THE AREA-WIDE PEST MANAGEMENT OF GLASSY-WINGED SHARPSHOOTER IN TULARE COUNTY

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Reporting Period: The results reported here are from work conducted January 2005 through September 2005.

ABSTRACT

Tulare County has 113,000 acres of citrus, not all of which is infested with glassy-winged sharpshooter (GWSS) (Figure 1). With Pierce's Disease (PD) documented in the county, and 62,000 acres of grapes, in 2005 we wanted to continue to suppress overall GWSS populations and keep the northernmost populations from moving into the county's un-infested citrus acreage. Citrus is the most important year-round reproductive host for GWSS in Tulare County, so treatments were focused in this acreage. Previous years area-wide treatments dropped GWSS populations significantly, therefore treatments in 2005 were relatively minimal in comparison.

INTRODUCTION

Tulare County has a very diverse agricultural system including 113,000 acres of citrus and 62,000 acres of grapes. This diversity and subsequent host range along with PD in the county, makes it a challenging system to manage GWSS populations. A successful area-wide management program for GWSS was already operational in Kern County to the south, and as GWSS populations were detected in Tulare County, the request for an area-wide treatment program was made in order to suppress building insect populations and to see where exactly the northernmost infestations were located in commercial citrus.

In the spring of 2003 an area-wide trapping program in Tulare County was initiated to determine relative GWSS population abundance. Traps were placed on a ¼ mile grid throughout the county's commercial citrus belt and extending into adjacent (permanent) commercial crops. Over 5000 traps are serviced on a weekly basis. In the fall of that same year, an area-wide treatment program for GWSS in citrus was employed. The focus was a foliar "knock-down" treatment, in citrus that had GWSS detections. The chemical Assail™ (active ingredient: acetamiprid) was used on the majority of acreage where organic status was not an issue. Over 38,000 acres of citrus were treated.

In 2004, treatments focused on remaining GWSS populations following the 2003 foliar applications. Ideally, we would have liked to have followed up those foliar treatments with a systemic chemical, on all of the 38,000 acres treated the previous fall, but fiscally that was not an option. Treatment areas were assessed throughout the year and the citrus acreage that was recommended for treatment was treated with the systemic chemical Admire® (active ingredient: imidicloprid). Over 17,000 acres of citrus were treated.

The treatment focus in 2005 was again, to follow up on remaining GWSS populations and suppress those populations before they spread into additional surrounding acreage. A major concern in doing area-wide treatments is trying to effectively treat a specific area, getting an efficacious treatment, and not having to treat that same area again the following year. A number of variables add to the difficulty in treating this insect pest in Tulare County. Some of these variables are: the diversity of agriculture and subsequent host range, treating citrus groves that are on domestic water sources, treating with a systemic chemical on very hilly areas (uptake problems), grower's having the proper irrigation system for an Admire® treatment, irrigation systems being up to regulation, efficacy of prior treatments, location of nearby infested organic citrus, surrounding urban areas, small acreages of citrus that are not considered commercial citrus acreage for treatment, and surrounding growers who may have opted not to treat in prior years. Along with the sheer number of growers to be contacted and treatments organized in a timely manner, an area-wide treatment regime in citrus acreage that was so large, was a difficult undertaking.

OBJECTIVES

1. Continue the overall suppression of GWSS populations in the infested citrus acreage of Tulare County.
2. Stop GWSS populations from spreading further north of where populations are currently detected in Tulare County.

RESULTS AND CONCLUSIONS

As with any area-wide program, program success in Tulare County was dependent upon the participation of growers to treat recommended acreage, as well as the teamwork of federal, state, county and contract program officials. Trapping data in

2005 indicated residual GWSS populations in a number of areas. Trapping data (current and past), treatment history, proximity to urban landscape, and in-field survey data provided by the County were all assessed prior to making a treatment recommendation. Due to the flight capabilities of this insect, treatment recommendations were made to include citrus within a ¼ mile buffer from trap finds that were deemed treatable by the program. Northern trap finds were treated with a foliar chemical, followed up with an Admire® treatment to try and ensure that those populations were knocked out to the best of the program's ability and not able to move further north. A ½ mile treatment buffer was used for these northern finds. A total of 4,789 acres of commercial citrus were treated in 2005.

GWSS Trapping Summary			GWSS	GWSS
County	Year	# of Traps	TotalCount	AveCount
Tulare	2003	5,161	48,639	9.42
Tulare	2004	5,210	9,704	1.86
Tulare	2005	5,121	913	0.18

FUNDING AGENCIES
Funding for this project was provided by the USDA Animal and Plant Health Inspection Service.

