

# Winter moth monitoring and management in Rhode Island

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CT Forest Health Symposium

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# Winter moth (*Operophtera brumata*)



# New England outbreak history

Late 1990s:  
defoliation near  
Boston thought to  
be fall cankerworm

2003: ID confirmed as  
exotic winter moth  
-Widespread defoliation  
documented, spreading  
into central MA, RI, CT

2005: Biocontrol  
program with  
*Cyzenis albicans*  
initiated by UMass

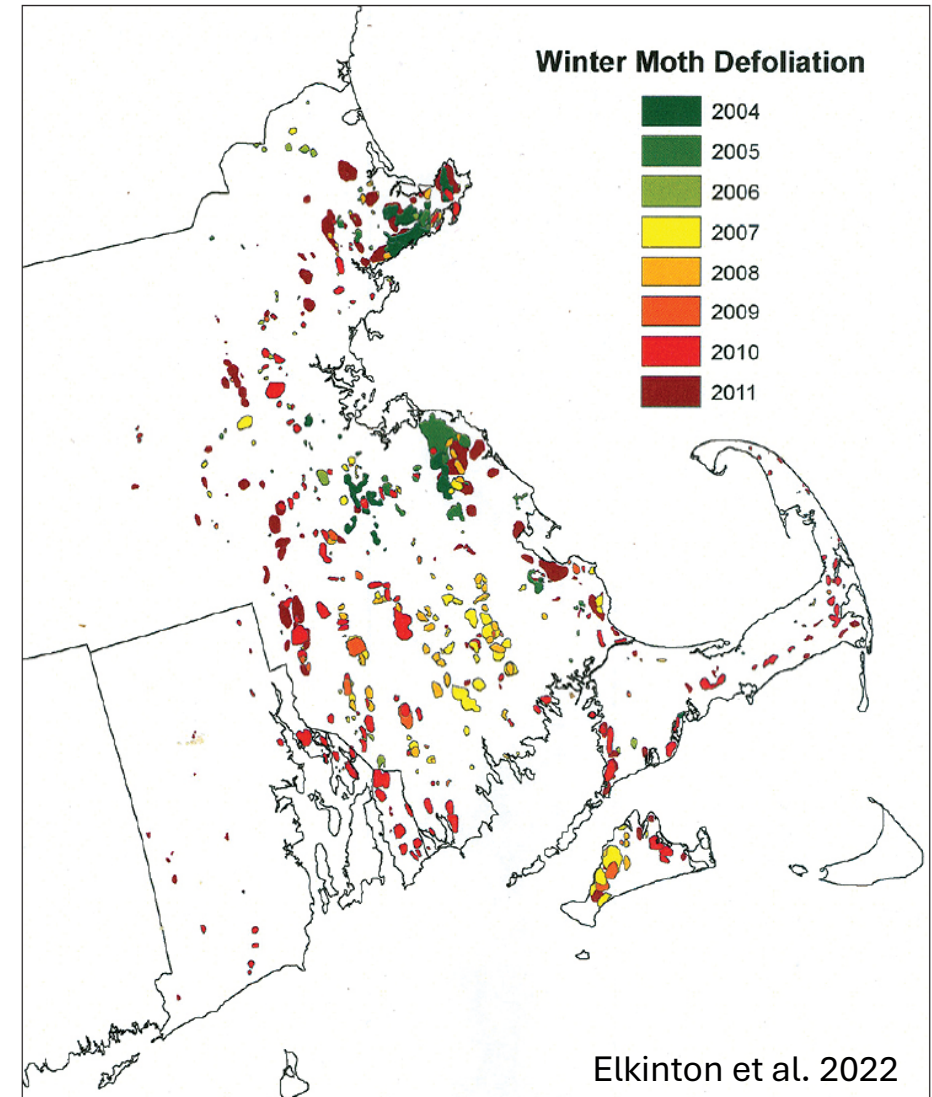
2008: First releases  
of *C. albicans* in MA

