

The migration pattern of Trey Riel, *Henicorhynchus siamensis*, in the Mekong mainstream*

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1. Introduction

The survey objective is to assess the migration and spawning of economically important fish through interviews with fishermen, who live along the Mekong River. The information from the interviews will enable us to better understand the complex nature of the various fisheries found. *Henicorhynchus siamensis* is a small cyprinid species, which is very important in the Mekong River fisheries (see Figure 10.1). It is found in great abundance in large and small rivers. It is also caught in floodplains along side the Mekong River. In Cambodia it is the most important fish in the Dai fisheries of the Tonle Sap River (Lieng *et al.*, 1995). *H. siamensis* is mainly processed for fish paste or dried.

2. Methods

The methodology of the migration and spawning study is based on a photo flipchart containing photos of 169 fish species and survey forms designed by AMFC. These survey forms were used during interviews with fishers throughout the Mekong mainstream, from Northern Lao PDR and Thailand to the Mekong Delta in Southern Vietnam. The interviewing program informed the commune/ villages headmen or chief fisheries officer at any fishing habitat to find old experienced fishers and to make appointment with them for interviewing. At each station at least two groups of fishers about 5-7 persons for one group. Subsequently, the most experienced fishers within these groups were selected for individual interviews on more detailed species-specific information (see Poulsen & Jørgensen 1999 for more information on the Survey methodology).

The survey was carried out from January to October 1999 by interviewing local fishers from 56 stations distributed along the Mekong and Bassac rivers. The survey range was from Chiang Saen/Bokeo Provinces on the border between Thailand and Lao PDR in the north to the Mekong Delta at the confluence with the South China Sea in the South.

3. Results and Discussion

Most fishers catch *H. siamensis* all year round, except at some stations that are close to the sea. The peak periods are during their upstream and downstream migrations. Fisherfolk who live along the Mekong River catch fish of sizes between 2 to 20cm long during the peak periods of upstream and downstream migrations. During upstream migration, fat content is higher than during the period of downstream migration. *H. siamensis* move in schools making their presence easier to detect. Migration of *H. siamensis* in the Mekong River is linked to the migration of other species such as *Botia modesta*, *Paralaubuca typus*, *Amblyrhynchichthys truncatus*. These different species usually migrate in schools together with *H. siamensis*.

Below the Khone Falls, *H. siamensis* migrates upstream from November to February (see Figure 10.2), whereas above the Khone Falls, it migrates upstream from March to September. It migrates in response to changing water levels. As floodwaters recede *H. siamensis* migrates from the flooded areas back to main river channels, e.g. the Mekong mainstream. Several fishers below the Khone Falls reported that the peak period of upstream migration for *H. siamensis* occurs one week before the full moon. Above the Khone Falls, migrations appear to be less influenced by the lunar phase. Some fishers along the stretch from Kratie to the Khone Falls in Cambodia were able to determine the speed of migration based on the time it takes for the fish to move between two villages along the river. They

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estimated the speed at 16 km per day. This corresponds well with research carried out by the MRC Fisheries Component for the Management of Freshwater Capture Fisheries of Cambodia (CMFCFC), which has shown that *H. siamensis* migrates upstream with a speed of about 17km per day (see paper by Srun Phallavan and Ngor Peng Bun on page 61).

Below the Khone Falls, *H. siamensis* migrates downstream from May to September when the water levels start to rise. This corresponds with the peak time for observations of eggs in the fish, i.e. the peak spawning period is believed to occur between May to June.

4. Conclusion

Migration is usually linked to changes in the water levels. When water levels start to rise during the flooding season, fish migrate from the Mekong mainstream to canals and flooded areas. Near the end of flooding season fish migrate back to the larger rivers. In the Mekong mainstream upstream migrations occur from November to February and downstream migrations from May to September (below Khone falls). The patterns of migration described below the Khone Falls differ from observations made in northern Lao and Thailand, where migrations take place from November to February. This could indicate that a different sub-population is involved in that section of the river. It should be noted that fishers catch this species all year round.

5. References

- Lieng, S., C. Yim and N.P. van Zalinge, 1995. **Freshwater Fisheries of Cambodia, I: The Bagnet (Dai) Fishery in the Tonle Sap River**. Asian Fisheries Science 8: p. 255 – 262.
- Poulsen, A. F. and J. Valbo Jørgensen, 1999. **Survey manual for the use of local fisher's knowledge in the study of fish migration and spawning habits**. AMFC Technical Report no. 1/99.

Figure 10.1: Trey Riel (*Henicorhynchus siamensis*) in the Mekong River



Figure 10.2: Migrations of Trey Riel (*Henicorhynchus siamensis*) in the Mekong mainstream

