



Two-lined Spittlebug (*Prosapia bicincta* (Say)) in Hawaii

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Update:

Two-lined spittlebug (TLSB), *Prosapia bicincta*, (Hemiptera; Cercopidae) was first detected in Kailua-Kona, on the Big Island of Hawaii in September of 2016 where it had caused severe damage to nearly 2,000 acres of pasture land. The pest has since rapidly expanded its range and is now causing damage to rangelands across an estimated 125,900 acres between Hualalai in the north and Keokea in the south. In highly infested areas, TLSB has resulted in nearly 100% die back of the dominant and key pasture grasses including Kikuyu (*Pennisetum clandestinum*) and pangola (*Digitaria eriantha*) grasses. The loss of these important livestock forages provides entry for the establishment of many undesirable, and often invasive plants such as Pamakani (*Eupatorium adenophorum*), wild blackberry (*Rubus* spp.), fireweed (*Senecio madagascariensis*), Hilo grass (*Paspalum conjugatum*), several other minor grasses of low forage quality, and other weeds. Currently TLSB appears to be isolated to the North Kona area, but because of its seeming preference for key livestock forage grasses it has the potential to spread throughout the islands and irreparably harm large areas of valuable livestock grazing lands. Consequently, TLSB is poised to become a major economic threat to the pasture-based livestock industry in Hawaii unless steps are taken to control the pest.

To combat this pest a taskforce comprised of extension specialists and agents, graduate students and research technicians from the University of Hawaii and personnel from the Hawaii Dept. of Agriculture (HDOA) Plant Pest Control Branch was formed in the fall of 2017. Initial funding was provided by the HDOA, Dept. of Natural Resources, and Hawaii County. The goal of the taskforce is to restrict the further spread of TLSB and to prohibit its establishment on the other non-infested Hawaiian Islands through rancher outreach and education; detection and surveillance; development of Integrated Pest Management (IPM) protocols; biological control agent exploration; and research into the biology and ecology of TLSB in Hawaii.



Figure 1. Adult Two-lined spittlebug (*Prosapia bicincta*) on Kikuyugrass.

Pasture Surveys:

By February 2018 the project team established a series of transects stretching across the Kailua-Kona ranch lands between Hualalai in the north to Keokea in the south. Monthly observations of these transects has revealed patterns in the population dynamics of TLSB. While spittle mass activity was low in February and March, as day time temperatures warmed, nymph density increased rapidly in April and May. Nymph activity began to decline slowly in June and July with a second, less intense peak of activity in August and September (Figure 2). In May and September nymph densities greater than 50 nymphs/m² were observed in two locations and consistently resulted in the dieback of the grasses in those areas (Figure 3). Subsequent observations in those areas found only minor recover of the grasses.

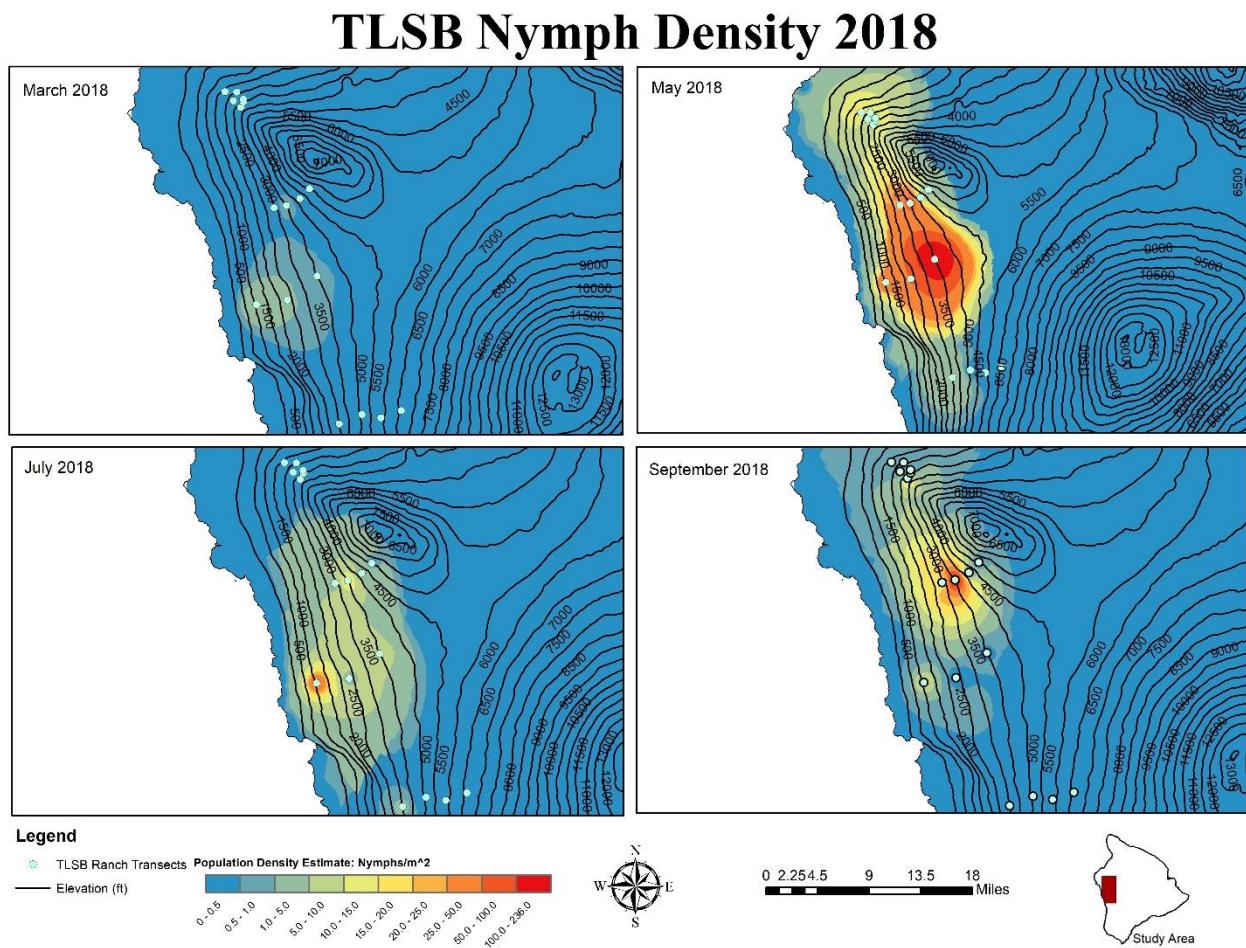


Figure 2. Two-lined Spittlebug nymph densities (nymphs/m²) along transects located in mauka pastures along the Kailua-Kona Coast of Hawaii between March and September of 2018.



Figure 3. Rangeland damaged by Two-Line Spittlebug in the mauka lands of Kailua-Kona. Two-line Spittlebug densities greater than 50 nymphs/m² consistently resulted in the dieback of Kikuyu and Pangola grasses (left) leading to the invasion of weeds such as Pamakani, fireweed, blackberry and many others (right).

The two-lined spittlebug poses a significant threat to the Hawaii Beef Cattle Industry in the state because of its apparent preference for sod-forming grasses like kikuyu and pangola grass that supports nearly 70% of the beef cattle production in the state. To help reduce the potential impact of the pest on the industry: **Be alert** to the condition of your pastures, **be observant** to the various insects you observe while in your pastures, **and report** any sightings of adult two lined spittlebugs, or spittle masses.

Who to Contact:

If you have any questions, concerns, or have observed two-line spittlebug in your area please contact us.

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