2011: First releases  
of *C. albicans* in RI

2012: Winter moth  
detected in ME

2014: First releases  
of *C. albicans* CT  
and ME

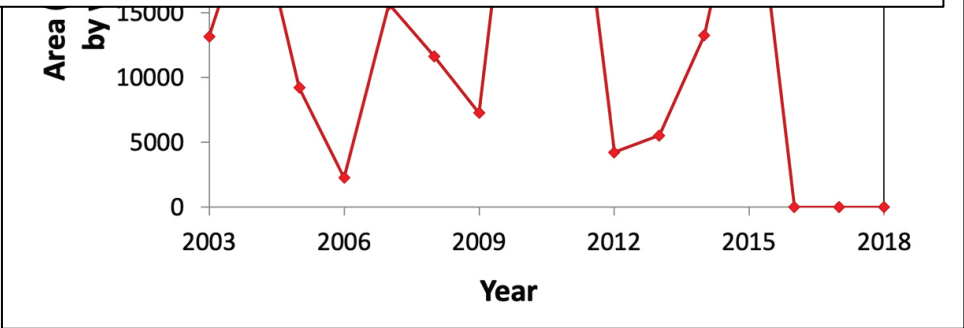
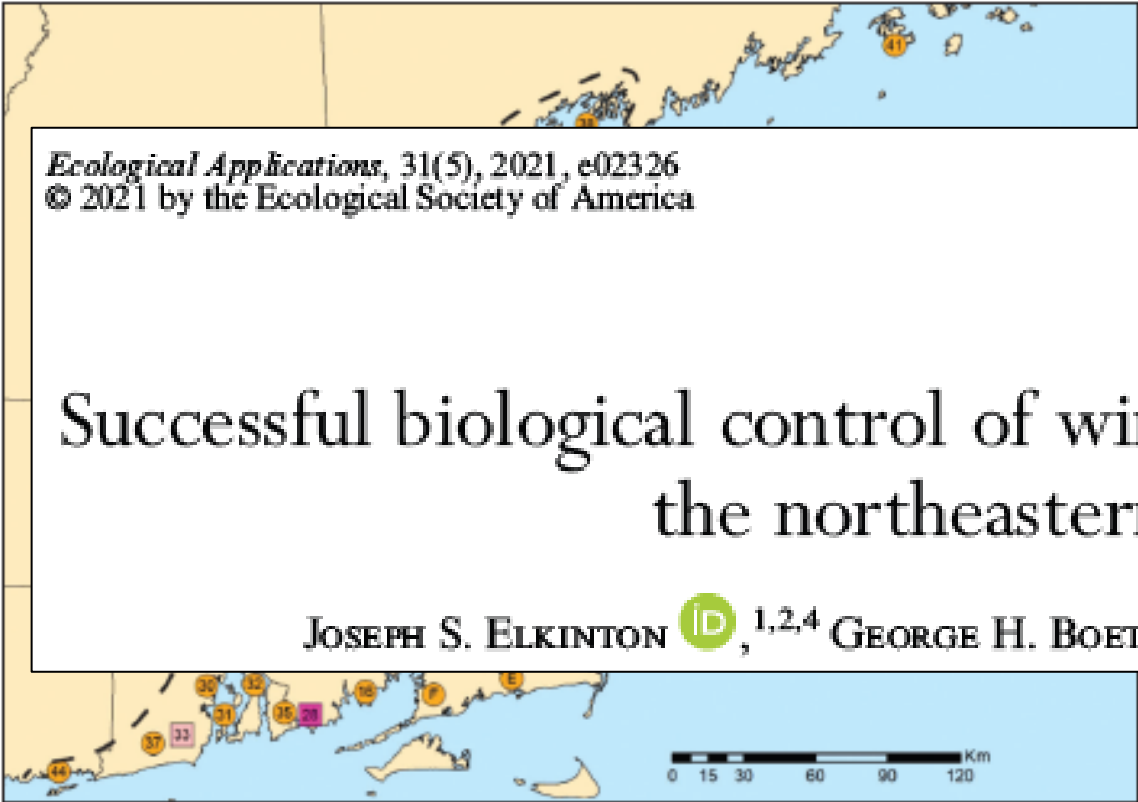
2016-2018: WM  
defoliation declined to  
undetectable levels  
-widespread recovery of  
*C. albicans*



# Biocontrol with *Cyzenis albicans*



# Biocontrol with *Cyzenis albicans*



**Figure 5.** *Cyzenis albicans* release and recovery locations in New England, 2005–2018. Dotted line delineates the boundary of the area with defoliating populations of winter moth, numbers refer to site IDs. As of 2020, we had not yet recovered *C. albicans* from several sites where releases had been made in 2014 or 2015, as indicated by purple squares. (reprinted from Elkinton et al., 2021 with permission from Wiley)

MA defoliation (Elkinton et al. 2021)

