# ESTABLISHING SPECIES-HABITAT ASSOCIATIONS FOR 4 ETELINE SNAPPERS USING A BAITED STEREO-VIDEO CAMERA SYSTEM

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By

William Francis Xavier E. Misa

Thesis Committee:

Jeffrey Drazen, Chairperson
Margaret McManus
Christopher Kelley

## ABSTRACT

Deepwater Eteline snappers in the Hawaiian Islands are part of a complex of commercially valuable bottomfish that has been subject to recent overfishing. The lack of ecological data on deepwater bottomfish makes it difficult to define their essential fish habitat (EFH), an integral concept in ecosystem-based fisheries management. This study makes use of a baited stereo-video camera system to quantitatively define the habitat associations of four of these species (*Pristipomoides filamentosus*, *P. sieboldii*, *Etelis coruscans*, and *E. carbunculus*) and expand our understanding of their ecology. Relative abundance, length, and habitat data from six locations in the main Hawaiian Islands that encompass a Bottomfish Restricted Fishing Area (BRFA) were evaluated and species- and size-specific differences were identified. Depth was a major factor influencing bottomfish distributions and habitat preferences were found to be species-specific. *Pristipomoides filamentosus* and *E. carbunculus* associated with hard bottom, low slope habitats. *Etelis coruscans* was found over both hard-low and hard-high habitats while the distribution of *P. sieboldii* was not significantly different between the four habitat types sampled. *Pristipomoides filamentosus* showed an ontogenetic increase in habitat depth while *P. sieboldii*, and *E. coruscans*, in addition to *P. filamentosus*, exhibited size-related shifts in habitat type, with two of the species moving from hard bottom, low slope to hard bottom, high slope environments. No ontogenetic shifts were found for *E. carbunculus* as only a limited number of juveniles were recorded. Regional variations in relative abundance and length distributions were also observed. In establishing species-habitat associations, it is imperative that the influence of life stage, mode of habitat utilization, and environmental variables on bottomfish distributions be assessed on a species level to better understand these intricate relationships.