

Potential expansion of the destructive invasive species *C. cactorum* in the Lower Rio Grande

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BACKGROUND

Why is the *Cactoblastis cactorum* an invasive species? (4)

- Native to South America, the Cactus moth was initially used as a biological control agent in several countries where the *Opuntia* spp. was considered an invasive species.
- In the past decades, the Cactus moth has been discovered in parts of the United States and Mexico, with more recent occurrences in northeast Texas.
- Destroy and feed on the native *Opuntia* spp.

Visual Signs of *C. cactorum* (1)

- Presence of egg-sticks
- Yellowing of pad-surface
- Frass and exudates on plant surface may indicate internal feeding



Fig 1. All three images represent *C. cactorum* as an egg-stick (left), a larva (middle), and an adult (right).

Photo Credit: D. Habeck and F. Bennett, Univ. of Florida

Why are the *Opuntia* species important to the LRGV? (2) (3)

- Important species of plant for agricultural and economic reasons
- A source of food for livestock during times of frequent droughts
- Economically favorable choice of feed
- Cultivated as green vegetables and for its tuna



Fig 2. *Opuntia* located near Trap CC95 in May 2020.

RESEARCH QUESTION AND HYPOTHESIS

Research Question

Is *C. cactorum* already expanding in the Lower Rio Grande Valley?

Hypothesis

The invasive species, *C. cactorum*, could be expanding in the Lower Rio Grande Valley.

