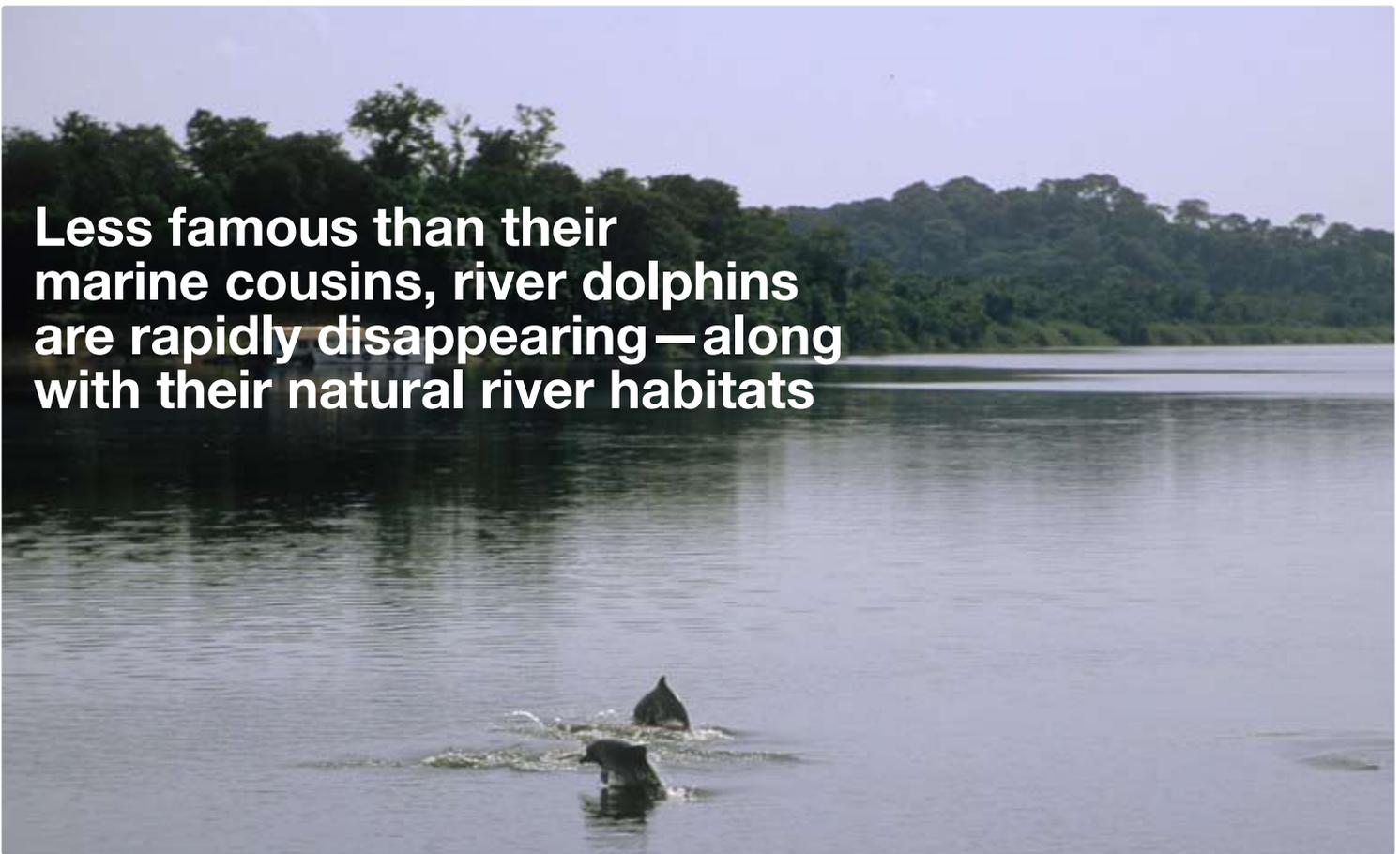




Less famous than their marine cousins, river dolphins are rapidly disappearing – along with their natural river habitats



Tucuxis, Pará, Brazil. © WWF-Canon / Michel Roggo

River dolphins and porpoises swim in some of the world's mightiest rivers, including the Ganges, Indus, Yangtze, Mekong, and Amazon. But these river basins are also home to over 15 per cent of our planet's people and include some of the most densely populated, and poorest, areas on Earth. Dam-building, entanglement in fishing nets, boat traffic, and pollution have led to drastic declines in dolphin populations over the last several decades. Several Asian species are now amongst the most endangered of all cetaceans. Urgent action is needed to prevent these charismatic animals, about which we still know very little, from becoming extinct.

