

Tracking Non-residential Pesticide Use in Urban Areas of California



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Objectives

1. Identify non-residential pesticide user groups in urban environments
2. **Examine the pesticide use trends of groups who report pesticide use**
3. Investigate the sources of information about pesticides and IPM within each user group
4. Develop recommendations on comprehensive and effective outreach approach/ strategy for urban insecticide user groups



Methods

- **DPR Pesticide Use Report (PUR) database**
 - Examined non-agricultural pesticide use data
- Interviews
- Surveys
 - Pest Management Professionals
 - UCCE Advisors
 - Pest Control Companies
 - Apartment Managers
 - Pet Groomers and Kennels
 - Cemeteries
 - Parks and Recreation Departments



Study Sites

Area of study: Sacramento, San Diego, and Orange County



Arcade Creek Watershed



Chollas Creek Watershed



San Diego Creek & Upper Newport Bay Watershed

38 sq miles

56%

25 sq miles

67%

% Residential

125 sq miles

15-20%

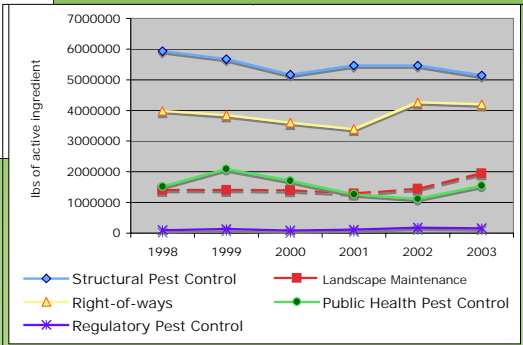
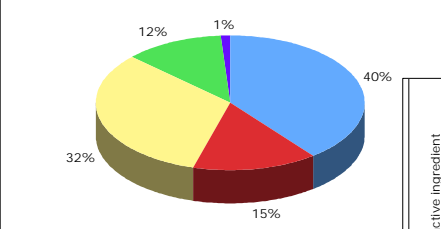
Pesticide User Groups

Groups that Report Pesticide Use:

- Structural Pest Control
- Licensed Landscape Professionals
- Public Agency Pest Control
 - Right-of-Ways
 - Public Health
 - Regulatory Pest Control



Reported Non-agricultural Pesticide Use in California



2003 Non-fumigant Insecticide Use

	Sacramento	%	San Diego	%	Orange	%
Structural Pest Control	44294	93%	206951	90%	258306	98%
Landscape Maintenance	1984	4%	22737	10%	2929	1%
Right-of-ways	207	0.4%	137	0.1%	921	0.4%
Public Health Pest Control	988	2%	142	0.1%	562	0.2%
Regulatory Pest Control	4	0.01%	401	0.2%	145	0.1%
TOTAL	47476		230369		262863	

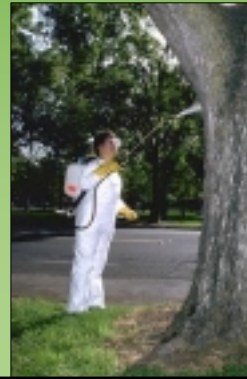
2003 Herbicide Use

	Sacramento	%	San Diego	%	Orange	%
Structural Pest Control	1394	1%	3360	2%	17	0%
Landscape Maintenance	39533	39%	58356	38%	65366	53%
Right-of-ways	56825	56%	91943	60%	58928	47%
Public Health Pest Control	39	0.04%	1	0.00%	161	0.1%
Regulatory Pest Control	4037	4%	82	0.1%	17	0.01%
TOTAL	101828		153743		124490	

Pesticide User Groups

Groups who are not licensed and generally do not report pesticide use:

- Residents who apply pesticides to their homes or landscapes
- Maintenance Gardeners (some)
- Pet Groomers/ Kennels
- Commercial
- Institutional
- Industrial
- The Department of Defense



