



# *Heteranthera reniformis*

## kidneyleaf mudplantain

*Heteranthera reniformis*, commonly known as kidneyleaf mudplantain, is native to the freshwater wetlands of North, Central, and South America. *H. reniformis* was first introduced to Hawaii as an ornamental pond plant, however, a naturalized population has recently been discovered. In July 2013, the kidneyleaf mudplantain was collected from a taro loi (patch) by an Oahu taro farmer and subsequently identified as *H. reniformis* by Danielle Frohlich (Oahu Early Detection).

### Description

*H. reniformis* quickly grows submerged or floating in shallow freshwater wetlands, forming dense mats with thick root systems (Csurhes 2008). Seedlings have narrow lance-shaped leaves that broaden into a glossy green, kidney shape, up to 5 cm wide. Petiolate leaves are usually arranged alternately along the stems, but are sometimes grouped into clusters.

The kidneyleaf mudplantain has small white to pale blue flowers that are arranged in clusters; each flower has six petals and three stamens. The fruit is in a capsule with 8 to 14 small winged seeds less than 1mm long (Csurhes 2008).

### Reproduction and dispersal

*H. reniformis* reproduces both vegetatively and by seed. Disturbance of this species in aquatic areas can result in stem fragmentation, root production at each node, and further infestations (Csurhes 2008). In addition, *H. reniformis* produces many seeds which can survive for long periods of time, enabling this species to reappear when conditions are optimal (Hill 2006).

### Invasiveness

According to the Hawaii Pacific Weed Risk Assessment, *H. reniformis* is considered “high risk” and exhibits many undesirable traits. *H. reniformis* is a member of the Pontederiaceae family, which also includes the water hyacinth, (*Eichhornia crassipes*). Water hyacinth, a common ornamental aquatic plant, proved its invasiveness when it overran the



Figure 1. *Heteranthera reniformis* leaves. Photos by HDOA.



Figure 2. Cluster of flowers.

waterways in Lake Wilson, Wahiawa, Oahu in 1997. It took several years for water hyacinth to be brought under control at the lake. (Star Bulletin March 2, 2003). A broad native range, from tropical to subtropical areas, allows this species to thrive in various habitats and become highly invasive, especially when competition is low.

This plant is an agricultural weed in countries such as Italy, where it infests flooded rice fields and reduces crop yield (Ferrero 1996). The kidneyleaf mudplantain has already proved to be a problematic species in Oahu taro lo'i. If left unchecked, *H. reniformis* may out compete newly planted taro, resulting in reduced yields. To date, the *H. reniformis* has only been found at a single location on Oahu. Additionally, the kidneyleaf mudplantain's dense mats can clog shallow freshwater streams and ditches making it a potential threat to the surrounding environment.

### Control

*H. Reniformis* may be controlled by repeated hand - pulling before the plant begins to flower. Mechanical removal must be done carefully, as not to break off vegetative plant parts that will lead to new plant growth. Herbicide applications to State waters must be in compliance with chemical label requirements and the National Pollution Discharge Elimination System.



Figure 3. New rooting at each node of *H. reniformis*.



Figure 4. *H. reniformis* growing rapidly between taro in a lo'i.

### Acknowledgements

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