

## The Twolined Spittlebug – a catastrophe in the making.

Funny name, yeah. But ranchers aren't laughing.

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PMKCA VP

*"Invasive species"* ... it seems there is a new one, a new threat to our island life, identified every week. When invading pests frequently affect an economy and a way of life – ranching for example – it is understandable that we all might become worn out from the constant state of crisis and concern.

Our Pa'auilo Mauka Kalopa Community Association was formed 20+ years ago by some of our ranching families to care about the welfare of our upcountry communities. One of the concerns we try to address is the impact that invasive species have on our lives, our health, and our economic well-being.

Ranchers have been alerted multiple times in past years to new invasive plants and pests that have the potential to turn productive pastures into wastelands. Although it's frustrating that we often discover invasives *ONLY AFTER* they have established themselves on our islands (a situation that angers many ranchers), our ranchland specialists and scientists have often been able to find methods to limit the damage done by new pests.

These experts are more alarmed about the **Twolined Spittlebug** (TLSB, *Prosapia bicincta*) than they are about most pests. As one ranchland specialist put it recently, *"I SO wish that this insect hadn't made it to our island!"*



*Twolined Spittlebug adult – Fingernail-sized, shiny black with two orange stripes.*

This invasive insect, first detected in Hawai'i just 5 years ago, has already damaged and destroyed **175,000+ acres of grazing lands** above Kona. And it looks like it's heading for the rich pastures around Waimea and on down the Hāmākua Coast.

*You aren't a rancher, you say?* Well, your lawn, neighborhood park, hiking trail, and golf course are also on the TLSB's menu. And maybe you have for dinner something that a local rancher produces.

Whoever you are and wherever you live on our island, you will be affected – and you can help to combat the spread of this insect by 1) being informed about the creature, 2) being alert and spotting it in your area, and 3) taking action to report your sighting and to control its spread.  
*Please keep reading!*

I live in the heart of Pa'auilo's ranching community. From my home, I look out on green pastureland, dotted with 'ōhi'a trees and bisected by gulches. The land was originally pasture, owned by one of the ranching families of the area. The names and faces are familiar to me now - DeLuz, Ramos, Ignacio and others. For many decades, cattle, sheep, horses, and other livestock roamed the open pasture lands, growing fat and strong on nutritious and vigorous grasses (kikuyu, pangola). These grasses are the mainstay of ranching in the area – *and they are also the favorite food of the voracious little TLSB.*

Hawaii island contains more than 570,000 acres of pasture and rangelands suitable for grazing. About one third of that land is considered “high quality”, based on rainfall, elevation, and forage types. Much of the best land for raising livestock, as you would guess, lies in the cool, moderately wet conditions that exist in a ring around Kohala mountain, continuing through wet-side Waimea, down the slopes of Mauna Kea to Honoka’a town and on along our Hāmākua coast nearly to Hilo.



*Vivid green pastures of kikuyu grass between Waimea and Hāmākua, targets for TLSB.*

So, when two of our island’s leading range and pasture specialists, Dr. Mark Thorne, Range & Livestock Management Specialist with the UH Kamuela Extension (CTAHR), and Carolyn Wong Auwelo, Grazing Land Management Specialist with USDA’s Natural Resources Conservation Service (NRCS), are seriously concerned about TLSB, we should all pay attention.

So far, the impact of this invasive pest has increased by about 35,000 acres per year. When the grasses are killed, invasive weeds that are unpalatable and often toxic to livestock take their place, turning a once-verdant pasture into a wasteland. Ranchers in the affected areas from South Kona to the slopes of Pu’u Wa’awa’a are having to take difficult and expensive measures to support their herds as fireweed and blackberry and other invasives take over. The economic

and social impact of the loss of ranching as a livelihood and as a way of life on our island would be catastrophic.



*A cow and her calf in a pasture transformed into inedible weeds by TLSB.*

The consequences of the loss of grassy pastures extend to other important areas in our island world.

When pastures are destroyed, our watershed areas lose their ability to hold water, threatening our water supply. The destruction of grasslands interferes with the web of wildlife, from field mice to our native owl (pueo) and hawk ('io) to mouflon sheep and game birds that also call these rangelands home. The grasses that form the turf of our lawns and parks are often kikuyu and are just as vulnerable to TLSB as grazing lands.

Island residents are increasingly aware of the importance of supporting our local agriculture – growing what we consume locally and reducing our dependency on shipped-in food. For those of us who include high-quality meat in our diet, supporting our ranching community's "locally-grown" initiatives is equally important.

**How could a little bug do so much damage?**

The Twolined Spittlebug goes through three stages in its lifecycle – as a tiny egg hiding in soil, as a small larva (“nymph”), and finally as an adult insect. Both the nymph stages and the adult insects feed on our best grasses.