Structural Pest Control

Non-fumigant Insecticide Use Trends

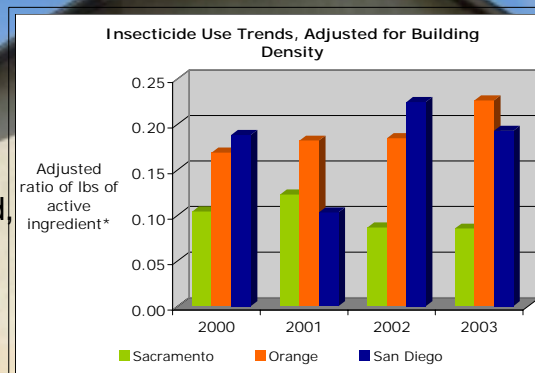
$$\text{Adjusted Pesticide Use} = \frac{\text{Total Pounds of Active Ingredient}}{\text{Housing Units} + \text{Private Non-farm Establishments with Paid Employees}}$$

% of state total use, 2003:

- 14% Orange
- 12% San Diego
- 2% Sacramento

Total lbs of a.i. applied, 2003

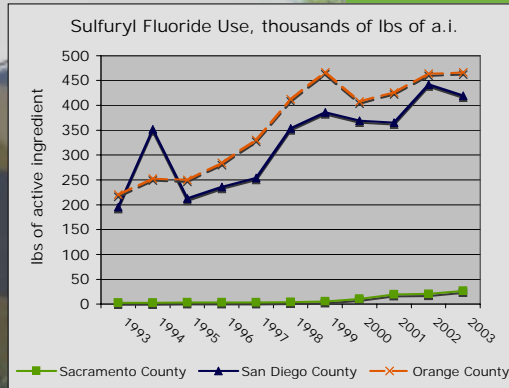
- 258,306 in Orange
- 206,951 in San Diego
- 44,294 in Sacramento



Structural Pest Control

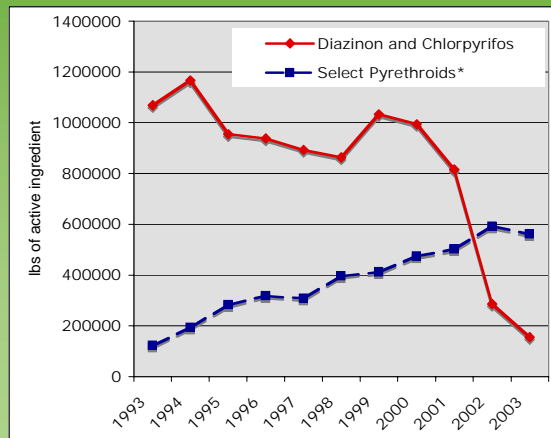
Fumigant Use Trends

- The most frequently used fumigant in California is sulfuryl fluoride
- Drywood termites + high population density in San Diego and Orange Counties = more fumigant use
- 3,106,333 lbs of a.i. of sulfuryl fluoride was applied in CA in 2003



Structural Pest Control

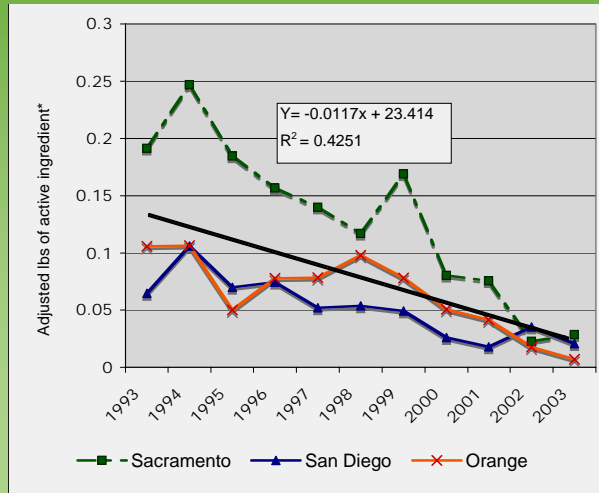
How is reported non-fumigant insecticide use changing in California?



Structural Pest Control

Diazinon and Chlorpyrifos Use Trends, adjusted for building density

The reported use of diazinon and chlorpyrifos has been steadily declining



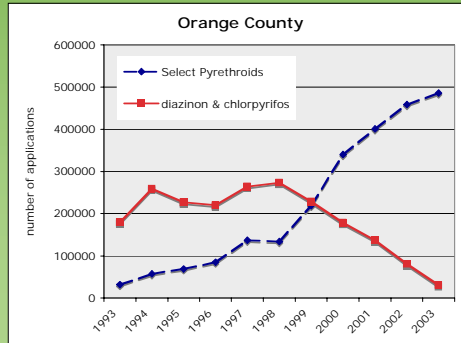
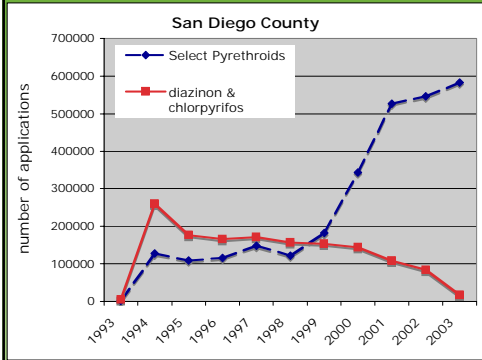
Structural Pest Control

