

Thesis Title Morphology of the Ubolratana reservoir and changes in the yield of fish species and abundance

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ABSTRACT

The Ubolratana reservoir is a large man-made lake, situated at the border of the Knon-kaen and Udonrthani provinces, was formed after the construction of a dam at the Pong-neeb site in 1966. It is used for multi-purposes, like generating electric power and for irrigation. The morphology of the reservoir is lobe type and it has a complex dentritic shape.

At a maximum storage elevation of 182 m above sea level it has a total surface of 410 km² (256,250 rai) with a maximum depth of 19.5 m. and an average depth of 15.7 m. At its minimum elevation of 176 m. above sea level its surface area is reduced to 160 km² (100,000 rai) with an average depth of 10 m

Due to the physical factors water area, water level, inflow and monthly rainfall the production of different fish species of the Family of Cyprinidae has been affected. This Family consist of a herbivorous group such as *Cirrhinus jullieni*, *Puntius leiacanthus*,

puntioplites proctozysron, *Osteochilus hasselti*, *Puntius gonionotus*, *Morulus chrysophekadion*, *Osteochilus melanopleura*, and a carnivorous group such as *Mystus sp.*, *Mystus numurus*, *Kryptopterus bleekeri*, *Ophicephalus striatus*, *Wallagonia attu*.

The total amount of nitrate, phosphate, benthos and plankton, which was sampled at 4 different zones of the reservoir (head water stream reservoir, reservoir river area, flooding area and lake in reservoir) was affected by these physical factors

These physical factors, however, had no significant effect on the total fish production nor the production of other fish species observed in the Ubolratana reservoir such as *Clupeichthys aesnensis*, *Hampala sp.*, *Notopterus notopterus*, *Ophicephalus micropeltes*, *Oxyelotris mamorata*, etc.

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The morphology and ecology of the Ubolratana reservoir can be divided into 4 zones resulting from different preservations each year. The physical factors that affect the fluctuation and the abundance in fish production of different fish species in each year are able to be used as a criterion for Ubolratana fishery management system. Beside, these can be used as a criterion for others large reservoir also.