

NOTICE OF PUBLICATION



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RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: Abundance and culture trials of *Ruditapes philippinarum* (Adam and Reeve, 1850), and abundance of *Tellina (Quidnipagus) palatum* (Iredale, 1929) at two sites in Kaʻneʻohe Bay, Oʻahu, Hawaiʻi

Author(s): Maria C Haws¹, Pua alaikahoniho omau Pascua¹, Robert Howerton², Angela Hiʻilei Kawelo³, Keliiahonui Kotubetey³

1. Pacific Aquaculture and Coastal Resources Center, University of Hawaiʻi Hilo, Hilo, HI, USA

2. University of Hawaii Sea Grant College Program, University of Hawaii-Maui College, Kahalui, HI, USA

3. PaePae ʻO Heʻeia, Kaʻneʻohe, HI, USA

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Abstract: Abundance, length-frequencies and distribution of *Ruditapes philippinarum* (Manila Clams) and *Tellina (Quidnipagus) palatum* were measured at two beaches in Kaʻneʻohe Bay, Oʻahu, Hawaiʻi in June, 2010. Abundances had decreased from 866.2m⁻² to 3.4 m⁻² for *Ruditapes* and from 75.5 m⁻² to 1.5 m⁻² for *T. palatum* since 1977. Distribution of both species was patchy, but both were most commonly found >40 m from shore. Size frequencies of live clams compared with empty shells suggest that few *Ruditapes* survive to sexual maturity. A similar trend was not detected for *T. palatum*. Aquaculture trials of *R. philippinarum* were conducted at the Heʻeia and Moliʻi traditional Hawaiian fishponds in the same bay. The clams failed to thrive, although triploid and diploid *Crassostrea gigas* performed well in concurrent trials in the same fishponds. Current lower abundances for wild *R. philippinarum* could be due to factors related to predation or nutrient limitations. Previously, two large sewage outfalls existed at the surveyed clam bed areas which may have temporarily increased nutrient availability for both wild and cultured clams. Current nutrient levels may inhibit Manila clam growth and recruitment in Kaʻneʻohe Bay.

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