

Go Gharial !

Going, going, going GONE ?
NO! Go back to survival !

Now it is up to you ! Go get Gharial back!

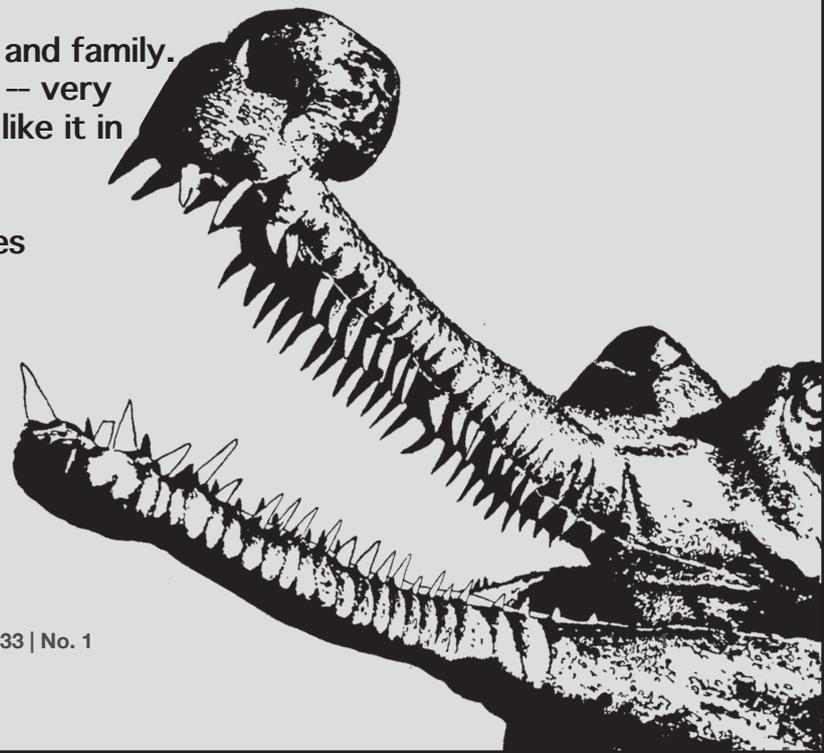
India came very close to losing its remarkable Gharial in the mid-1970s when it was discovered that their total number throughout India was about 250 animals. Wildlife biologists speak of “minimum viable population” or MVP, e.g., the lowest number at which a group of animals can survive for the long term; 250 is far below the MVP !

Furthermore, these 250 gharials were scattered within several areas which earlier comprised their range -- this is “fragmentation” which is also not good for long survival.

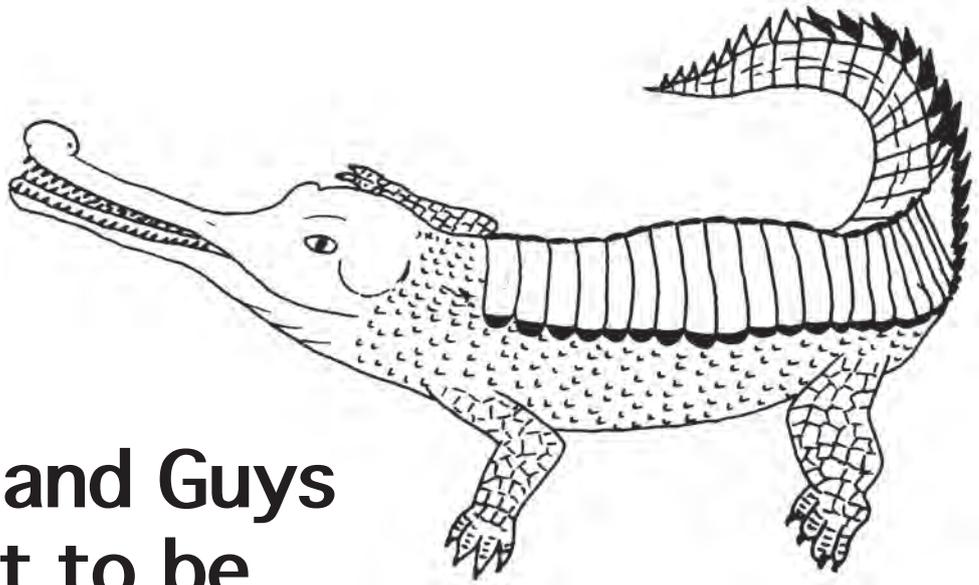
Ok but why worry? Aren't there so many other animals left ... lakhs of invertebrates, thousands of bats and rodents, hundreds of amphibians, other reptiles and mammals ? Yes, but

