

# BMSB Update for the Pacific Northwest

Stakeholder Advisory Meeting  
BMSB-SCRI  
2 November 2016  
Raleigh, NC

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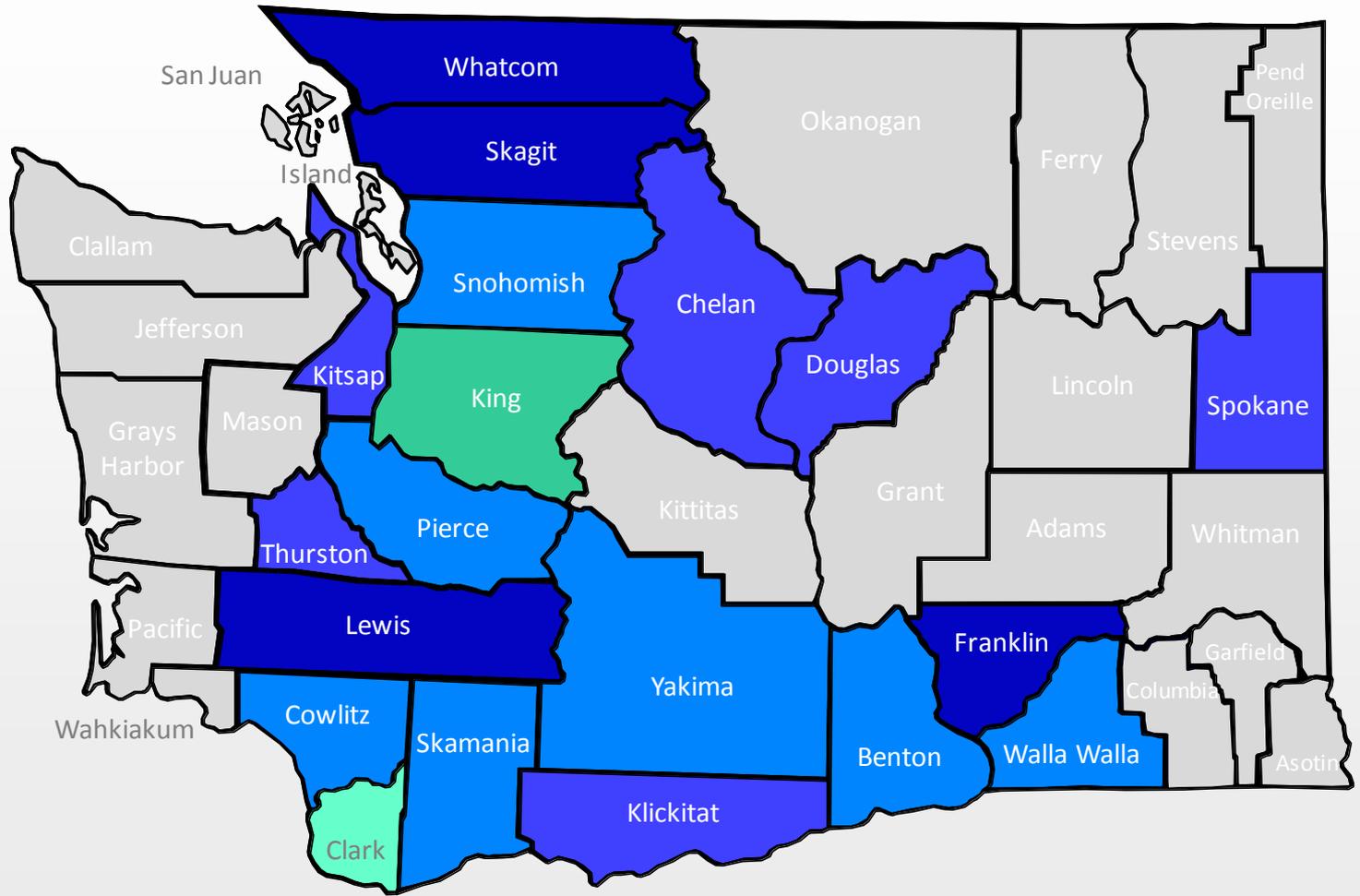
## Washington & Oregon co-Pis and collaborators

- Oregon
  - Vaughn Walton (Corvallis; berries, wine grapes)
  - Nik Wiman (North Willamette Ext. Ctr; hazelnuts)
  - Clive Kaiser (Milton Freewater; tree fruits)
  - Rick Hilton (Medford; tree fruits and wine grapes)
- Washington
  - Betsy Beers (TFREC, Wenatchee; tree fruits)
  - Dave Crowder (WSU Pullman campus; landscape ecology obj. leader)
  - Doug Walsh (Prosser; multiple crops, IPM & IR-4 coordinator)
  - Gwen Hoheisel (Coop. extension, Prosser; wine grapes)
  - Mike Bush (Coop. Ext., Yakima; master gardeners)