The reported use of select pyrethroids and fipronil



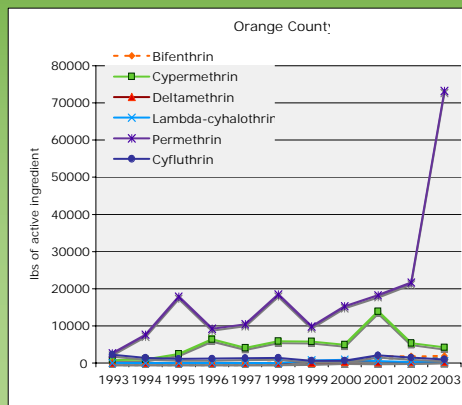
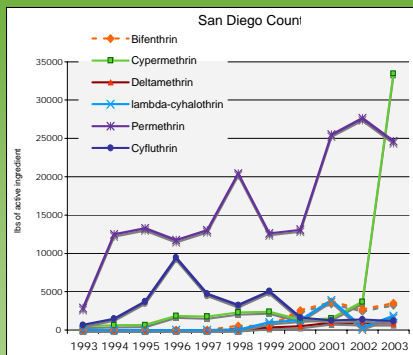
Structural Pest Control

The number of OP and pyrethroid applications



Structural Pest Control

What pyrethroids are gaining popularity?



Licensed Landscape Professionals



Who are they?

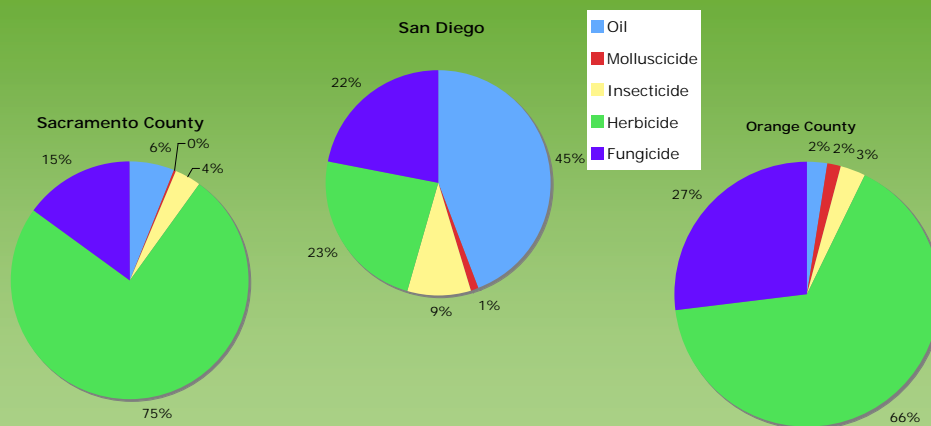
- Professional landscape maintenance companies
- Golf Course Superintendents
- Parks and Recreation Departments
- Cemetery Landscape Managers
- Sports Turf Managers
- Landscape Pest Specialists