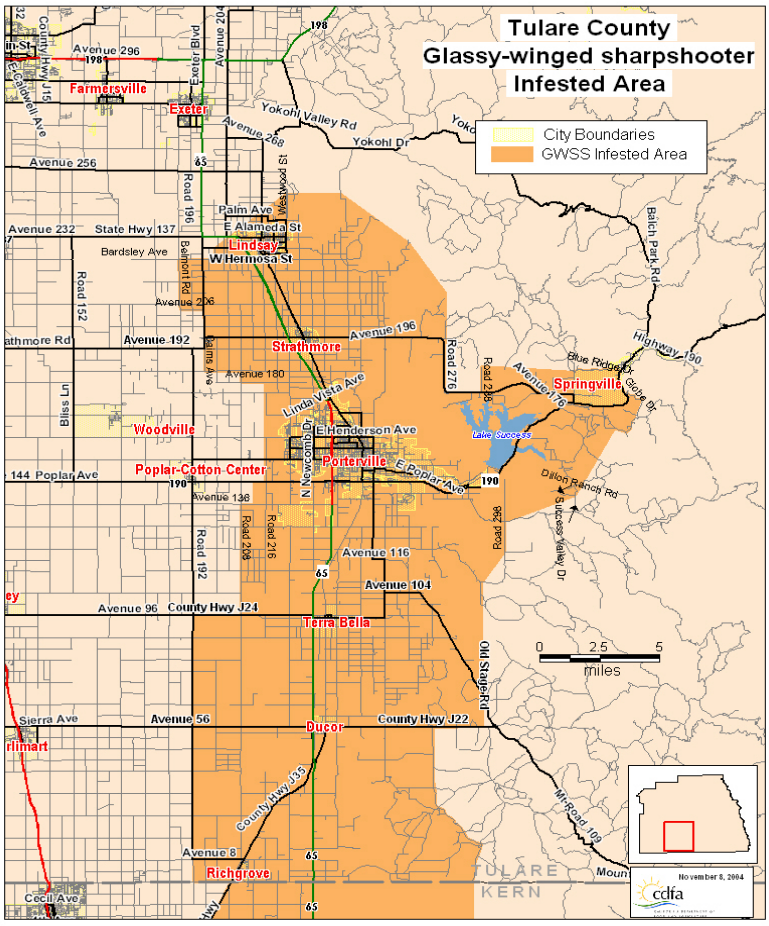

Figure 1. GWSS infested area of Tulare county.

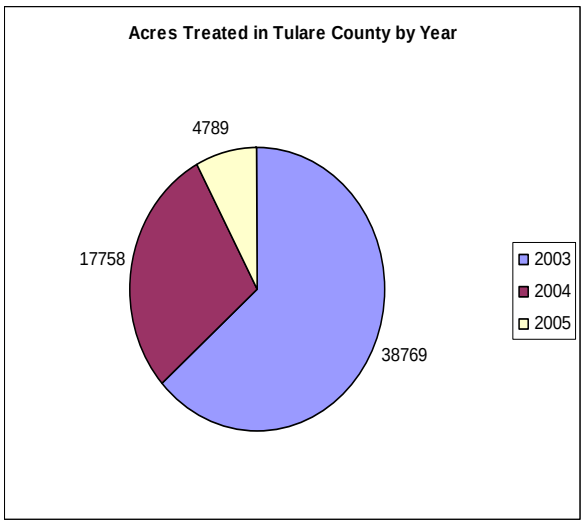

Figure 2. Total citrus acres treated in 2003, 2004 and 2005 under the GWSS Area-wide Program.