# 2022 RI: winter moth resurfacing

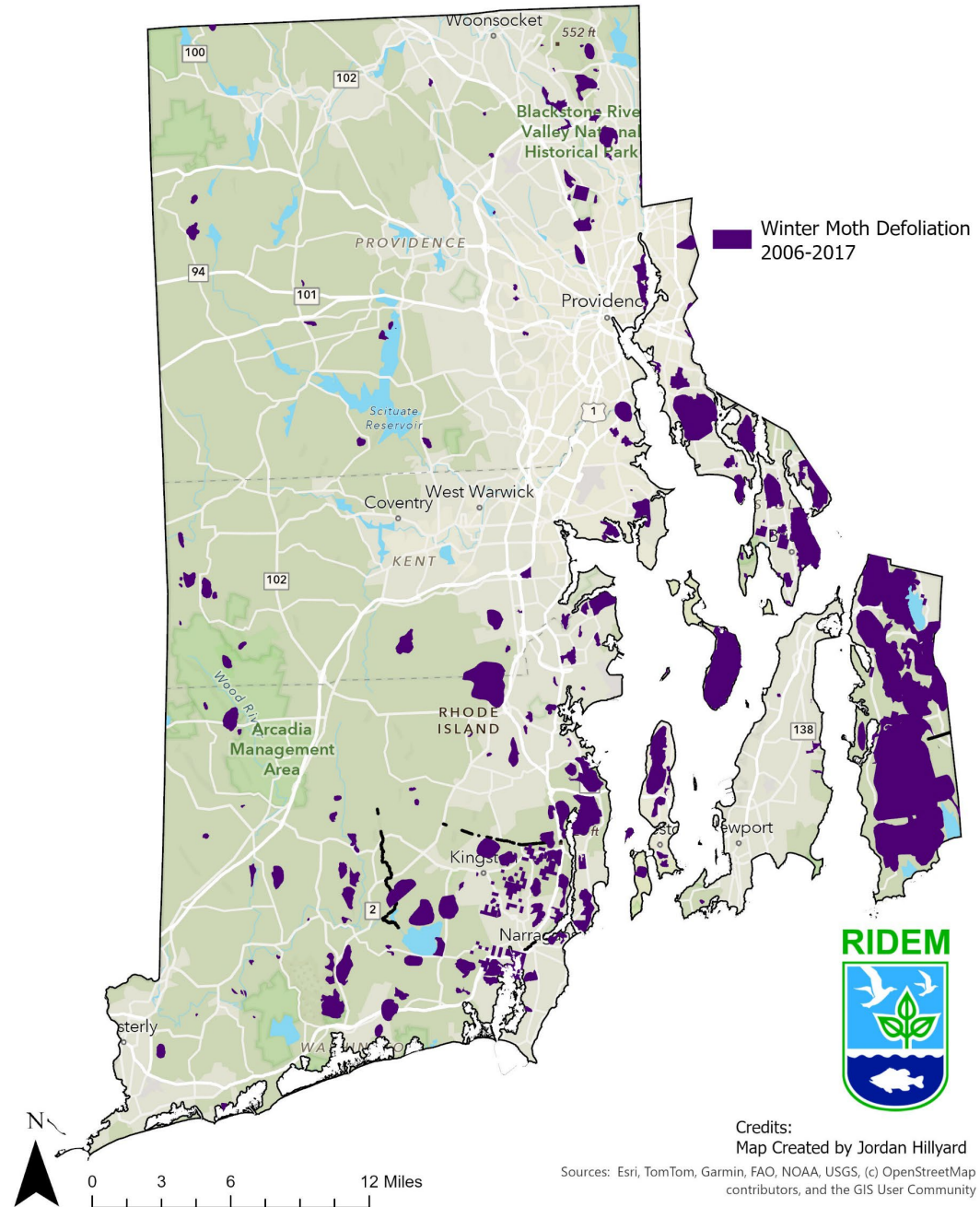


Continuing in 2023...  
2024...  
2025...



