California Environmental Protection Agency
Department of Pesticide Regulation

Update on Pesticide Air Monitoring Network

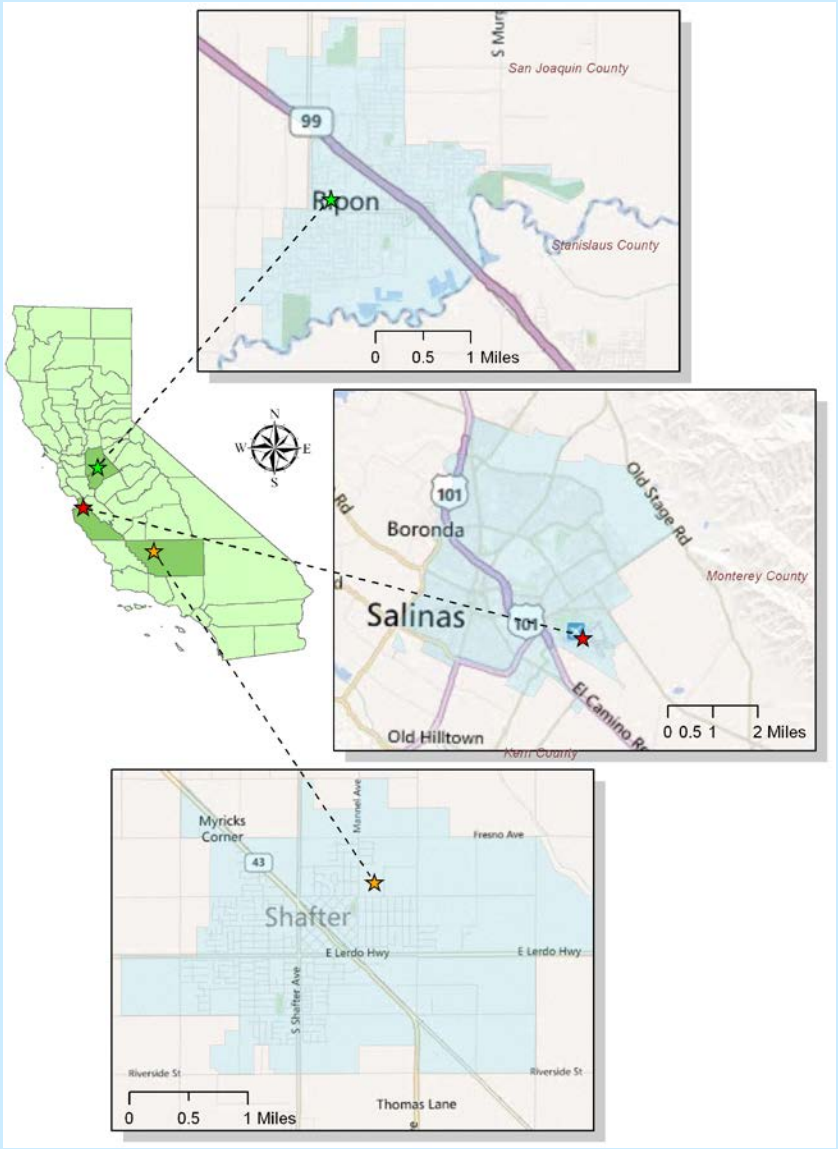
March 21, 2014

Pesticide Registration and Evaluation Committee

Email during meeting: preccomments@cdpr.ca.gov

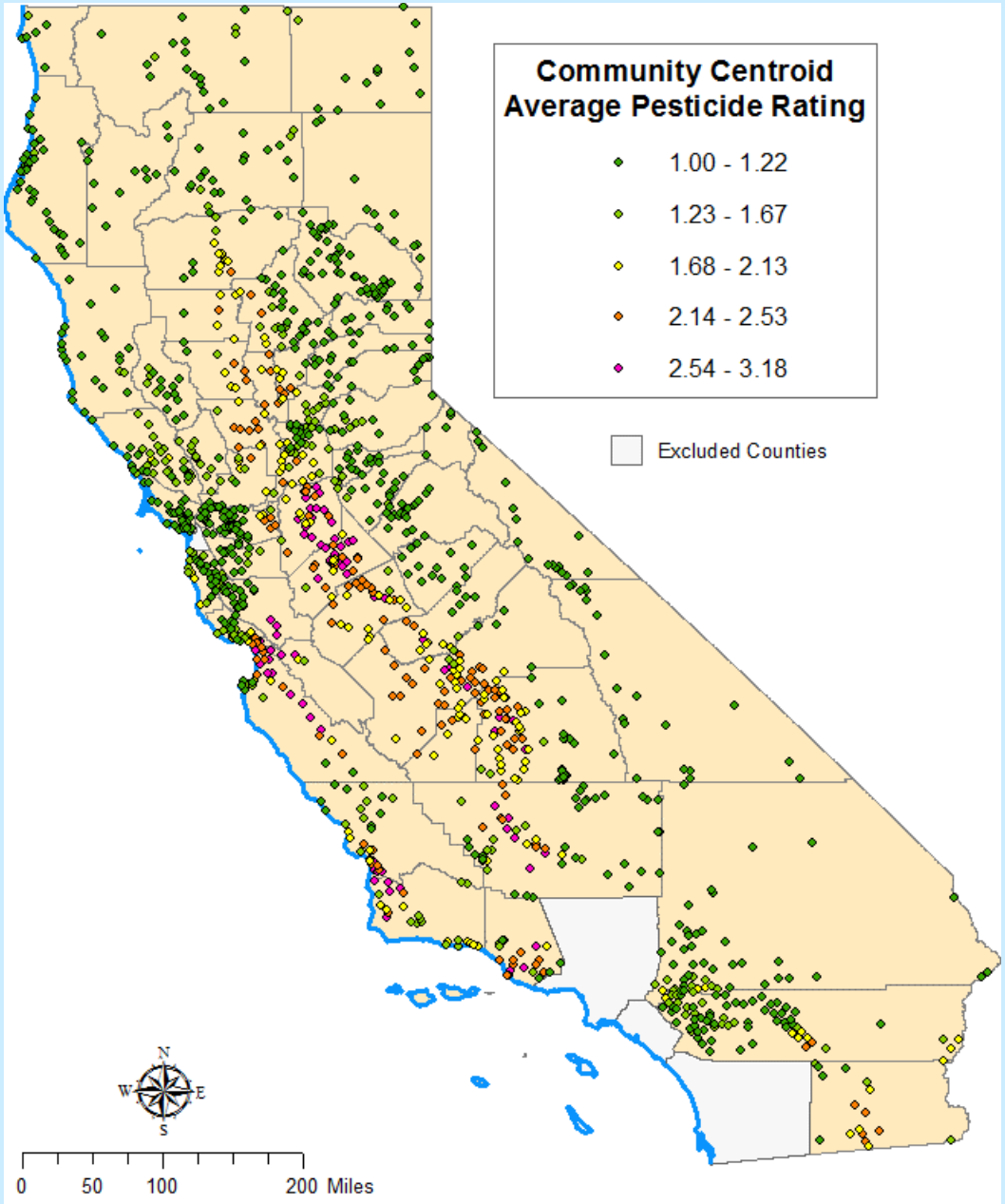
Air network plan unchanged

- Monitor for 32 pesticides
- One monitoring site in each selected community
