

## *Euglandina rosea* (Férussac, 1821) is found on the ground and in trees in Florida

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*Euglandina rosea* (Férussac, 1821) is a carnivorous snail native to the southeastern United States, including Florida (Hubricht, 1985; Wolfe and Brooks, 1968). It is known as a ground-dwelling terrestrial snail that feeds on terrestrial gastropods (Burch, 1962; Pilsbry, 1946). Introduced to Hawaii in 1955, it is one of the worst cases of an intended biological control agent attacking non-target species (Cowie, 2001). Enclosures keep it away from consuming remaining endemic snails, including the endangered *Achatinella* species (Stone, 1999).

On a collecting trip in Marianna, Jackson County, Florida (June 2003), individuals of *E. rosea* were found between 0.3 and 2.0 m above ground on both trees and vines. The majority of individuals were found ~1 m above ground (Figure 1). Collections were made after heavy rains and in high humidity (>80% R.H.—Marianna Airport). Snails were located above the flood plain of the Chipola River. They were found in a clearing within a mixed forest dominated by salt cedar (*Tamarix gallica* L.) and overgrown with vines.

Of the 17 living specimens of *E. rosea* collected, three were found in the leaf litter. Most were found along the trunks of trees or on the underside of leaves. Snails were found immobile either attached with their foot or aestivating, as determined by presence of a mucus epiphragm over their aperture (Burch, 1962). *Euglandina rosea* were found within a 20-m<sup>2</sup> area, coexisting with individuals of the potential prey snails: *Mesodon thyroideus* (Say, 1816), *Stenotrema maxillatum* (Gould, 1848), *Ventridens demissus* (A. Binney, 1843), and *Oligyra orbiculata* Say, 1818. Eggs of *E. rosea* were collected a few centimeters below the surface of the leaf litter.

The literature suggests that *E. rosea* is found primarily in leaf litter (Burch, 1962; Griffiths et al., 1993; Mace et al., 1998; Pilsbry, 1946), although individuals have been known to climb trees or walls to capture prey (Cowie, 2001; Davidson, 1965; Gerlach, 1999; Hadfield et al., 1993; van der Schalie, 1969; Voss, 1976). Davis and Butler (1964) stated that *E. rosea* fed on tree snails in its native habitat. However, these authors did not mention that the introduction of *E. rosea* could threaten native Hawaiian snails. In addition, *E. rosea* is known to



**Figure 1.** *Euglandina rosea* on vegetation in Marianna, Florida about 1 m above ground. Photograph by DJB.

forage underwater for aquatic snails in Hawaii (Kinzie, 1992).

The behavior of aestivating above ground has serious implications for the use of *E. rosea* as a biological control agent. The ability of *E. rosea* to utilize both trees and leaf litter may allow it to out-compete native species for these resources and allow better access to non-target species (Gerlach, 1999). The use of both ground and tree habitat by *E. rosea* in its native range and aquatic habitat in Hawaii (Kinzie, 1992) makes it a very dangerous species to use in biological control.

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