

By [Rajesh](#)

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Gharial (GAVIALIS GANGETICUS) Update In Bangladesh

THOUGHTS

*This is a guest post by **M Ashraful Kabir** – Department of Biology, Saidpur Cantt Public College, Bangladesh. E-mail: ashraful.mission@gmail.com*

At three zoos in Bangladesh, there are a few **gharials** but they are living with the same sex. In Gazipur Safari Park it's almost the same scenario. In some recreational parks, there are Gharials but are not productive.

If we ensure in-situ conservation in zoos and safari parks via captive breeding, there is a good chance that their numbers will increase.

In Bangladesh, development-related activities are the major cause for the decline in gharial population. River bank erosion and Sand mining beside the river induces fear in gharials. River traffic and fishing should be restricted to conserve gharial of Bangladesh. If possible we should introduce modern technology immediately to see its number increase.

A big seminar, symposium, and meetings don't often lead to a solution. Insecticides and other chemicals in fields are another cause for the extinction of gharials. Lack of research fund is also a problem. In Bangladesh, a few independent researchers are working towards conservation of gharials. Awareness, which is currently lacking, should increase in this field.

Table 1. Male-Female ratio (1:1) Gharial in Bangladesh

| Gharials | Male | Female | Total |
|--------------|----------|----------|-----------|
| Rajshahi | – | 3 | 3 |
| Rangpur | – | 4 | 4 |
| Dhaka | 4 | – | 4 |
| Gazipur | 1 | – | 1 |
| Total | 5 | 7 | 12 |

Source: *ProthomAlo*, 20 April 2016

Discussion

Gharials belong to the order crocodilia and are the only member under the family gharialidae. These are the largest animals in crocodilian, their average length being 11-15ft.

In Bangladesh, due to environmental pollution, their number is decreasing and only 5 of them were found in 2015 (**red data book, IUCN Bangladesh**). We need to immediately take effective steps for conservation of this nice animal. In our zoos, if we arrange for its captive breeding surely its number will increase.

Gharial and False Gharial (*Tomistoma*) are genetically close relatives (**Janke et al 2005**). Taxon is found in padma, jamuna and tista rivers in the northern parts of Bangladesh (**Khan 1992; 2015**). Estimated total population in 1957-1990=52, 1991-2000=32, 2000-2002=1 young (**sarker et al 2003**). Padma river of Rajshahi in the year 2009-2010=9, 2010-2011=7, 2011-2012=5 were found (**Rashid et al 2014**).

Females lay 10-96 eggs (average 60), hatch 72-96 days at 32-34⁰ C (**Daniel 2002**). This is both diurnal and nocturnal. Gharial telemetry project was initiated to investigate 2007-08 mass dying of gharials – 110+ individuals in the lower Chambal river, large basking aggregations form in December and January. This 2007/08 die-off of 113 sub adult in Chambal C riverine of India was mainly due to nephrotoxin (**Whitaker et al 2008**).

In late June 2008 with assistance from WWF-India, the Madras crocodile bank trust and the gharial conservation alliance received ministry of environment and forests and state government's permissions to capture, radio-tag and monitor up to 30 wild gharials. A subsequent tagging in March 9 resulted in 10 animals being tagged. Another 10 were tagged in November 2010. At present 5 gharials are still being tracked into 2013 for the 2010 group.

Its mating season is mid-February. Nesting is late-march to early-April. Eggs incubate for 2 months and hatch early-mid June. Eggs/hatchlings mortality rate is over 50% at most rearing facilities. Wild hatchlings indicate that they benefit from pre-monsoon ambient temperature and begin feeding on live fish after hatching. There is a need to accumulate accurate knowledge on gharial ecology.

Toxicity in fishes and cold weather are among the causes for its death (**Lang and Kumar 2013**). Fishermen kill crocodiles and monitor lizards eat its eggs (**Stevenson and Whitaker 2010**). It is one of the largest living crocodilians (males up to 6 m, average weight 160 kg).

It is one of the largest living crocodilians (males up to 6 m, average weight 160 kg) (**Densemores 1943; Willis et al 2007**). Adults do not have the ability to walk in a semi-upright stance as other crocodilians do (**Bustard and Singh 1978; Whitaker and Basu 1983**). The presence of the species in the Irrawaddy River in Myanmar has also been reported (Smith 1931).

The ghara of males are used for mating with females (**Martin and Bellairs 1977**). Females get maturity once they grow up to 3 m long.

From less than 200 gharials worldwide in 1974, surveys in 1997/98 in India and Nepal indicated total numbers had increased to around 1675 (**ENVIS 1999**), of which 436 were adults (**anon 2006**). However surveys in 2006 showed that the population had dropped to less than 200 breeding adults and the total population was estimated to be approximately 834 (**Andrews 2006; data collected by RK Sharma 2005, 2006; Boullard and Cadi 2005; LAK Singh Pers. Comm; Tirtha Maskey, Pers. Comm.**). Human influences on riverine habitat for sand –mining, agriculture, irrigation, dam, barrage, to create loss of gharial habitat. From Bhutan gharials are extinct, some in India and in Nepal only 35 individuals

Human influences on riverine habitat for sand–mining, agriculture, irrigation, dam, barrage, etc. creates a loss of habitat for gharials. In Bhutan, gharials are extinct. Only a few are there in India and in Nepal – around 35 (**IUCN 2009**). No gharials are available in Pakistan, and in Myanmar, their number is not verified. In India in 1975-1982 released 879 gharials. It is hoped that the crocodile breeding and management training institute, situated at Hyderabad (

In India, surveys during 1975-1982 indicated 879 gharials. It is hoped that the crocodile breeding and management training institute, situated at Hyderabad would contribute actively in increasing their numbers (**Rao et al 1995**).

Recommendations

- We should count the population of gharial (IUCN Bangladesh 2015 only 5)
- Need to identify its habitat (only Rajshahi Padma river)
- Make a plan for conservation (circular for wildlife conservation from various schools/colleges)
- Through active action plan in zoos/safari park by in-situ conservation for captive breeding
- Need large space
- It needs pollution free water
- Regulate temperature for breeding zone
- Gharial expert
- Emphasis on research
- Interested teachers of various colleges could manage part-time jobs in their area of expertise

- Apply for fund to WWF or IUCN

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