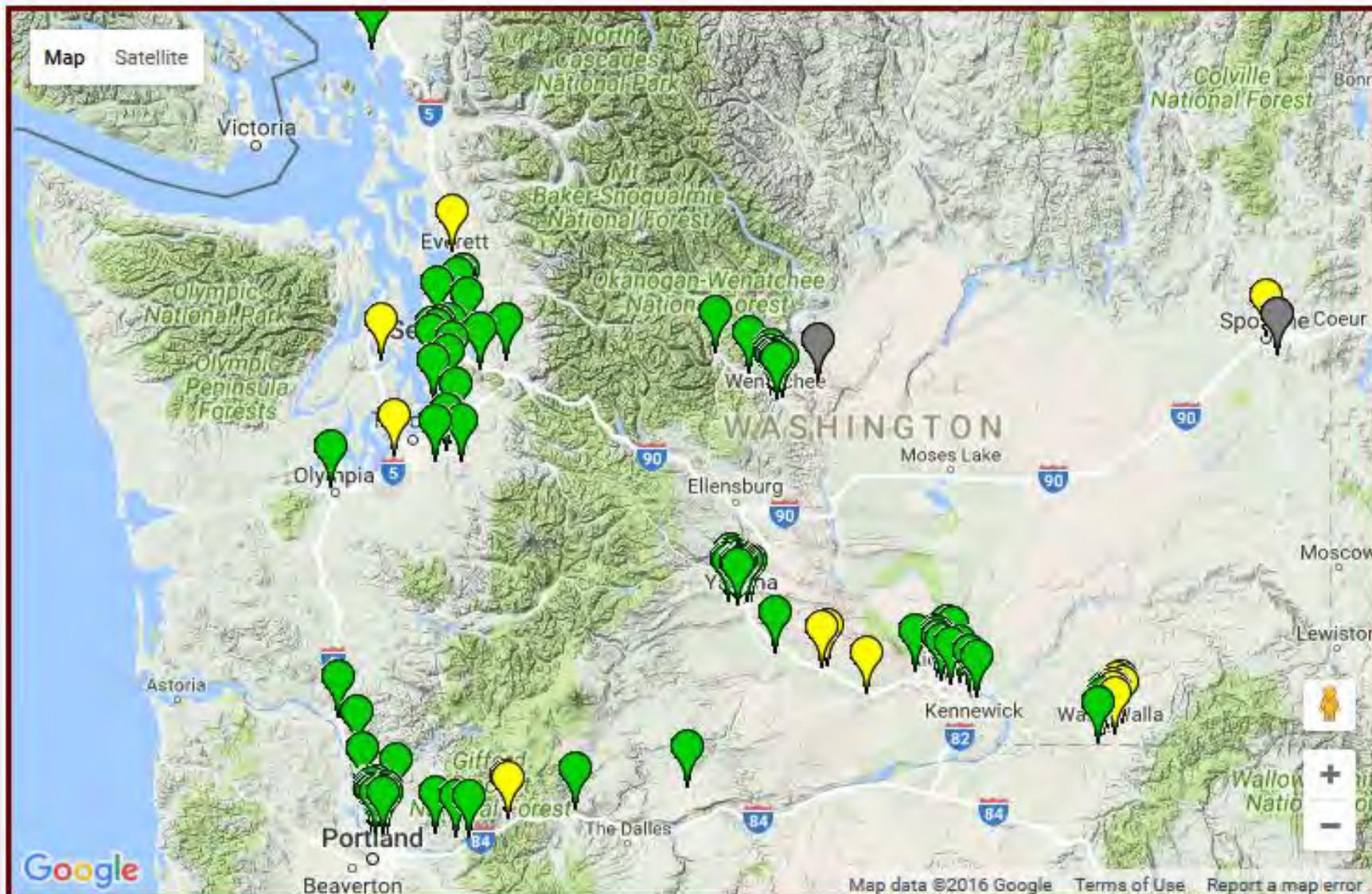


# Washington: BMSB detected in 19 counties





# Curent Distribution in the WA





## Oregon

- Economic damage to hazelnuts in 2013 (northern Willamette Valley) estimate 2.5-5% damage
- Tree Fruits affected: apples, pears, peaches, cherries
- Studies ongoing on wine grapes, blueberry, blackberry (commercial damage?)
- Report of 50% crop loss to apples Milton-Freewater in 2015



