UNIVERSITI PUTRA MALAYSIA

FISH COMMUNITIES IN PAYA BUNGOR, WITH NOTES ON ITS DEVELOPMENT, MANAGEMENT AND RECREATIONAL USE

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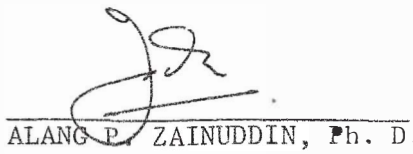

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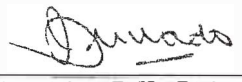

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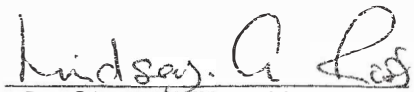

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FISH COMMUNITIES IN PAYA BUNGOR, WITH NOTES ON ITS DEVELOPMENT, MANAGEMENT AND RECREATIONAL USE

by

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species accounts for more than 80 per cent of the species composition. The three most dominant species are *Amblyrhynchichthys truncatus*, *Thynnichthys thynnoides* and *Puntius schwanenfeldii*.

The pattern of seasonal abundance indicates influence of physico-chemical parameters like water level (WL), water temperature (T) and conductivity (C). Their relationship was formulated and simplified into an equation. The fish population of Paya Bungor are highly-heterogenous and they exhibit spatial and temporal patterns of distributions, mostly related to feeding. However the pattern breaks down during breeding season. The distribution of fish communities fits both log-normal and canonical log-normal distribution rather well, reflecting a large assemblies of species existing in Paya Bungor. Seasonal variations in the community diversity are noted mostly accounted by fluctuations in water level.

A large proportion of the fish species are carnivorous, followed by omnivores and detritivores. However, in terms of population abundance, the detritivores constitutes almost sixty per cent of the total population in Paya Bungor. Together with the omnivores, they comprise 85 per cent of the total fish population, corresponding to the fish community in the middle and lower reaches of rivers.

The growth of the three major species, *Amblyrhynchichthys truncatus*, *Thynnichthys thynnoides* and *Puntius schwanenfeldii*,

reflected by the length-weight relationships, are isometric for the two former species and allometric for the latter species. The von Bertalanffy's Growth Formula for the three species are computed.

The coefficients of total mortality, natural mortality, fishing mortality and the exploitation rate for the three major species were also calculated. The mean age of first capture for *T. thynnoides* and *A. truncatus* is about one year old and by the time they reach about 1½ years old, they can be fully retained by the fishing gear. On the other hand, *P. schwanenfeldii* exhibits low fishing mortality but are retained much earlier in life, at the age of nine months. However this species also remains in the exploitable size range for only about six months.

There appears to be a single recruitment season for *A. truncatus* occurring during periods of high water. In contrast, although *T. thynnoides* also has a major recruitment season, it occurs during dry season when the water level is low. *P. schwanenfeldii* is recruited almost all the year round.

With regard to the proposed Paya Bungor Development Plan, a few drawbacks were identified which can cause several adverse effects on the existing fish populations. Several management options for Paya Bungor were also proposed.