

Life History of *Nanophyes marmoratus*

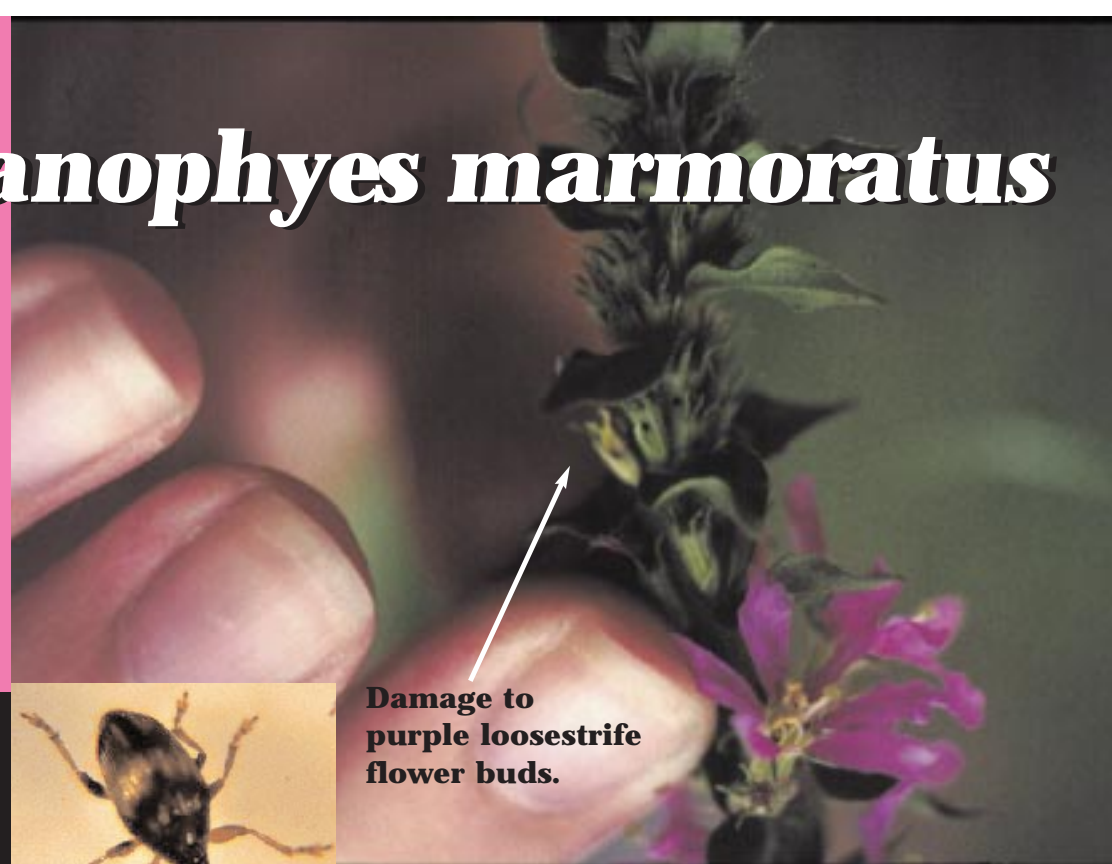
Purple Loosestrife Biological Control Agent

Nanophyes marmoratus are small weevils from Europe and Siberia that belong to the insect family Curculionidae. They feed on flowers of purple loosestrife (*Lythrum salicaria*). Adult weevils are 2 to 2.5 mm long with a long snout and blunt abdomen. The elytra, or wing covers, are black or reddish-black with lighter markings across the center.

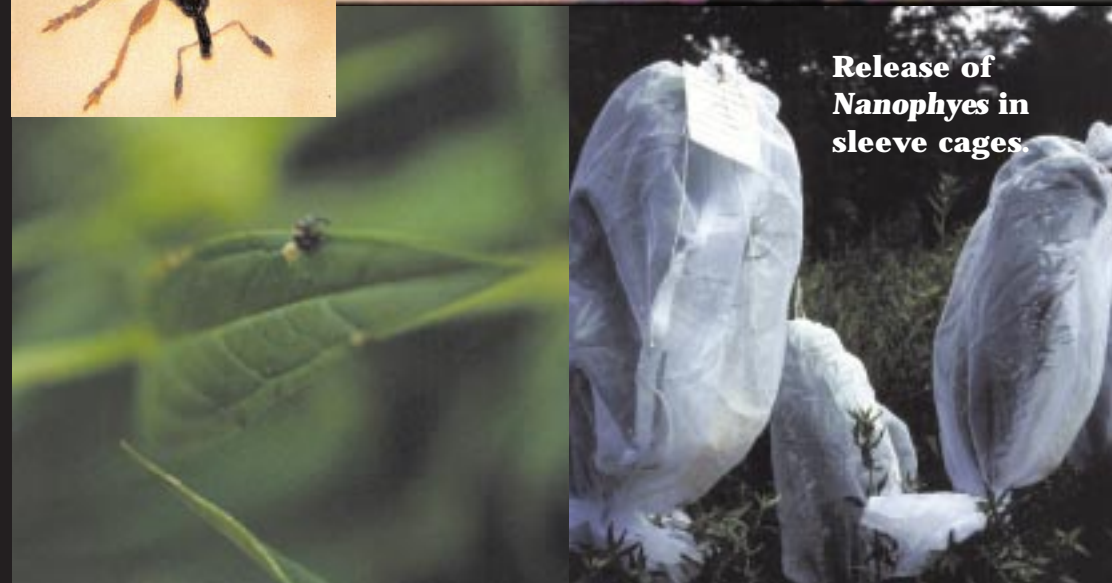
Nanophyes weevils overwinter as adults in leaf litter. They emerge in May and begin feeding on young purple loosestrife leaves near the shoot tips. The weevils move to flower spikes when buds develop, where they mate and feed within the closed flower buds. Female weevils lay eggs in unopened flower buds from June through September. Only one egg is deposited into each flower bud. Each female can produce 60 to 100 eggs. The damaged buds do not flower or produce seeds.

Weevil larvae complete their development inside purple loosestrife flower buds, feeding on all flower parts. Pupation occurs inside a chamber within the damaged bud. New generation adults emerge in August and feed on purple loosestrife leaves before overwintering.

There is one generation of weevils produced per year. It takes one month for a *Nanophyes* weevil to develop from egg to adult. The weevils are very host specific, and successful larval development only occurs on purple loosestrife. Feeding damage by *Nanophyes marmoratus* is expected to reduce continued production of purple loosestrife seed in wetlands.



Damage to purple loosestrife flower buds.



Release of *Nanophyes* in sleeve cages.