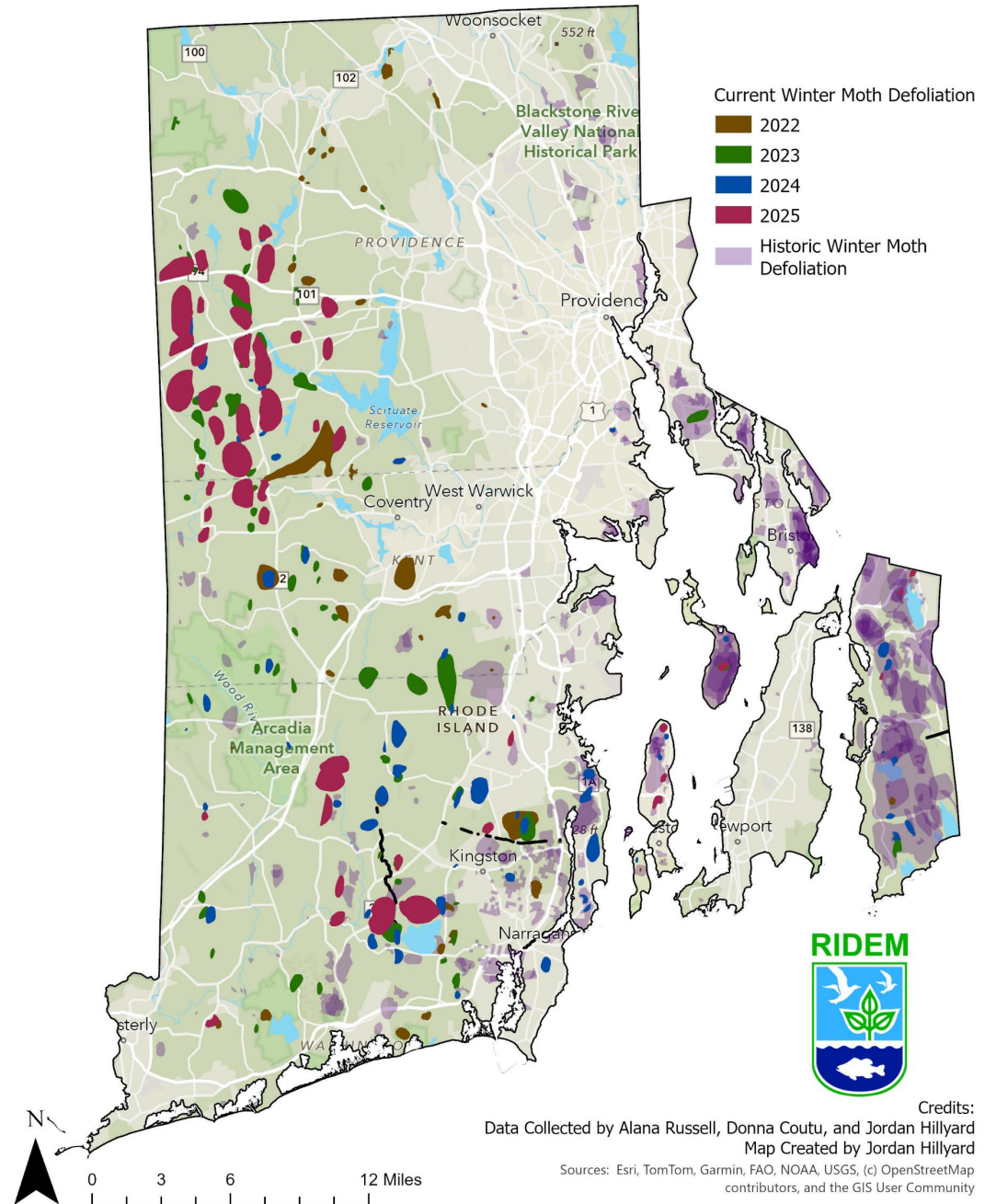
# RI historic defoliation 2006-2017

## Historical Winter Moth Defoliation 2006-2017

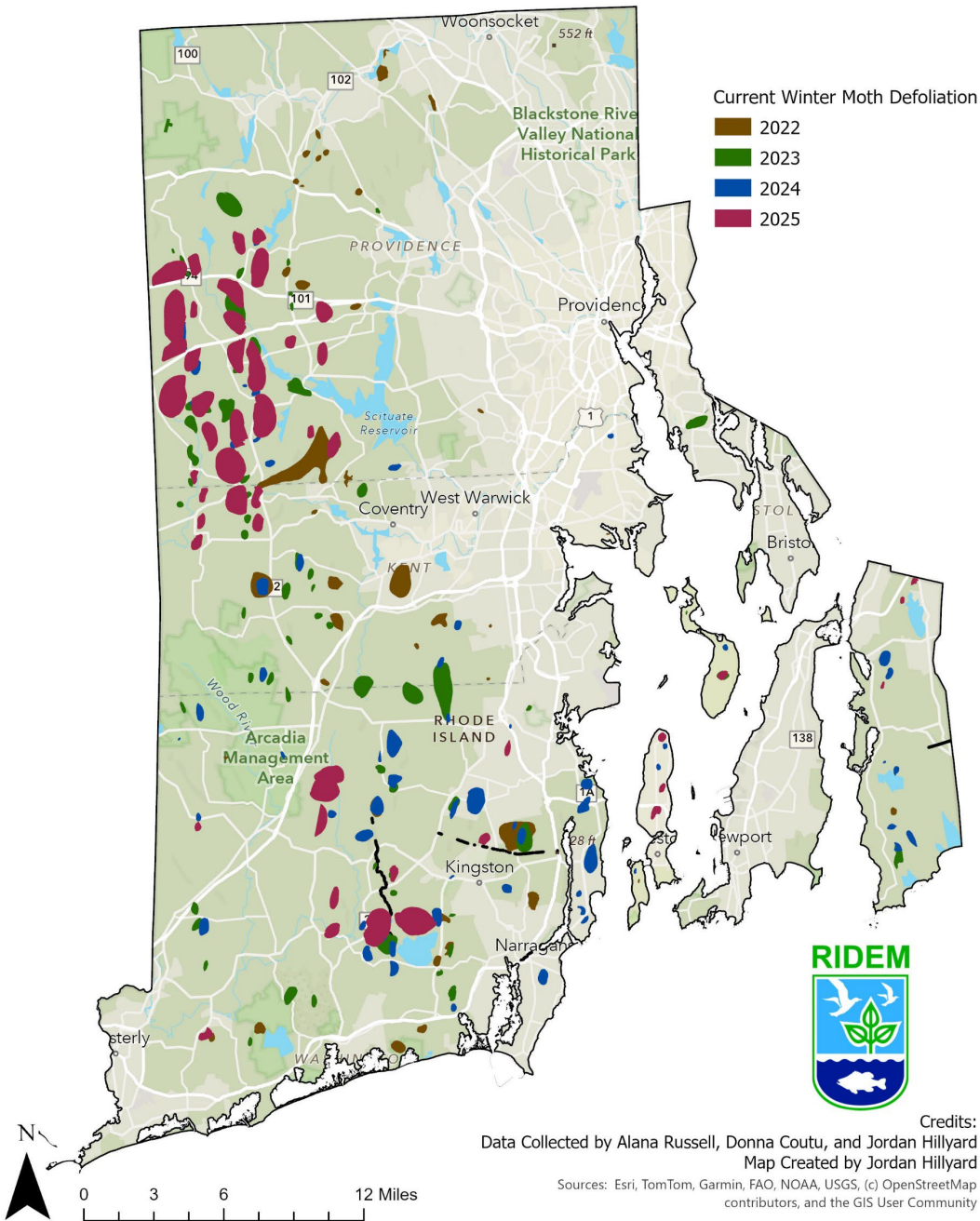


# RI historic vs. current defoliation 2022- present

## Current and Historic Winter Moth Defoliation



# Current Winter Moth Defoliation 2022-2025



Year	Acres defoliation
