



Re-distribution of *T. japonicus* in the PNW

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Funding

USDA United States Department of Agriculture National Institute of Food and Agriculture
Specialty Crop Research Initiative

Collaborating Institutions

OSU Oregon State University

NC STATE UNIVERSITY

PennState

OSU Oregon State University

UNIVERSITY OF MARYLAND

UNIVERSITY OF GEORGIA

WASHINGTON STATE UNIVERSITY

Cornell University

Utah State University

Northeastern IPM Center

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THE OHIO STATE UNIVERSITY

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UNIVERSITY OF MINNESOTA

VirginiaTech

Berkeley

MICHIGAN STATE UNIVERSITY

UCRIVERSIDE

This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, Specialty Crop Research Initiative under award number 2016-51181-25409.

- Re-distribution efforts coordinated with SEM survey in both states
- Less about finding new adventive populations than creating them
- WA: SEM only
- OR: SEM, yellow sticky card



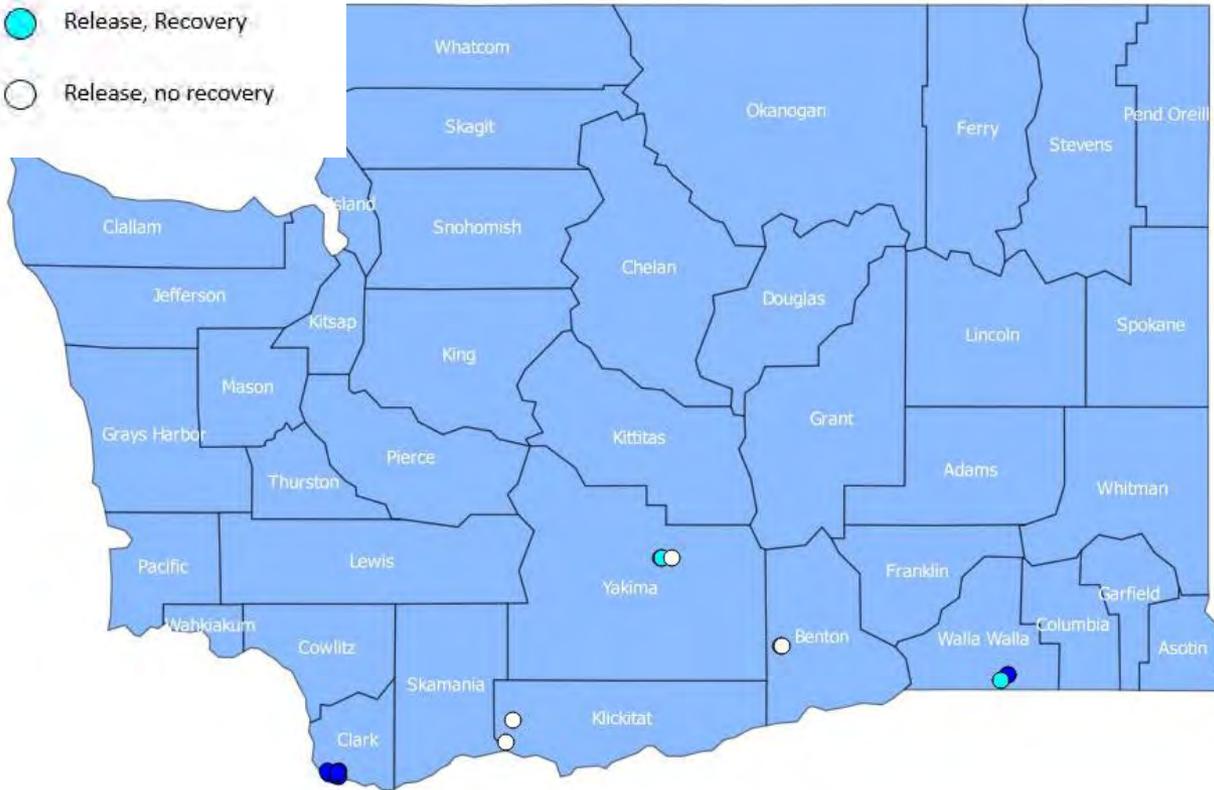
OR: began fall of 2016, continued 2017-2018