  - Ripon
  - Salinas
  - Shafter
- Collect one set of 24-hour samples each week, each site



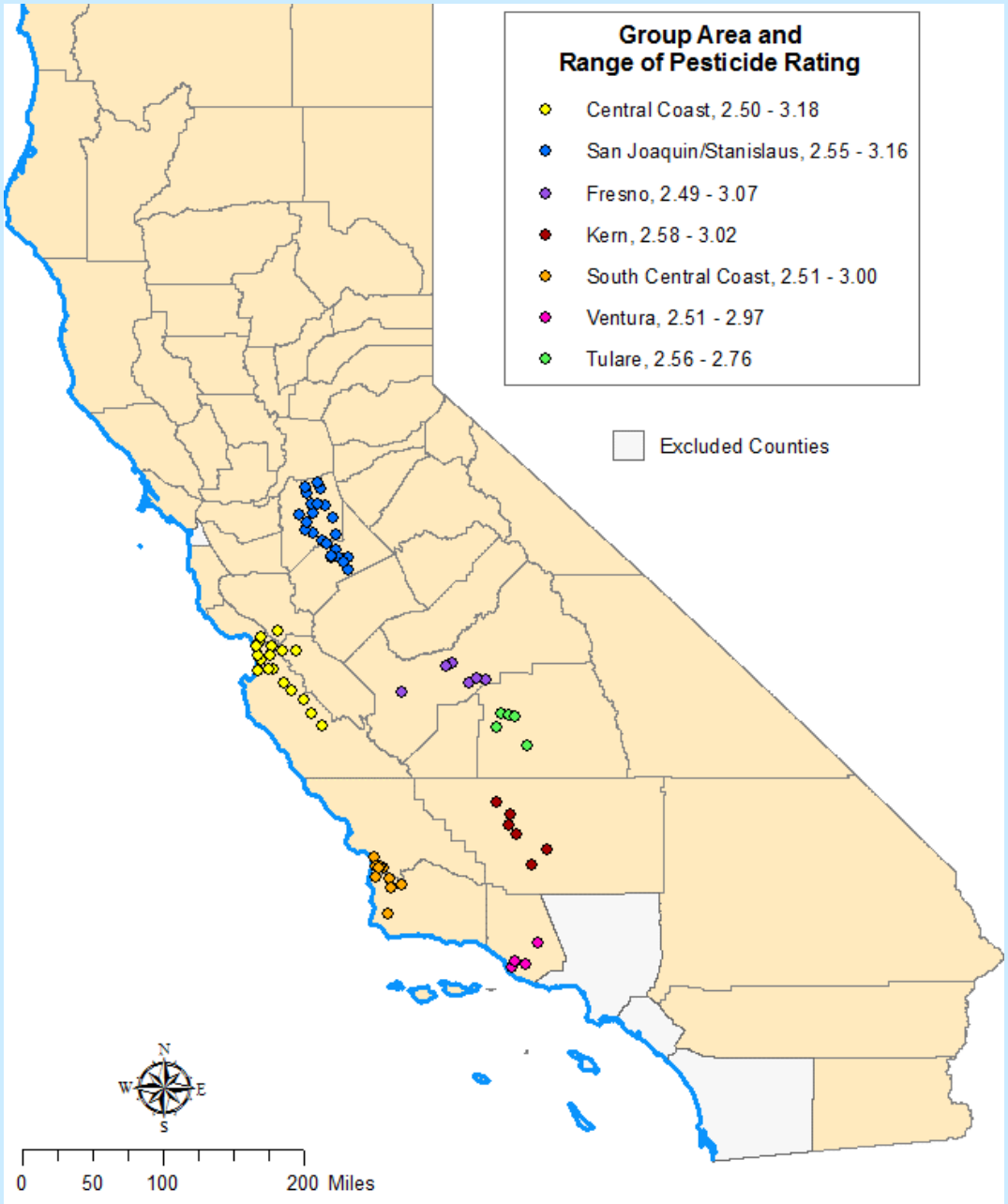
Community pesticide ratings

- Compiled 2011 use data for 32 pesticides and 1,267 communities
  - Within community
  - 1 mi of community
  - 5 mi of community
- Communities rated based on quartile ranking for each pesticide & region, then averaged rankings



