

Identifying Urban Pesticide Use Trends using PUR



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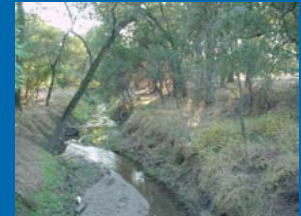
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Objectives



1. Identify urban non-residential pesticide user groups.
2. Examine the primary pesticide use trends within each user group.
3. Compare use trends among counties.
4. Develop methods to identify use report data gaps

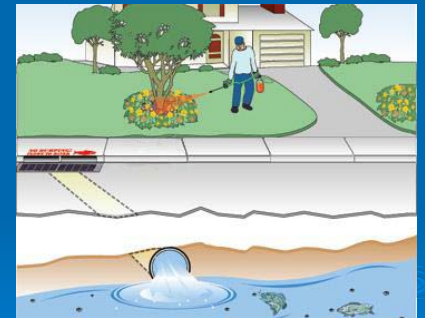
Methods: PUR Analysis

- Data source: pesticide use report database (PUR)
- Time frame: 1993-2002
- PUR-GIS application on ArcView
- Study sites: Sacramento, San Diego, and Orange Counties



Major groups reporting pesticide use in urban areas

- Structural pest control
- Landscape maintenance
- Rights-of-way
- Public Health Pest Control
- Regulatory Pest Control



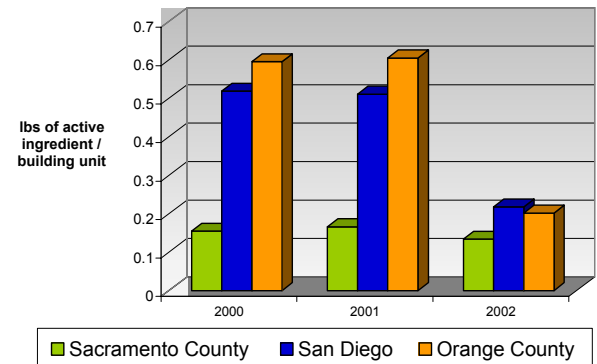
Structural Pest Control

- Definition
- Data quality
- Accounting for the greatest percentage of pesticide use.
 - Over 90% of the total insecticide use, including fumigants
 - In 2002, accounted for 98% of the total urban insecticide use in Orange County.



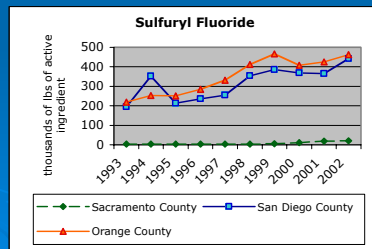
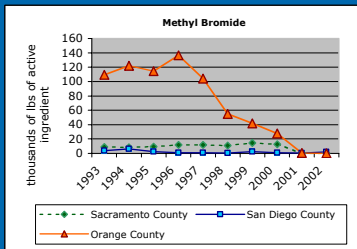
Structural Pest Control

Structural Pest Control: The rate of insecticide use per housing unit plus private nonfarm business establishment (2000 census)





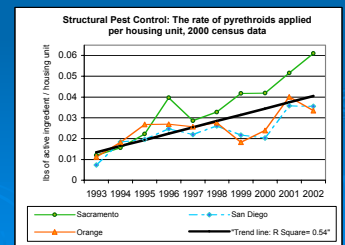
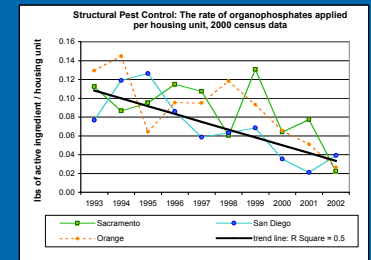
Structural Pest Control: trends in fumigant use



Structural Pest Control

➤ Insecticides used for localized treatments include:

- pyrethroids
- organophosphates
- Imidacloprid
- liquid nitrogen
- disodium octaborate tetrahydrate.