## Washington

- Damage to tree fruits and vegetable crops in diversified farm in Vancouver
- Detected in wine grapes in Walla Walla
- Report of damage to pears in mid-Columbia





# Crop Value at Risk (Fruits and Nuts) – PNW \$4,373,432,000

Crop	Value of utilized production - 2015	
	WA	OR
Apple	2,396,250,000	44,383,000
Apricot	9,721,000	-
Blackberry	-	38,035,000
Blueberry	146,847,000	104,307,000
Boysenberry	-	2,743,000
Sweet cherry	436,918,000	67,571,000
Tart cherry	11,000,000	531,000
Grape	419,000,000	65,000,000
Nectarine	8,840,000	-
Peach	13,644,000	-
Pear	239,750,000	153,497,000
Prune/plum	1,820,000	2,075,000
Raspberry	89,767,000	13,838,000
Strawberry	7,840,000	13,255,000
Hazelnut	-	86,800,000
<b>Totals:</b>	<b>\$ 3,781,397,000</b>	<b>\$ 592,035,000</b>



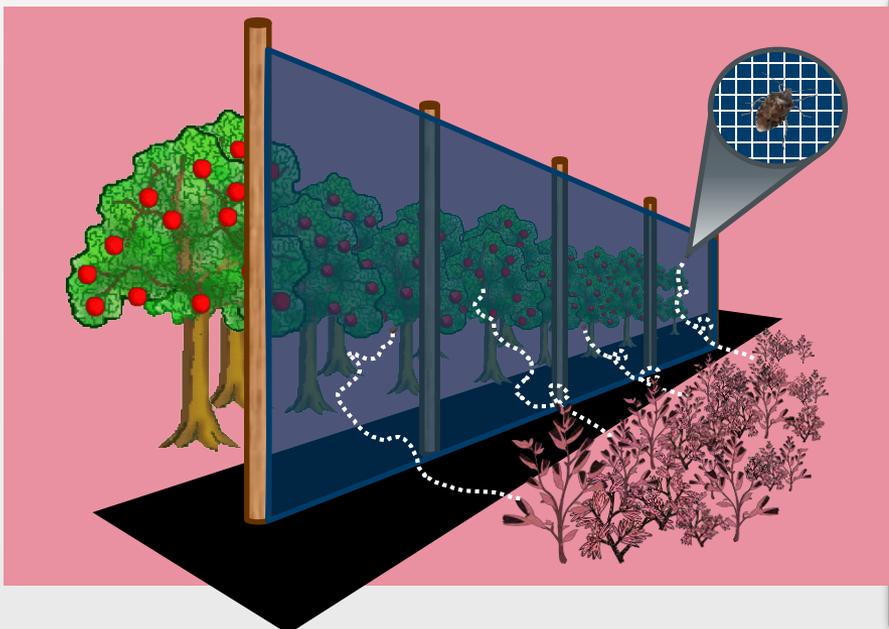
1. Winter survival and spring emergence phenology
2. Natural enemy surveys (since 2012)
3. *T. japonicus* range and redistribution
4. Enhanced pheromone trap captures with plant volatiles
5. Trap mechanisms
6. Behavior of *T. japonicus* - host chemical cues (David Lowenstein- postdoc)
7. Behavior of *T. japonicus* - overwintering (David Lowenstein- postdoc)
8. Invasion history and landscape ecology of BMSB (since 2012)
9. Damage phenology in pear and hazelnut (w/ Vaughn)
10. Treatment thresholds hazelnuts (w/ Vaughn)
11. Commercial pheromone trials
12. Temperature-dependent feeding behavior of BMSB (w/ Vaughn)
13. Nutritional status of BMSB (w/ Jana Lee)



1. Determine distribution of *Trissolcus japonicus* in Washington
2. Maintain a laboratory culture of *T. japonicus* in preparation for release
3. Evaluate IPM-friendly management strategies for BMSB
4. Document the spread of BMSB within the state
5. Determine suitability of native shrub-steppe plants as hosts for BMSB

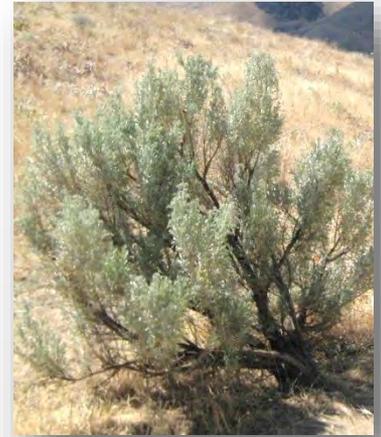


# Obj. 3. Barrier studies





# Obj. 1: BMSB Ecology in the semi-arid shrub-steppe environment





# Questions?