- **Gharial is unique.**
 - It is the most distinctive of living crocodilians
 - It is one of the largest living crocodilians
 - It is one of the oldest of reptiles
 - Its ancestors had a wide geographical distribution for most of the cenozoic age, crossing over to South America; it is at the centre of an evolutionary puzzle.
- **Gharial is monotypic in species, genus and family.** That just means that it is -- zoologically -- very unique indeed. There are many animals like it in so many important aspects.
- **Gharial is extinct in 4 of the 6 countries which made up its former range.**

Therefore, if we lose Gharial, we have lost an unique component of Indian science, natural history, history of science, evolution, it shouldn't happen.



Great Gharial Games



For Girls and Guys who want to be Guardians of Gharial

General info about Gharial and other Crocs

Gharial is a type of crocodile. There are three types (or families) of crocodiles Family Alligatoridae, Family Crocodylidae, and Family Gavialidae - Alligators, Crocodiles and Gharials

All crodilians are basically alike but have small differences.

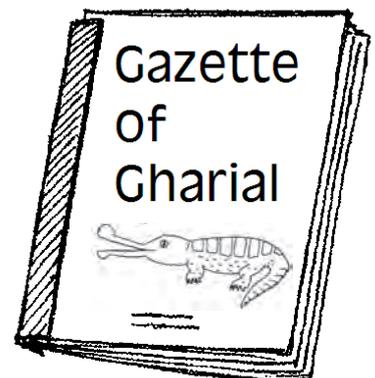
All crocs are alike in these ways

- they are all reptiles - they all have scales instead of fur or feathers
- they are all carnivores - meat eaters - their preferred food is fish
- they are all amphibious and spend some time on land - they all live in warm sub-tropical and tropical waters throughout the world.

They are different in these and other ways

Different in location

- alligators are found mostly in N. America, S. America and China
- crocodiles are found in Asia, Africa, Pacific Islands and USA
- Gharials are found in Asia (India and Nepal)
- Gharial is now found only in the following Indian states : M.P., U.P. & Rajasthan
- It is found in Nepal (but only a few breeding adults).
- Gharial is Extinct in Pakistan, Bhutan, Bangladesh and Myanmar.



Fantastic Facts

Different in species and name

There are 21 species of crocodylians altogether India has three species. They are called Gharial (*Gavialis gangeticus*), Indian mugger (*Crocodylus palustris*), and Estuarine crocodile (*Crocodylus porosus*)

Different in head shapes

Gharial head looks like some kind of musical instrument with a narrow snout which gets bigger at the end and has a bulb on the end in case of males.

Mugger snout is wide and almost triangular.

Estuarine crocodile snout is medium (between wide and narrow) and almost triangular.

Different in Colour

dorsal (upperside)	Gharial is olive green with dark cross bands Mugger is Ash or dark or yellow brown Saltwater crocodile is dark green-brown
Ventral (underside)	Gharial - light yellow or white Mugger - white Saltwater crocodile - white

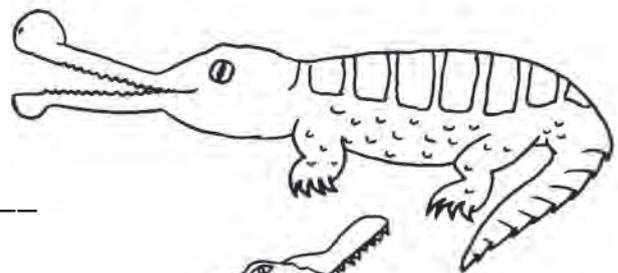
Different in behaviour -- gentleman or gangster

Gharial is generally a gentleman. It is not aggressive and will not attack humans unless severely provoked. Mugger and Estuarine crocodiles are gangsters. They are cranky, hungry, and dangerous to man when man encroaches on their territory. Stay out of their way or pay the price.

