

SUBSTANTIAL DRIFT: A LEGAL PERSPECTIVE

By

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Presented to:

Cal IPC



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- ▣ All materials have been prepared for general information purposes only and is not presented as legal advice.
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Typical Lawsuit

SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF

o0o

ABC FARMING,

Plaintiff,

v.

XYZ CROP DUSTER, DOES 1 through
100, Inclusive,

Defendants.

Case No.

COMPLAINT FOR:

- 1. NEGLIGENCE**
- 2. TRESPASS**
- 3. NUISANCE**
- 4. STRICT LIABILITY FOR
ULTRAHAZARDOUS ACTIVITY**

The Usual Suspects

- Grower
- Landowner
- Applicator
- PCA
- Chemical Supplier
- Chemical Manufacturer



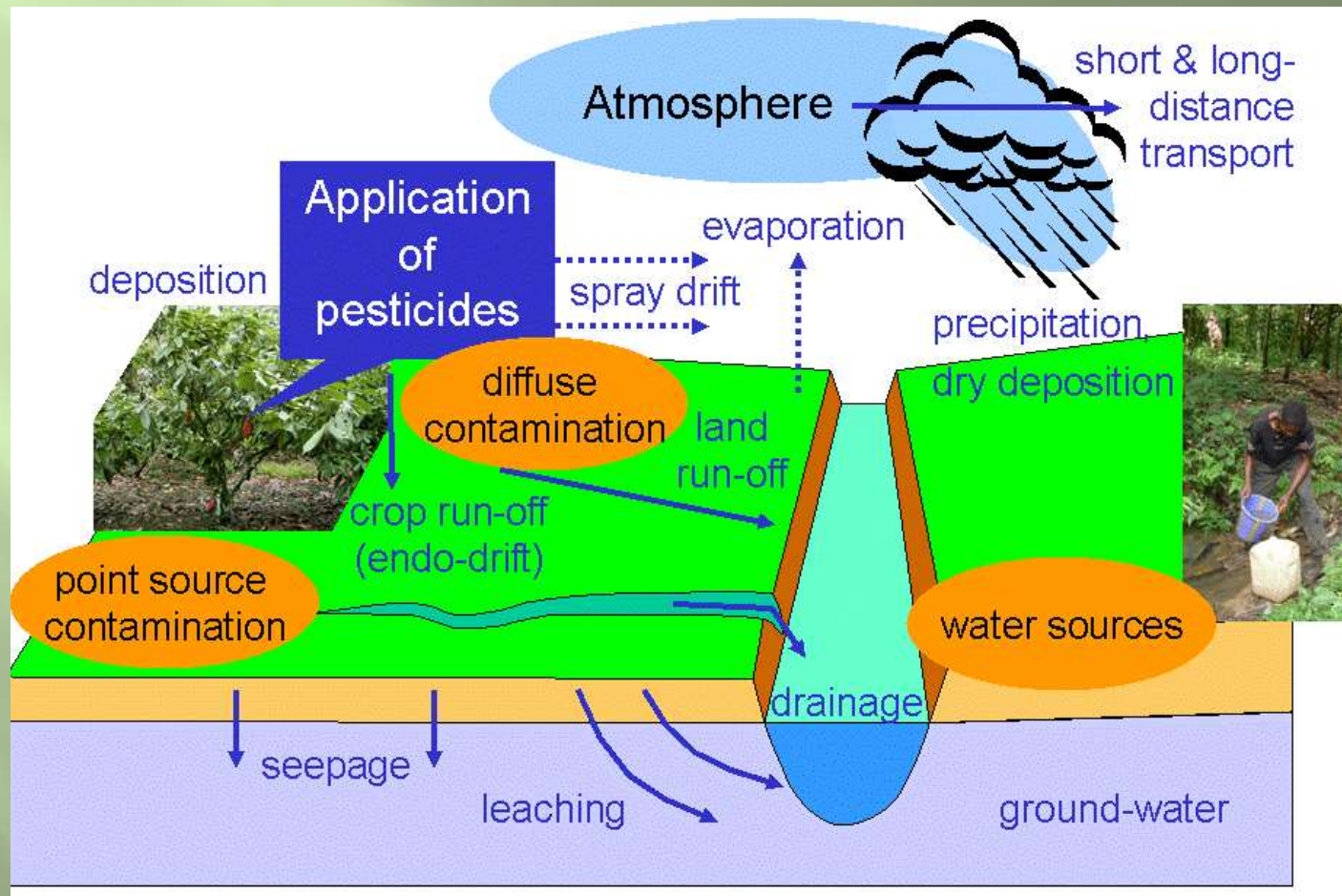
Food and Agricultural Code §12972 – Drift Prevention

The use of any pesticide by any person shall be in such a manner as to prevent substantial drift to nontarget areas.



Types of Off-Target Movement

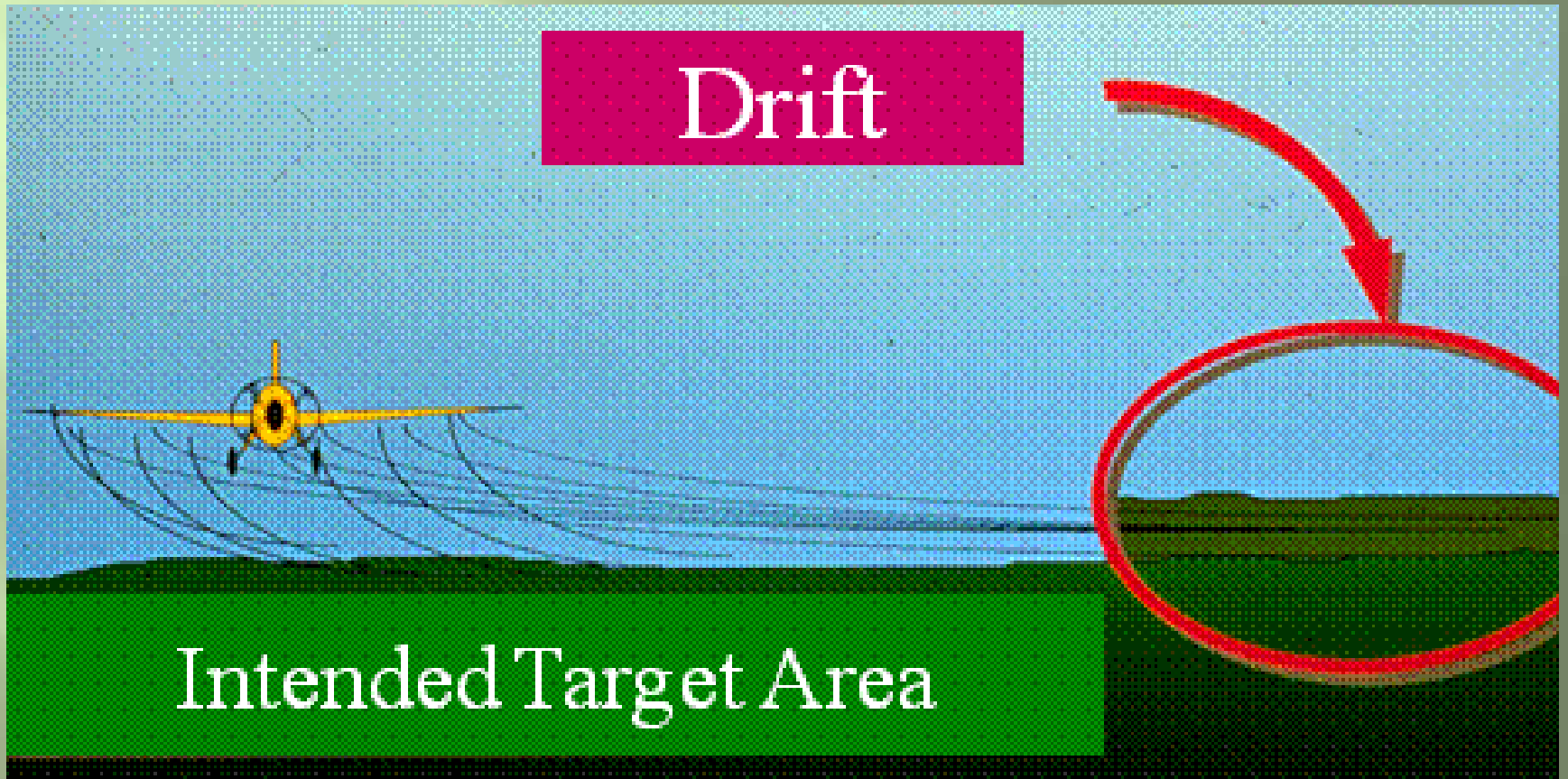
- * Direct Drift
- * Inversion
- * Wind Erosion



