	Plastron (<i>Seela</i>), Chest Pellicle (<i>Tar</i>)	Rs 300 for Ganges softshell turtle
<i>Toe Fazal</i>	Ganges softshell turtle, Smith's Turtle is also in use.	3-5 Turtles/day Sometimes 10 turtles	Plastron (<i>Seela</i>), Chest Pellicle (<i>Tar</i>)	Rs 230 for Ganges softshell turtle
<i>Dhapaan Wali Jhoke</i>	Ganges softshell turtle,	3-5 Turtles/day	Plastron (<i>Seela</i>), Chest Pellicle (<i>Tar</i>)	Rs 100 for Ganges Softshell turtle
<i>Balay Wala Bridge</i>	Ganges softshell turtle, Peacock softshell turtle	2-3 Turtles/day (sold 16 pieces in 2 months)	Plastron (<i>Seela</i>), Chest Pellicle (<i>Tar</i>)	Rs 230 for Ganges softshell turtle and Peacock softshell turtle
<i>Jhoke Muhammad Ali Group 1</i>	Ganges softshell turtle, Peacock softshell turtle	8-10 Turtles/day	Plastron (<i>Seela</i>), Chest Pellicle (<i>Tar</i>)	Rs 230 for Ganges softshell turtle and Peacock softshell turtle
<i>Jhoke Muhammad Ali Group 2</i>	Ganges softshell turtle, Peacock softshell turtle	2-3 Turtles/day	Plastron (<i>Seela</i>), Chest Pellicle (<i>Tar</i>)	Rs 230 for Ganges softshell turtle and Peacock softshell turtle
<i>Kaheeri Band Spur-33</i>	-	-	-	-
<i>Mianli Spur-32</i>	Ganges softshell turtle, (don't sell but have knowledge)	-	Plastron (<i>Seela</i>), Chest Pellicle (<i>Tar</i>)	-
<i>Pachanri Spur-31</i>	Ganges softshell turtle,	2-5 Turtles /day	Plastron (<i>Seela</i>), Chest Pellicle (<i>Tar</i>)	Rs 50-60 for Ganges softshell turtle

Table 6: Sizes of Turtles, found in Captivity

Length (cm)		Total Length (cm)	Carapace (cm)
Carapace	Plastron		Width
38.1 cm	20.32 cm	58.42 cm	38.1 cm
30.48 cm	17.78 cm	48.26 cm	30.48 cm
25.4 cm	12.7 cm	38.1 cm	25.4 cm
35.56 cm	17.78 cm	53.34 cm	35.56 cm
27.94 cm	12.7 cm	40.64 cm	27.94 cm
30.48 cm	15.24 cm	45.72 cm	30.48 cm

Glimpses of Visit



Photo: Uzma Noureen / PWP

Ganges Softshell Turtle (wounded with spear and net-hook)



Plastron & Chest Pellicles placed in open to be dried up



Ganges Softshell Turtles



Photo: Uzma Noureen / PWP

Dried meat of softshell turtles



Photo: Uzma Noureen / PWP

Dried Plastrons & Chest Pellicles



Photo: Uzma Noureen / PWP

Hooks, used to catch turtles



Photo: Uzma Noureen / PWP

Locals with Spear in hand



Photo: Uzma Noureen / PWP

Slaughtered Turtles



Photo: Uzma Noureen / PWP

Part of softshell turtle



Photo: Uzma Noureen / PWP

Locals, capturing turtles



Photo: Uzma Noureen / PWP

Plastrons in local's hand



Photo: Uzma Noureen / PWP

Slaughtered turtle



Photo: Uzma Noureen / PWP

Ganges Softshell Turtle, ready to cook



Photo: Uzma Noureen / PWP

Plastron & Chest Pellicles of Ganges Softshell Turtle and Peacock Softshell Turtle



Photo: Uzma Noureen / PWP

Ganges Softshell Turtles in Captivity

Annexures

Annex: 1

**FRESHWATER TURTLE SURVEY
QUESTIONNAIRE**

Date: _____

Name: _____

Village: _____

Coordinates: _____

Nearest Village: _____

Community

1. Tribe: _____

2. Population: _____

3. Major Sources of Income:

Male: _____

Female: _____

Children: _____

4. Literacy Rate: _____

5. Economic activities: _____

If they capture turtle;

1. Do they sell it?

Yes/No

2. If yes, then they sell whole or any specific part?

3. If specific part, then which part is to be sold and of which species?

4. At which rate that part is sold and to whom?

5. Which size of turtles are more in demand?

6. What is the mean of capturing turtles?

7. How many turtles they capture per day?

8. Which species is mostly demanded by dealers?

9. How many species are there in river?

10. Which species is abundantly present in river?

11. What do they do with the rest of turtle after removing the required parts?

12. What do they do with eggs of turtle?

13. If eaten, then eggs of which species are mostly used for eating purposes?

14. Is there any other use of turtle's egg?

15. When they started capturing turtles?

Major Threats to Turtles

1. Poaching/Killing

2. Egg collection:

3. Boat(propeller/noise):

4. Pollution:

5. Habitat Conversion/degradation:

6. Effect of explosive material or drugs/Poison use for fishing:

Other Information

1. Local names of turtles:

2. Clutch size:

3. Egg protection by community;

Yes/No

Annex: 2

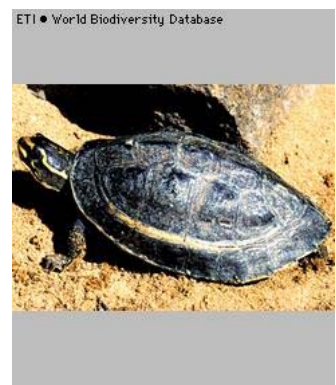
Freshwater Turtles of Pakistan
(Species Identification Card)



Kachuga smithii
(Smith's Turtle)



Geoclemys hamiltoni
(Spotted Pond Turtle)



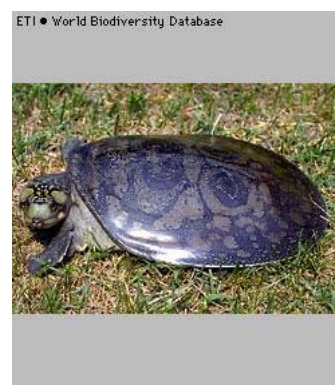
Hardella thurjii
(Crowned River Turtle)



Kachuga tecta
(Indian Roofed Turtle)



Aspideretes gangeticus
(Ganges Softshell Turtle)



Aspideretes hurum
(Peacock Softshell Turtle)



Lissemys punctata
(Indus Mud Turtle)



Chitra chitra
(Chitra Turtle)