

# Movement pattern of Mekong giant Catfish monitored using acoustic telemetry in Kaeng Krachan reservoir, Thailand

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## Abstract

We quantified movement pattern of endangered but important local fish resources, Mekong giant catfish (*Pangasianodon gigas*) at Kaeng Krachan reservoir, Thailand to understand the effectiveness of the release of the cultured fish to the reservoir. Fine-scale positioning system (Vemco Positioning System, VPS, Vemco, Canada) using 24 acoustic receivers (VR2W, Vemco) was deployed at the reservoir. Twelve cultured fish (TL = 88.5 ± 8.6 cm) and 2 reservoir fish (TL = 204 and 201 cm) were attached with acoustic transmitters (V13AP, V16TP, Vemco) and released in the reservoir in July and October 2013, respectively. Vertical profiles of water temperature and dissolved oxygen were measured at 10 different points in the reservoir. Additionally, lake-bottom topography was measured by using an echo sounder with a GPS in October 2013. Movements for 8 of 12 cultured fish were successfully monitored with VPS for 3 months. Movement patterns of the fish were different in each individual. Three fish stayed in the areas near the dam at the northern reservoir during the nighttime (18:00-6:00) and a single fish stayed during the day time (6:00-18:00). On the other hand, one of the reservoir fish moved widely within the monitoring area and used the south part of the reservoir. Both of cultured fish and reservoir fish mainly used shallower water than 10 m deep because there was hypoxic water below the depth. After hypoxia layer disappeared in December, the reservoir fish dived into deeper layer at 20 m deep.

**Keywords:** biotelemetry, ultrasonic coded transmitter, topography, *Pangasianodon gigas*