2011 community pesticide ratings

- Top groups are in Central Coast and San Joaquin Valley



Communities with the highest use ratings of 32 pesticides (2011 data)

Communities	County	Rating
Gilroy, Prunedale, Hollister, San Martin, Salinas (2.81), King City	Santa Clara Monterey San Benito	3.18-2.77
Modesto, Stockton, Salida, Ripon (3.08), Lathrop, Manteca, Lodi, Keyes, Ceres, Turlock, Linden	San Joaquin Stanislaus	3.16-2.78
Shafter (3.02), Bakersfield	Kern	3.02-2.81
Fresno, Selma	Fresno	3.02-2.58
Nipomo, Santa Maria	San Luis Obispo Santa Barbara	3.00-2.77
Camarillo, Oxnard	Ventura	2.97-2.94

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Evaluation of alternative communities

- Modesto, Stockton, Salida – Ripon alternatives (2nd rank)
  - Modesto and Stockton are large – site selection problematic
  - Salida adjacent to Ripon
- Bakersfield, Fresno (3rd and 4th ranks) – Shafter alternatives
  - Same or lower pesticide rating than Shafter
  - Large communities – site selection problematic
- Nipomo/Santa Maria (5th rank), Camarillo/Oxnard (6th rank)
  - ARB fumigant monitoring in both areas
  - Similar nonfumigant ratings as North Central Coast
  - Higher nonfumigant sampling costs