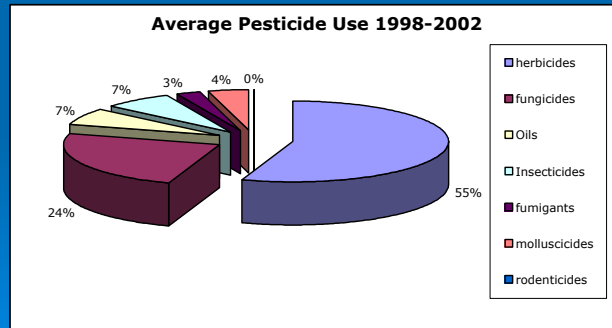


➤ Structural pest control operators are shifting away from using diazinon and chlorpyrifos toward pyrethroid insecticides.



Landscape Maintenance

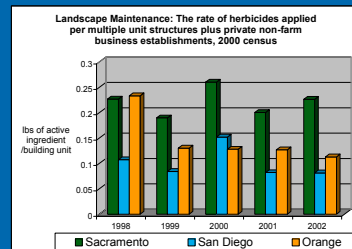
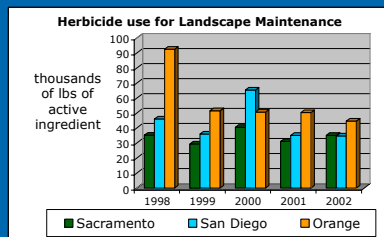
- Definition
- PUR data only represents a fraction of the overall use.



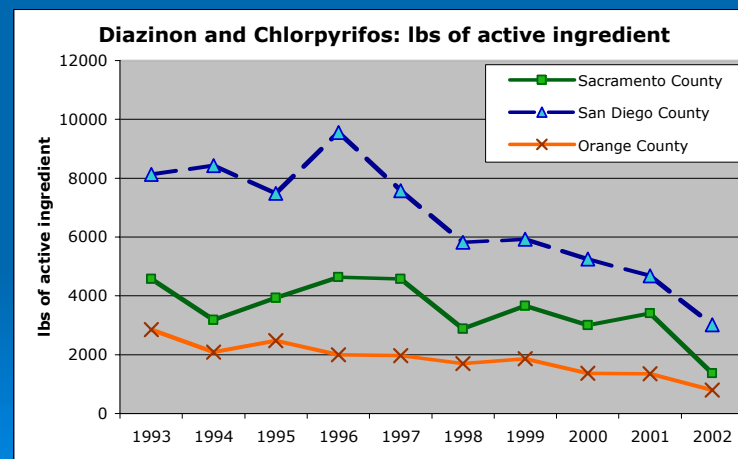
Landscape Maintenance: Pesticide use in 2002

	Sacramento		San Diego		Orange	
herbicides	35166	74%	34810	34%	44677	52%
fungicides	6836	14%	39024	39%	29609	35%
Oils	3344	7%	6994	7%	3073	4%
Insecticides	2280	5%	16777	17%	3041	4%
fumigants	22	0.05%	1468	1%	3006	4%
molluscicides	49	0.1%	2056	2%	1964	2%
rodenticides	2	0.005%	67	0.1%	107	0.1%
TOTAL	47699		101195		85476	

