

**FIRST RECORD OF EXOTIC AMUR CATFISH, *SILURUS ASOTUS*  
(ACTINOPTERYGII: SILURIFORMES: SILURIDAE), IN THE TIBET STRETCH  
OF THE LANCANG RIVER, CHINA**

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**Abstract.** A single specimen of exotic Amur catfish, *Silurus asotus* Linnaeus, 1758, was captured by gillnet in the Tibet stretch of the Lancang River for the first time. (The Lancang River is an international river and in its lower course is also known as the Mekong River.) It is the first record of this fish species in eastern Tibet. The most possible pathway of the Amur catfish introduction into the Tibet stretch of the Lancang River was a human-mediated release known as life liberation activities or life release ceremony.

**Keywords:** *Silurus asotus*, exotic fish, the Lancang River, Mekong River, Tibet, life release ceremony

## INTRODUCTION

The Lancang River is a big international river in Asia. The Lancang River in its lower course is also known as the Mekong River. The Tibet stretch of the Lancang River is about 509 km and its elevation above the sea level exceeds 2000 m. Due to the high altitude environment, the fish fauna in the Tibet stretch of the Lancang River has been poorly studied. Only seven native fish species were recorded in this area (Anonymous 1995):

- *Schizothorax lantsangensis* Tsao, 1964
- *Schizopygopsis anteroventris* Wu et Tsao, 1989
- *Ptychobarbus kaznakovi* Nikolskii, 1903
- *Triplophysa brevicauda* (Herzenstein, 1888)
- *Triplophysa stoliczkai* (Steindachner, 1866)
- *Triplophysa stenura* (Herzenstein, 1888) and
- *Pareuchiloglanis gracilicaudata* (Wu et Chen, 1979)

The Amur catfish, *Silurus asotus* Linnaeus, 1758, is widely distributed in China, Japan, the Korean Peninsula, and Russia (Froese and Pauly 2018). In China, the Amur catfish is an economically important fish that is mainly cultured in Sichuan, Guangdong, Hubei, and Liaoning provinces. The currently known distribution records of the species in the main inland rivers of China are summarized in Fig. 1. The Amur catfish has been recorded from the Lhasa River, but is not recorded from other parts of Tibet (Chen and Chen 2010). In this paper, the first occurrence of exotic Amur catfish is reported from the Tibet stretch of the Lancang River.

## MATERIAL AND METHODS

A single specimen of Amur catfish was sampled (Fig. 2) using gillnet (length 10 m, height 1.5 m, mesh size 0.4 cm) on 15 September 2017. The sampling site (30°52'54.4656"N, 97°21'1.7892"E; elevation 3123 m above sea level) was in the shallow water near the bank. The surface water temperature was 13.5°C, the flow rate was 1.1 m · s<sup>-1</sup>, and the dissolved oxygen was 7.07 mg · L<sup>-1</sup>.

## RESULTS AND DISCUSSION

The specimen (Fig. 3) was 214 mm in standard length. The other morphometric and meristic characteristics are shown in Table 1. This is the first record of this fish species in the Tibet stretch of the Lancang River.

Amur catfish might be introduced into the Lancang River during life liberation activities, known also as a life release ceremony, a custom maintained and practised for thousands of years. During life liberation activities, the local people would buy live fish from the market and release them into a river. Therefore the demand for live fish during life liberation activities is dramatically increasing. On the other hand, religious beliefs of the local people prohibit them from fishing because living aquatic organisms (like the terrestrial ones) are treated as sacred. Therefore, a large amount of exotic fish products including Amur catfish from the lowland areas of China has been introduced into Tibet waters in recent years. On the other hand, the local people are less aware of the threat that exotic fish may pose to

