

Fish and shrimp communities in abandoned aquaculture ponds and surrounding habitats in Batan Bay Estuary, Philippines

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In tropical countries, shrimp ponds converted from mangroves have often been abandoned. Although such area is generally considered as a non-productive environment where few animals inhabit, this shallow semi-closed waterbody is potentially suitable habitat for fish and crustacean juveniles. This study investigated fish and shrimp assemblages in abandoned ponds and surrounding waters in Batan Bay Estuary, Philippines. Eleven sampling stations in 5 habitat types were established: AP (5 stations in abandoned ponds without vegetation); APM (2 stations in abandoned ponds with mangroves); MG (2 stations in remaining patches of mangroves); SG (seagrass); and SB (sandy beach). Sampling was done in September (rainy season, 2013, 2014) and March (dry season, 2014, 2015). A small seine net (1-mm mesh) was used to collect juvenile and small resident fishes and shrimps. Specimens were identified up to species level, if possible, counted, and their weight measured. A total of 8632 shrimps (20 species, 9 genera, 8 families), and 6654 fish (124 species, 64 genera, 34 families) were collected. Species diversity and abundance of shrimp and fish were not clearly different among habitat types, while community structure was divided into 3 types; SB, SG and the rest of the stations. AP, APM and MG had similar communities irrespective of mangrove vegetation, suggesting that abandoned ponds also provide habitat for small fish and shrimps. However, these results have to be taken with caution since the extensive loss of mangroves and high fishing pressures in the estuary might mask the effects of mangroves on fish and shrimps.

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