There are seven freshwater cetacean species:

1. Also known as the pink river dolphin or boto, the **Amazon river dolphin** can only live in freshwater. It is found throughout much of the Amazon and Orinoco River Basins in Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, and Venezuela. It is the most abundant freshwater cetacean and probably numbers in the tens of thousands. However, it is classified as Vulnerable, with several dams having already fragmented the Amazonian population, and many more proposed.

2. The **tucuxi** lives in both salt- and freshwater and is found on the east coast of Central and South America. A riverine sub-species, *S. f. fluviatilis*, is found in the Amazon River and its main tributaries in northern Brazil, Peru, Colombia, and Ecuador, as well as in the lower Orinoco River in Venezuela. Classified as Data Deficient, its population is not known but it is not thought to be immediately threatened.

3. The Critically Endangered **Yangtze river dolphin**, or baiji, can only live in freshwater and has very poor eyesight. It once lived in the lower and middle reaches of the Yangtze River, Fuchun River, and in Dongting and Poyang Lakes, China. Today it is the world's most endangered cetacean, with fewer than 100 surviving in the middle reaches of the Yangtze.

4. The Endangered **Ganges river dolphin**, or susu, can only live in freshwater and is essentially blind. It once ranged throughout the Ganges-Brahmaputra-Meghna and Karnaphuli-Sangu river systems of Nepal, India, and Bangladesh, from the Himalayan foothills to the Bay of Bengal. Today its population is divided by dams into isolated groups and has a much reduced range. The lowest estimate for the total population is 1,200–1,800 individuals.

At a glance:

Species:	<i>Amazon river dolphin</i> (<i>Inia geoffrensis</i>), <i>finless porpoise</i> (<i>Neophocaena phocaenoides</i>), <i>Ganges river dolphin</i> (<i>Platanista gangetica gangetica</i>), <i>Indus river dolphin</i> (<i>P. g. minor</i>), <i>Irrawaddy dolphin</i> (<i>Orcaella brevirostris</i>), <i>tucuxi</i> (<i>Sotalia fluviatilis</i>), <i>Yangtze river dolphin</i> (<i>Lipotes vexillifer</i>)
Habitat:	Coastal, brackish, and fresh waters
Location:	South Asia, Southeast Asia, East Asia, Central and South America
Population:	Fewer than 100 to tens of thousands, depending on the species
Status:	Data Deficient to Critically Endangered (IUCN–The World Conservation Union)



5. Closely related to the Ganges river dolphin, the Endangered **Indus river dolphin**, or bhulan, is found in Pakistan's Indus River. One hundred years ago, the sub-species lived throughout the 3,500km-long river and its tributaries. Today around 1,100 individuals survive in a 1,375km-stretch of the Indus, divided into isolated populations by six barrages (a type of dam).

6. The **Irrawaddy dolphin** lives in both salt- and freshwater, and is found in a few locations in South and Southeast Asia. There are three exclusively freshwater populations: about 70–100 individuals live in a 190km-stretch of the Mekong River (Lao PDR, Cambodia); 33–50 live in a 420km-stretch of the Mahakam River (Indonesia); and about 59 live in a 370km-stretch of the Ayeyarwady River (Myanmar). In addition, very small numbers survive in the partially freshwater Songkhla Lake (Thailand) and the brackish Chilka Lake (India). The freshwater populations are all classified as Critically Endangered, as is the Songkhla Lake population.

7. The **finless porpoise** is the only porpoise species that can live in freshwater. It is found in coastal waters Southeast and East Asia, with a sub-species, *N. p. asiaeorientalis*, found in the Yangtze River and its adjacent lake systems. Classified as Endangered, there could be fewer than 2,000 individuals of this freshwater sub-species.

What are the problems facing river dolphins and porpoises?

Habitat loss and degradation

The rivers and lakes in which freshwater cetaceans are found are subject to many, often intensive, human activities that have caused extensive habitat loss and degradation.

Dams have divided many species into small, isolated populations, making them susceptible to inbreeding and more vulnerable to other threats as they cannot move to new areas. Several dolphin populations completely disappeared following the construction of a dam. Dams also disturb the migration, breeding cycles and habitat of fish and other prey species, and so reduce the cetaceans' food supply.

