



FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

COMMISSIONER WILTON SIMPSON

Papilio demoleus L. (Lime Swallowtail) Survey Final Report Key West, Monroe County – Florida

Overview

On September 26, 2022, an FDACS-DPI scientist was copied on an email correspondence related to an iNaturalist post from September 23, 2022. The post included photos of two caterpillars on backyard, potted citrus trees in Key West, Florida that were identified as lime swallowtail (*Papilio demoleus* L.), a federally regulated citrus pest.

On October 4, 2022, FDACS-DPI personnel were dispatched to inspect the potted citrus from the iNaturalist report. They collected one larva and one pupa from the property and sent them to the Division diagnostics laboratory in Gainesville for identification. The samples were badly degraded from Hurricane Ian, but DPI scientists were able to tentatively identify the larva. Molecular analysis confirmed the identification on October 13, 2022.

Over a four-year period, DPI personnel traveled to the Florida Keys on seven separate occasions to conduct week-long outreach, survey, and eradication efforts for the lime swallowtail. A total of 602 sites were visited across the Keys during this program (Figures 1 and 2). Nine sites were positive (Table 1), and all live specimens found were destroyed. The last live specimen was found on the January 25, 2023. The four positive samples found between April 24-28, 2023; survey were empty chrysalids. As of August 15, 2026, the lime swallowtail is considered to be eradicated from Florida.

I. Survey Timeline:

September 26, 2022: DPI notified of an iNaturalist with suspect lime swallowtail photo

October 4, 2022: DPI inspected the site of posted photograph (one positive larva)

October 17-21, 2022: First delimitation survey (five positive sites containing five larvae and four empty chrysalids, 95 negative sites)

November 14-18, 2022: Second delimitation survey, outreach and education (homeowners) (two positive sites containing two larvae and two empty chrysalids, 150 negative sites)

January 23-27, 2023: Third delimitation survey, outreach and education (homeowners, nurseries) (370 negative sites)

April 24-28, 2023: Fourth delimitation survey, outreach and education (homeowners, nurseries) (one new positive site containing four empty chrysalids) (366 negative sites)

June 19-23, 2023: Fifth delimitation survey, outreach and education (homeowners, nurseries) (310 negative sites)

February 5-9, 2024: Sixth delimitation survey, outreach and education (homeowners, nurseries, businesses and schools) (299 negative sites)

June 8-12, 2026: Final delimitation survey, outreach and education (nursery outreach) (485 negative sites)

II. Public Outreach

November 22-24, 2022: All eight active plant nurseries containing citrus throughout the Keys surveyed and Pest Alerts distributed.

January 23-27, 2023: Doorhangers distributed to all lime swallowtail positive properties and nearby citrus sites. Roughly 50 sites visited.

April 24-28, 2023: Doorhangers distributed to all lime swallowtail positive locations and all nearby residential sites. Roughly 400 sites visited.

June 19-23, 2023: Doorhangers distributed to all lime swallowtail positive locations and all nearby residential sites. Around 8,000 sites.

February 5-9, 2024: Bookmarks and pest alerts distributed to 13 businesses, 11 schools, and four parks/community centers in Key West. Material was also given to seven plant nurseries throughout the Keys (the 8th from earlier surveys had closed permanently). Pest alerts were distributed as needed while surveying. Around 1,000 bookmarks and 200 pest alerts were distributed to 35 points of interest for dissemination.

June 8-12, 2026: Seven currently active plant nurseries throughout the Keys re-surveyed and given Pest Alerts and bookmarks. Around 500 sites visited.

III. Helpline Calls (01/23/2023 to 06/12/2026)

Total: **22**

Table 1: Citrus Site Survey Totals.