WA: began fall of 2017, more concerted effort in 2018



T. japonicus re-distribution in WA

- Adventive
- Release, Recovery
- Release, no recovery



Releases in
2017 (1 site) (urban)
2018 (8 sites)

2018: 6 sites urban, 2
sites orchard



2018: 4-5 releases per site, late June – early October
each release had adults from 2 parasitized egg masses
(50-60 adults/release)

Total: 1827 adults released



WA: 235 SEM deployed in 2018



Adventive population in Vancouver, WA

66% of BMSB egg masses (SEM) attacked

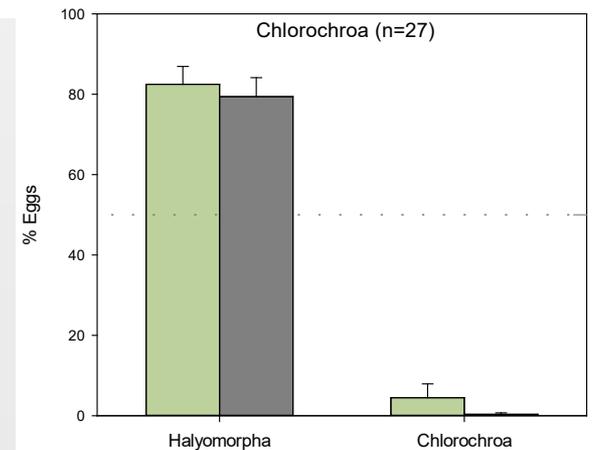
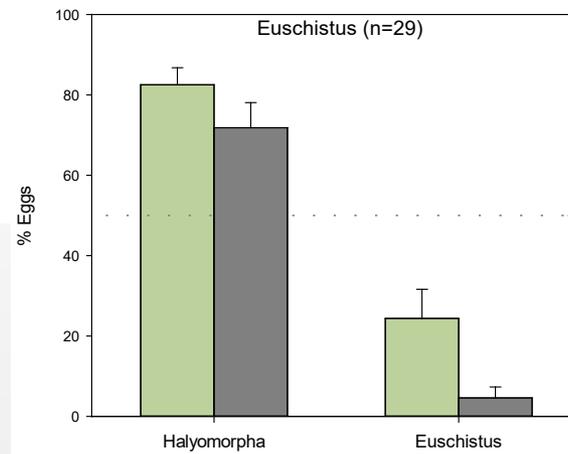
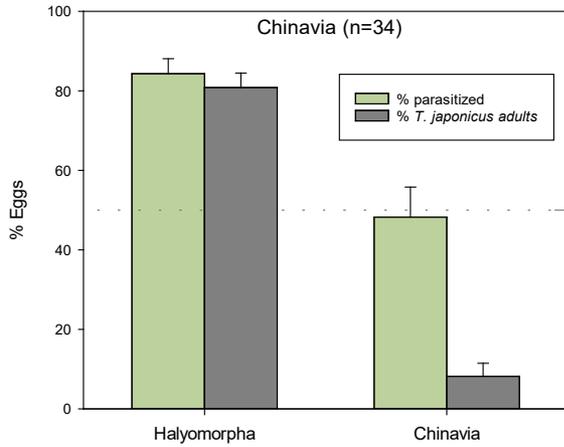
53% of eggs parasitized

Eastern Washington Sites:

% egg masses	
	21%
	3%
	0%
	0%
	8%
	0%
	0%
	0%

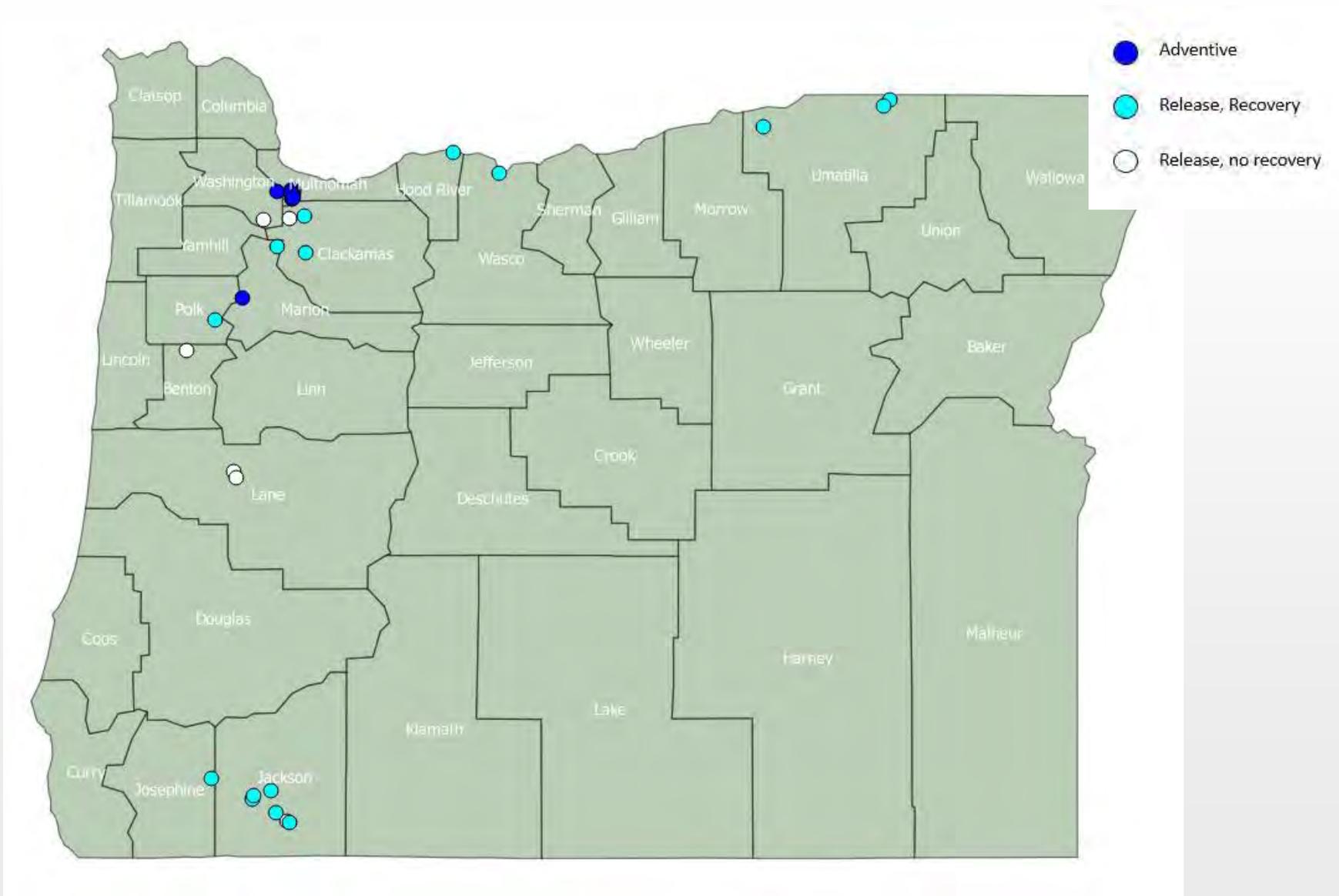


Non-target Effects of *T. japonicus*





T. japonicus re-distribution in OR





T. japonicus re-distribution in OR

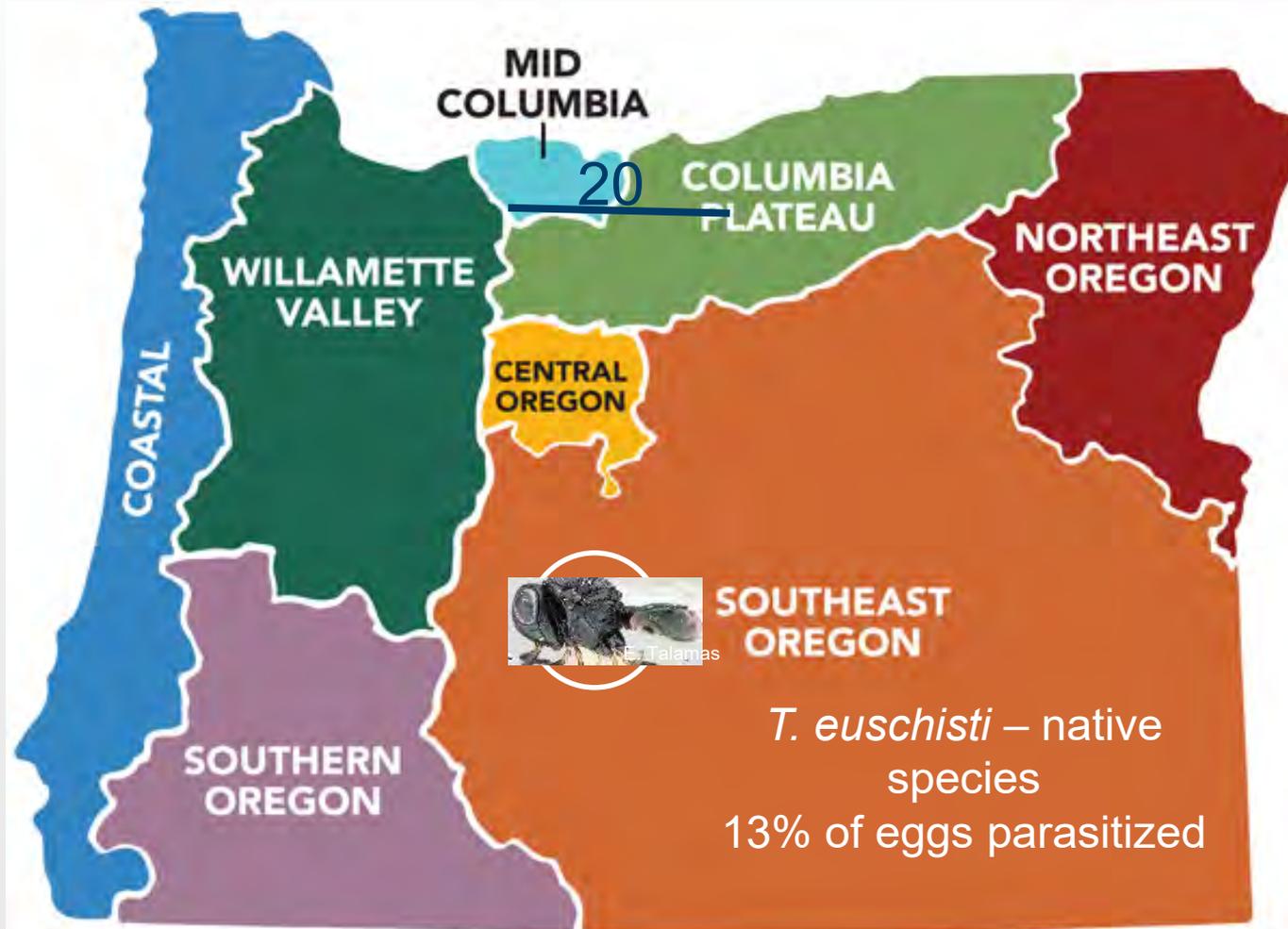
2018 monitoring: 177 egg masses





T. japonicus re-distribution in OR

2018 monitoring: 11% parasitized by samurai wasp





T. japonicus re-distribution in OR

2018 monitoring: 33 yellow cards with *T. japonicus*





Comparable egg parasitism between years

2018

- 13% *T. euschisti* (native wasp species)
- 11% *T. japonicus* (samurai wasp)

2017

- 6% *T. euschisti*/ *T. utahensis*/ *T. strabus*
- 9% *T. japonicus* (samurai wasp)