In addition, dams change the natural flow and distribution of water. For example, barrages and irrigation have greatly reduced water volume in the Indus and Ganges Rivers, leading to a dramatically reduced dry-season range for river dolphins. Reduced flows have also caused saltwater to intrude an additional 160km into the Sundarbans Delta of the Ganges River, further decreasing the amount of suitable habitat for freshwater dolphins.

The Yangtze, Indus, and Ganges Rivers are already heavily dammed, with many more large dams planned or under construction. Large dams are also planned for the Mekong, Amazon, and Orinoco Rivers.

Industrial, agricultural, and human pollution is another serious cause of habitat degradation, particularly for the Indus, Ganges, and Yangtze Rivers. Each year, 2,500 tonnes of pesticides and 1.2 million tonnes of fertilizer are used in the vicinity of the Ganges River, while 80 per cent of the 15.6 billion cubic meters of wastewater discharged into the Yangtze is not treated. The Ayeyarwady, Mekong, and Amazon Rivers are also polluted by mercury, cyanide, and arsenic leaching from gold mining activities, and the Amazon and Orinoco Rivers have been polluted by oil spills in Colombia. In many areas, the ability of the rivers to dilute and flush out pollutants has been drastically reduced due to upstream water diversion and removal.

High levels of pollution can directly kill prey species and dolphins, and completely destroy their habitat. As the top predator, river dolphins have been shown to have high levels of persistent toxic chemicals in their bodies, which is likely to adversely affect their health. One explanation for the high number of dead and stillborn Irrawaddy dolphin calves found in Songkhla Lake could be high levels of toxins from agrochemicals used intensively along the lakeshore. As industrialization and development speeds up throughout the dolphins' range, pollution is expected to increase.

Noise and congestion caused by boats can also be a serious problem. The rivers in which cetaceans live are often very muddy, so the animals rely primarily on echolocation to navigate and find food. Noise pollution can interfere with this. High traffic and harassment by tourist boats in some rivers causes stress in dolphins and can lead to collision with boat propellers.



Indus river dolphin found dead due to entanglement in fishing net. Indus River, Pakistan. © WWF-Canon / WWF-Pakistan/Uzma Khan



Construction of the Three Gorges Dam, Yangtze River, China.
© WWF-Canon / Michel Gunther

Other human activities, such as clearing of river banks, deforestation, sand mining, dredging, and land reclamation, particularly along the Yangtze, have also contributed to the decline in both the quality and quantity of freshwater cetacean habitat, while overfishing has reduced their food supply.

All of these habitat degradation factors harm not only the dolphins, but also the millions of people living in these river basins, whose lives and livelihoods depend on healthy, unpolluted river systems.

Accidental death

Freshwater cetaceans are extremely vulnerable to bycatch, or incidental capture in gillnets and other modern fishing gear. A recent study in the mouths of the Amazon suggested that over 1,050 tucuxis drowned in fishing gear in a single year. In the Mekong River, at least four Irrawaddy dolphins died per year due to gillnet entanglement from 2001–2003, out of a population of only 70–100 individuals. Freshwater cetaceans are also killed by electric fishing and dynamite fishing.

Indus river dolphins also occasionally die after becoming trapped in irrigation canals, while Yangtze river dolphins are killed by boat propellers and blasting of river channels to improve navigation.

Poaching, hunting, and capture

While many river dolphin populations are protected by local people, some are deliberately hunted for their meat and oil, which are used as fish bait and as an emulsion to protect boats from water. They are also occasionally hunted for their body parts, which are used in traditional medicine. In addition, the animals are sometimes killed by fishermen in retaliation for ‘stealing’ fish.

Irrawaddy dolphins are also caught live for display in oceanaria. Twenty-two of the 50 individuals caught since 1974 originated from the Mahakam River, placing increased pressure on the remaining population of just 33–50 individuals. Yangtze river dolphins were also caught for similar purposes in the past.

What is WWF doing to reduce threats to freshwater cetaceans in the wild?

River dolphins and porpoises are ‘flagship’ species for their habitats — charismatic representatives of the biodiversity within the complex ecosystems they inhabit. Efforts to

safeguard these cetaceans will not only help save many other species, but will directly contribute to human development and survival by ensuring the availability of adequate and clean freshwater.

