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Effects of mangrove rehabilitation on density of *Scylla* spp. (mud crabs) in Kuala Langsa, Aceh, Indonesia

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ABSTRACT

The density of mud crabs (*Scylla* spp.) in 2016 is described in three mangrove habitats: one rehabilitated 2007, one in 2013, and one not subject to any rehabilitation (a control site). We report the effects of mangrove rehabilitation on mud crab density, and correlations between mud crab density, mangrove density, mangrove stem diameter and tree height, and environmental parameters in the Kuala Langsa mangrove rehabilitation area, Aceh, Indonesia. Rehabilitation sites had significantly higher dissolved oxygen (DO), lower temperature, and greater mud depth than the control site. Mangrove density, stem diameter, and tree height were greater significantly in rehabilitation sites than at the control site. Mud crab density was significantly higher in the two rehabilitation sites than at the control site. Based on data from 140 sampling plots per site, stepwise multiple regression analysis revealed mangrove density to be the best predictor of mud crab density at all sites; correlations were positive. Tree height was the second predictor of mud crab density; correlations were positive at rehabilitated sites. Mud depth correlated positively with mud crab density at one rehabilitation site, and the control site. Multiple regression analysis for data combined for the three sites demonstrated mangrove density to be the best predictor of mud crab density (with positive correlation); a weak, positive correlation was also apparent for tree height and DO. Results support the view that mangrove rehabilitation enhances densities of mud crabs. Manipulative experimentation is required to determine the mechanisms of the ecology of mangrove ecosystems affect mud crab populations.

Keywords: mangrove; rehabilitation; mud crab; density; population.

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