Egg mass type	2018	2017
Fresh 	103	156
Frozen 	56	138
Wild	5	3



Cards useful for detecting in remote areas

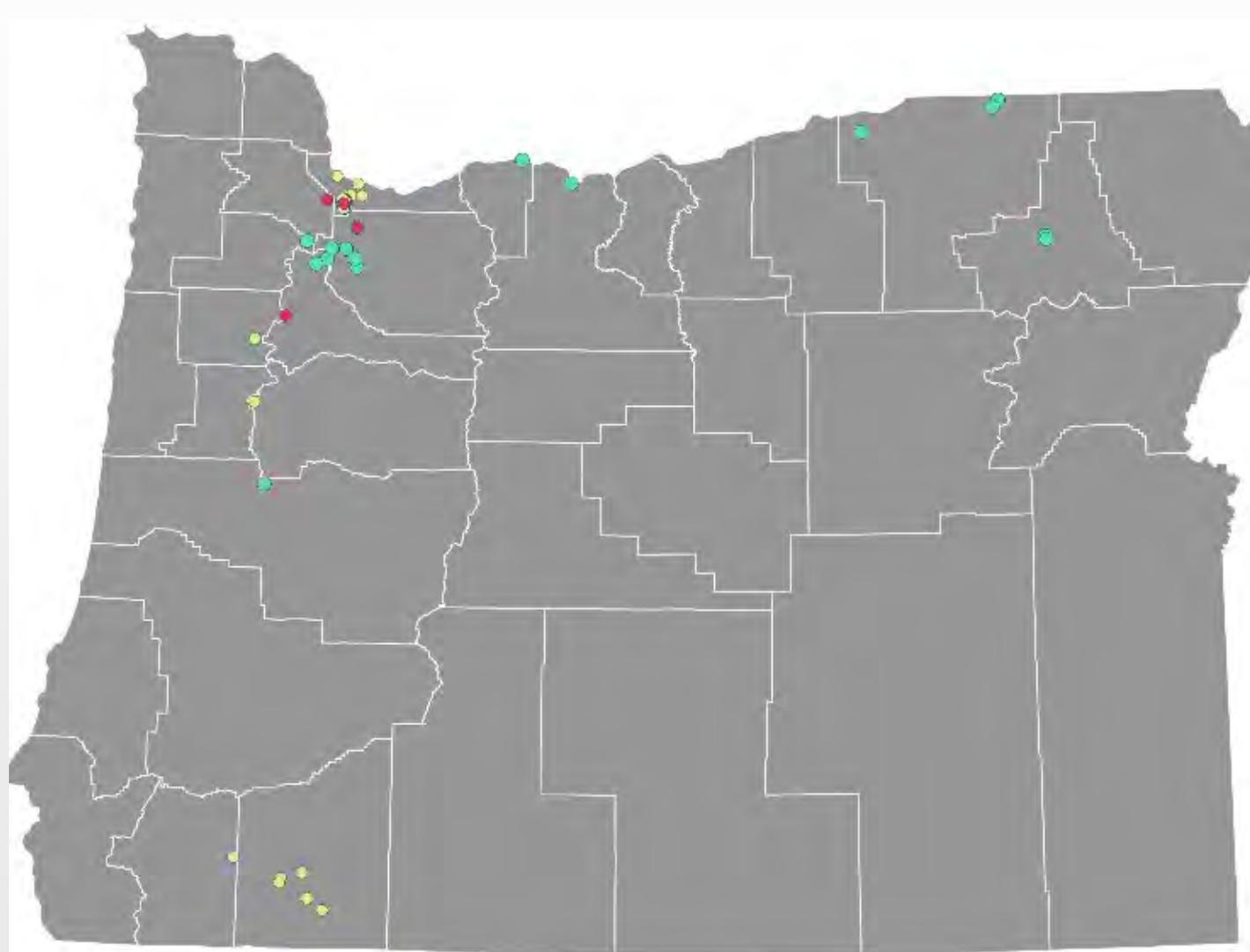
Recovery type

captures [62]

● Card [24]