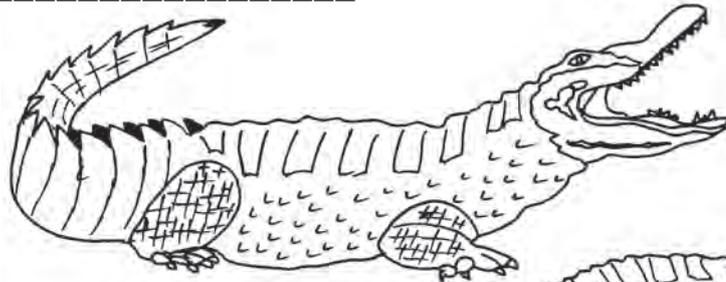
Instructions

1. Colour each animal its natural colour as told on the previous page
2. Draw the animal that it likes best between its jaws
3. Find the zoological or scientific name for the animal and write it beside the common or popular name.

Gharial

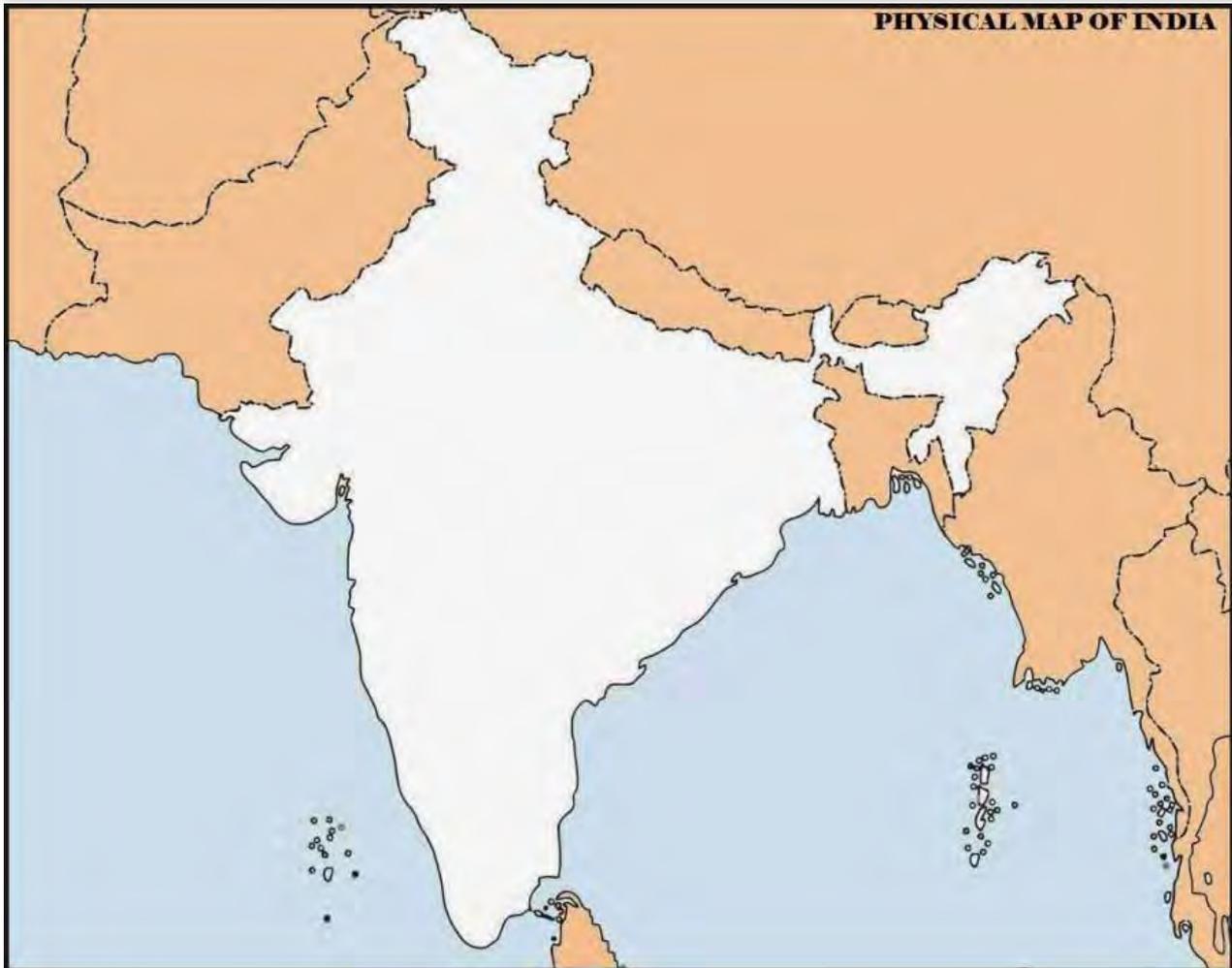


Mugger



Saltwater crocodile





Gharial on the map

We have told you the countries and states where gharial is found. Take your pencil or pen and draw a tiny gharial in every major area where it is found (state or country). Make a list of these names over to the right beside the numbers. Draw a line from each state and country to the correct area on the map like we have done for India.

Countries having Gharial

1. India and
- 2.

Indian states having Gharial

- 1.
- 2.

Remaining Gharial in

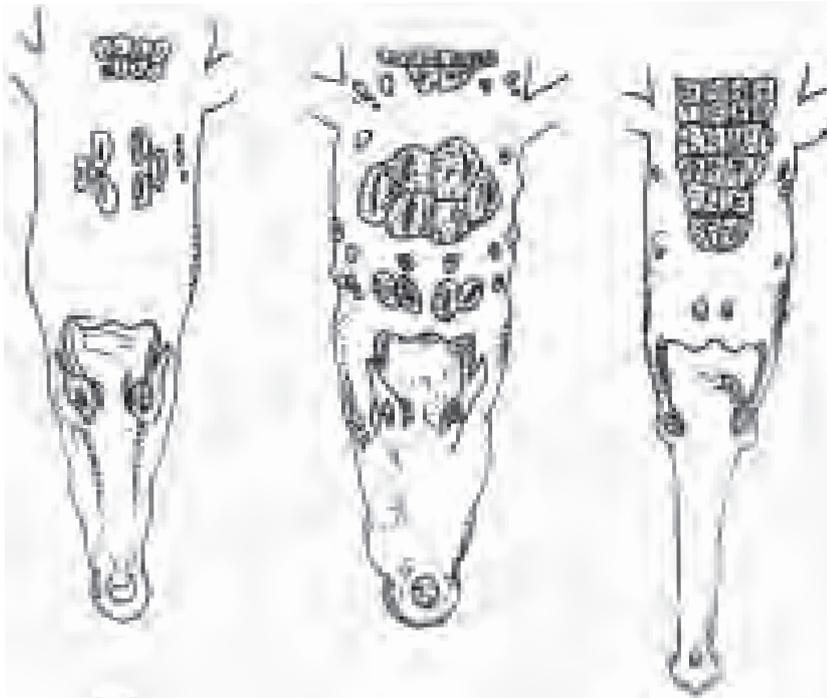
1. Chambal River (National Chambal Wildlife Sanctuary, Madhya Pradesh)
2. Katarniaghat Wildlife Sanctuary (Uttar Pradesh)
3. Son Gharial Wildlife Sanctuary (Madhya Pradesh)

Countries where Gharial once lived but is no more present.

Draw a big "x" for Extinct

1. 3.
2. 4.

What kinda croc ?



Adapted from L.A.K. Singh, 1999

Instructions : Elsewhere in this article the different species of Indian crocodilians have been identified by the shape of their head and nose. Review this if you want. Then ...

1. Write the common name of the species under the head in the space provided.
2. Write the zoological or scientific name along the side of the head.
3. Can you guess what zoological / scientific names are for ? Write your guess in the box below and then check the right answer which is cleverly hidden somewhere in this article.

1. _____ 2. _____ 3. _____

<p>How is Gharial <u>different</u> from other crocodilians ? List reasons you remember before peeking on the other page.</p> <hr/>	<p>How is Gharial <u>like</u> other crocodilians ? List reasons you remember before peeking on the other page.</p> <hr/>
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How do we stop it ?

In the mid-70s, when it was discovered that there were only 250 gharials, an FAO funded project was set up which included finding nests, collecting eggs, hatching and rearing baby gharials for release to “safer” areas when they were old and fast enough to escape predators. Foresters were trained in monitoring and other studies. A **Crocodile Conservation Project** was started and flourished, establishing large protected areas in important crocodile areas. Over 4000 captive reared and captive bred young gharial were released, many of them in the **Chambal River** and **Chambal Gharial Sanctuary** which covered three states - Rajasthan, U. P. and Madhya Pradesh, and was one of the most important areas in saving gharial

... or so it was thought.

