

The Biodiversity of Nursery Ground in Swamp Areas Important to Survive The Black Fishes in The Wetland

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ABSTRACT

Fish nursery grounds are important for the life cycle of fishes and often these areas are not particularly well studied or the processes understood in Sumatra. On December 2014, The blackfishes in swamp ecosystem of South Sumatra consist of *Channa striata*, *Clarias batrachus*, *Anabas testudineus*, *Trichogaster trichopterus*, *Polyacanthus hasselti*, *Rasbora argyrotaenia*, *Betta taeniata*, *Betta anabantoides*, *Monopterus albus*, *Notopterus notopterus*, *Trichogaster pectoralis*, *Trichogaster leeri*, *Oxyeleotris marmorata* and *Helostoma temmincki*.. This observation is constitute first record of blackfishes in Sumatra.

Keywords: First, nursery grounds, blackfishes, observation, sumatra.

INTRODUCTION

The nursery ground so important for growing and development juveniles of any fishes in aquatic ecosystem. Fish nursery grounds are important for the life cycle of fishes and often these areas are not particularly well studied or the processes understood. The juvenile stage of fishes are often considered to be particularly difficult to work on because very complex structure and composition of microorganism which arranged in those microhabitat. A swamp is an area of land permanently saturated, or filled, with water. Many swamps are even covered by water. There are two main types of swamps: freshwater swamps and saltwater swamps. The freshwater swamps are very important to maintain survival of blackfishes as local fishes in swamp ecosystem as existing in South Sumatra.

MATERIALS AND METHOD

These method was applicated for the biodiversity of nursery ground in swamp areas important to survive the black fishes in the wetland at December 2014. Purfosive sampling used in this observation. The materials use is Ph meter, Camera for record.

RESSULT AND DISCUSSION

The blackfishes in swamp ecosystem of South Sumatera consist of *Channa striata*, *Clarias batrachus*, *Anabas testudineus*, *Trichogaster trichopterus*, *Polyacanthus hasselti*, *Rasbora argyrotaenia*, *Betta taeniata*, *Betta anabantoides*, *Monopterus albus*, *Notopterus notopterus*, *Trichogaster pectoralis*, *Trichogaster leeri*, *Oxyeleotris marmorata* and *Helostoma temmincki*. Traditionally, blackfishes in lowland of South Sumatera had been known since long time as foodstuff by much peoples for protein resources in their life. According to degradation of ecosystem in low land especially much swamp areas the population of their fishes continually depletion from year to year. The degradation of swamp ecosystem because land clearing and conversion of lands from naturally to be agriculture as plantation and other usage. The other factor was much of domestic wastes introduce to water column, affecting the qualities of nursery ground.

There were much macrophytes around of nursery ground in swamp ecosystem as *Ceratopteris thalictroides*, *Marsilea crenata*, *Salvinia natans*, *Salvinia molesta*, *Azolla pinnata*, *Polygonum barbataum*, *Alternanthera sessilis*, *Nymphaea nouchali*, *Nelumbo nucifera*, *Neptunia natans*, *Ludwigia adscendens*, *Nymphoides indica*, *Ipomoea aquatica*, *Hydrylla verticillata*, *Monocharia hastata*, *Eichhornia crassipes*, *Pistia stratoites*, *Spirodella polyrhiza*, *Lemna perpusila*, etc. In stems and bodies of macrophytes much periphytons sessile and adhesive to look for natural foodstuff for their living. Periphytons are a complex mixture of algae (Cyanophyceae, Chlorophyceae, Bacillariophyceae/Diatomae, Desmidiaceae), heterophilic microbes (Protozoa: Flagellata, Rnhizopoda, Ciliata; Rotifera; Crustacea planktonik: Copepoda, Cladocera, Ostracoda; aquatic insects; aquatic nemathelminthes, etc.) that is attached to submerged surfaces in most aquatic ecosystems. It serves as an important food source for aquatic invertebrates and much fishes.

The function of periphytons can also absorb contaminants, removing them from the water column and limiting their movement through the environment and then to be accumulated. The periphyton is also an important indicator of water quality; responses of this community to pollutants can be measured at a variety of scales representing physiological properties to community level changes.

Periphyton communities are used in aquaculture food production systems for the removal of solid and dissolved pollutants. Naturally, periphyton communities very important for foodstuff to much fish juveniles and some black fishes. Other periphyton, plankton communities also important in nursery ground because much fish juveniles look for foodstuff to their life.



Figure 1. The Nursery Ground for Black Fishes in Swamp Area, Natural of Swamp Ecosystem who live some black fishes like *Channa striata*, *Clarias batrachus*, *Anabas testudineus*, *Trichogaster trichopterus*, *Polyacanthus hasselti*, *Rasbora argyrotaenia* and *Betta taeniata*. (Photo by E.P. Sagala, December 2014). Subregion of Rambutan about 10 kilomtres from Palembang City.