Year To Date Trapping Totals 2004

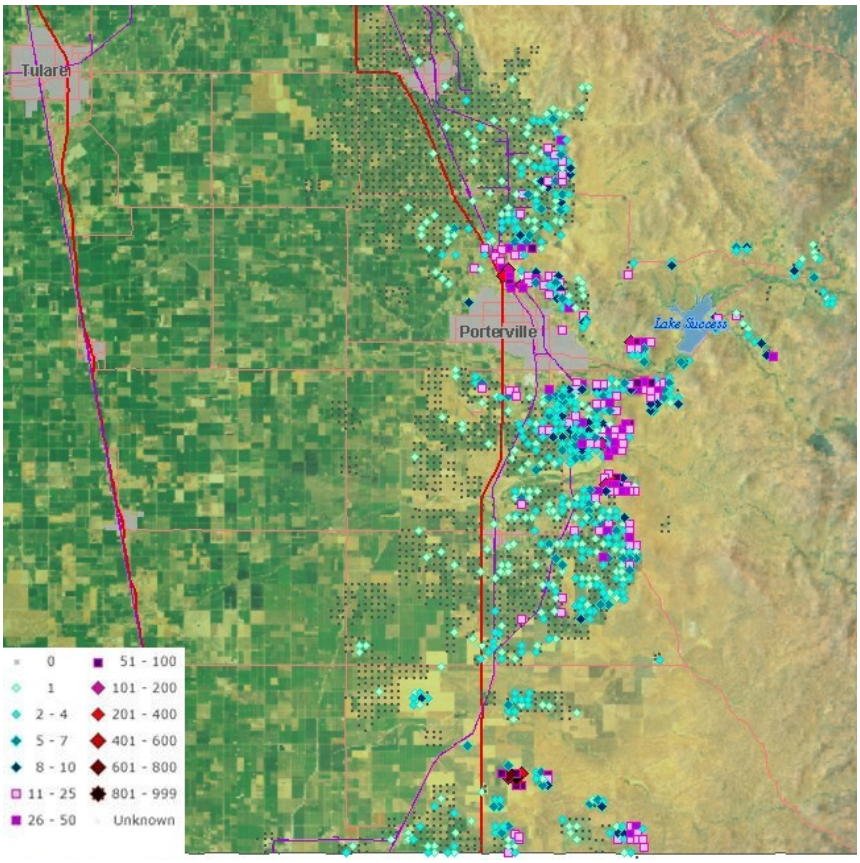

Figure 3. 1/1/04 through 9/24/04 GWSS trapping totals in Tulare County.

Year To Date Trapping Totals 2005

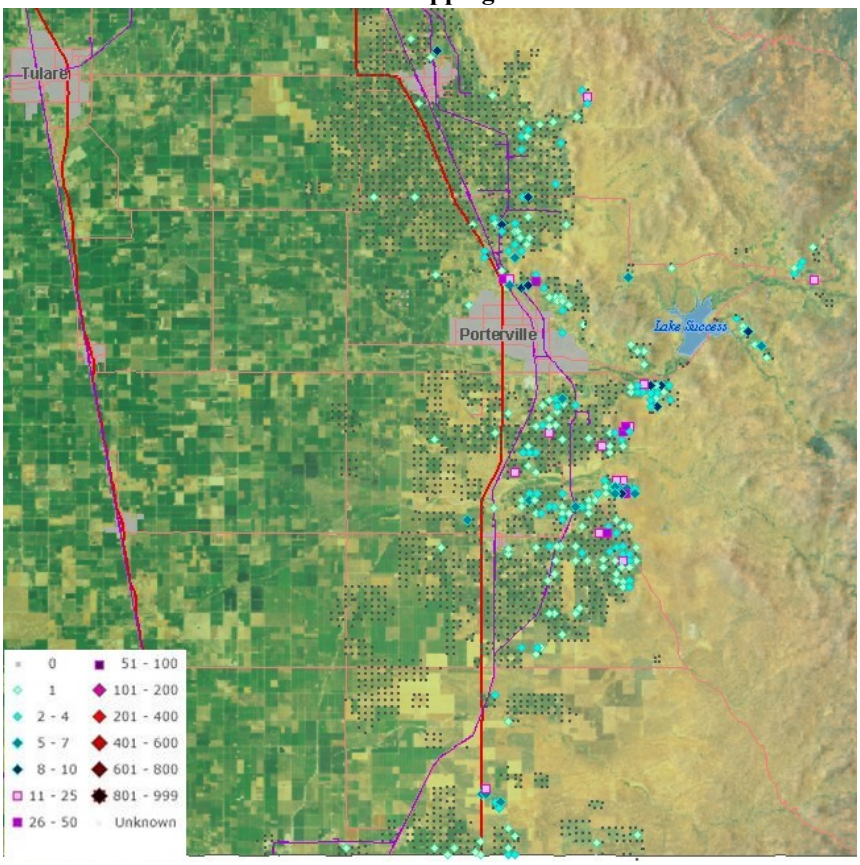

Figure 4. 1/1/05 through 9/23/05 GWSS trapping totals in Tulare County.