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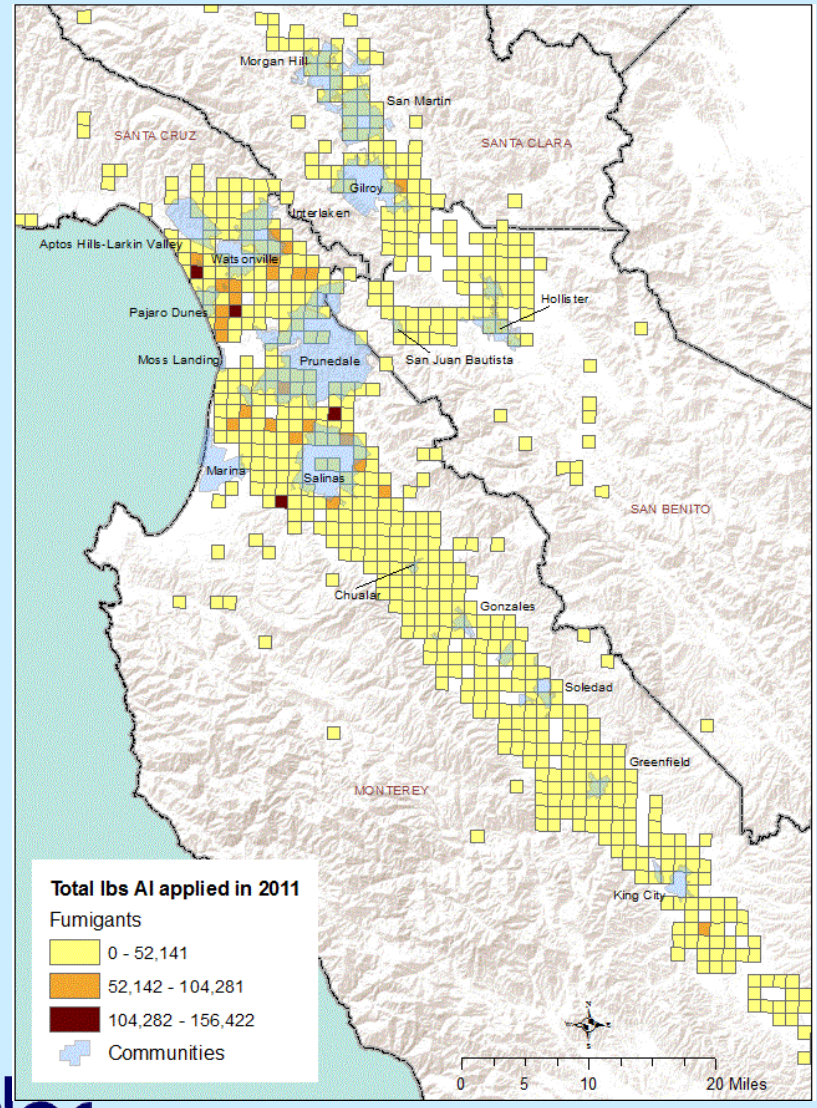
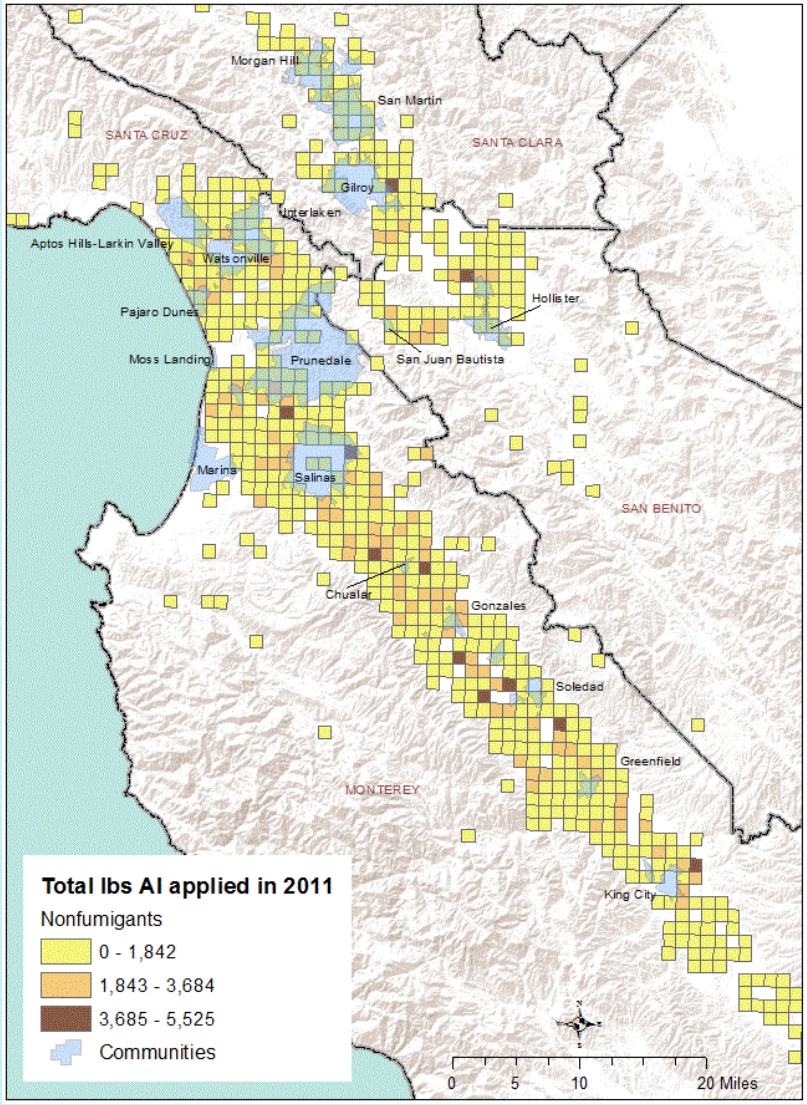
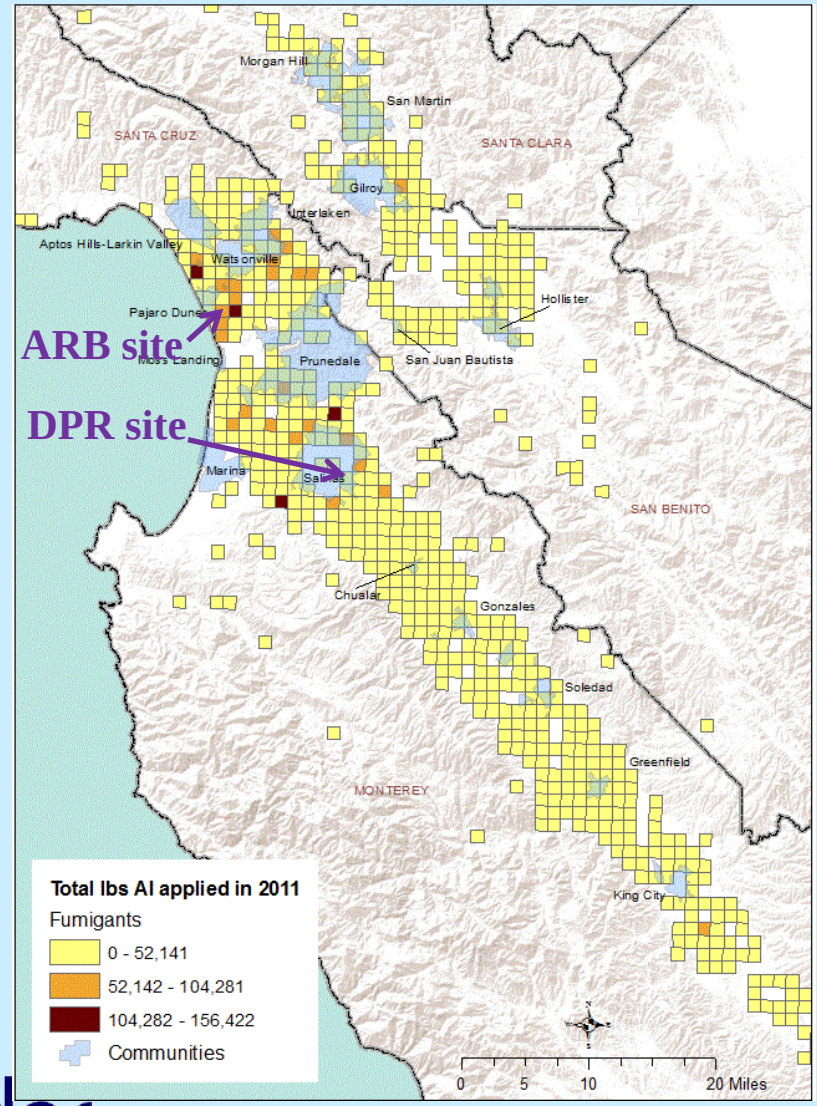
Evaluation of North Central Coast communities – use of monitored pesticides





