Nattanan Tiengtam 2007: Species Diversity and Ecology of Fish Communities in Rice Fields of Pathum Thani Province of Central Thailand. Master of Science (Fisheries Science), Major Field: Fisheries Science, Department of Fishery Biology. Thesis Advisor: Assistant Professor Prachya Musikasinthorn, Ph.D. 176 pages.

Species diversity and ecology of fish communities in rice fields in Pathum Thani Province of Central Thailand were studied during March 2004 - May 2007. From 44,220 collected specimens, totally, 9 orders, 19 families, 30 genera and 37 species of fishes were recognized. Irrigation canals beside rice fields showed much higher species diversity (36 species [97.30% of all]) and quantity (41,692 species [94.28% of all]) than ricefields (21 species [56.76% of all] and 2,528 species [5.72% in quantity]). *Esomus metallicus* (35.99%), *Amblypharyngodon chulabhornae* (16.70%), *Oryzias minutillus* (14.91%), *Trichopsis vittata* (9.33%), *Trichogaster trichopterus* (5.68%), *Rasbora borapetensis* (5.15%), *Lepidocephalichthys furcatus* (3.15%) and *Dermogenys siamensis* (2.53%) are the first 8 dominant species in quantity. From observation of maturity of gonads and size of specimens, *Oryzias minutillus*, *Trichogaster trichopterus*, *Rasbora borapetensis*, *Rasbora rubrodorsalis*, *Trichopsis pumilus* and *Gobiopterus chuno* were judged to be the dry season spawners while *Puntius brevis* and *Anabas testudineus* were judged to be the rainy season spawners. *Esomus metallicus*, *Amblypharyngodon chulabhornae*, *Trichopsis vittata*, *Lepidocephalichthys furcatus*, *Dermogenys siamensis* and *Channa striata* were recognized as non-seasonal spawners. Human activities in the rice fields and attached irrigation canals effected changes of species composition of the both environments. Species diversity of the rice fields including attached irrigation canals was highest (23 species) during sowing seeds – shooting out periods. In conceiving – forming ear periods, species diversity of the whole study area was low but highest in the rice fields. Species diversity of the whole area was lowest (13 species) during harvesting periods. A result of correlation coefficient analysis showed that there were relations between environmental factors such as dissolved oxygen, water depth, pH and water temperature, and species diversity and abundance of fishes in the study area. This study indicated that the rice fields including attached irrigation canals work as spawning and nursery grounds for many fish species as well as supply fishes to the surrounding environments such as larger irrigation canals and take an important role in maintenance of biodiversity of a local area.

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