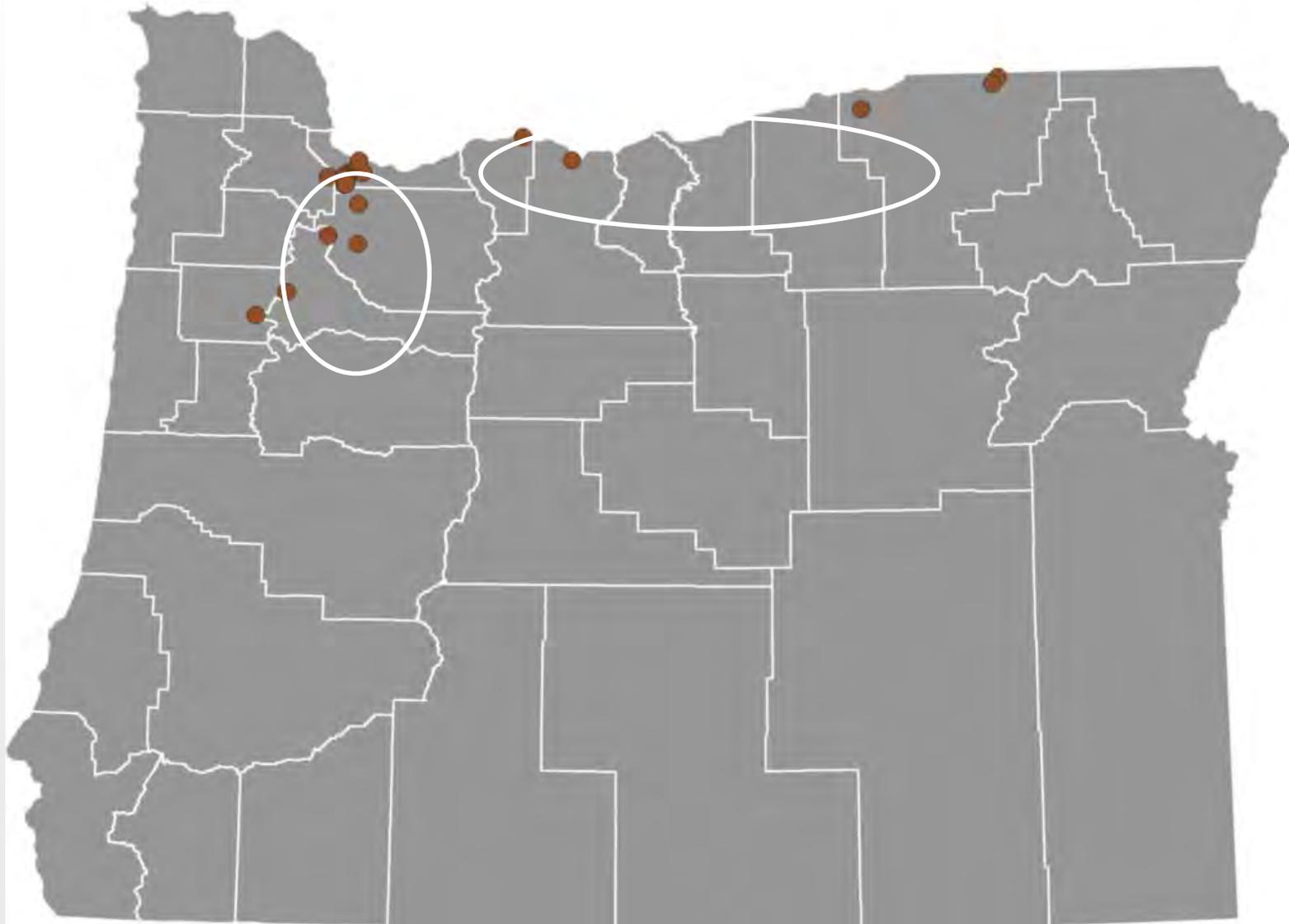
○ Sentinel [33]

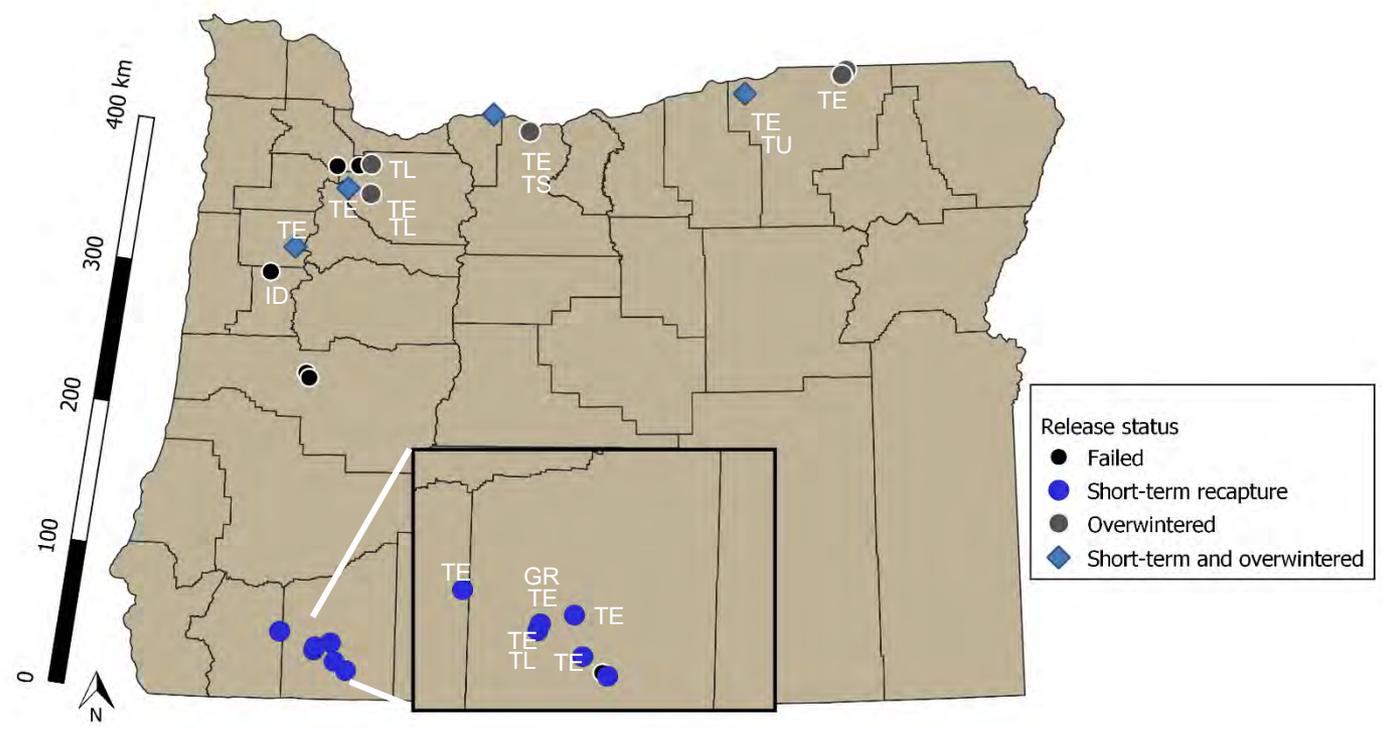
● Wild egg mass [5]