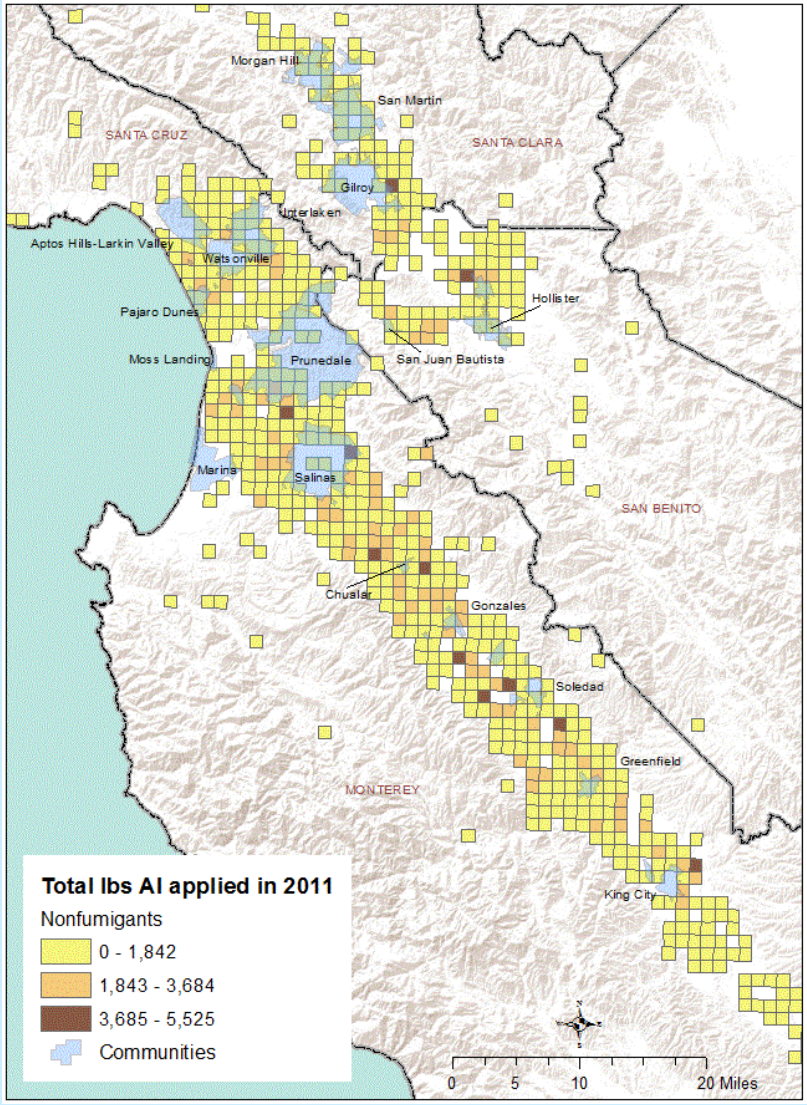
Evaluation of North Central Coast communities – use of fumigant pesticides



- Fumigant use highest between Watsonville and Salinas
  - Gilroy has high fumigant rating due to use east of Watsonville, other side of Santa Cruz Mtns
  - Prunedale is hilly area – problematic site selection
  - ARB site south of Watsonville

Evaluation of North Central Coast communities – use of nonfumigant pesticides

Community	Nonfumigant Rating
Gilroy	3.25
Prunedale	3.10
King City	2.98
Greenfield	2.98
Hollister	2.96
Soledad	2.94
San Martin	2.92
Salinas	2.86

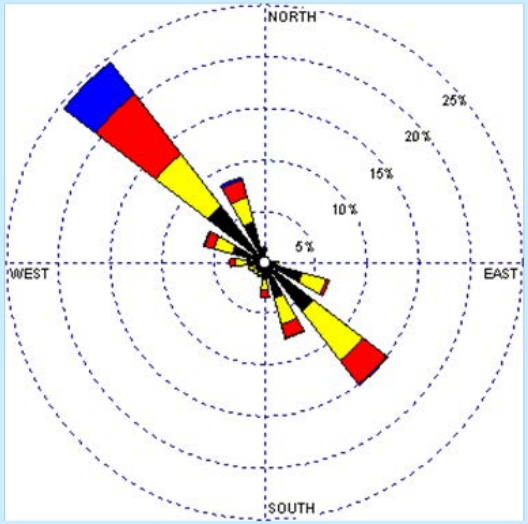


Evaluation of North Central Coast communities – diazinon air monitoring

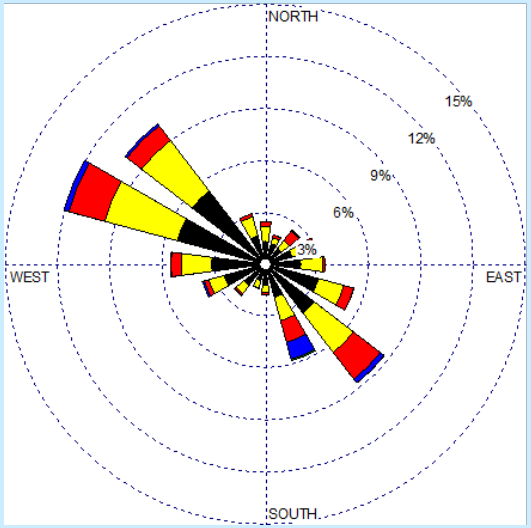
Project	Community	Max 4-wk Concentration (ng/m^3)
Jul-Aug 2009 ARB	Chualar	5.5
	Gilroy	4.5
	Hollister	None Detected
	King City	None Detected
	Salinas	6.1
	Soledad	3.5
Feb-Dec 2011 Air Network	Ripon	2.8
	Salinas	8.6
	Shafter	28.6

