ASPECTS OF THE DISTRIBUTION AND BIOLOGY OF FIVE *Mugil* SPECIES OCCURRING ON THE SOUTH COAST OF JAMAICA

by

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ABSTRACT

Aspects of the distribution and biology of five *Mugil* species occurring on the south coast of Jamaica.

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Fish used in this study were collected from fishermen on the south coast of Jamaica or captured by the author. 619 *Mugil curema*, 127 *Mugil hospes*, 66 *Mugil gyrans*, 23 *Mugil incilis* and 15 *Mugil liza* was collected and analyzed during the period 1999 - 2004.

Based on abundance in commercial catches *M. curema* was the most common species occurring on the south coast of Jamaica. Analysis of morphometric measurements of *M. curema* and *M. hospes* between sites on the south coast indicats that *M. curema* and *M. hospes* found at sites Old Harbour Bay, Kingston Harbour and Salt River (coastal marine areas) could be from the same stock or could share the same recruitment pool while those from Yallahs Salt Ponds have a separate recruitment pool. The peak reproductive periods for *M. curema* was March – May with a secondary peak in August, and for *M. hospes* was December to April. Ripe and running *M. gyrans* were found in inshore fresh waters in November and in coastal marine waters in July, September and April. One ripe and running *M. incilis* was found in January.

Analysis of gut contents of four species showed that diatoms of various genera (principally *Navicula* and *Pleurosigma*) were the principal food eaten. Other food material found in the gut contents, included sarcodines, ostracods, algae (round single celled and filamentous forms) copepods, dinoflagellates and rotifers.

The length-weight relationships and growth parameters estimated for the species are: At Kingston Harbour, *M. curema*; Weight = $0.015 \times L^{3.01}$; $L_\infty = 441$ mm, K = 0.10, $t_0 = -4.32$ (both sexes), Weight = $0.022 \times L^{2.805}$; $L_\infty = 441$ mm, K = 0.19, $t_0 = -2.472$ (females), Weight = $0.028 \times L^{2.893}$; $L_\infty = 367.5$ mm, K = 0.12, $t_0 = -4.608$ (males); *M. hospes* (both sexes); Weight = $0.059 \times L^{2.486}$; $L_\infty = 35.7$ mm, K = 0.53, $t_0 = -1.47$; *M. incilis* (both sexes); Weight = $0.002 \times L^{3.450}$; $L_\infty = 514.5$ mm, K = 0.16, $t_0 = -6.688$; *M. gyrans* (Salt River, both sexes) Weight = $0.022 \times L^{2.850}$; $L_\infty = 29.4$ mm, K = 0.27, $t_0 = -1.883$.

The best estimate for natural mortality (M) for the south coast of Jamaica are: at Kingston Harbour; 0.42 for *M. curema*, 1.108 for *M. hospes,* and 0.382 for *M. incilis.* Fishing mortality (F) seems to be greater in *M. hospes* than in *M. gyrans M. curema* and *M. incilis.*

Keywords; June Masters, mullet, Jamaican south coast, *Mugil curema*, *Mugil hospes, Mugil gyrans*, *Mugil incilis, Mugil liza*