In January 1995 a PHVA workshop on Gharial was held in Gwalior because the various state governments were threatening to stop the release programme. The workshop reported about 1200 Gharials -- 100 adults and 75 nests -- in Chambal as the most secure and only self-sustaining population in the country at that time. Participants nonetheless concluded that continued supplementation of populations was necessary for long-term survival. Two surveys in 1995-97 also indicated about 1200 gharial in the Chambal River but some bad changes in the sanctuary were emerging.

In just 7 years a crisis developed. Use of the Chambal River has increased and monitoring and protection has decreased. Surveys around 2004 reported 600 Gharials, a loss of 50% of the population in this best river in five years. Population numbers tell us a great deal about the status of species, but population loss tells more. Decline of 50% in 10 years is a very serious matter. We have a decline of 50% in five years - another decline may take us back to 250 !

India was again losing its gharial in 2004.

Status of gharial in 2012

Just two short years later, the status of Gharial in India had reduced to less than 200 again (Andrews, 2006) and less than 35 adults for Nepal (Saikia, 2012). The causes of their declining populations for the last 60 years have been inferred from literature -- overhunting, egg collection & killing by fishermen, limitation of range due to loss of riverine habitat. The geographic range of gharial has also declined from about 20,000 sq. km. to less than 3000 sq.km. in India and in Nepal from about 1000 sq. km. to less than 100 sq. km. Small population size + decline are also important : currently there are only three breeding populations in India -- Chambal River, Son River Sanctuary and Katarniaghat Wildlife Sanctuary. There is has been a 50% decline in the population from 1997 to 2006. Any of these criteria -- declining population, shrinkage of geographic range and small population size and decline -- are enough by themselves to justify upgrading the IUCN Red List category from Endangered to Critically Endangered. Gharial qualifies in all three ! Wildlife scientists, reptile specialists, crocodilian experts and gharial



researchers have been and are sounding alarm bells but nobody in the concerned governments with the power to respond seems to be listening.

Status of gharial in 2012

Just six years later, the species was reported to be present only in five separated breeding population namely Chambal river, Giwa river, Son river, Brahmaputra river in India and Rati and Narayani river in Nepal. As per current estimates the number of breeding gharials never crossed 220 (Saikia, 2012).

What about you ? Are you listening ?

Researchers are doing their part to insure that accurate information is available for gharial. That information needs to get into the hands of people who can take strong action to confront the problems and take serious action steps. Sometimes the government will listen to an audience that is not the usual activists. Young people who take an interest may be more effective than others. You are India's future after all. See next page for things legislators and officials need to do and what YOU need to do to motivate them.

Gharial Conservation alliance: <http://www.gharialconservationalliance.org/>

- consists of scientists, educationist, social scientists
- approach to conserve species
- involve local people in conservation and management

What legislators / government needs to do :

- resussitate the “grow and release” programme or similar activity so that rivers can be restocked with young gharial
- take strong action against the forces which led to the decline of gharial
- develop the will to take this action by understand the significance of permitting a unique treasure to become extinct
- deal with the illegal fishing/turtling mafia on Chambal River
- develop legislation that can be carried out and strengthen enforcement with regard to fishermen and their dangerous nets;
- create a Project Gharial for all the states formerly holding Gharial with funds for survey, monitoring, restocking, protection, community development and awareness building.

What you should do :

- learn all you can about gharial - from books, from websites, etc
- create awareness in your school, in your neighborhood, at your temple or mosque, on your cricket team, anywhere a group is gathered ...
- address government agencies with letters about gharial - organise letter writing campaigns, signature campaigns, fundraising efforts
- organise street plays and dramas in your neighbourhood. (You can write to Zoo Outreach Organisation for a Drama Kit, e.g. ideas for dramas, guidelines for dramas, masks of fishermen, river dwellers, politicians, etc.,
- Think positively ... think that we CAN save the gharial IF we believe we can and if we try.

By Sally Walker, Marimuthu, B.A. Daniel and Latha Ravikumar; Artwork by Sanjay Molur