2022	12,500
2023	8,800
2024	6,752
2025	18,246

# Winter moth or fall cankerworm?



# Adult trapping with UMass



- Pheromone baited bucket traps
- Attracts male moths



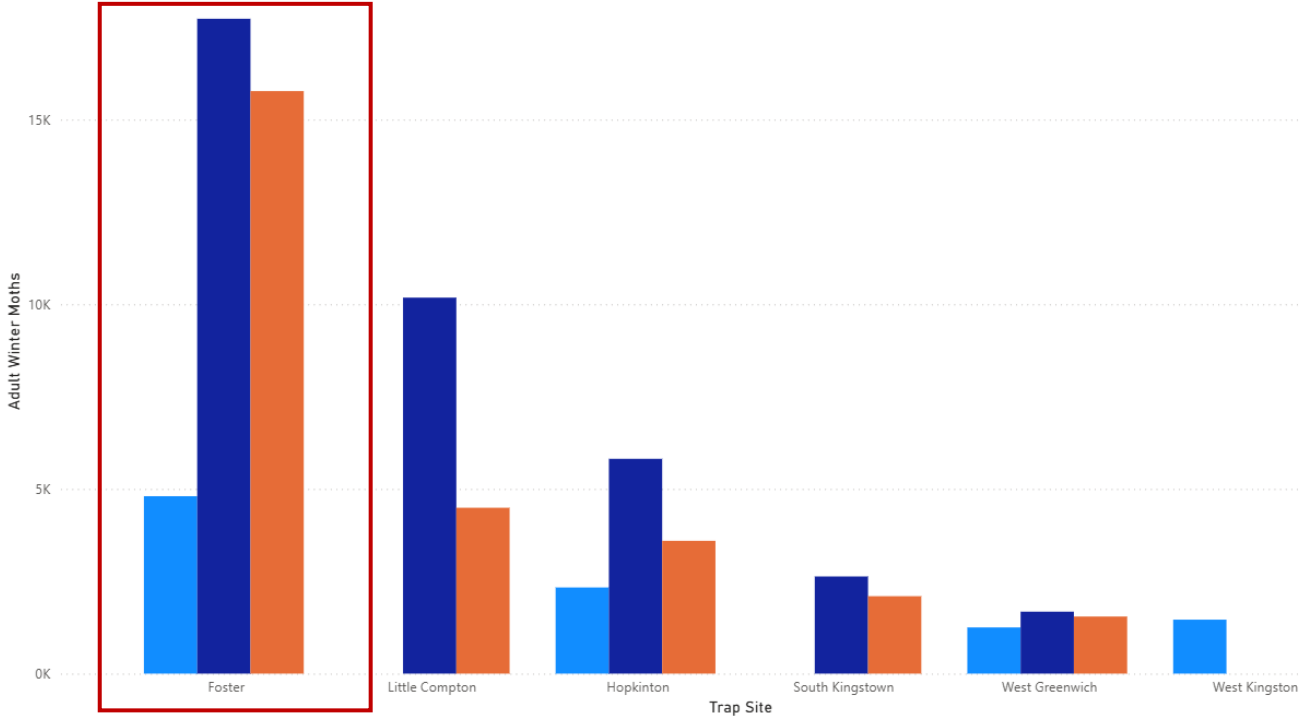
- Late October-January
- Checking weekly/biweekly
- 5 sites in RI