Adventive samurai wasps clustered in 2 regions







Bonus! *T. japonicus* found in British Columbia, Canada

Petition for the release of *Trissolcus japonicus* (Hymenoptera: Scelionidae) for biological control of *Halyomorpha halys* (Hemiptera: Pentatomidae) in Canada



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Cover Photo: Tim Haye

Petition for Canadian release of *T. japonicus* submitted to Canadian Food Inspection Agency in August 2018

A decision is expected within 6 months

But, while the petition was under review.....



First record of *T. japonicus* in Canada!



Photo: E. Talamas

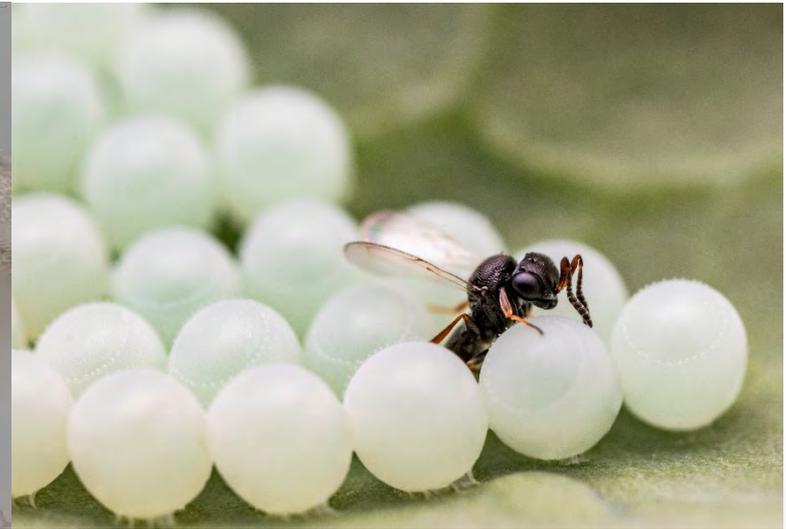


Photo: Warren Wong

- Emerged from a single egg mass collected on August 23, 2018, in Chilliwack, BC (one of sixteen sites surveyed across BC; was not detected at any other sites).
- Mitochondrial DNA barcode (COI) confirmed morphological identification.
- Microsatellite DNA analysis is underway to determine possible origins (Marie-Claude Bon, EBCL).

Abram, P.K., Talamas, E.T., Acheampong, S.A., Mason, P.G., Garipey, T.D. 2019. First detection of the samurai wasp, *Trissolcus japonicus* (Ashmead) (Hymenoptera, Scelionidae), in Canada. *Journal of Hymenoptera Research* (in press).