Citrus Site Location	Citrus Sites Surveyed (positive)	Citrus Sites Surveyed (Negative)	Citrus Sites Surveyed (Total)
Key West & Stock Island	9	500	509
East Rockland Key	0	4	4
Sugarloaf Key	0	1	1
Ramrod Key	0	1	1
Big Pine Key	0	43	43
Vaca Key	0	42	42
Plantation Key	0	1	1
Tavernier Key	0	1	1
Total	9	593	602

Figure 1. Map of survey and eradication efforts in Key West and Stock Island

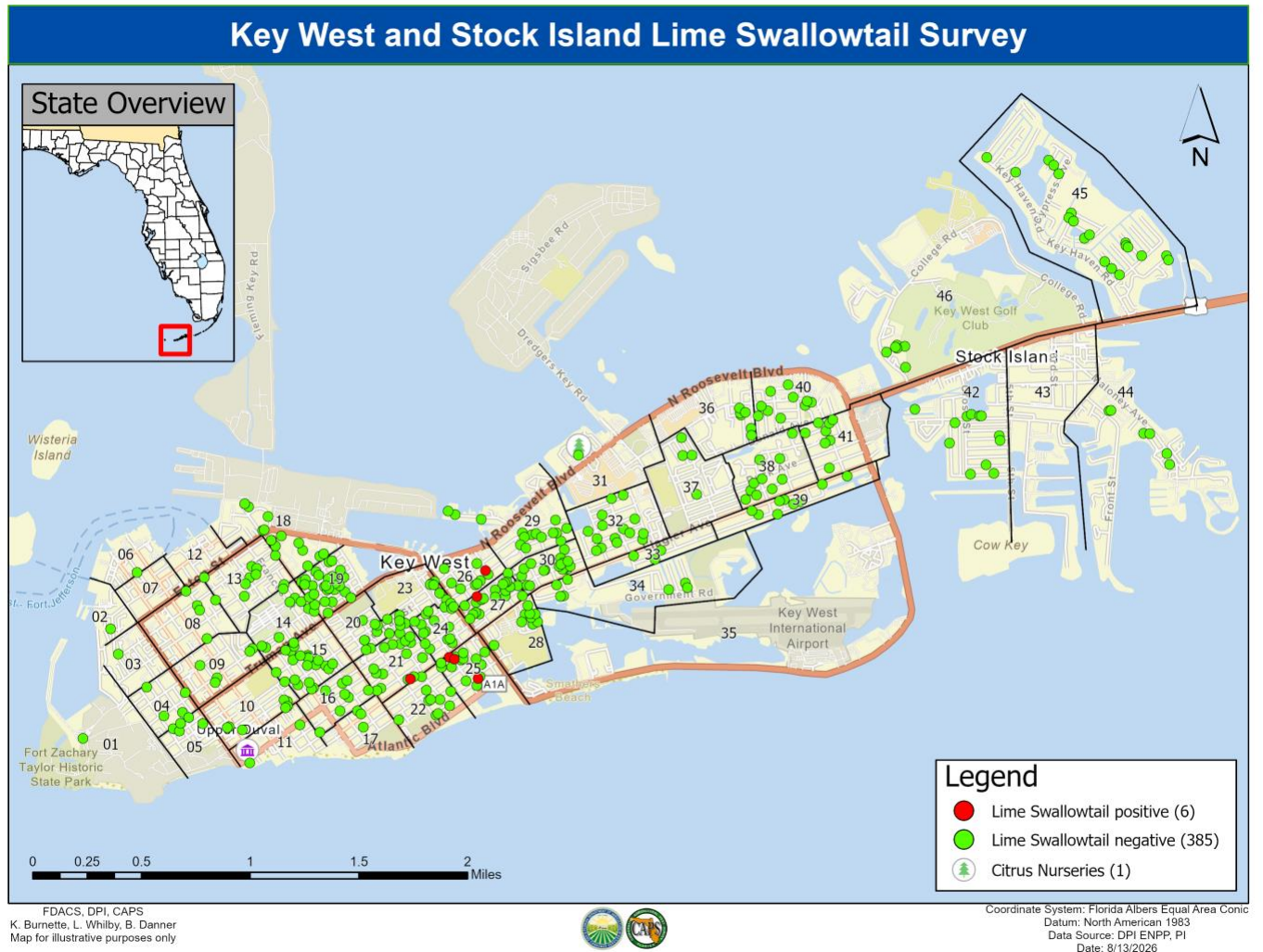


Figure 2. Map of surveyed plant nurseries with citrus plants.