# Adult trapping



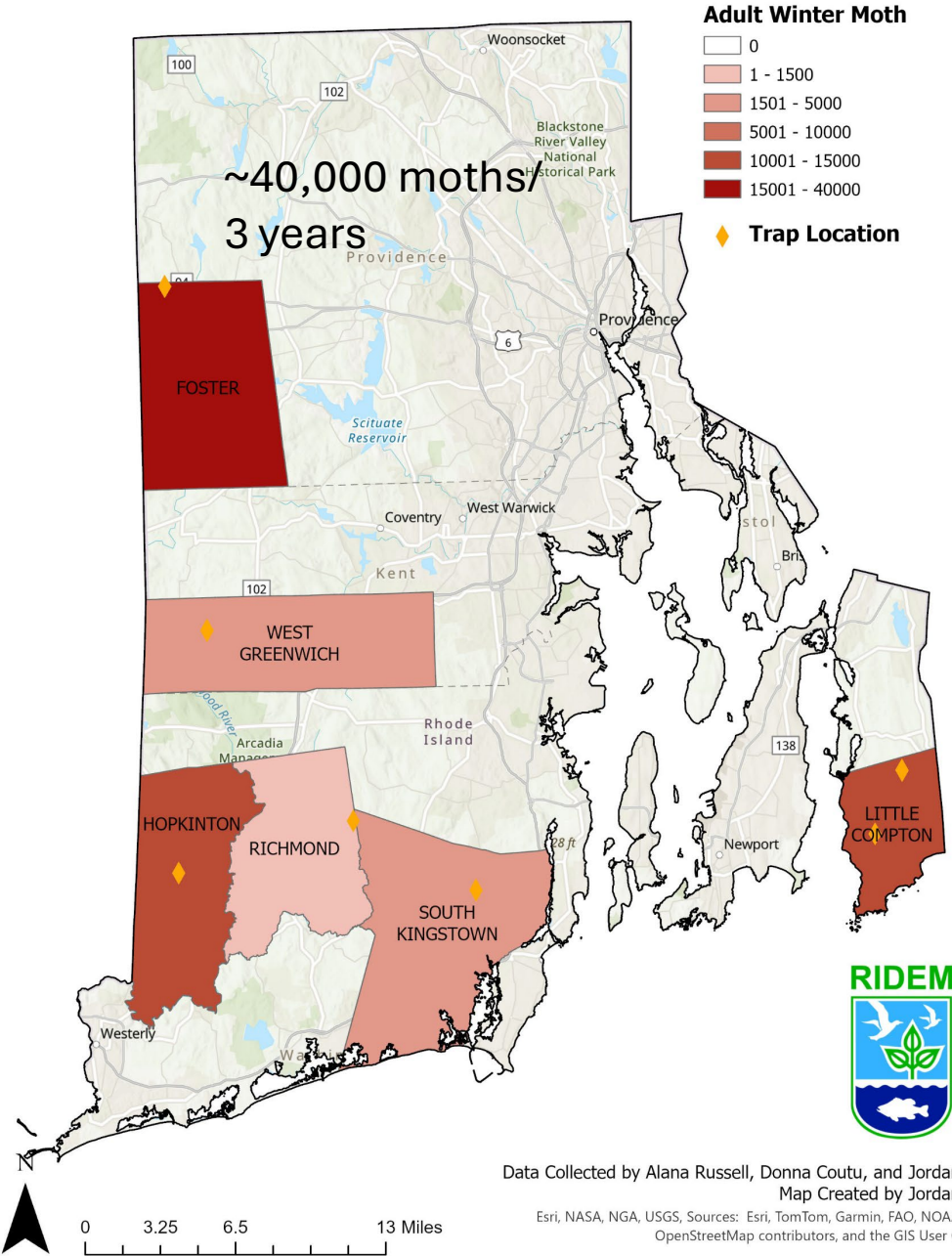
Winter Moth Trap Data

Winter Season ● 2023 ● 2024 ● 2025



~17,000 moths  
Foster 2024

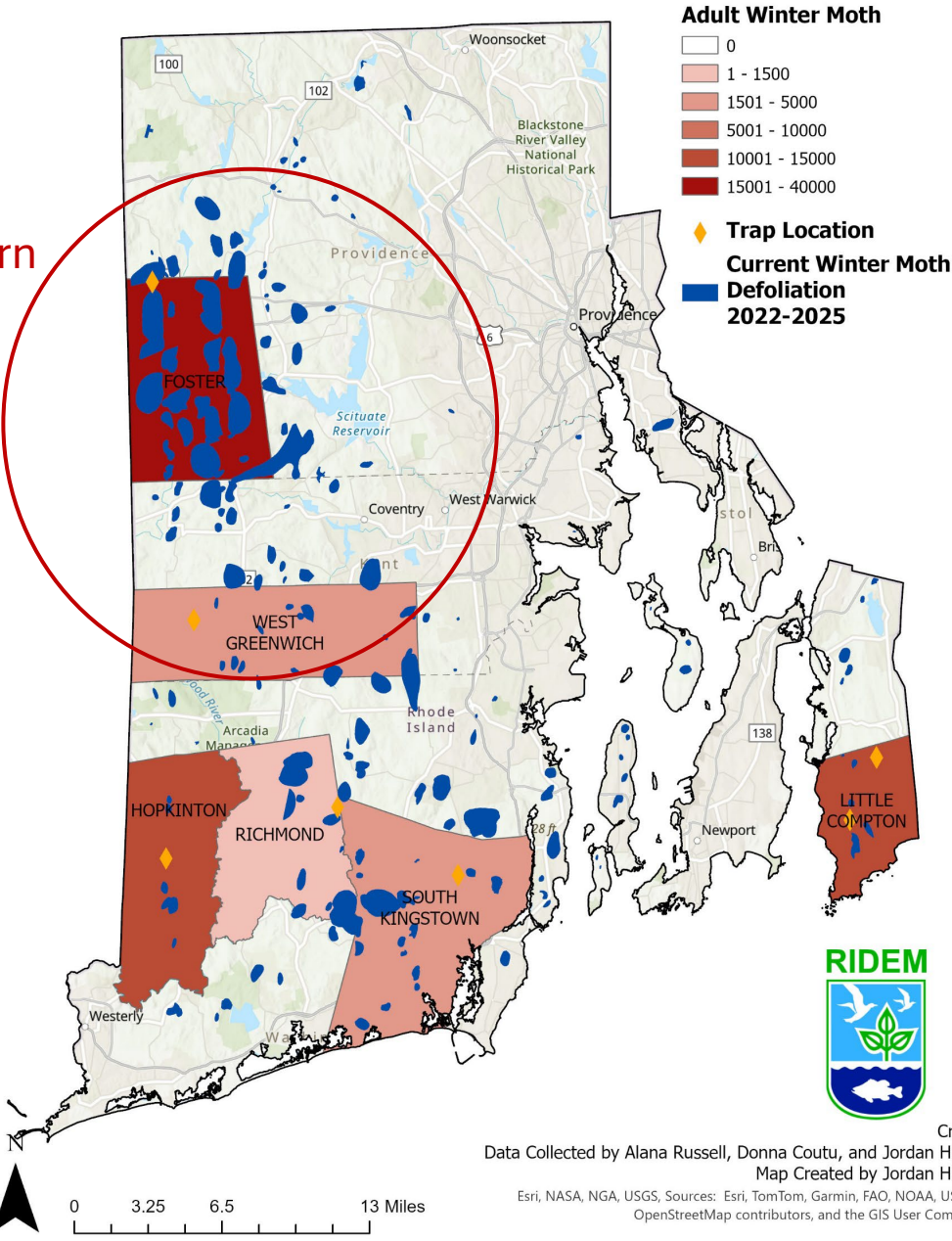
# Winter Moth Trapping Data



Credits:  
Data Collected by Alana Russell, Donna Coutu, and Jordan Hillyard  
Map Created by Jordan Hillyard  
Esri, NASA, NGA, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community