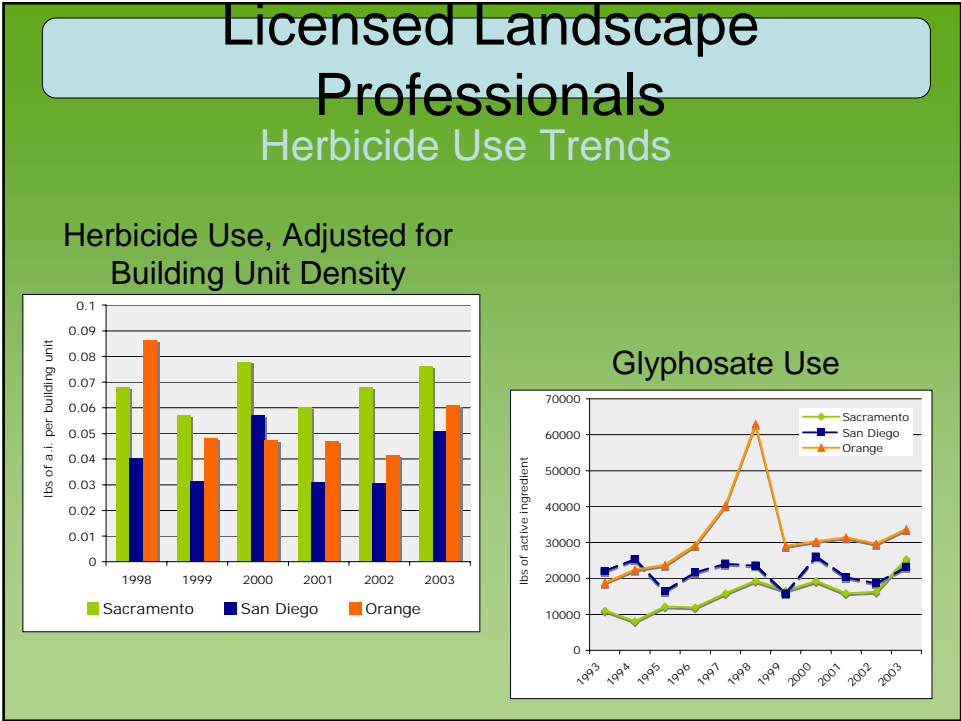
This group is reachable!

Licensed Landscape Professionals

Pesticide Use Breakdown, 2003

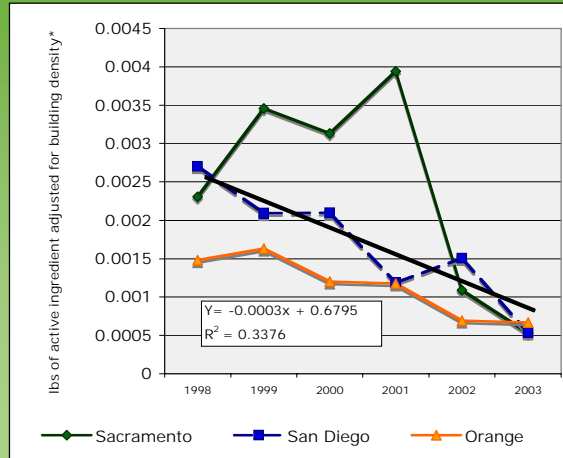


A substantial portion of pesticides applied to turf and ornamentals goes unreported in CA!



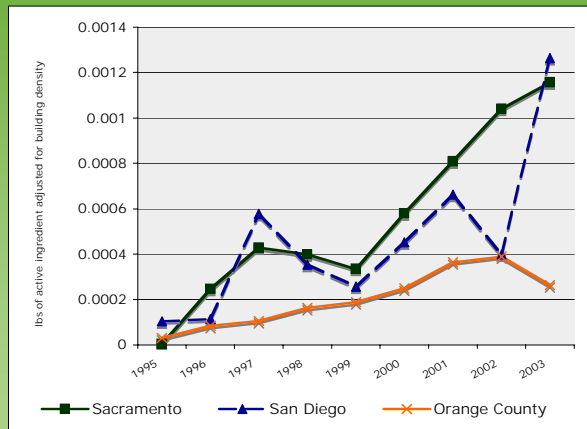
Licensed Landscape Professionals Insecticide Use

The reported use of diazinon and chlorpyrifos has been decreasing



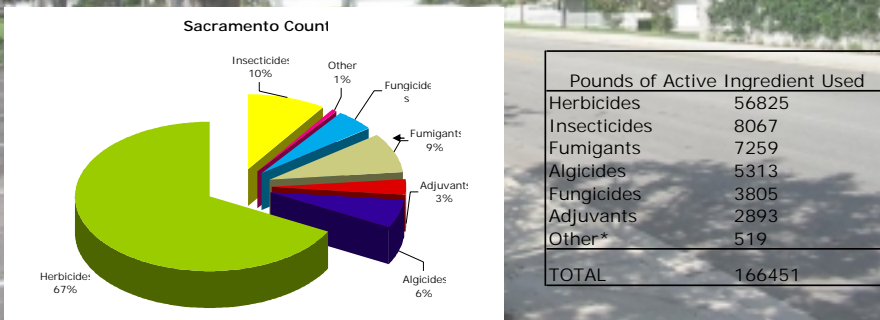
Licensed Landscape Professionals Insecticide Use