Figure 2. The Nursery Ground for Black Fishes in Swamp Area, A part of Natural of Swamp Ecosystem was Constructed for culturing especially *Anabas testudineus*, *Clarias batrachus*, *Rasbora argyrotaenia* and *Polyacanthus hasselti*. (Photo by E.P. Sagala, December 2014). Subregion of Rambutan about 10 kilomtres from Palembang City.

Plankton are a diverse group of organism that live in the water column of large bodies of water and that cannot swim against a current. They provide a crucial source of food to many little, medium and large aquatic organisms, such as fishes which live in swamp areas and other water every where in the wolrd.

Plankton base of tropical system consist of phytoplankton and zooplankton. Phytoplanktons are autotrophic organism means able to make organic material from inorganic material through photosynthesis process. While zooplanktons are heterotrophic organism that means found their foodstuff from other organism in aquatic ecosystem. In food chain and foodweb, zooplankton depend to phytoplankton. Plankton abundance and distribution are strongly dependent on factors such as ambient nutrient concentrations, the physical state of the water column, and the abundance of other plankton.

Phytoplankton in the swamp waters of South Sumatera consist of several taxa namely Cyanophyceae, Chlorophyceae, Bacillariophyceae, Desmidiaceae. Some Cyanophyceae as phytoplankton which frequent found in swamps water are *Anabaena*, *Oscillatoria*, *Rivularia*, *Spirulina*, *Merismopedia*, *Lyngbya*, *Phormidium* and *Gloeotrichia*. The Chlorophyceae which almost frequent found in swamps waters are *Scenedesmus*, *Gloeocystis*, *Quadrigula*, *Ankistrodesmus*, *Chaetophora*, *Spirogyra*, *Oedogonium*, *Actinastrum*, *Selenastrum*, *Microspora*, and *Draparnaldia*. Bacillariophyceae which frequent found in swamps waters are *Navicula*, *Diatoma*, *Cymbella*, *Fragilaria*, *Pinnularia*, *Cyclotella*, *Meslosira*, *Tabellaria*, *Nitzschia*, *Eunotia*, *Amphipleura*, *Cocconeis*, *Achnanthes*, *Synedra* and *Asterionella*. Desmidiaceae also frequent found in swamps waters as *Cosmarium*, *Closterium*, *Spondylosium*, *Staurastrum*, *Penium*, *Micrasterias*, *Desmidium*, *Xanthidium*, *Euastrum*, *Pleurotaenium* and *Tetmemorus*.

Zooplankton in the swamp waters of South Sumatera consist of several taxa namely Flagellata, Rhizopoda, Ciliata, Rotifera, Copepoda, Cladocera, Ostracoda and Nematelminthes. The genera of Flagellata which frequent found in swamps waters are *Euglena*, *Phacus*, *Trachelomonas*, *Oicomonas*, *Thylacomonas*, *Astasia*, *Peranema* and *Lepocinclis*. Rhizopoda which almost frequent found are *Astramoeba*, *Centropyxis*, *Diffugia*, *Nebela*, *Actinophrys*, *Quadrullella*, *Euglypha*, *Heleophera* and *Trinema*. The Rotifera which frequent found in swamps waters are *Asplanchna*, *Brachionus*, *Keratella*, *Euchlanis*, *Notholca*, *Monostyla*, *Pleosoma* and *Rotaria*. The genera of Copepoda which frequent found in swamps waters are *Cyclops*, *Diaptomus*, *Bryocamptus*, *Cantocamptus* and *Harpacticus*. The Cladocera which frequent found in swamps

waters are *Daphnia*, *Diaphanosoma*, *Latona*, *Sida*, *Leptodora*, *Simocephalus*, *Ceriodaphnia*, *Moina*, *Bosmina*, *Alona* and *Macrothrix*. The genera of Ostracoda which frequent found in swamps waters are *Candona*, *Paracandona*, *Physocypria*, *Cypria*, *Cyclocypris*, *Cyclocypria*, *Cypris*, *Cypriconcha*, *Chlamydotheca*, *Cypricercus*, *Herpectocypris*, *Stenocypris*, *Cyprretta*, *Cypridopsis* and *Metacypris*. Furthermore, that the genera of Nematelminthes which frequent found in swamps waters are *Chromogaster*, *Microlaimus*, *Ethmolaimus*, *Achromodora*, *Chromadora* and *Anaplectus*.

CONCLUSSION

Those plankton communities very important to supply the foodstuff of blackfishes in swamp ecosystem especially in the lowlands like in Palembang City and other regions of South Sumatera. For future time need made conservation about nursery ground in little pool and big pool naturally.

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