# Current Defoliation and Winter Moth Trapping Data

Area of greatest concern

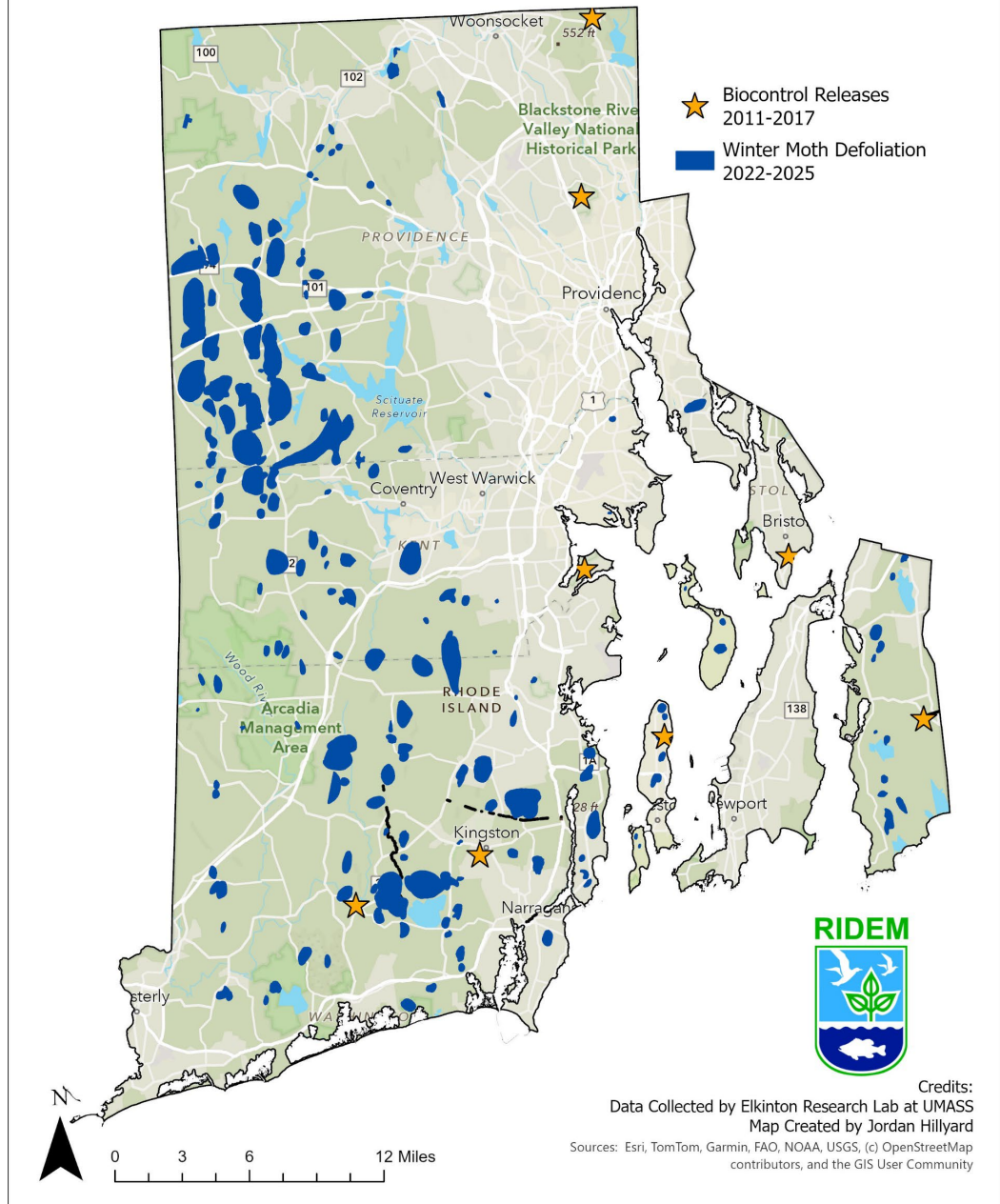


# Mismatch of previous biocontrol releases and current defoliation

- Has *C. albicans* spread? What is % parasitism in new area of concern?
- What is % parasitism at previous release sites?
- Can we bolster biocontrol efforts by collecting and redistributing parasitoids to areas in need?



## Historical Biocontrol Release and Current Defoliation



# Revamping biocontrol releases

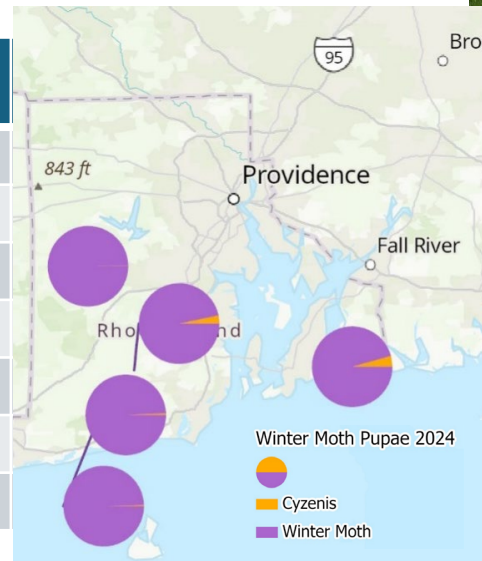


## Approach:

- Mass collect WM caterpillars from areas nearby previous *C. albicans* recoveries.
- Transfer caterpillars to UMass to rear out parasitoids
- Parasitoids would be returned to RI to release in spring 2025
- 2024: Nearly 7,000 caterpillars were collected from 6 sites.

## Results:

Site	2024 % <i>C. albicans</i> pupae
Coventry	0.2
Charlestown	0.5
Kingston	3.3
South Kingstown	0.4
Little Compton	4.3
Foster	Not sampled
<b>Average</b>	<b>1.2</b>



# Revamping biocontrol releases



## Approach:

- Mass collect WM caterpillars from areas nearby previous *C. albicans* recoveries.
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## Results:

Site	2024 % <i>C. albicans</i> pupae	2025 % <i>C. albicans</i> pupae
Coventry	0.2	2
Charlestown	0.5	4
Kingston	3.3	Not sampled
South Kingstown	0.4	Not sampled
Little Compton	4.3	13*
Foster	Not sampled	1
<b>Average</b>	<b>1.2</b>	<b>4</b>