Direct Drift

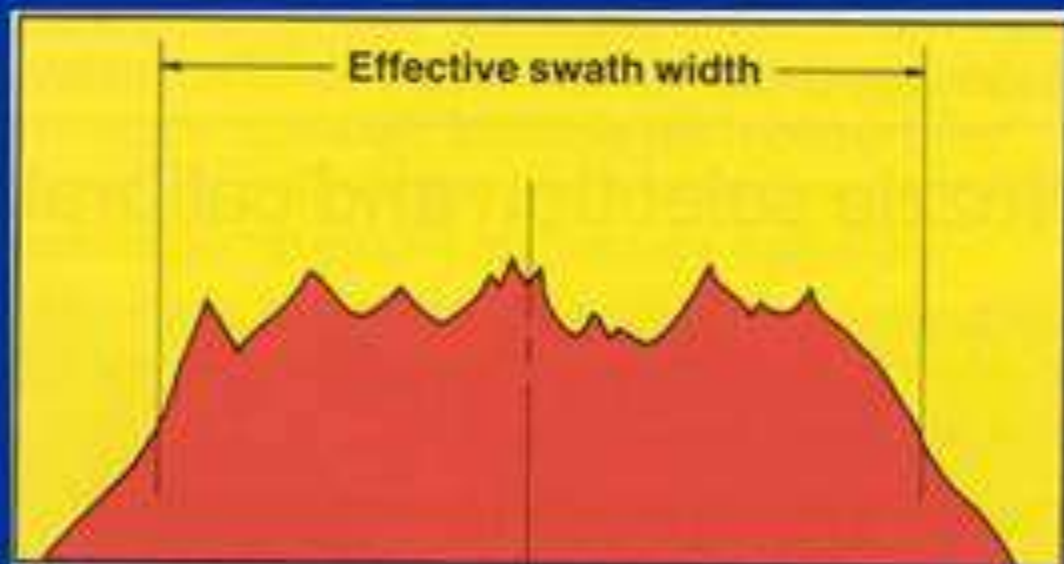
Drift

Intended Target Area



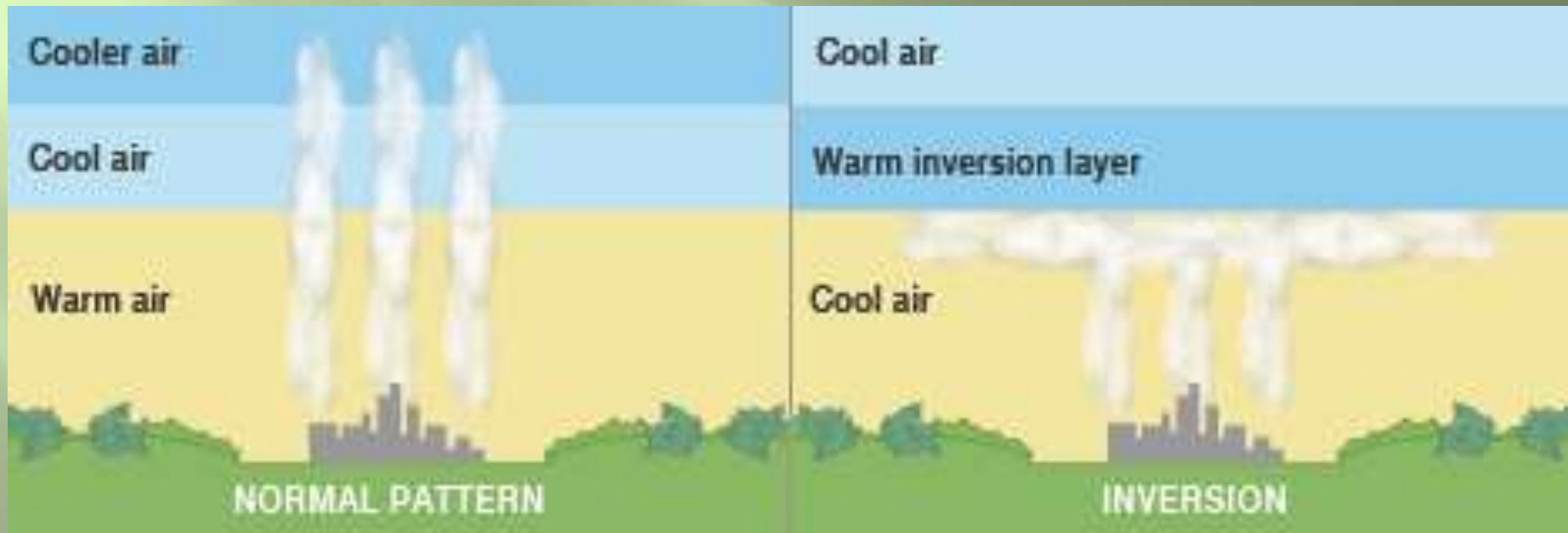


Spray pattern analysis



Temperature Inversion

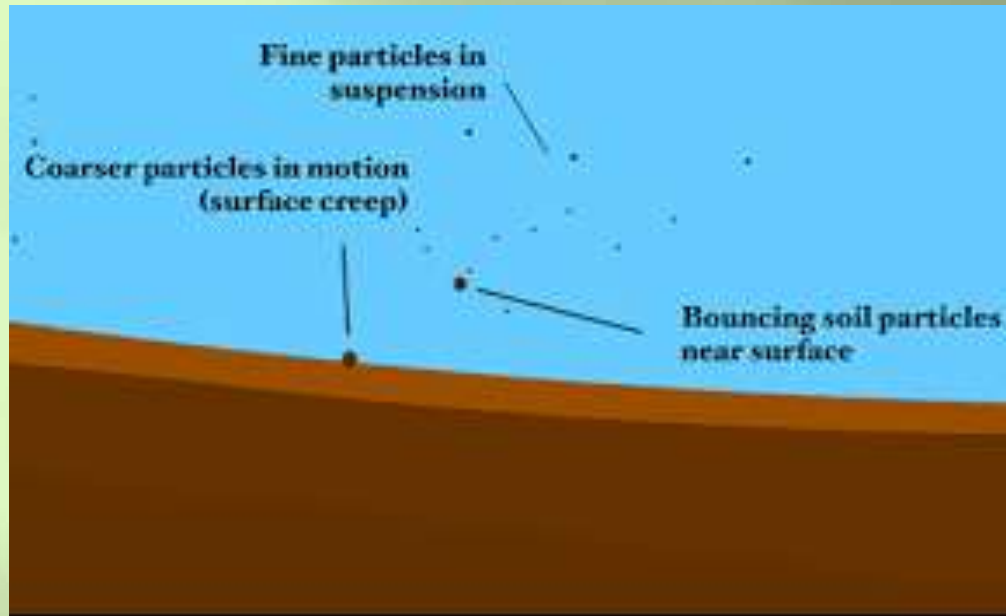
Particulates become trapped in the inversion layer and are then carried away



Temperature Inversion



Wind Erosion



Concerns With Crop Loss Litigation

- ▣ High damage claims
 - \$1.5 million for 120 acres of tomatoes
 - \$3 million for 150 acres of almonds
- ▣ Low insurance coverage
- ▣ Non-reported applications



Joint Liability

- ▣ In California, all Defendants are jointly liable for all of Plaintiff's economic damages

- ▣ Economic damage is any type of monetary loss including crop loss

- ▣ Example:
 - Grower sues PCA, applicator and neighboring farmer/landowner for \$1,500,000
 - Applicator & PCA only have \$100,000 policies, each
 - If jury finds neighboring farmer even 1% at fault, **Plaintiff can collect \$1.3 million from farmer.**

Suggestions for Product Use Recommendations



- ▣ Identify/map all sensitive crops
- ▣ Do not rely on software for application rates
 - ▣ Ex: Roundup - 32 ounces by ground, 22 ounces by air
- ▣ Ensure appropriate warnings
- ▣ Identify buffer zones
- ▣ Reduce recommended treated area for buffer zone
- ▣ Consider preparing separate PURs for each field

Identify Ongoing Work in Area



Identify Bees in the Vicinity



Organic Crops are Increasing Concern

- ▣ Governed by both Federal and State law
 - No prohibited substances (pesticides) can be used on the property in the 36 months prior to harvest.
 - ▣ 7 CFR 205.504(b)(5)(iii)

