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Biological Control with Insects: The Waterlettuce Weevil ¹

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(*Neohydronomus affinis* Hustache Coleoptera:
Curculionidae: Erihinae: Stenopelmini)

Host : *Pistia stratiotes* L. (Araceae)

The genus *Neohydronomus* is comprised of three species whose native range is primarily South and Central America. All are semiaquatic, are covered with a layer of dense scales (not water-repellent), and feed on a single plant species, *Pistia stratiotes*, in the family Araceae.

Adult *Neohydronomus affinis* are small (3 mm long) and have a nearly straight rostrum that is strongly constricted ventrally at the base. *N. affinis* ranges in color from uniform bluish-grey to reddish-brown with a tan, chevron-like band across the elytra. The color pattern is associated with scales and may be difficult to distinguish if the scales are wet, dirty or missing.

Females chew a hole about 0.5 mm in diameter in the leaf (usually on the upper surface near the leaf edge), deposit a single egg inside this puncture, and close the hole with a black substance. The larvae hatch within 4 days (at temperatures above 75°F). The young larvae, which are very small, burrow under the leaf surface and work their way toward the

spongy portions of the leaf at a rate of about 1.5 to 2.0 cm/day. The larval stage lasts 11 to 14 days.

Under optimal temperatures, 4 to 6 weeks are required for *N. affinis* to complete the transition from egg to adult. Adults chew holes (about 1.4 mm in diameter) in the leaf surface and burrow in the spongy tissues of the leaf. The characteristic round feeding holes are easily observed when weevil populations are large (several hundred insects per square meter), but may be concentrated near leaf edges and more difficult to observe when populations are small.

Self-perpetuating populations of *N. affinis* have established at several sites in southern Florida. The first experimental releases were made during 1987 at Torrey Island and Kraemer Island at the south end of Lake Okeechobee. The weevils, in combination with native insects, subsequently caused dramatic declines in the waterlettuce populations at these two sites. The weevils have dispersed throughout the peninsular portion of the state and are impacting waterlettuce populations in other areas.

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