Evaluation of North Central Coast communities – wind speed and direction

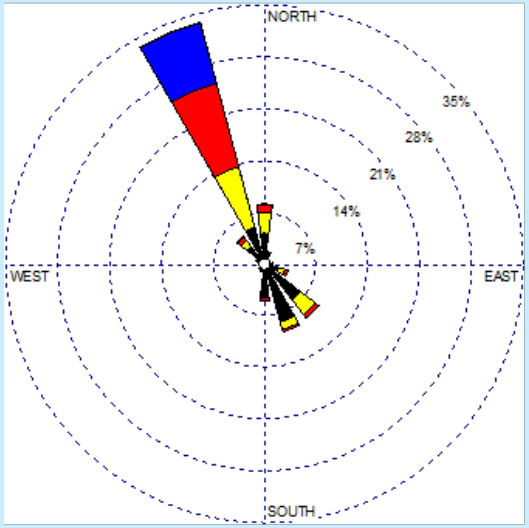
Gilroy (15% calms)



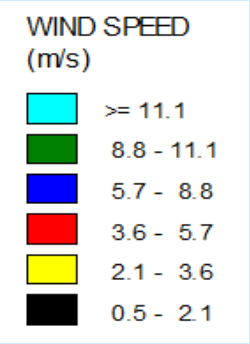
Salinas (27% calms)



King City (16% calms)



- Wind direction is more consistent and speed is higher in Gilroy and King City
- Wind direction is more variable and speed is lower in Salinas
- Gilroy is upwind from higher use areas



Alternatives to Salinas site

- North – Gilroy, Hollister, San Martin
  - Not highly rated for fumigants
  - Gilroy is upwind from higher use areas
- North – Prunedale
  - Hilly area – site selection problematic
  - ARB fumigant monitoring south of Watsonville
- South – King City, Greenfield, Soledad
  - Nonfumigant ratings similar to Salinas
  - More calm periods in Salinas
  - Salinas has comparable or higher diazinon concentrations

Other key issues and comments

- Tulare is 3rd highest county for use of all pesticides, but 9th highest for the monitored pesticides
- Monitoring in “unincorporated communities” was considered because all “census designated places” were evaluated
- Location of monitoring site within the community
  - Sites have minimum qualifications, including site permission
  - Previous monitoring shows similar concentrations for sites with one mile separation – Ripon is ¼ mi from west border, 1.5 mi from other borders
  - Moving sites makes year-to-year comparisons more difficult

Other air monitoring in 2014

- ARB ambient monitoring requested
  - Year-round monitoring for 1,3-D and methyl bromide
  - Seasonal monitoring for chloropicrin
  - Oxnard, Santa Maria, south of Watsonville
- ARB application-site monitoring requested
  - Chlorpyrifos – potential toxic air contaminant
  - Mancozeb – hazardous air pollutant-toxic air contaminant
  - MITC – toxic air contaminant, effectiveness of permit conditions