Confusing Map & Organic Crops



AUG 19

OPEN

WALNUTS

SLOUGH

Almonds

SHED

GARAGE

HOUSE

HOUSE

STORE

DFWPA

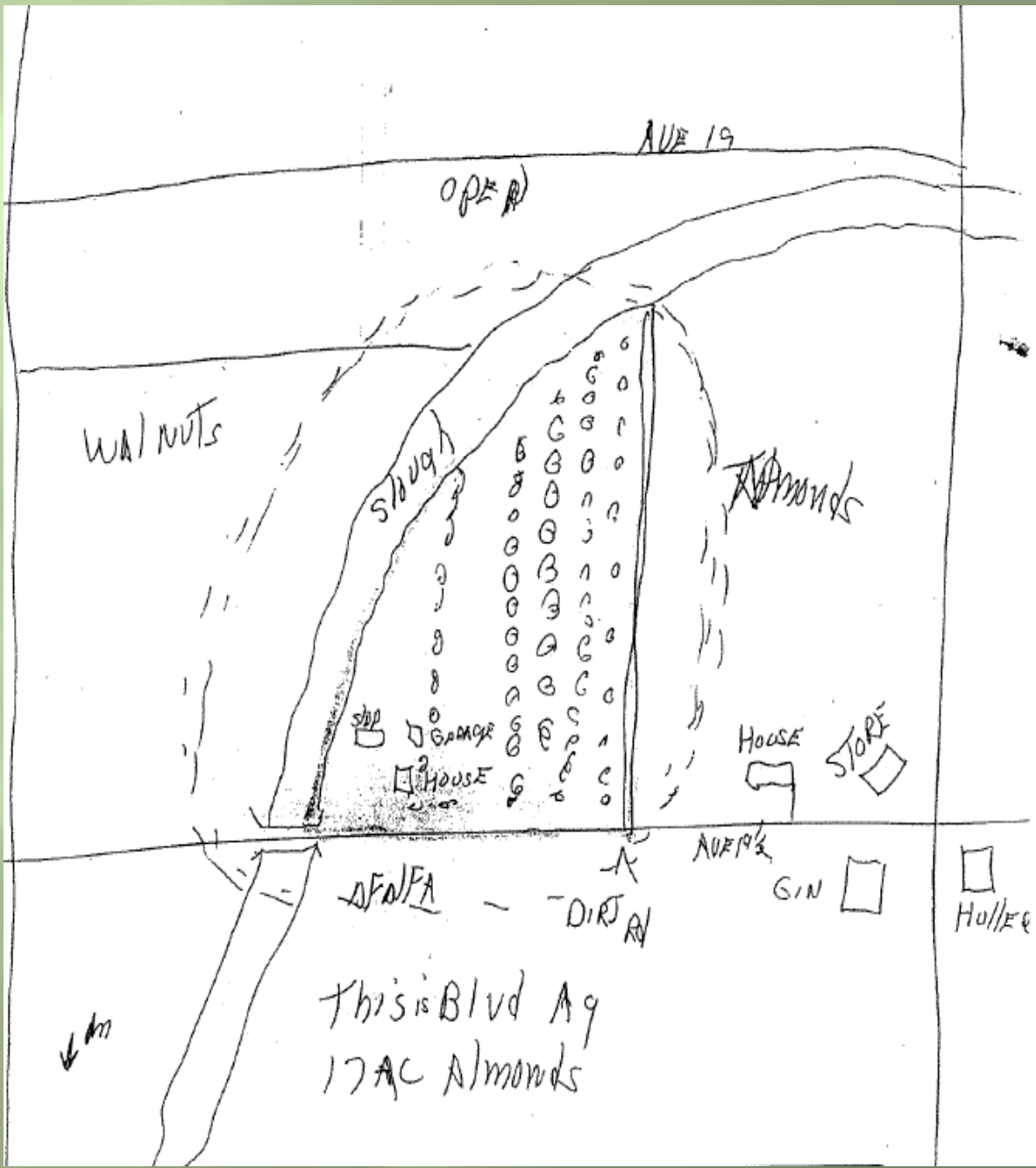
DIRT RD

AUG 19

GIN

HOLPER

This is Blvd A9
17 AC Almonds



INVESTIGATIONS

*Retain Consultants–

Herbicide/PCA/economist

* Identify neighboring applications

* Collect Samples – tissue and soil

* Take Photographs including Aerial

* Analyze Product Use Recommendation/Maps

* Analyze Pesticide Labels

* Obtain Product Use Reports for nearby crops

* Weather – temperature, wind, humidity

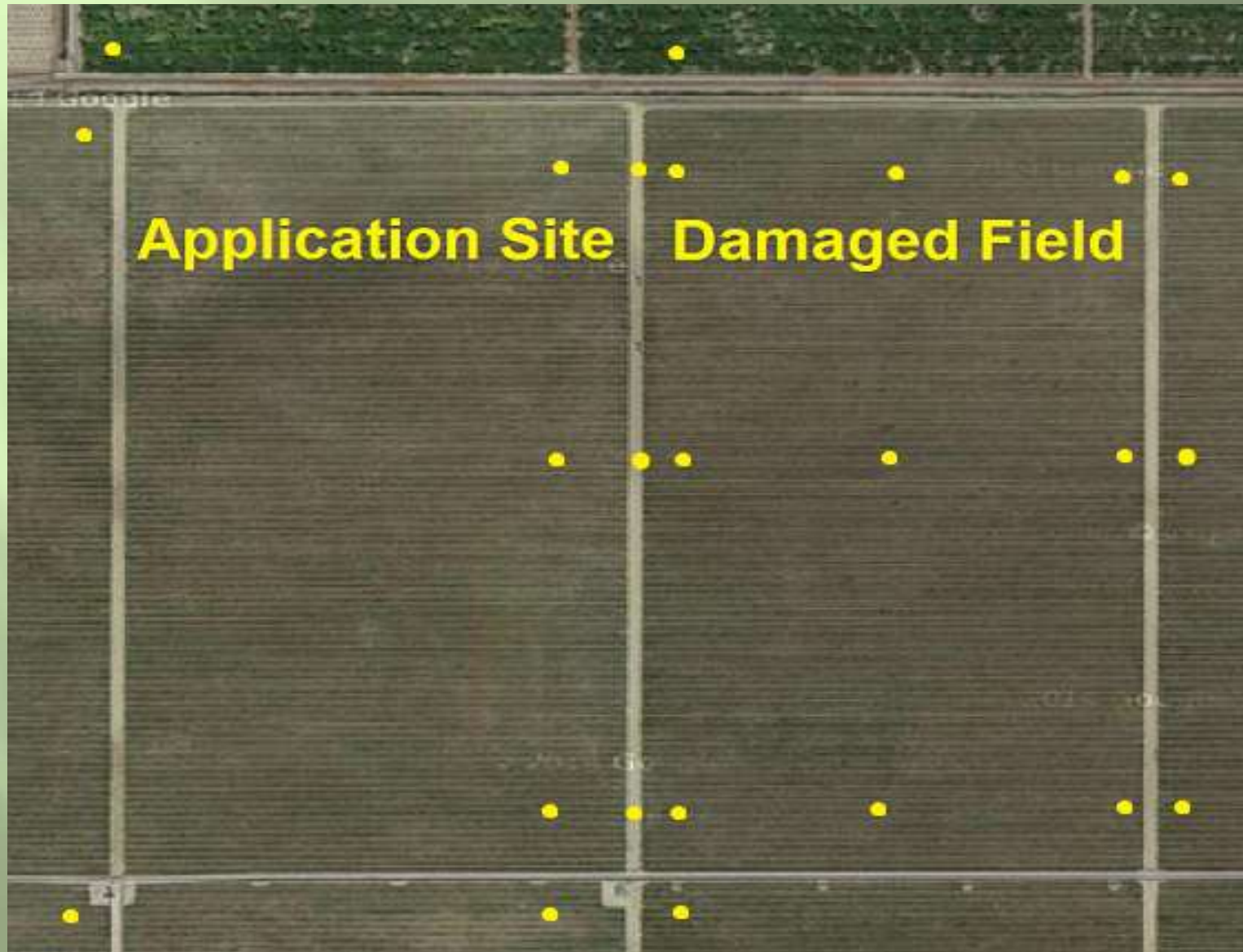
* Historical Yield Data & Imaging

Early Sampling Needed for Defense



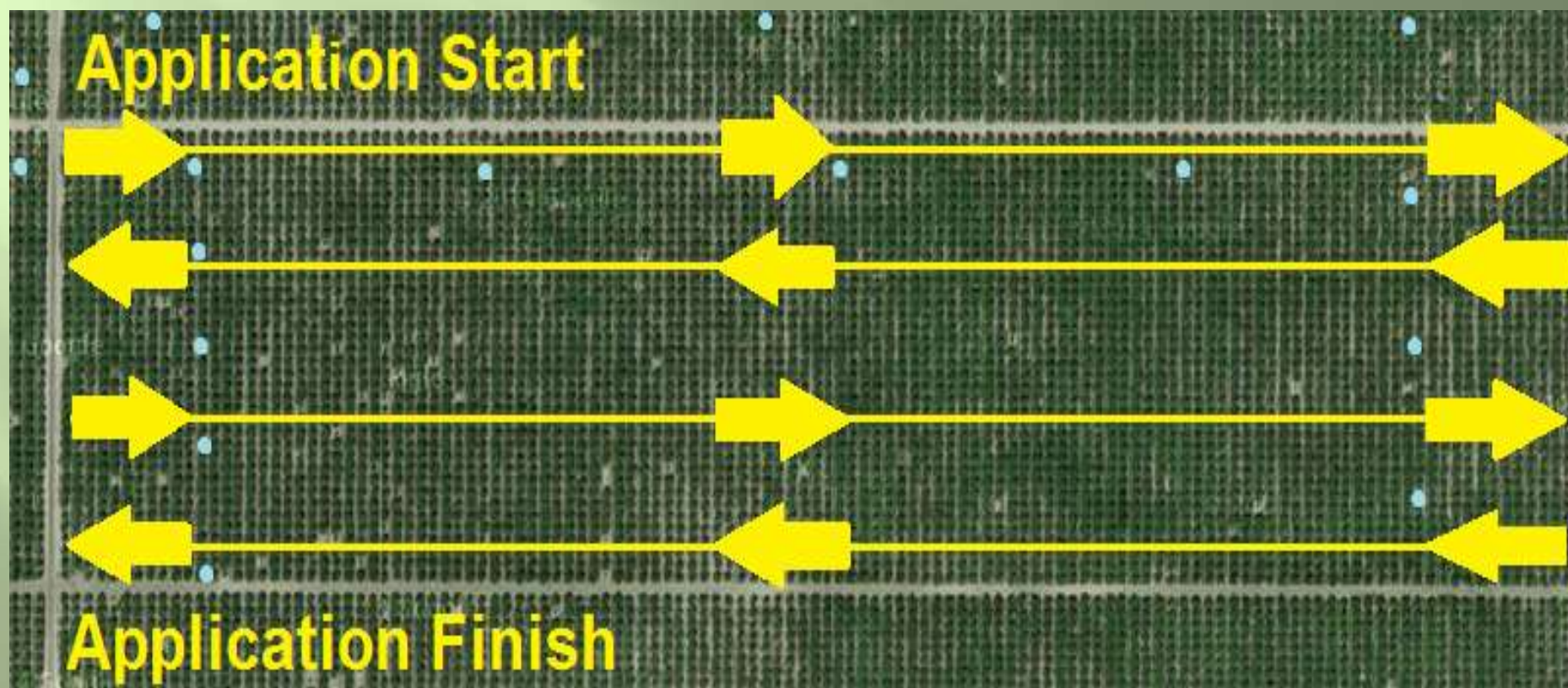
Sampling in Alleged Drift Case

(Assuming a NW wind)

