Mekong giant catfish tracking project 2003 in the Mekong River

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ABSTRACT
Mekong giant catfish *Pangasianodon gigas* is one of the largest freshwater fish in the world. The fish is endemic to the Mekong basin and becomes high-degree endangered species listed in the IUCN Red List. Nevertheless little is known of the behavior. Ten Mekong giant catfish (TL: 76.5 to 88.5 cm, BW: 3.5 to 5.8 kg) were implanted with coded ultrasonic transmitters (Coded V16, Vemco Ltd.). Five monitoring receivers (VR1, Vemco Ltd.) were installed at Kong Chiam, Nakhon Phanom, Sri Chianmai, Sang Khong, and Chiang Khong along the Mekong River. The fish were released at Nakhon Phanom on 11 May, 2003. Three fish were recaptured by fishermen using set nets. One of the fish was recaptured at 100 km upward from the release point one week after release. This shows high performance of upward swimming of Mekong giant catfish in the Mekong River. Since 24 May, 2003, all fish are missing, unfortunately. Currently, the receivers are still waiting for the fish's coming.

KEYWORDS: **Mekong giant catfish, biotelemetry, tracking, coded ultrasonic transmitter**

INTRODUCTION

Mekong giant catfish *Pangasianodon gigas* is one of the largest freshwater fish in the world and grows up to 3 m in length and 300 kg in weight. The fish is endemic to the Mekong basin and becomes high-degree endangered species listed in the IUCN Red List. Nevertheless little is known of the behavior. Biotelemetry study on the Mekong giant catfish started with the background by the request of the Department of Fisheries, Ministry of Agriculture and Cooperatives of the Thai government in 2001. Ten Mekong giant catfish with coded ultrasonic transmitters were released in the Mekong River in 2002. Four fish were detected 6 to 9 days after the release by a receiver that was installed at the point 60 km upward of the release point. This shows high performance of upward swimming of Mekong giant catfish in the Mekong River. In 2003, another ten Mekong giant catfish were released. Preliminary results in 2003 were introduced in this paper.

MATERIALS AND METHODS

Artificial seed reared in the Karasin Freshwater Research Station, Thailand were used. Details of each fish are given in Table 1. The fish were anesthetized and implanted with a coded ultrasonic transmitter (Coded V16, Vemco Ltd.) into the body cave on 10 May 2003. Details of implanting method were the same as Mitamura et al. (2002a). The transmitters weighed 10 g in water, was 16 mm in diameter, 65 mm length. The transmitters emit a train of six pulses for identification. Five monitoring receivers (VR1, Vemco Ltd.) were installed at points along the Mekong River, Kong Chiam, Nakhon Phanom, Sri Chianmai, Sang Khong and Chiang Khong (Fig. 1). The receivers decode ID numbers of the fish implanted with the transmitters in their detection zone within a radius of 300 m and record the number and time stamp in a flash memory. The fish were released at Nakhon Phanom on 11 May, 2003.

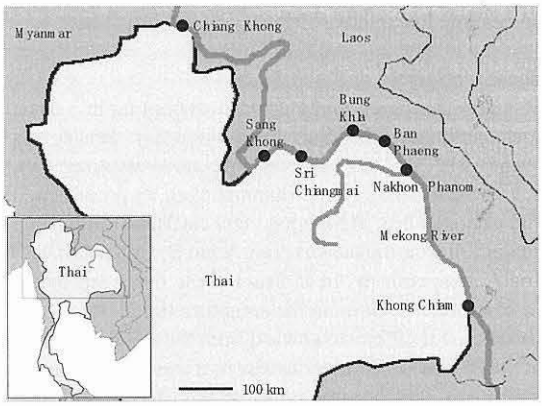

Fig. 1. Points of receiver, release and recapture,

Table 1. Details of the fish.

Fish ID	TL (cm)	BW (kg)	Recapture	Time	Point	Re-release	Time
31	81.0	4.3					
32	76.5	3.5					
33	83.0	4.6					
34	81.5	4.1					
35	88.5	5.8					
36	80.5	4.6					
37	81.0	4.4					
38	79.0	3.8					
39	81.0	4.5					
40	78.5	4.5					
A	75.0	3.5	18 May	10.00	Bung Khla	19 May	13.00
B	75.0	3.3	19 May	10.00	Bung Khla	19 May	13.00
C	75.0	3.3	20 May	8.30	Ban Phaeng	21 May	12.00

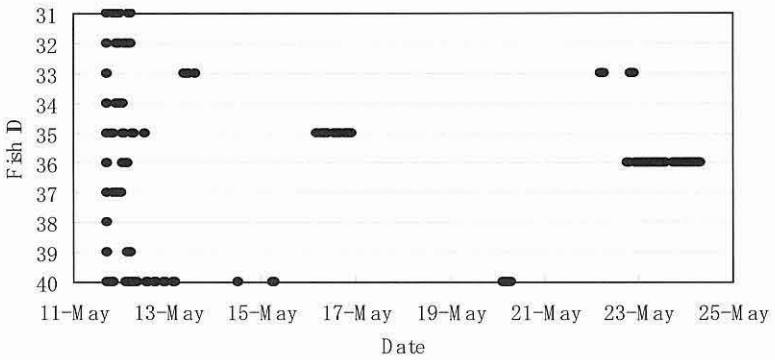

Fig. 2. Records of the receiver installed at Nakhon Phanom.

RESULTS

The records were downloaded once in July. Figure 2 shows records by a receiver installed at Nakhon Phanom Fish ID: 33 and 38 moved outside of the detection zone just after the release. The other fish stayed around the release point for 1 or 2 days and then moved outside of the detection zone. Some fish (ID: 33, 35, 36, and 40) returned to the release point again. Finally, fish ID: 36 stayed around the release point until 24 May. Later, all fish were missing until now, unfortunately. Three fish are recaptured by fishermen using set nets 7 to 10 days after release. Details of each fish (A, B, and C) are given in Table 1. Recapture points were shown in Figure 1.

DISCUSSION

Fish A performed 100 km upward swimming in 7 days. The swimming speed was about 14km/day. This agrees the result in 2002 that Mekong giant catfish swam upward at a speed of 10km/day (Mitamura et al., in press). High swimming ability of Mekong giant catfish was observed again. Considering the size, fish A and B were fish ID: 38 and 32, respectively. In addition, these fish ware absent from the release point at the recapture time. Fish C was recaptured at 50 km downward from the re-release point of fish A and B. Considering the re-release and recapture time, Fish C was the same as the fish B. Fish B must be tired because of the capture. The fish might move downward after re-release and was recaptured again. Since 24 May, all fish were missing. Some fish might be captured by shy fishermen. Some fish might pass Laos side where is the outside of the detection zone of the receivers. Some fish might stay the point between 2 receivers. The transmitter will last until June, 2004. Currently, the receivers are still logging and waiting for the fish's coming. The missing fish will be detected sometime, somewhere.

ACKNOWLEDGEMENTS

The authors wish to thank staff of the Freshwater Research Stations for their all help in the experiment in Thailand. The first author especially thanks Mr. Lhan, Mr. Sombat, Mr. Dong and Mr. Ohm. This study was supported by a Grant-in-Aid for Scientific Research (15780138), the Ministry of Education, Culture, Sports, Science and Technology.

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