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## Giant fish 'verges on extinction'

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A river giant vanishes

**One of the world's largest freshwater fish is on the verge of going extinct.**

A three-year quest to find the giant Chinese paddlefish in the Yangtze river failed to sight or catch a single individual.

That means that the fish, which can grow up to 7m long, has not been seen alive for at least six years.

There remains a chance that some escaped the survey and survive, say experts, but without action, the future of the species is bleak.

The concern for the Chinese paddlefish is that its fate will parallel that of the Yangtze river dolphin, a large mammal species that was once abundant in the Yangtze river system, but has recently been declared extinct.

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Chinese Academy of Fisheries Science

A number of fish species vie for the position of the world's largest freshwater fish, including the arapaima (*Arapaima gigas*) of the Amazon river and the Mekong giant catfish (*Pangasianodon gigas*).

At up to 7m, the Chinese paddlefish (*Psephurus gladius*) is much longer than either, though it may not exclusively live in freshwater.

The fish is suspected to be anadromous, meaning it spends some of its life in marine waters before returning to the river to spawn. But it is so rare that little is known about its behaviour, life history, migration habits and population structure.

It is endemic to the Yangtze river system in China.

"It has special characteristics such as its sword-like rostrum. Some people call it the 'elephant fish' and we found out it swims on the surface of the water like a whale," says Professor Wei Qiwei, one of the leaders of the research team from the Chinese Academy of Fisheries Science in Jingzhou, China.

The last confirmed sighting of a Chinese paddlefish was made in the river on 24 January 2003.

Now scientists have published in the Journal of Applied Ichthyology the results of a three-year survey to find and locate the fish.

Professor Wei and colleagues surveyed the upper Yangtze river between Xinshi, Sichuan Province and Chongqing, covering a distance of 488.5km.

Most of this stretch of water lies within the Upper Yangtze National Nature Reserve, a

protected area.

### **Elusive target**

Between 2006 and 2008, the team used a number of boats to deploy 4762 setlines, 111 anchored setlines and 950 drift nets in a bid to catch the fish.

They failed to catch a single individual.

The team also used hydroacoustic equipment that beams sound through the water to create a picture of the river and anything in it.

This identified nine possible targets, of which two could be paddlefish, say the researchers. But they could not confirm these finds.

The fish now appears on the brink of extinction, say the scientists.

#### **FRESHWATER GIANTS**

Record-breaking freshwater fish (weights not included if unknown):

Mekong giant catfish 2.7m, 293kg

European or wels catfish 4.57m, 336.3kg

White sturgeon 3.8m

Amazon arapaima 2.48m, 147kg

Chinese paddlefish 7m

They speculate that some paddlefish may have eluded the research team, avoiding its nets and capture methods.

Professor Wei also thinks that some younger, smaller paddlefish may also still exist.

"The individuals born in the late 1980s and early 1990s should survive in the wild, since the Yangtze river system is large and it has some complicated habitats where the paddlefish could hide," he says.

But without intervention, the future for the species is bleak.

"It is not a good future for the species. Maybe we have only ten years to save the species according to the estimated life span of 30 to 40 years," Professor Wei says.

"The offspring born in 1990 will be 30 years old by 2020. It is impossible for the species to be a viable population by natural reproduction. With the current situation of ecology and environment in the Yangtze river, man assistant measures have to be taken."

With so few fish left the team proposes that modern reproduction methods need to be considered, such as using surrogates to rear the fish in captivity.

Other techniques may include preserving genetic material, cloning, or gynogenesis, where fish eggs are coerced into developing via parthenogenesis.

However the team need to find live paddlefish in order to be able to start this process.

From the middle of last century the population of Chinese paddlefish has declined rapidly

due to overfishing, habitat degradation and pollution.

The construction of the Gezhouba dam in 1981 on the Yangtze river also created a barrier to the migrating fish which further affected fish stocks.

The species has been listed as critically endangered on the International Union for the Conservation of Nature's Red List of Threatened Species since 1996.

### **Last chance to find**

The team believe the upper Yangtze is probably one of the last places that the fish may be present and propose to focus their efforts there.

They also hope to be in a position to act if any fish materialise on the river.

"In the last three years, we have been trying to set a quick-response network along the upper-stem of the Yangtze river to save accidental catches of the paddlefish," Professor Wei says.

"However, the network not only costs money and time, but is also a great challenge."