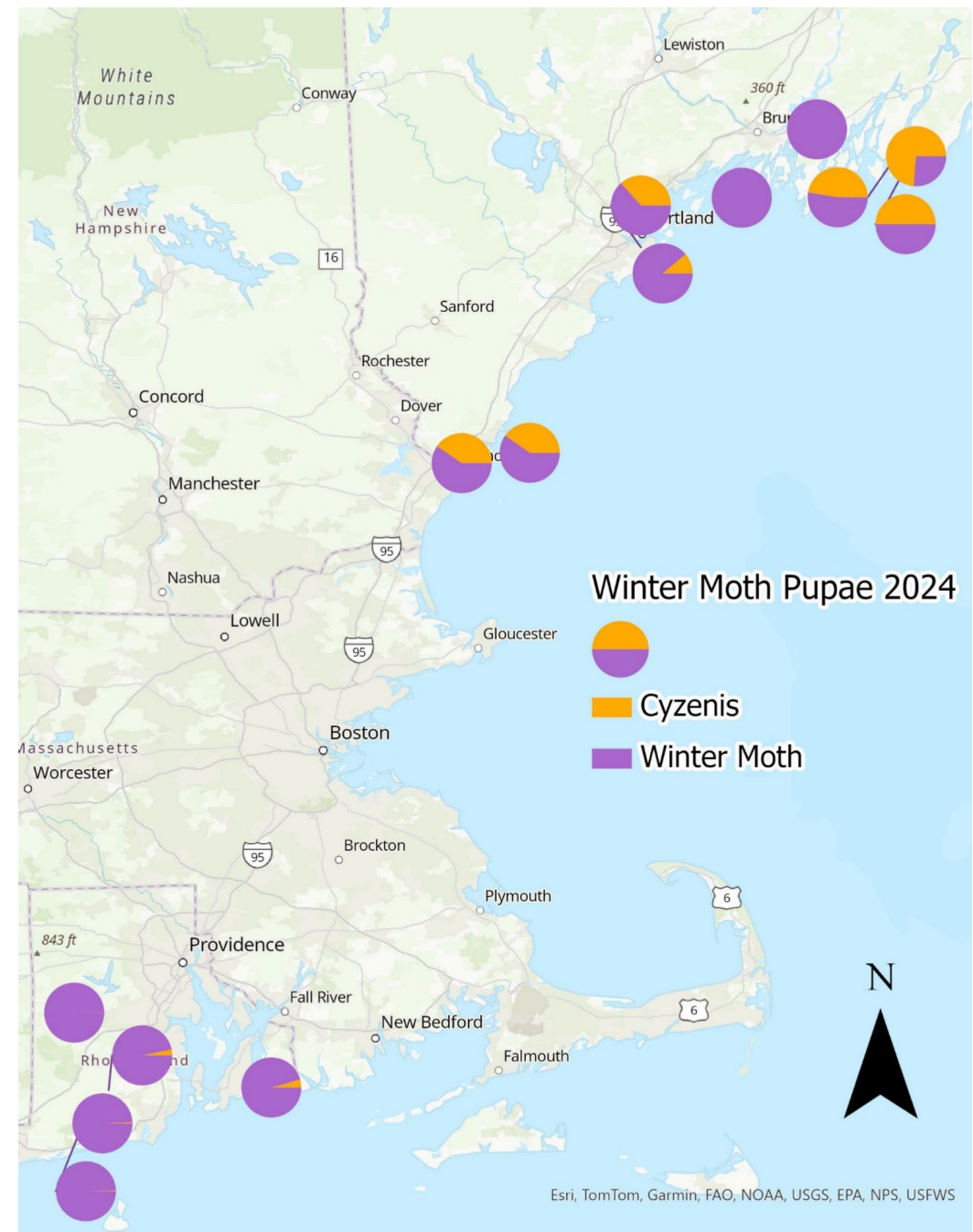


\*Previous WM decline coincided with 10-40% parasitism (Elkinton et al. 2022)

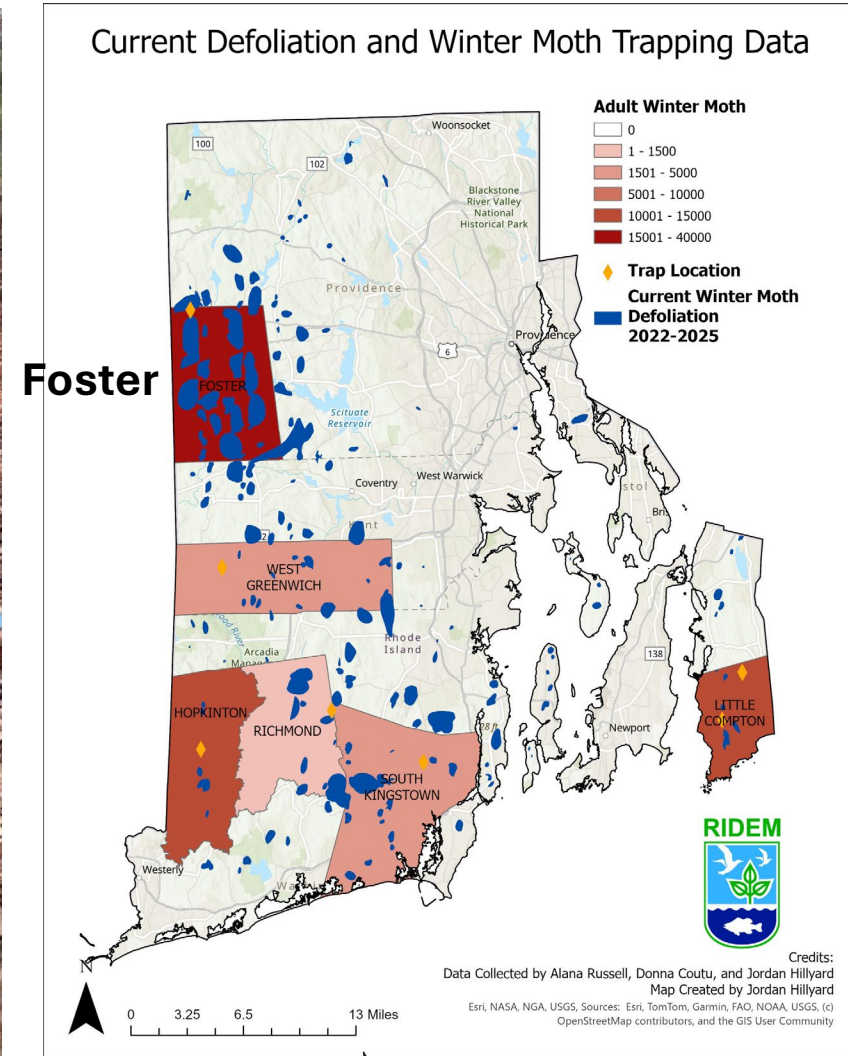
# NFFPC mobilization



- 2,000 WM caterpillars collected
- 1,600 *C. albicans* reared → 800 sent to RI for redistribution



# “Inundative” Foster release



800 *C. albicans* set up in release cage; November 2025!

“Ribbon cutting” will be in April

# Moving forward

- Continue to monitor defoliation and adult activity
- Continue to monitor RI *C. albicans* for natural population growth
- NFFPC funded mobilization in 2026 in prep → more *C. albicans* collections for future “inundative” releases
- Team up with CT? Can we expand monitoring across the border?





# Thank you! Questions?

## Acknowledgments

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NFFPC



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