The reported use of imidacloprid has been increasing



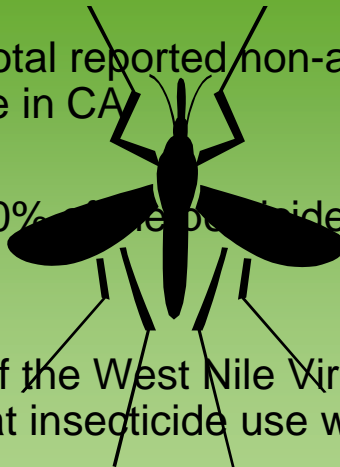
Public Agency Pest Control: Right-of-Ways

- Majority of use is herbicides (refer to 2003 data below)
- In 2003, the two most frequently applied herbicides were glyphosate and diuron



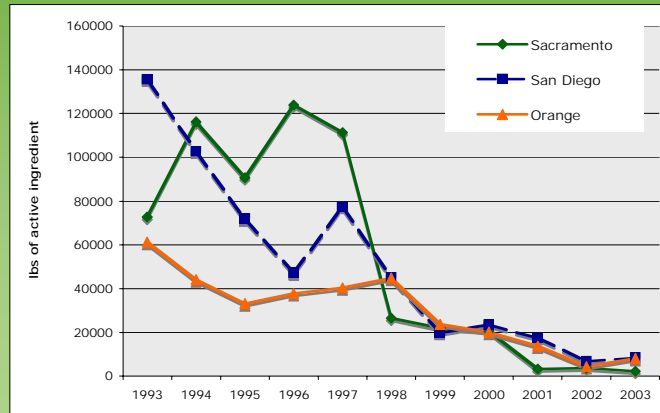
Public Agency Pest Control: Public Health

- 12% of the total reported non-agricultural pesticide use in CA
- In 2003, > 50% of the pesticides applied were oils
- As a result of the West Nile Virus, it is expected that insecticide use will increase



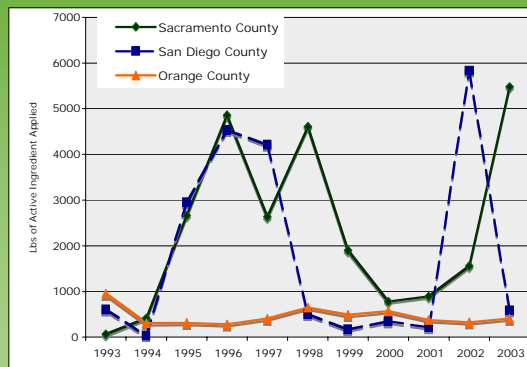
Public Agency Pest Control: Public Health

Trends in Public Health Pesticide Use (1993- 2003)



Public Agency Pest Control: Regulatory Pest Control

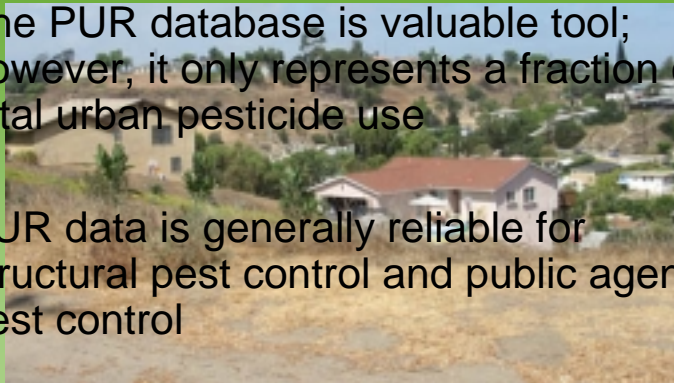
Pesticide Use Trends



Of the total non-agricultural pesticide use in CA, in 2003 only 1% was reported under this category

Conclusions

- The PUR database is a valuable tool; however, it only represents a fraction of total urban pesticide use
- PUR data is generally reliable for structural pest control and public agency pest control
- Structural pest control accounts for over 90% of the total reported insecticide use



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Urban Insecticide Users Outreach
Strategy Development Study

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THANK YOU

Report will be available this spring on
DPR's website: <http://www.cdpr.ca.gov>

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