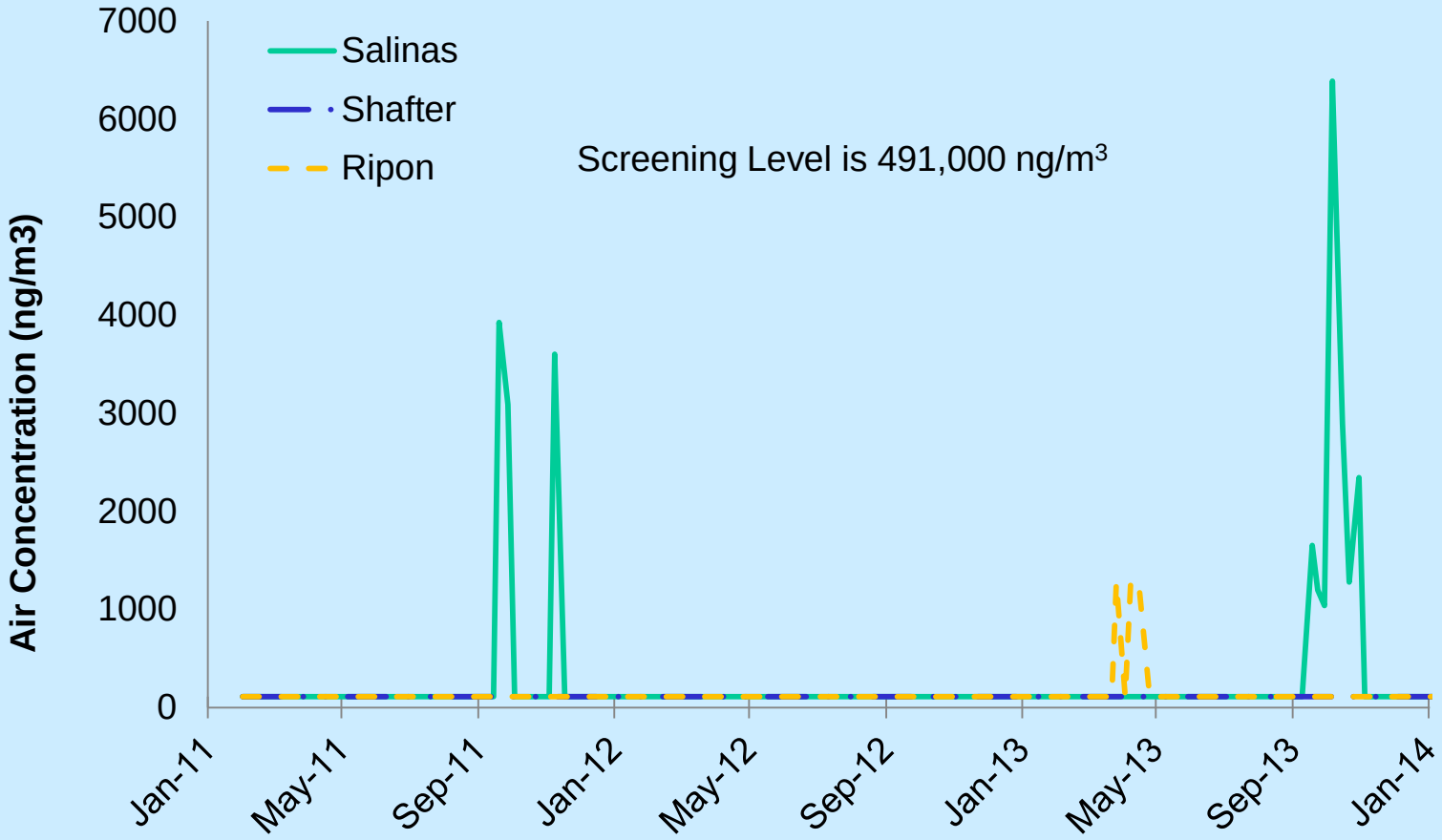
Air network plan conclusions

- Air network supplements other monitoring for individual pesticides
- Air network focuses on long-term monitoring for multiple pesticides, pesticides monitored and frequency remain unchanged
- Ripon, Salinas, and Shafter remain high use areas for many pesticides
- Other communities do not have significantly higher use ratings, and have other disadvantages

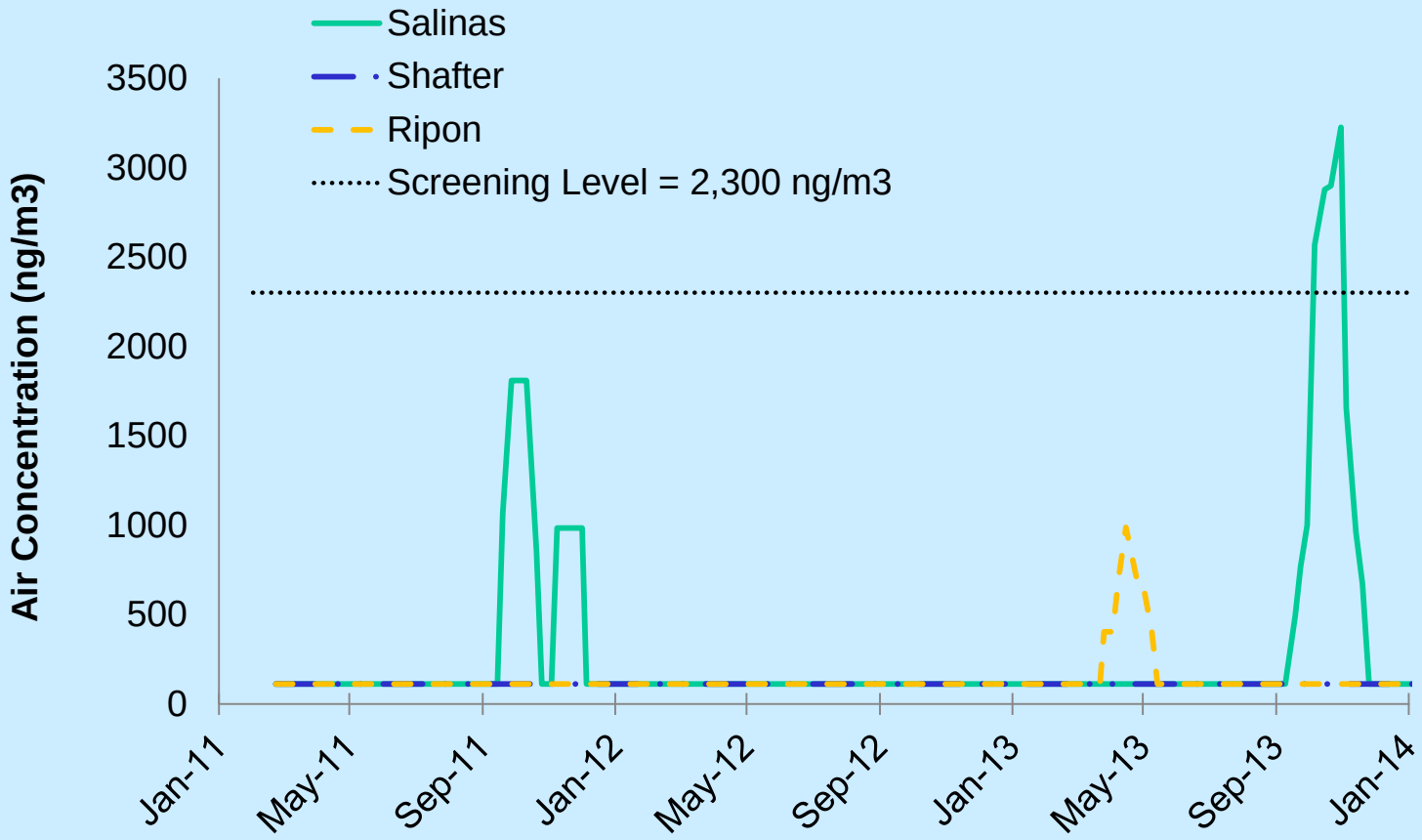
Preliminary air network results for 2013