MATERIALS AND METHODS

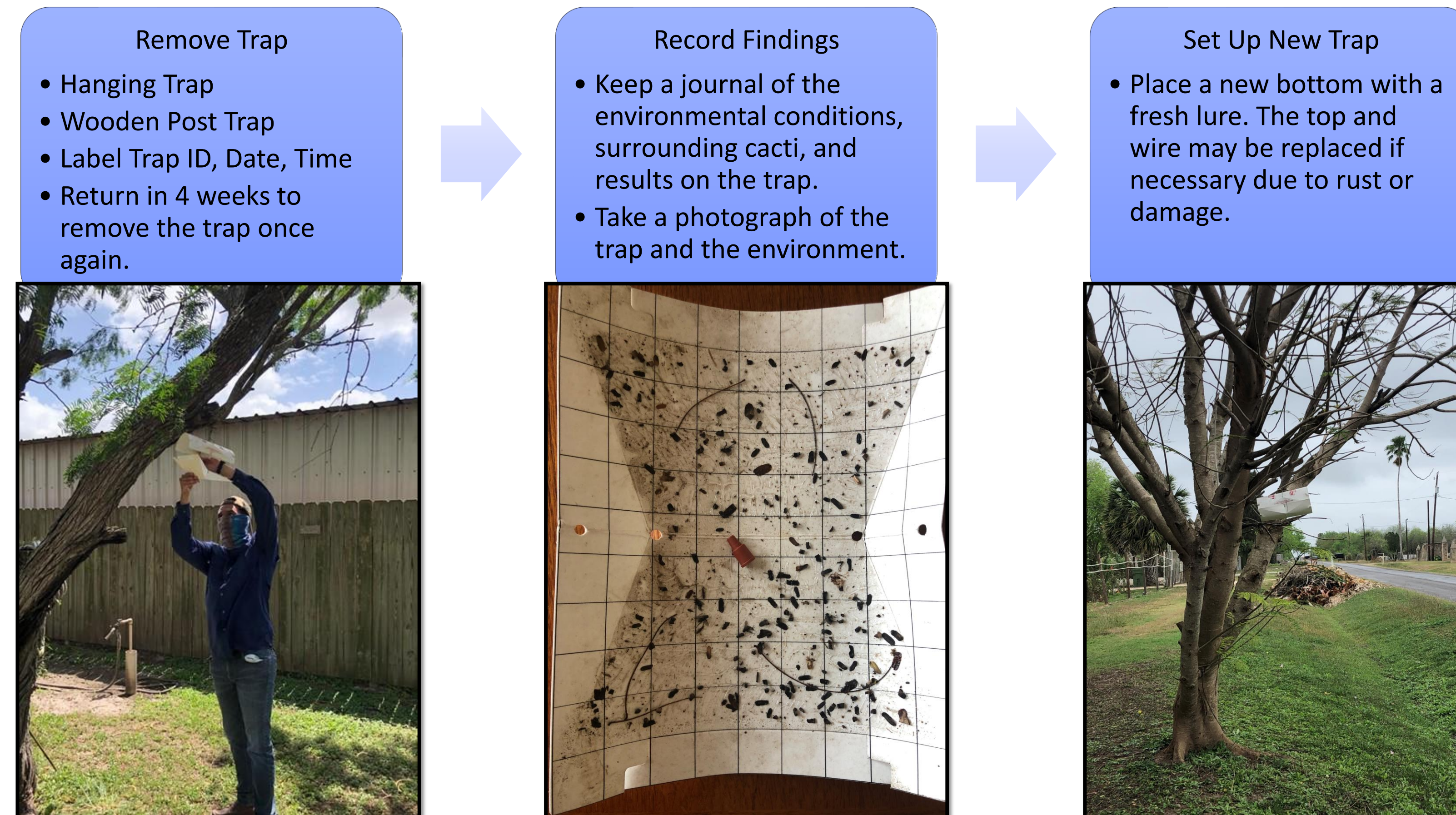


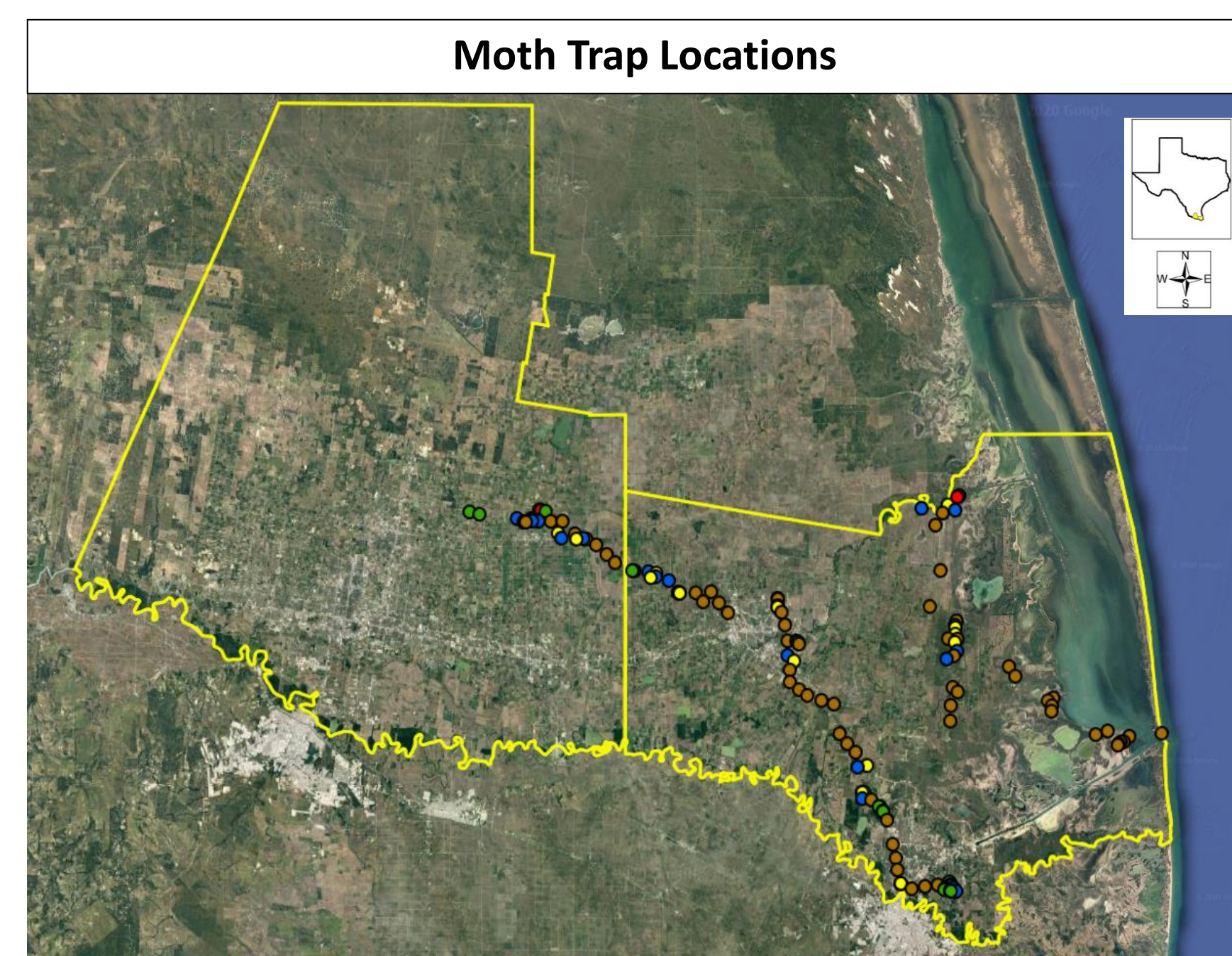
Fig 3. Isaiah Jaramillo removes a trap in July 2020.

