Climate and Hydrological Impacts of Water Level Fluctuations on Cyprinid Fish Larvae in Reservoir Ecosystem: A Case study in Ubolratana reservoir, the Northeastern THAILAND

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Keywords: Hydrological changes, Water storage levels, Cyprinid fish larvae,
Littoral zone, Spawning and nursery grounds, Ubolratana reservoir

Abstract

The Ubolratana reservoir is one of the most phenomenal in fisheries production of the Northeastern part of Thai-land. In the past decade, declining in fishery captures were noticed especially those of the Cyprinid species. To find out what are the causative factors was the main objective setting in order to sustain fishery resources and have a suggestion for improvement of fishery management measure. To accomplish the objectives, an integration of information on climate and hydrological changes i.e. rainfall, water inflow, water outflow, water storage, and water temperature were calculated on correlation with larval and juvenile densities. Observation was performed during February to October 2018. Furthermore, changing of dropdown areas (DDE) which were exposed and dried during drought period were also focused. Results showed that rainfall and water storage had highly affected on densities of larval and juvenile cyprinids. Mostly, cyprinid larval occurred in the Pong river inlet the density reached highest levels in early June 2018 with 102-2,022 individuals/1,000 m^3. At that time, the inflow water was 2,493.10 million m^3 and might be considered as cyprinid spawning season. Total 37.20 km^2 DDE in early June 2018 was benefited to the most two economically important cyprinid fish nurseries. Those were *Henicorhynchus siamensis* and *Barbonymus gonionotus* with high dense of 197±440 and 290±375 individuals/100 m^2, respectively. Information from this study should be applied for prediction of the pre-recruited cyprinid populations. Furthermore, acquired information would help to promote the fishery resource management of the Ubolratana reservoir.