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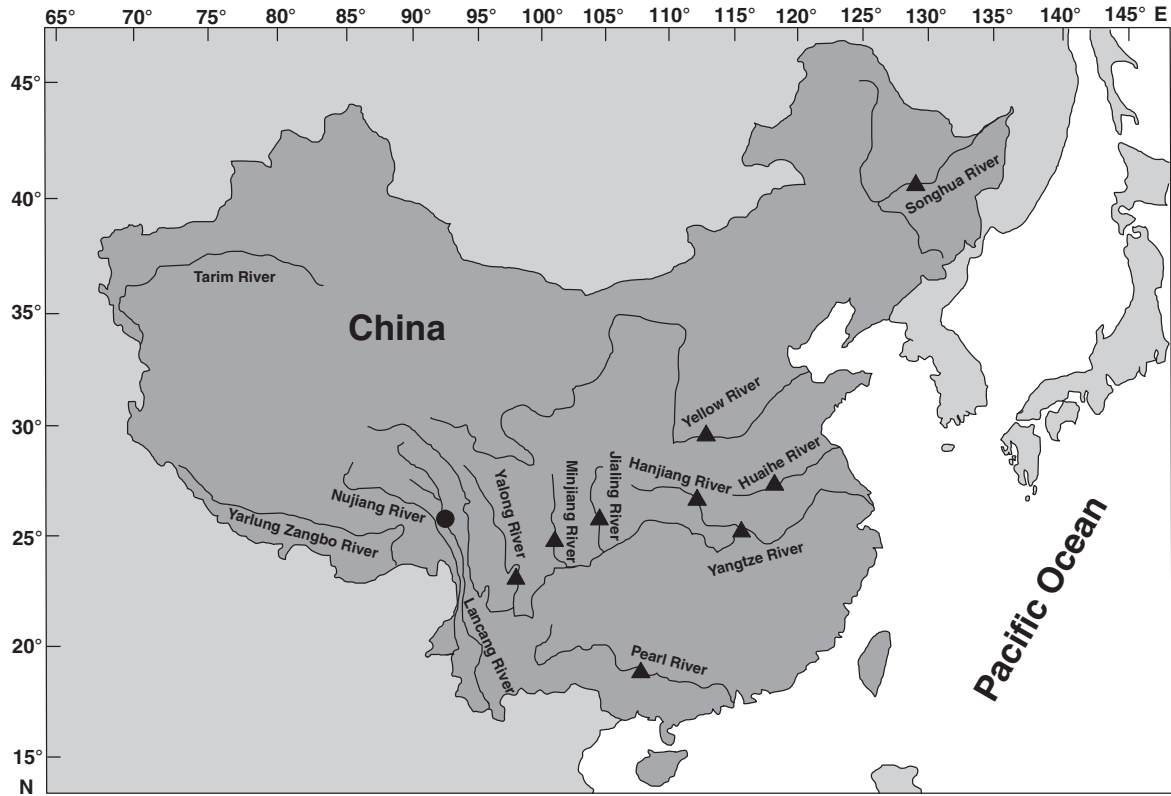


Fig. 1. Geographical distribution of Amur catfish, *Silurus asotus*, in the main inland rivers of China; black dot represents the new record from the Lancang River, triangles mark previous records

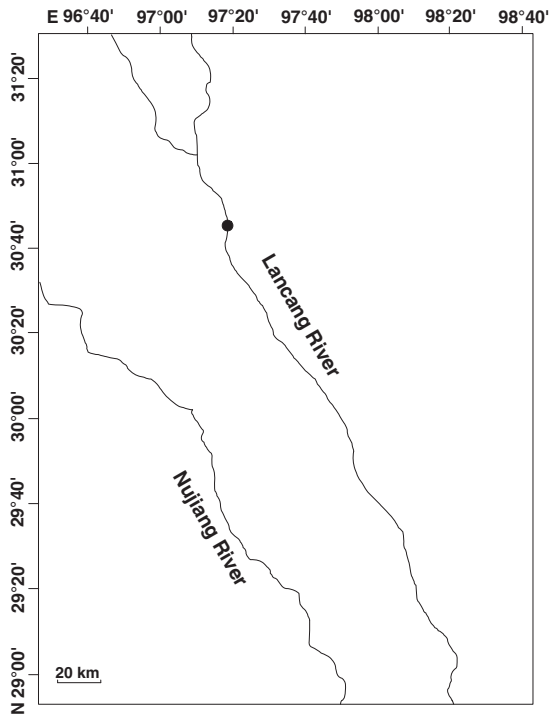


Fig. 2. A close-up map of the Tibet stretch of the Lancang River; black dot marks the sampling site of Amur catfish, *Silurus asotus*

Table 1

Morphometric and meristic characteristics of Amur catfish, *Silurus asotus*, caught in the Tibet stretch of the Lancang River, China

Character	Morphometric value [mm]	Meristic count
Total length	236	
Standard length	214	
Head length	47	
Head width	34	
Eye diameter	5	
Maximal body depth	36	
Maximal body width	26	
Mouth width	24	
Caudal peduncle length	12	
Dorsal fin length	6	
Anal fin length	116	
Dorsal fin rays		5
Anal fin rays		78
Ventral fin rays		I, 10
Pectoral fin rays		I, 10



Fig. 3. The Amur catfish, *Silurus asotus*, caught in the Tibet stretch of the Lancang River, China

the local ecosystems and therefore they are determined to release all kinds of fish that are available on the market.

Amur catfish may have a negative impact on the ecology of the river system. Amur catfish is carnivorous and highly adaptable to various environments (Chu et al. 1999). Historically, there were no carnivorous fishes in the Tibet stretch of the Lancang River (Anonymous 1995). So it is reasonable to presume that individuals of the Amur catfish present in this area may form an established population easily and may exert huge predation pressure on the native fish species.

It is high time to build up the awareness in the local population about the invasion of Amur catfish and also to exert pressure on the policymakers to stop the practice of introducing the exotic species into the Lancang River.

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