Fig 4. Trap CC91 from March 2020.

Fig 5. Trap CC91 represents a wired, hanging trap on a tree. Photo recorded in March 2020.

After getting the landowners' permits, we started placing the Cactus moth traps in May 2019. We placed 20 traps by then. We placed another 43 traps by June 2019. We had a total of 100 traps by the beginning of August 2019. We sampled 100 traps from October 2019 to February 2020. After the COVID-19 crisis, new safety regulations were set. So, we had to adjust the survey of the number of traps and relocate some of the traps. Refer to table 1 for details.

RESULTS



- Legend
- Continued Traps from pre COVID-19
 - Discontinued Traps from pre COVID-19
 - Relocated Traps: Inaccessible
 - Relocated Traps: Missing
 - Relocated Traps: COVID-19 Safety Regulations

Figure 6. Location of the Cactus moth traps, including relocated traps that were needed to adjust to the COVID-19 safety regulations.

Up to now, there has been no indication of the presence of the Cactus moth in Hidalgo County or Cameron County.

Local Moths Identified:

- *Agrotis ipsilon* (Black cutworm), Fig. 6
- *Spodoptera exigua* (Beet armyworm), Fig. 7



Figure 6.
Trap HBR081
05/18/2020



Figure 7.
Trap CC97
05/10/2020

Table 1. Number of traps that were relocated and their reasons.

	Number of Traps
Continued traps: Traps that were continued to be serviced at the coordinates provided since before COVID-19.	65
Discontinued traps: Traps that were to continue to be service at the coordinates before COVID-19. Those traps were relocated.	35
Relocated traps due to different criteria that includes:	35
Inaccessible traps. Traps that were located on private properties with frequently unavailable property owners.	2
Missing traps. Traps that had coordinates before COVID-19 but were not found again or were discarded due to flooding or unknowingly removed by someone.	20
COVID-19 safety regulations. Traps that were in a hazardous area such as a cattle ranch, backyards of homes, or high exposure to people such as flea markets and airports.	13

REMARKS AND FUTURE WORKS

Surveys for this species in South Texas are crucial for early detection and eradication. Results from this survey are equally important for neighboring states, such as New Mexico and Arizona, and the country of Mexico with significant cactus production which could be negatively impacted from the spread of this invasive and destructive pest. We recommend continuing to monitor the area and expanding to places of future risk such as nursery areas.

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