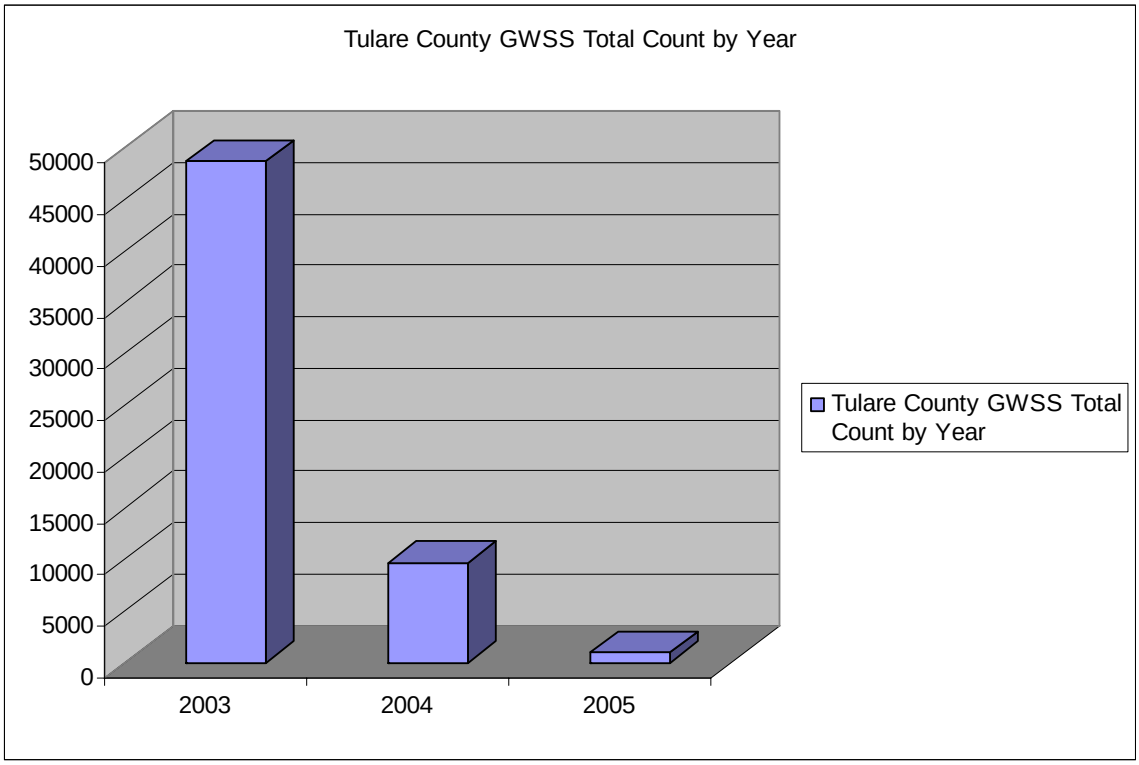

Figure 5. GWSS total trap catches on yellow-sticky traps in Tulare County by year.

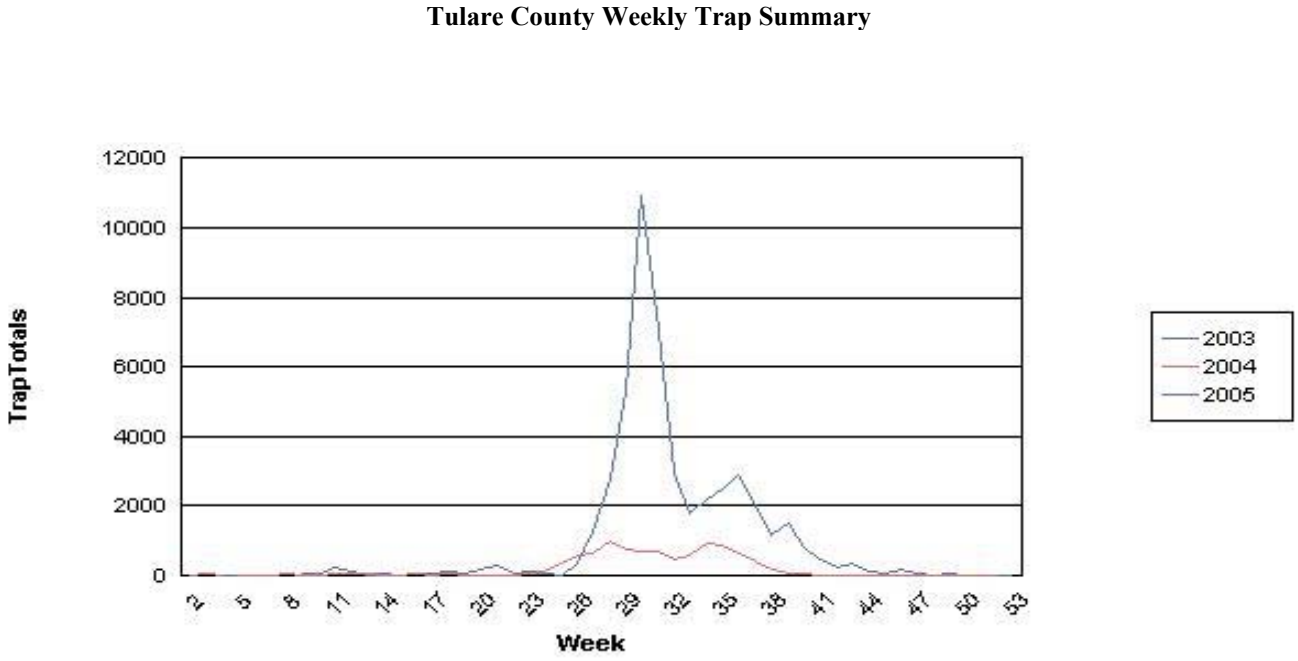

Figure 6. GWSS weekly trap summary in Tulare County by year.