Alien Snails Found in Greenhouses - Can We Keep Them Out of Our Native Forests?

O'ahu Army Natural Resources Program

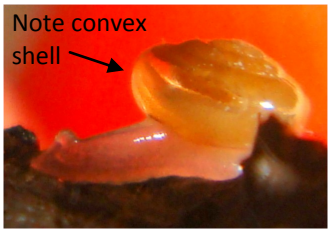
The O`ahu Army Natural Resources Program (OANRP) maintains two endangered plant nurseries where propagules are raised for genetic storage and to be out-planted back into the wild. Within the last year, it has been discovered that much of the nursery stock are harboring multiple species of alien snails. It has been shown that horticultural facilities act as critical vectors for many alien snail and slug species, highlighting the need for greater awareness about these species (Cowie et al., 2008). The purpose of this informational flyer is threefold: 1) to provide additional information for any agencies/organizations conducting out-plantings in the wild by highlighting the species found in OANRP nurseries; 2) to garner any information that the horticultural, botanical, and conservation community may have regarding quarantine and eradication methods; and 3) to garner any information the horticultural, botanical, and conservation community may have regarding known distribution of these alien snail species in the wild.

Five snails of concern:

Zonitoides arboreus

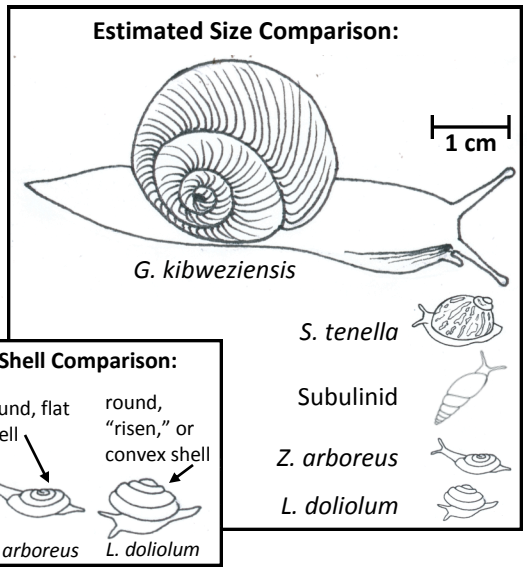
Subulinid

Gonaxis kibweziensis



Liardetia doliolum

Succinea tenella



RISKS associated with accidental forest introduction:

- Competition with native snails for food
- Increased prey for snail predators
- Potential to transmit diseases to native snails (currently little known)
- Possibly affecting plant health (currently little known)

OANRP's current QUARANTINE & ERADICATION methodology:

- Potted plants are routinely baited with lettuce to attract snails, and lettuce and soil below lettuce examined for snail presence.
- If, following 8 weeks of visual examination, snails are never found, then plants are cleared for out-planting.
- If snails are found, infected plants are treated with metaldehyde (Hollingsworth & Armstrong, 2003, Hollingsworth pers.comm. 2009).
- Greenhouse facilities are sprayed with metaldehyde, all equipment is power-washed, all stock is kept on benches seated in salt pellets.

If you can provide additional information about these snail species, methods for control in the greenhouse, or have seen them in the wild, please contact: Matt Keir, OANRP Rare Plant Program Manager (matthew.keir@us.army.mil)

References:

Cowie, R.H., K.A. Hayes, C.T. Tran, and W.M. Meyer III, 2008. The horticultural industry as a vector of alien snails and slugs: widespread invasions in Hawaii. Int. J. of Pest Mgmt. 54(4): 267-276.

Hollingsworth, R.G. & J.W. Armstrong, 2003. Effectiveness of products containing metaldehyde, copper or extracts of yucca or neem for control of *Zonitoides arboreus* (Say), a snail pest of orchid roots in Hawaii. Int. J. of Pest Mgmt. 49(2): 115-122.