Abstract for the **IV International Symposium for Anchialine Ecosystems**:

TOPIC (Other – Oral Presentation)

Anchialine restoration in Hawai‘i – One pool complex at a time

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Coastal development and introductions of invasive plant and animal species have significantly reduced the quantity and quality of anchialine pools throughout Hawai‘i. Hawai‘i Wildlife Fund worked with government agencies to designate a 538-hectare property in Hawai‘i into Forest Reserve to enable conservation of its anchialine ecosystems, native plants, and cultural resources. Perimeters of two large pools were overgrown with invasive plants (christmasberry, sourbush, mesquite), and both had a deep sediment layer. One pool had impenetrable growth of seashore paspalum and the other had Mozambique tilapia.

Native pool shrimp were never seen in the pool with tilapia but were previously observed in the pool choked with paspalum, and smaller pools within the complex. Species inhabiting this region include *Halocaridina rubra*, *Metabetaeus lohena*, and *Palaemon debilis; H. rubra* exhibit unique haplotypes and are genetically distinct from other nearby pools.

Restoration of these anchialine ecosystems began in 2009 with the hand removal of the non-native vegetation around the pools, followed by selective stump treatment with herbicide. Sediment removal was accomplished with a trash pump. Certain water quality parameters and relative shrimp abundance were monitored before, during and after restoration work.

Currently, the woody invasive vegetation is gone and pool peripheries abound with native plants. The sediment sites are also supporting native vegetation. A low level of effort is being expended quarterly to prevent invasive grasses from reinvading. Pool shrimp are now abundant in the pool where paspalum was removed. Tilapia eradication with rotenone is planned for the second pool in late 2018.