In 2005, WWF launched a new River Dolphin Initiative. With 40 years of experience in cetacean conservation, WWF is working with governments, other non-governmental organizations, industry, fishermen, and local communities to:

- Reduce dolphin deaths and habitat degradation caused by dams, irrigation canals, and water withdrawals
- Reduce pollution of freshwater ecosystems
- Reduce dolphin deaths from fishing bycatch and deliberate removal
- Restore fisheries and river-bank habitats
- Conduct necessary research to guide conservation activities for these little-understood animals
- Assist local communities to develop more sustainable livelihoods and enhance their management of natural resources.

Examples of current work to conserve freshwater cetaceans include:

1. In India, WWF coordinated a survey of Ganges river dolphins and the threats they face. To mitigate the identified threats, WWF is encouraging local communities along a 164km-stretch of important dolphin habitat in the upper Ganges River to use natural fertilizers; not to dispose of domestic sewerage in the river; to improve sewerage management; to reforest the river bank; and to ban commercial fishing and sand-mining activities. WWF is also monitoring dolphin populations and threats in important dolphin habitats in other areas of the country.

2. In Pakistan, WWF coordinated the largest-ever population survey of the Indus river dolphin, and is working to assess water and sediment quality, studying bioaccumulations of toxic chemicals and heavy metals in the dolphin’s prey species. Dolphin habitat is being improved by changing existing agricultural practices. WWF also conducts rescues of dolphins stranded in irrigation canals. As part of plans to modernize Taunsa Barrage, WWF is discussing the development of dolphin corridors and improvement of existing fish ladders to allow dolphins and fish to cross the barrage. Various steps have been taken to enhance awareness and train local stakeholders for improved species management.

3. In China, WWF is working to restore the Yangtze River Basin to improve freshwater habitats and resources for both people and wildlife. In 2004, a joint WWF-HSBC project led to the regular opening of a dyke at Tian'e-zhou Oxbow Lake, reconnecting it to the Yangtze after 50 years. This has boosted water levels and quality in the lake, home to the Yangtze finless porpoise, and is allowing the natural migration of fish during their breeding season.

4. In Cambodia and Lao PDR, WWF is working with the Cambodian government's Department of Fisheries to implement the Cambodian Mekong Dolphin Conservation Strategy. WWF is also helping Cambodia and Lao PDR to coordinate their conservation efforts. Key elements of the work include raising public awareness, development of relevant laws, responsible tourism, and Irrawaddy dolphin research.

5. In Nepal, WWF has initiated a project to survey Ganges river dolphin populations in the Karnali River and its tributaries. The project will also analyze threats to the dolphins and their habitats, and provide recommendations to decision and policy makers on dolphin conservation. Awareness-raising activities will also be carried out at a local level.

6. In Colombia and Venezuela, WWF helped carry out the first-ever survey of Amazon river dolphin populations in the Orinoco River and has supported educational campaigns that have created greater awareness about river dolphins.



Children in front of a sign about conservation of the Ganges river dolphin, Farida village, Uttar Pradesh, India. © WWF-Canon / Jamie Pittock

7. WWF additionally has several large-scale initiatives and projects to address freshwater issues that also affect river dolphins. These include the Dams Initiative, which works to ensure that the benefits provided by dams are not overtaken by negative environmental and social impacts; agriculture initiatives, which work to reduce water use and pollution caused by agriculture; and the promotion of Integrated River Basin Management, which aims to maintain or restore functioning freshwater ecosystems and promote sustainable use of water resources in the world's major river basins.

8. WWF works on preventing over-exploitation of freshwater cetaceans for international trade through TRAFFIC — operated as a joint programme by and between WWF and IUCN–The World Conservation Union — as well as through associated field and policy interventions. In 2004, WWF and TRAFFIC supported a ban on the international live trade of Irrawaddy dolphins for oceanaria by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

9. WWF also works to phase out and ban the most hazardous industrial chemicals and pesticides, which contaminate people and wildlife including freshwater cetaceans, and to identify and promote safe, effective, and affordable alternatives.



Air and water pollution in Jiangjiazui Town, West Dongting Lake, China. © WWF-Canon / Yifei Zhang

Find out more...

This fact sheet is designed to give a broad overview of some of the threats faced by freshwater cetaceans, and to give examples of WWF and TRAFFIC's work and solutions on the ground. For more detailed information on species, WWF, TRAFFIC, and the work we do, please visit www.panda.org/species and www.traffic.org

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