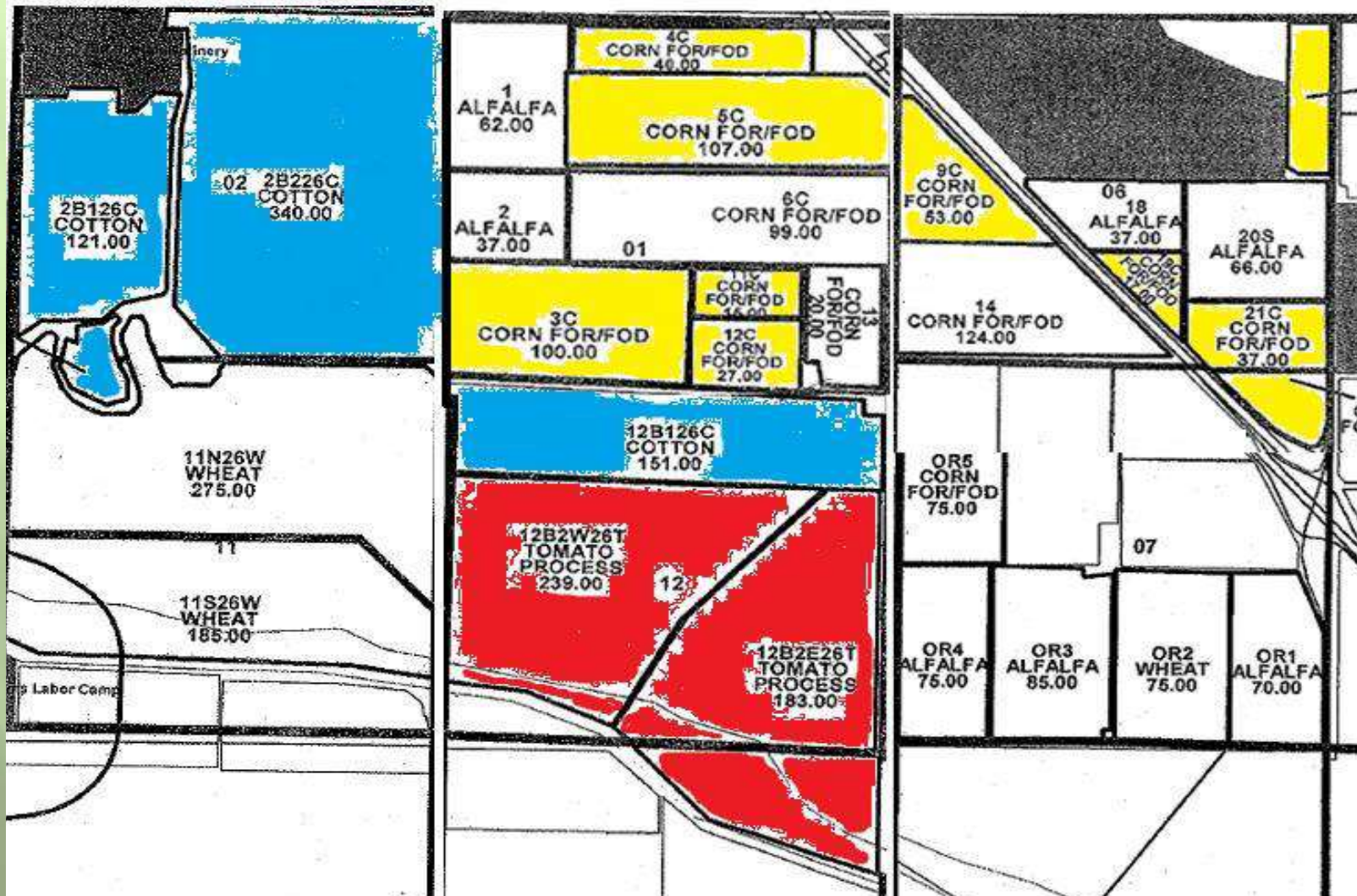


Sampling in Alleged Contaminated Application Case

(Assuming wind from NW)



Identify Neighboring Applications



Identify Neighboring Applications



Injured Crops



Injured Crops



UC IPM Herbicide Symptom Database



University of California
Division of Agriculture and Natural Resources

Herbicide Symptoms

SHARE

EMAIL

PRINT

SITE MAP

Enter Search Terms



Home / Search

More Information

Herbicide Damage

Modes of Action

Herbicides (Active Ingredient &
Trade Name List)

Plants

About Us

Home / Search

Select from the categories below to display images that matches the selection. Add additional category selections to include more images. Click the "x" to remove the selection.

