

The Use of Genetic Tagging to Assess Inshore Rockfish Populations Within a Marine Conservation Area in the Strait of Georgia

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Fisheries and Oceans Canada (DFO) has recently implemented a spatial management strategy to address conservation and management concerns regarding British Columbia's inshore rockfish stocks. To date, DFO has closed 106 rockfish conservation areas (RCAs) to groundfish harvest. Unfortunately, the unique habitat requirements and physiological characteristics of inshore rockfish inhibit the effectiveness of many traditional stock monitoring methods. In our study, we evaluated the use of a novel, *in situ* genetic tagging technique to examine the abundance, distribution and movement of copper (*Sebastes caurinus*) and quillback (*S. maliger*) rockfish within a small RCA in the Strait of Georgia. Site-specific capture-recapture abundance estimates were calculated from a subset of 2004 samples that contained sufficient tissue for individual identification. Of the 351 samples analysed, we recorded 11 recaptures (3.1% recapture rate) and observed limited within-site movements. We also evaluated the relationship between catch-per-unit-soak time (CPUST) and density as an alternative means of indexing abundance. Our results identify genetic tagging as a potential alternative to traditional marking techniques for evaluating rockfish abundance and distribution. Given improvements to biopsy hook design, the costs of applying a genetic tagging sampling technique could be competitive with the costs of current assessment practices such as submersible surveys.