

Abstract

The Ecology and Biology of the Nonindigenous Species *Pterygoplichthys pardalis* (Siluriformes: Loricariidae; Castelnau, 1855) with Observations on other Freshwater Ichthyofauna of Black River, St. Elizabeth, Jamaica

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Although considered to be the second greatest threat to natural biodiversity globally, invasive alien species are believed to be THE greatest risk to the ecological integrity of isolated island ecosystems. In recent times Jamaican freshwater ecosystems, as well as their dependent large and small-scale economies, have become increasingly vulnerable to the threat of nonindigenous fish populations.

Pterygoplichthys pardalis, native to the Amazon Basin of South America, is now the dominant fish species in the Black River system, Jamaica. The area supports several socio-economic services such as small-scale fisheries and agriculture. The prolific and resilient nature of the suckermouth catfish is feared to directly or indirectly affect food fish yields as well as disrupt community dynamics.

This project investigates the ecology and biology of the suckermouth catfish in the Black River system with comments and comparisons to other non-native fish species within the system. Fisheries yield, habitat features, morphometrics, reproduction, diet, and risk assessments were investigated over 24 months.

Results show that *P. pardalis* is widely distributed throughout the Black River system. The species dominates the artisanal fisheries catch and yields a significantly higher catch per unit effort when compared to that of tilapia species in the Lower Morass. Significant morphometric variations in *P. pardalis* suggest the possibility of adaptive evolution of the population within the wetlands. In Black River the species is detritivorous and displays significant dietary overlap with tilapia. The species displays extended spawning during the first wet season of the year and the population also shows the ability to adjust its reproductive strategy based on increased salinity levels downstream. *P. pardalis* displays high invasive potential and pose significant threat to aquaculture and the environment in Jamaica.

Keywords: Aisha Deborah-Kay Jones; Black River; *Pterygoplichthys pardalis*, invasive alien species, fish