- DRAFT 2013 concentrations were higher than previous years for several pesticides
  - Carbon disulfide
  - **Chloropicrin**
  - Chlorothalonil
  - Chlorpyrifos and its OA breakdown product
  - **1,3-dichloropropene**
  - EPTC
  - Oxyfluorfen

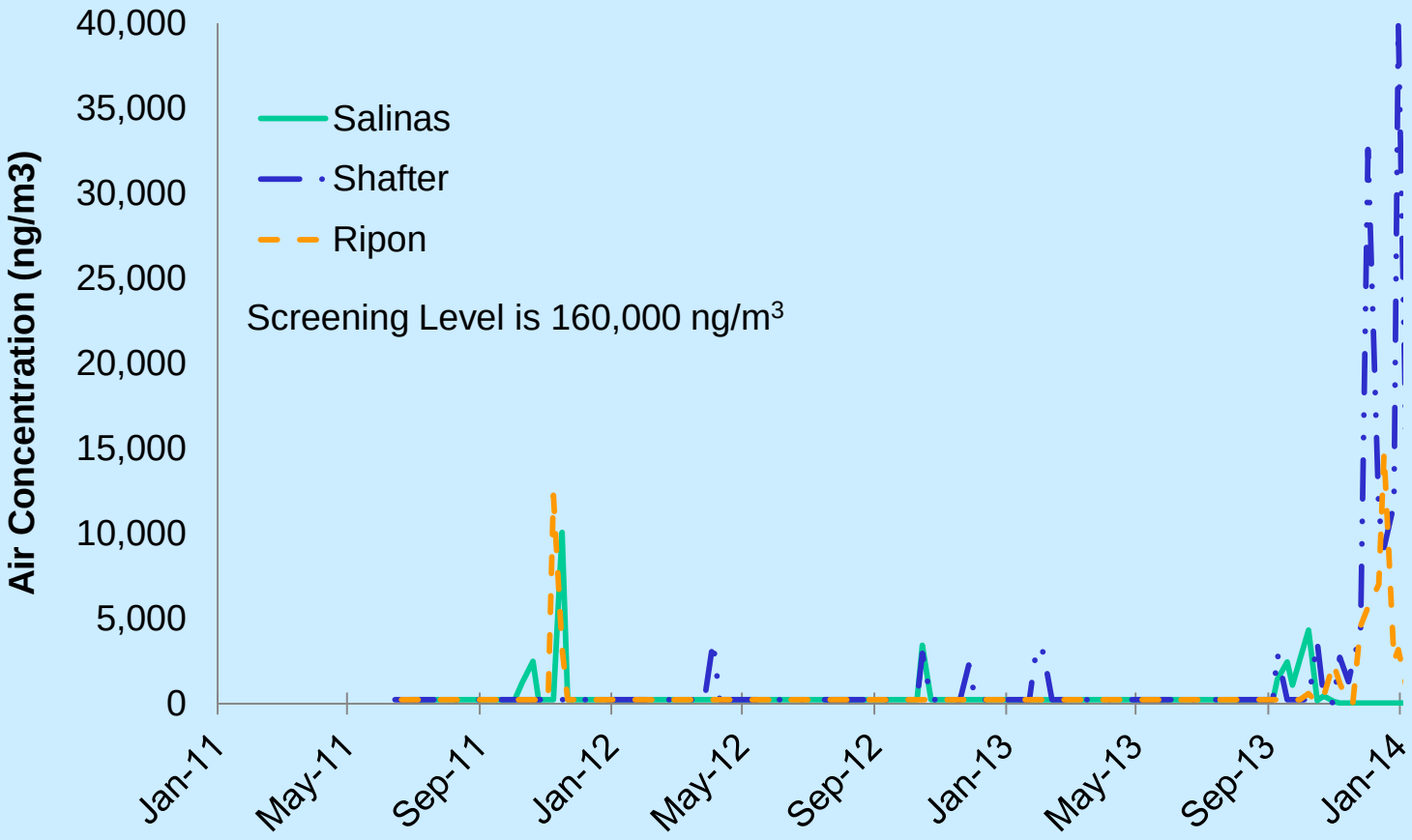
DRAFT 2013 chloropicrin 24-hour air concentrations



DRAFT 2013 chloropicrin rolling 4-week average air concentrations



DRAFT 2013 1,3-D 24-hour air concentrations



Next steps for 2013 data

- Verify results
- Screening levels are triggers for additional evaluation
- Chloropicrin evaluation
  - Evaluating reasons for higher concentrations – chloropicrin use and weather at time of detections
  - Evaluating impact of proposed mitigation measures for acute exposures on seasonal (subchronic) exposures
- 1,3-D evaluation described in next presentation

Questions, additional information

- Lead staff

Pam Wofford
(916) 324-4297
pwofford@cdpr.ca.gov

Randy Segawa
(916) 324-4137
rsegawa@cdpr.ca.gov

- DPR web site: www.cdpr.ca.gov
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  - Select “Air Monitoring Network”