Mode of Action (MoA)

Chemistry

Herbicides

Plants

Symptoms

Add Mode of Action



Add Chemistry



Add Herbicide



Add Plant



Add Symptom



Sample selection from gallery:



Contact Information

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<http://herbicidesymptoms.ipm.ucanr.edu/>

Searchable by Herbicide and Plant Type

- ▣ For example, glyphosate on tomatoes:

10 images matching the selected options:



Plant: tomato
MoA: Inhibition of EPSP synthase
Chemistry: Glycine
Herbicide: glyphosate
Symptoms: chlorosis, interveinal chlorosis, leaf crinkling, leaf distortion, leaf narrowing, leaf strapping, necrotic spots, stunting



Plant: tomato
MoA: Inhibition of EPSP synthase
Chemistry: Glycine
Herbicide: glyphosate
Symptoms: chlorosis, leaf curling, leaf distortion, leaf malformation, leaf narrowing, stunting



Plant: tomato
MoA: Inhibition of EPSP synthase
Chemistry: Glycine
Herbicide: glyphosate
Symptoms: stunting

Searchable by Herbicide and Plant Type

- ▣ For example, dicamba on almonds:

2 images matching the selected options:



Plant: almond
MoA: Synthetic auxins
Chemistry: Benzoic acid
Herbicide: dicamba
Symptoms: epinasty, growth distortion, leaf cupping, leaf curling, leaf distortion, leaf malformation, malformation, twisting



Plant: almond
MoA: Synthetic auxins
Chemistry: Benzoic acid
Herbicide: dicamba
Symptoms: epinasty, growth distortion, leaf cupping, leaf curling, leaf distortion, leaf malformation, malformation, stunting

Injured Crops

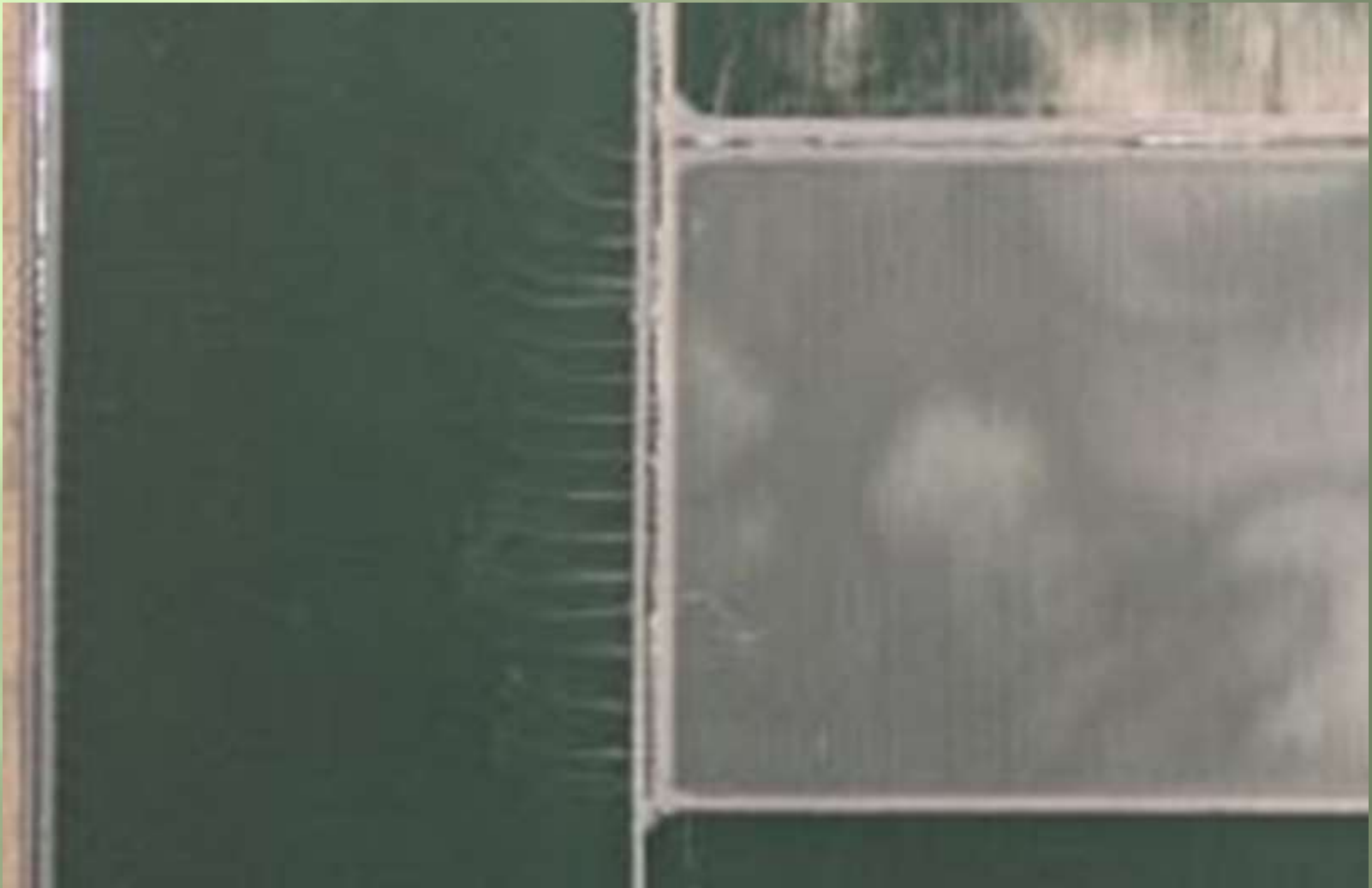








Aerial Photos of Overspray



Aerial Photos of Alleged Drift



CASE STUDY:

- ❑ Late February
- ❑ Target: Weedy fallow fields
- ❑ Roundup and Goal by airplane
- ❑ Almonds in bloom



CASE STUDY:

- ❑ Target: Weedy fallow fields
- ❑ Roundup & Goal mid-Feb
- ❑ Symptoms detected 0.5 mile from target field
- ❑ Symptom and residue gradient
- ❑ Economic loss to four almond orchards



Watch out for big jobs:

> 1 mile

Fallow Rice

Damaged
Peaches,
Mandarins,
Kiwifruit :
200 acres

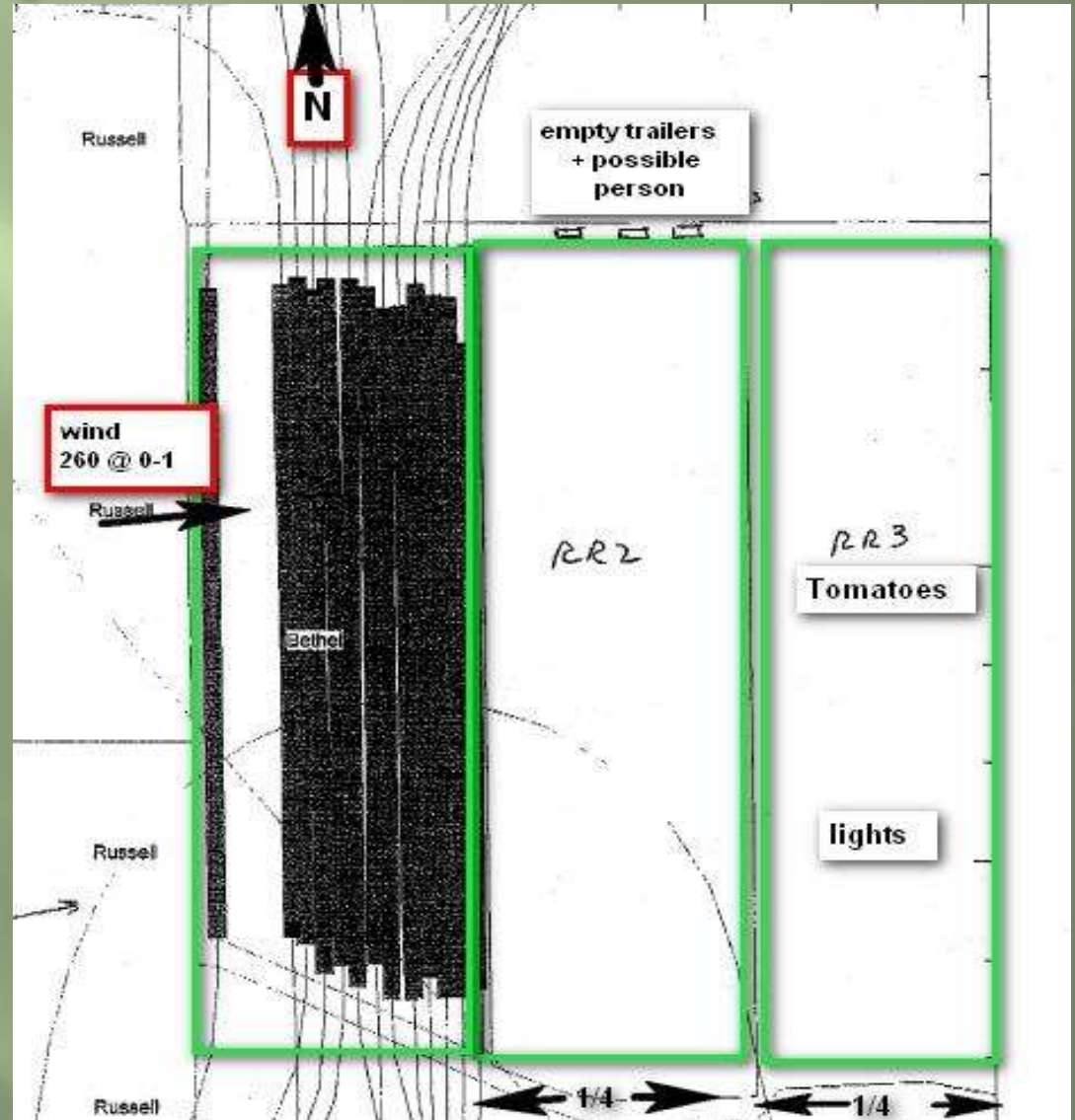
Target Fields:

- 400+ acres
- Air application in late April
- Roundup

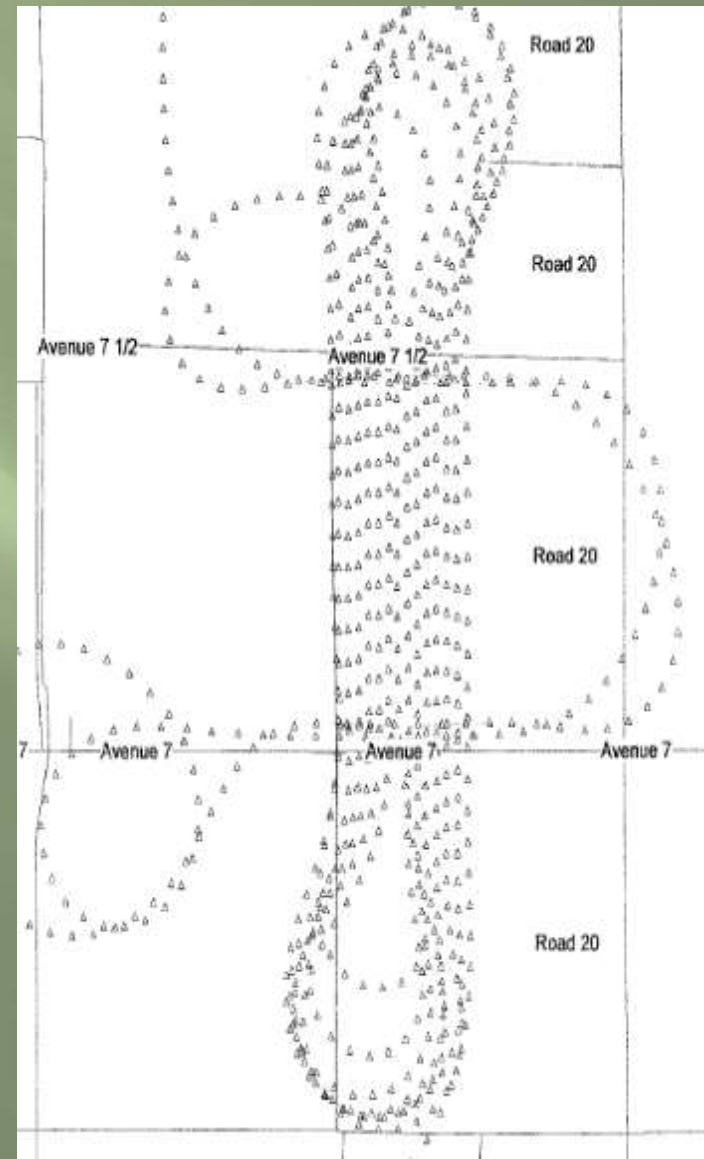
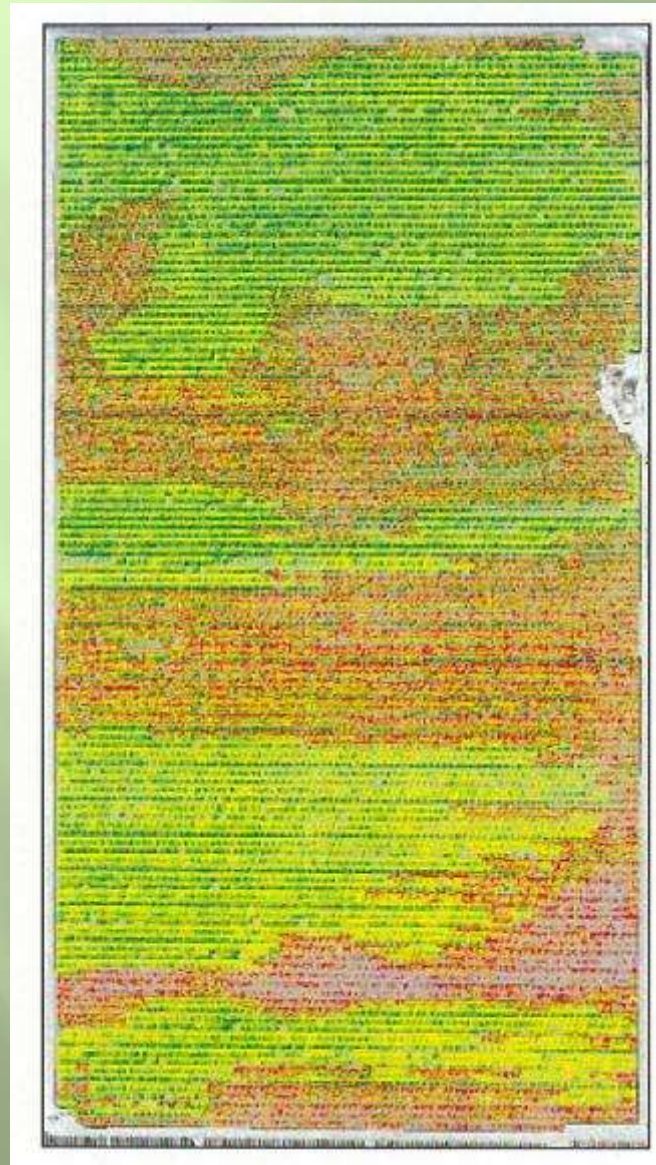
Review GPS Logs from Applicators

Exposure Not Possible--

Plaintiff testified he was adjacent to the lights in the tomatoes.



