Nakkares Sonsupap 2007: Analysis on Distribution and Structure of Benthic Fauna Communities for Assessment of Aquatic Enrichment Status in Vajiralongkorn Reservoir and Srinakarin Reservoir, Kanchanaburi Province. Master of Science (Fisheries Science), Major Field: Fisheries Science, Department of Fishery Biology. Thesis Advisor: Associate Professor Charumas Meksumpun, Ph.D. 193 pages.

Research study on distribution and community structure of benthic fauna in Vajiralongkorn and Srinakarin reservoirs, Khanchanaburi Province was carried out based on major objective to assess enrichment status of the aquatic resources. The study was performed by field surveys of benthic fauna during February, May, and August 2006 from 21 and 20 survey stations of each reservoir, respectively. Results of Vajiralongkorn reservoir indicated 38 species of benthos consisting of Phylum Arthropoda, Annelida, and Mollusca. Average densities and diversity indexes ranges of February, May, and August 2006 samples were 126, 168 and 70 individuals/m^2 and 0.58-1.82, 0.19-1.31 and 0-1.84, respectively. Results of Srinakarin reservoir indicated 41 species of nearly similar benthos consisting of Phylum Arthropoda, Annelida, and Mollusca. Average densities and diversity indexes ranges of February, May, and August 2006 samples were 456, 65 and 63 individuals/m^2 and 0-1.90, 0-1.87 and 0-1.61, respectively. Aquatic insect in genus *Chironomus* sp. was found dominantly in both reservoirs. Comparative enrichment areas of Vajiralongkorn reservoir (with benthos density of *ca* 400-900 individuals/m^2) were the areas such as Dai Chong Thong, Doi Duan, and Huay Ban Rai, while comparative enrichment areas of Srinakarin reservoir (with benthos density of *ca* 250-800 individuals/m^2) were the areas such as Wat Wung Pha Daeng, Hauy Nam Khun, Ban Dong Sela etc. In those enrichment areas, comparative lower slope of shorelines and higher utilization by agricultural activities were apparently observed. The results also indicated that the highest enrichment status of both reservoirs was found during highest water-restoration period (February 2006). The overall findings here could be applied for selection of suitable sites and timings for effective fish population enhancement so as to develop fishery resources in the reservoirs further.

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