In the nymph stage, the creature sucks fluids from the stems of grass close to the soil level while living inside of a frothy mass that it produces as a protective **cover**. When the bug is in this form, buried deep in the plant foliage, it is almost invisible. *Look for the white froth clinging to the base of the plant stem.*

In its adult stage, the insect, about the size of your little fingernail, is more mobile and more dangerous, able to jump or fly short distances in search of new plant material to infest. Scientists have learned the TLSB saliva contains amylase, an enzyme that breaks down complex carbohydrates in the grass into simple sugars, interfering with the plant’s photosynthesis, and ultimately killing the grass.

This “double-whammy” of nymphs below and adults above, will turn infested grass into a dead brown mass within a few weeks. When the insect has fed sufficiently, it lays around 50 eggs in a new patch of grass, thus starting the cycle over again. A single TLSB laying eggs in its 2-month lifecycle can increase the population of pests and the size of damaged pasture exponentially.

### **What is being done about the TLSB?**

There is significant effort being brought to bear on this dangerous pest. Scientists and rangeland experts are engaged in a two-pronged effort to find effective control methods and to identify nutritious grass species that are resistant to TLSB which can be used to restore pasture lands that have been destroyed.

*Here’s where island residents can help:* With highly productive range lands still unaffected by TLSB, combatting the spread of the pest is also a major focus of the experts. Ranching and rangeland management organizations in Hawai’i are bringing information and support to their members. Other groups and agencies that are concerned with invasive species, such as the Big Island Invasive Species Committee ([biisc.org](http://biisc.org)) are also leading efforts to inform the public and give residents ways in which they can help.

### **Is this a concern for all of us – or just for ranchers?**

*Grass is food to the Twolined Spittlebug.* Your mowed lawn is just as delicious to the bug as your ranching neighbor’s pasture. As Dr. Thorne put it in a recent interview, “The Twolined Spittlebug is not just a rancher’s problem. It belongs to the entire state.”

Anyone in Hawai’i who is concerned about our food supply and our self-sufficiency should be concerned about TLSB. If you are concerned about the welfare of our historic agricultural communities and their contributions to our island heritage, you should be concerned about

TLSB. If you appreciate the beauty of your lawns and parks and open spaces, you should be on the lookout for this insect.

### **What can you do to help the ranching community combat TLSB?**

The Twolined Spittlebug is hopping and flying its way towards your backyard, your neighborhood, your park, your farm, your ranch. The bug won't sting you like a Little Fire Ant or keep you awake like a coqui frog, but it will wreak havoc on our island world.

**Be informed:** By reading this article, you have taken an important step towards being informed about the Twolined Spittlebug and the serious risk it presents. Stay informed, especially as updates about its spread or methods of control become available.

A new website, [www.TLSBHawaii.com](http://www.TLSBHawaii.com), has recently been launched to help inform the public – every Hawai'i resident – about TLSB, its impact on the ranching community, and what every one of us can do to help curtail the spread of this insect. It's sobering to hear ranchers and rangeland specialists describe what they are seeing in the affected areas.

A new video brings home the message of the severity of the TLSB threat to our island's agriculture and heritage. You will find it here, <https://youtu.be/m16mfcQM0QQ>, and via a link on the TLSBHawaii.com home page.

**Be vigilant:** Look out for the Twolined Spittlebug. Know how to recognize the adult bug - *a fingernail-sized, black-bodied insect with 2 orange stripes*. Look for patches of dead grass in your lawn or pasture. Look for frothy white masses close to the ground.

*Don't give it a free ride:* If you are traveling (driving, hiking, horseback riding) through areas where the TLSB is known to exist, check your gear and cargo areas to be sure you aren't transporting a TLSB to a new area where it can start a new infestation. The bug doesn't fly far, but it can hitch a ride in your SUV, truck cab or bed or horse trailer. And, as a general rule, don't transport plants, soil or organic material from one location to another. Many troublesome invasive species, including TLSB are spread that way.

**Take action:** If you have a mowed lawn or are in a grassy area and you see a yellowing patch of grass and evidence of TLSB (frothy mass close to the ground and/or adult insect) in your own mowed lawn or in any grassy area, trap the insect and take photos. Report your sighting on website [643pest.org](http://643pest.org). (And install the **643pest** app on your IOS or Android phone to quickly report from wherever you are.) Early detection of the TLSB in new areas is critical in controlling its spread.



**REPORT INVASIVE SPECIES**  
**643-PEST**  
**643pest.org**  
**CALL OR CLICK TO PROTECT HAWAII**

*From your laptop or your smart phone app, report sightings on **643pest**.*

If you're a rancher finding evidence of the TLSB in your pastures, especially in areas where the insect has not yet been seen, contact Dr. Mark Thorne or Carolyn Wong by making a report on [643pest.org](http://643pest.org) or via the 643PEST app on your phone.

***This destructive invasive species is no joke. If there is green grass where you live, imagine it gone.*** In its place, picture a wasteland of toxic invasive weeds that animals can't eat. Imagine the heritage of ranching and the livelihood of ranching families devastated.

Then, remember that, by your vigilance and action, you can make a difference in combatting the spread of the Twolined Spittlebug and help curtail the devastation it is causing on our island, until a solution has been implemented.