Imaging of Damage Compared to GPS

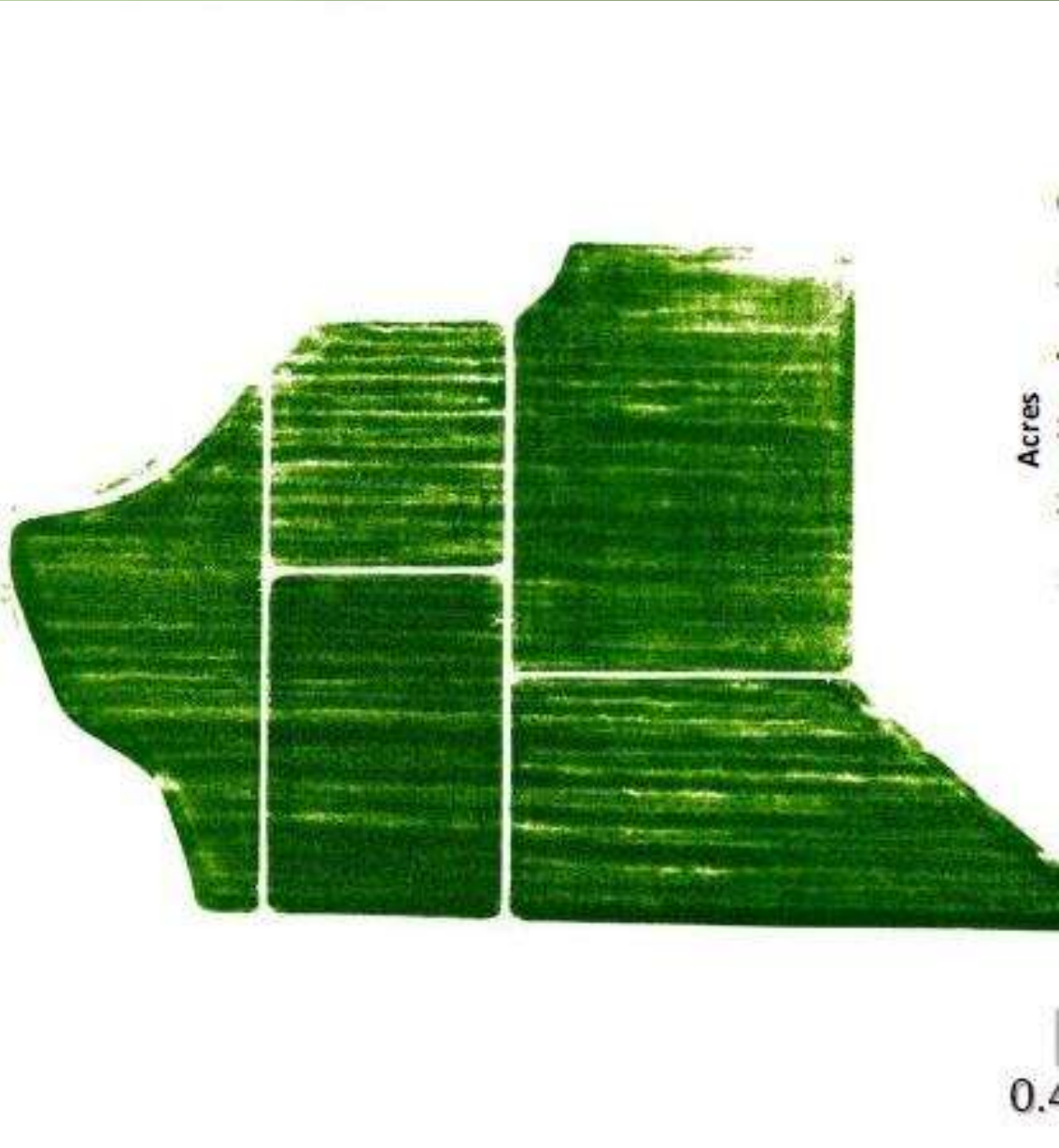


Identifying Plant Vigor Through Infrared









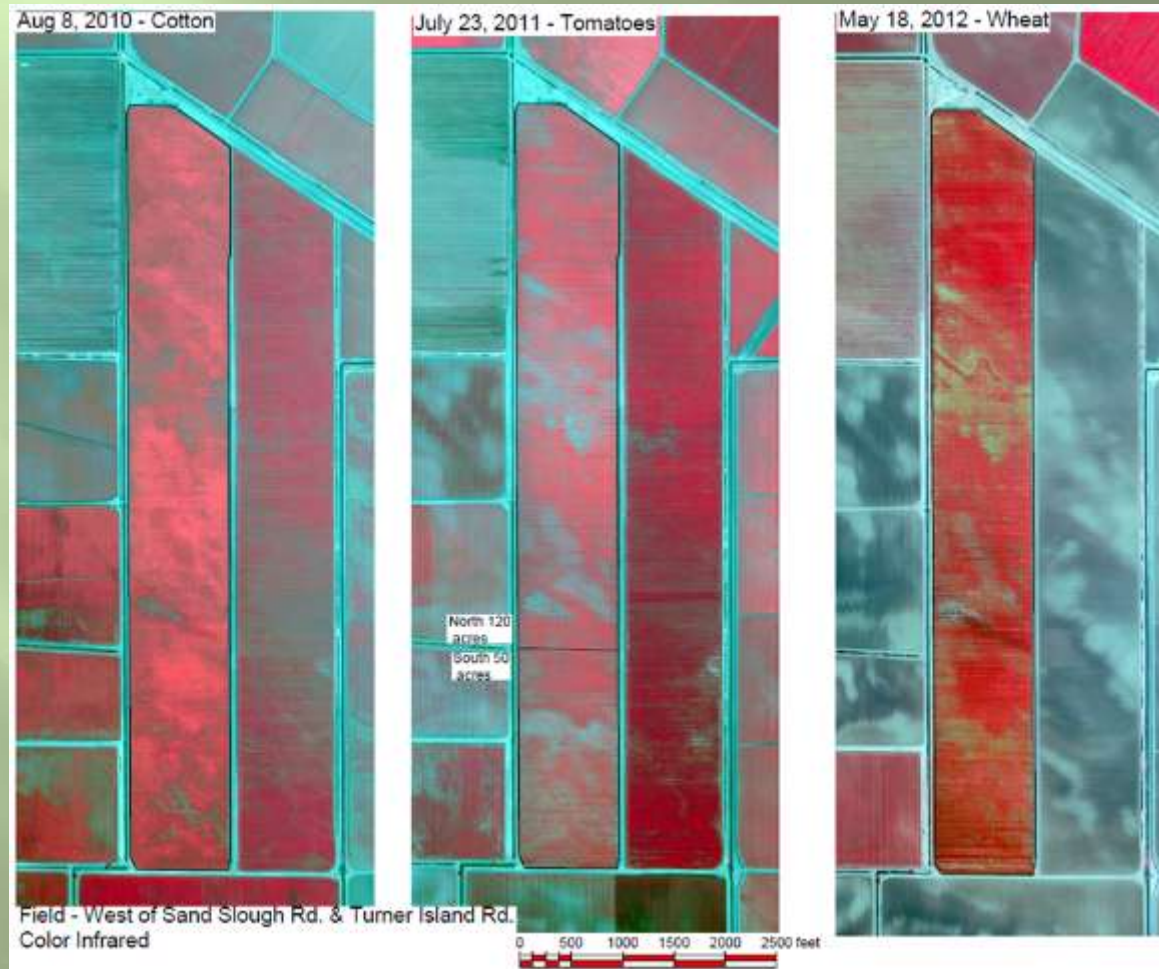
Acres

0.4

Salinity Concerns



Soil Nutrient Concerns

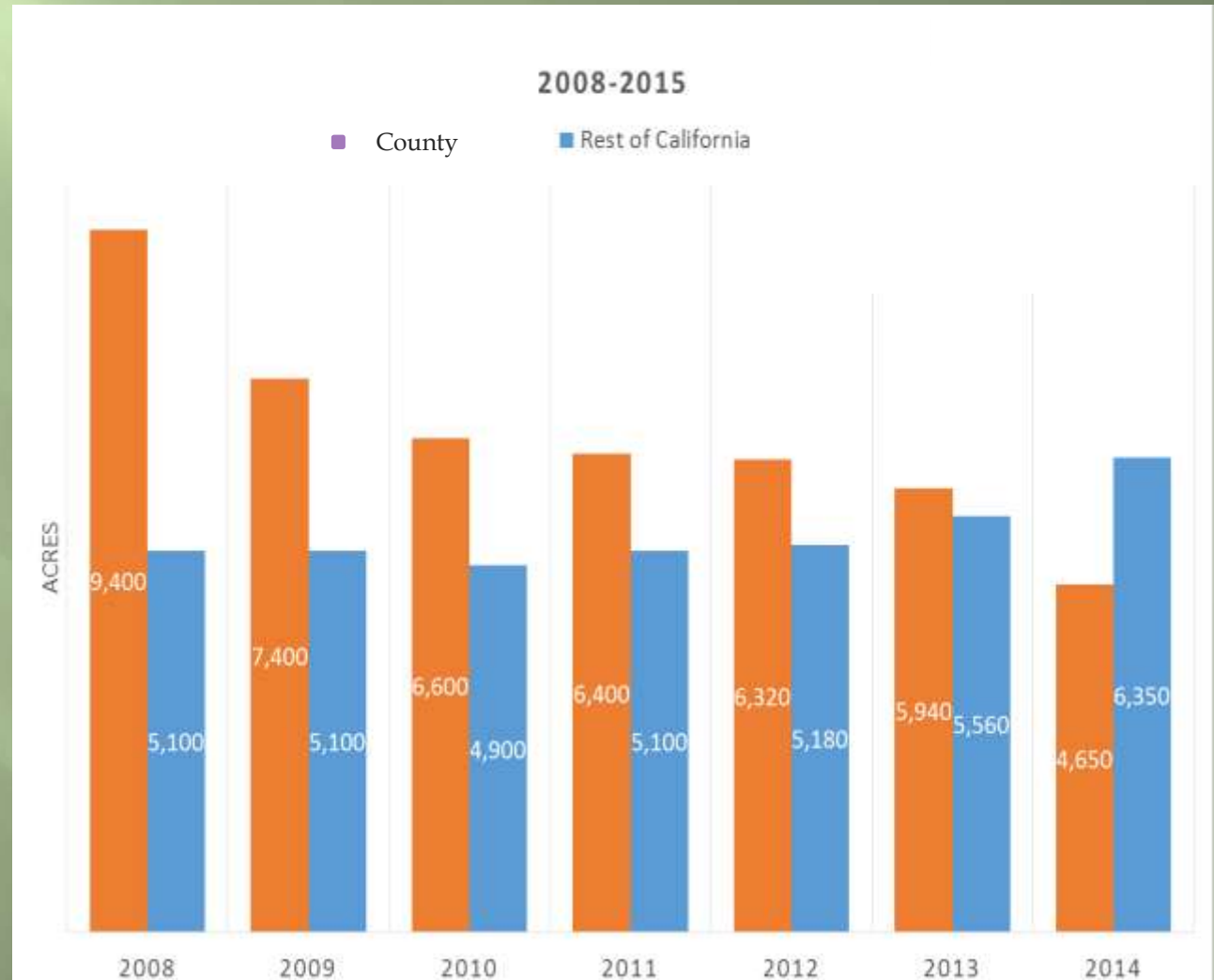


Claims Mushroom Out of Control with Time



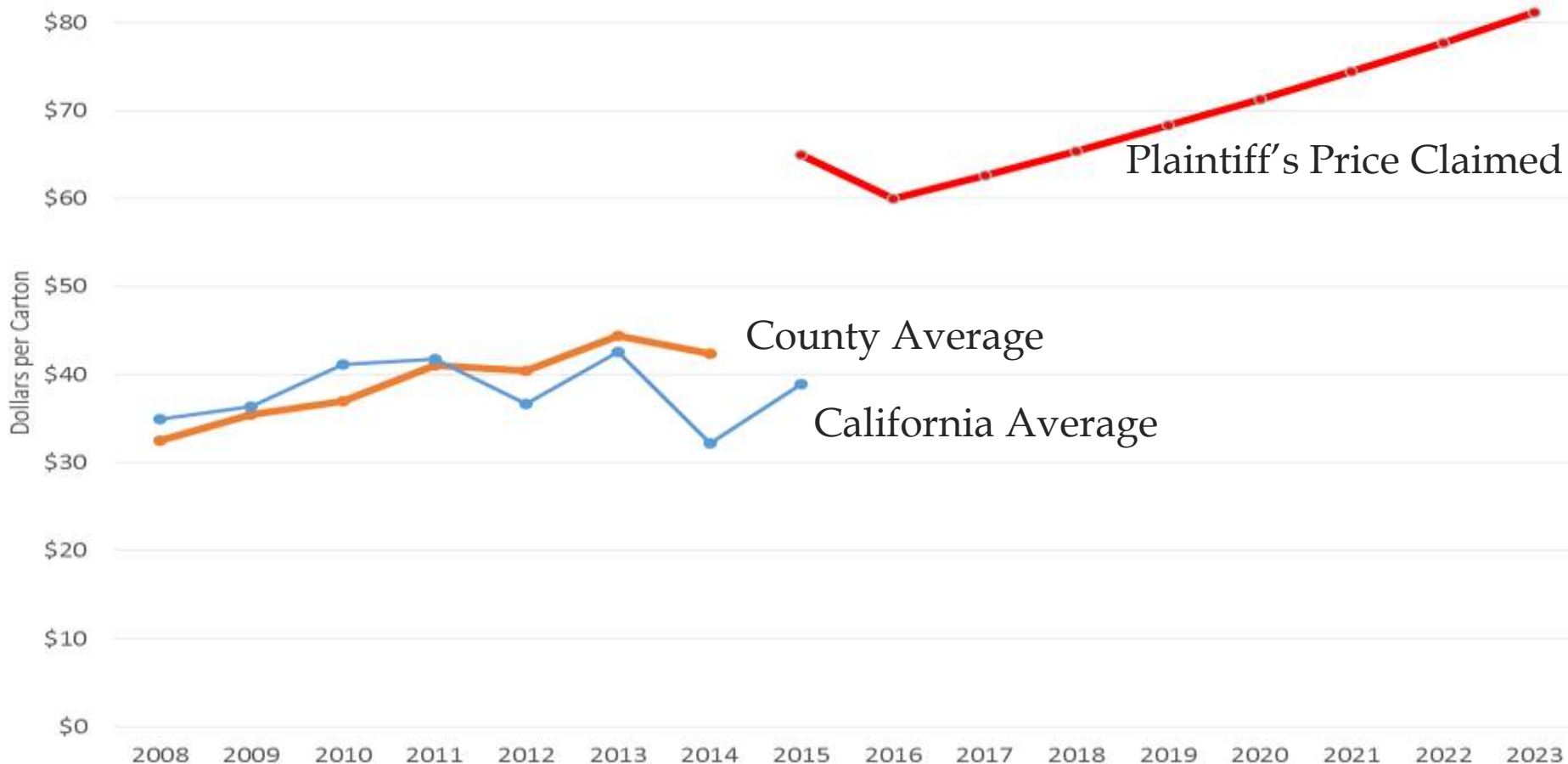
Alleged Crop Loss – Investigate State & County averages

County
production
declined
by more than
50% since 2008.

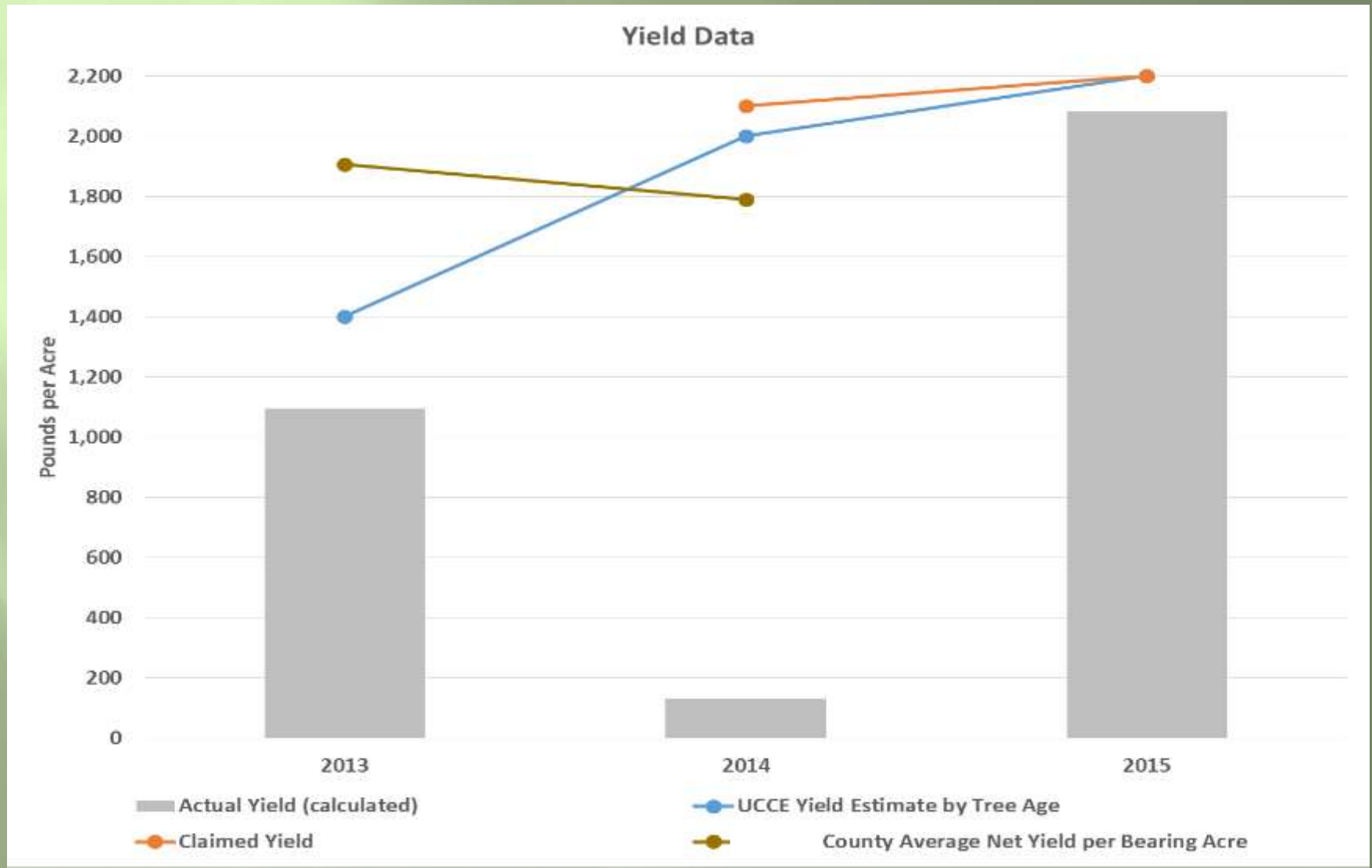


Price claimed by Plaintiff is much higher than publicly reported UCCE and County average prices

Comparison of Average Prices to Claimed Price per Carton



Plaintiff's alleged yields exceed UCCE/ County averages and ignore relatively low yield received in 2013.



Leading Causes of Liability Claims

- Weather & Wind (Environment)
 - Excessive Wind/Direction/Inversion
 - Temperature/Humidity
 - Terrain
- Equipment and Technology
 - Boom/Nozzle Type
 - Tank Contamination
 - Pressure
 - Flow Control
 - Guidance Systems
- Application
 - Delivery
 - Label Violations
 - Rate of Release/Speed
 - Formulation and Mix
 - Inappropriate application
- Buffer Zones
- Map and Boundary Issues
 - Illegible/Confusing Maps

All May Not be Lost

Mitigating Damages