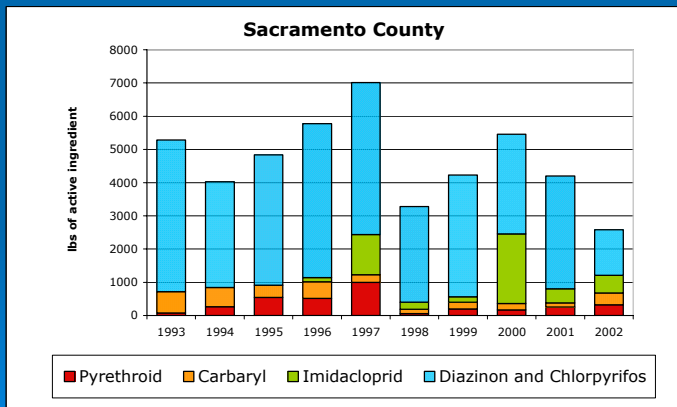
Landscape Maintenance: herbicide use



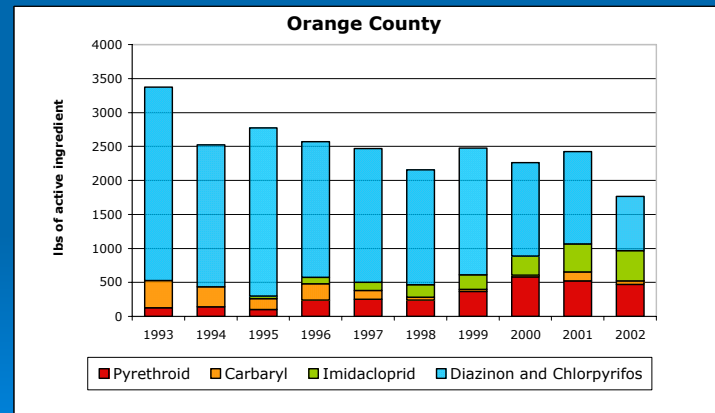
Landscape Maintenance



Landscape Maintenance: insecticides used 1993- 2002



Landscape Maintenance: insecticides used 1993- 2002



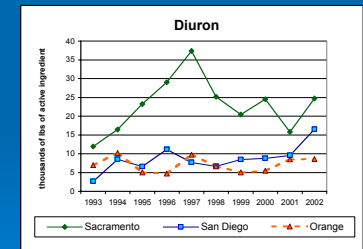
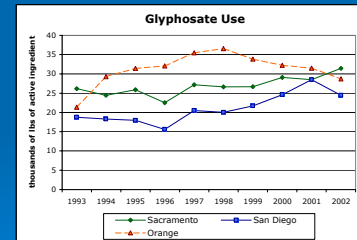
Rights-of-way



- Pesticides are applied to control pests near and around impervious surfaces.
 - Federal, state, county, and township highways and roads
 - Electric utilities including substations, switching stations, transmission lines, and distribution lines
 - Pipelines (including pumping stations)
 - Public surface drainageways
 - Railroads
 - Public irrigation waterways
 - Banks of public bargeways and areas around locks and dams
 - Parking lots
 - Cell phone towers
 - Bike trails and other public paths outside of recreational areas
 - Flood control sites

Rights-of-way: herbicide use

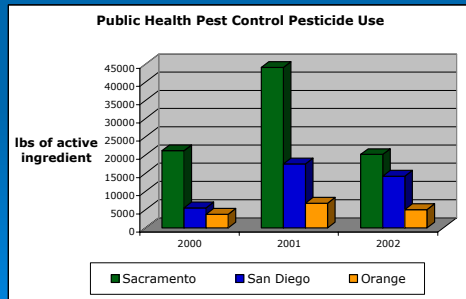
2002			
	Sacramento	San Diego	Orange
Glyphosate	43%	34%	82%
Diuron	34%	34%	8%



Public Health Pest Control

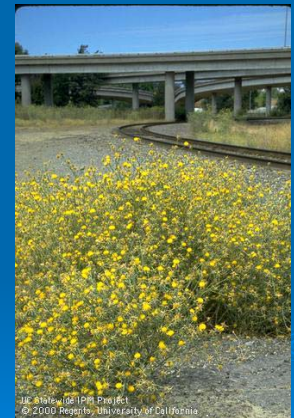


- Definition
- Accounts for less than 1% of total insecticide use
- Most insecticides are used for mosquito abatement
- Some herbicide use



Regulatory Pest Control

- Definition
- Control against invasive species
- Includes urban and rural
- Less than 1% of the total insecticides used
- Most herbicide use consists of glyphosate and 2,4-D



Identifying use report data gaps

➤ Survey :

- groups that do not report use
 - landscape businesses
 - Maintenance or operations staff
 - Kennels and pet groomers
 - Teachers and school janitors
- UC Cooperative Extension
- Landscape maintenance professionals
- Structural pest control operators
- Caltrans
- other

Next steps...



- Survey urban pesticide users to find out:
 - Pesticide use practices
 - Disposal practices
 - Where they get information about how to manage pests
 - How to disseminate information about IPM and water quality protection.