



IPM and Water Quality

Cheryl Wilen

UCCE/UC IPM

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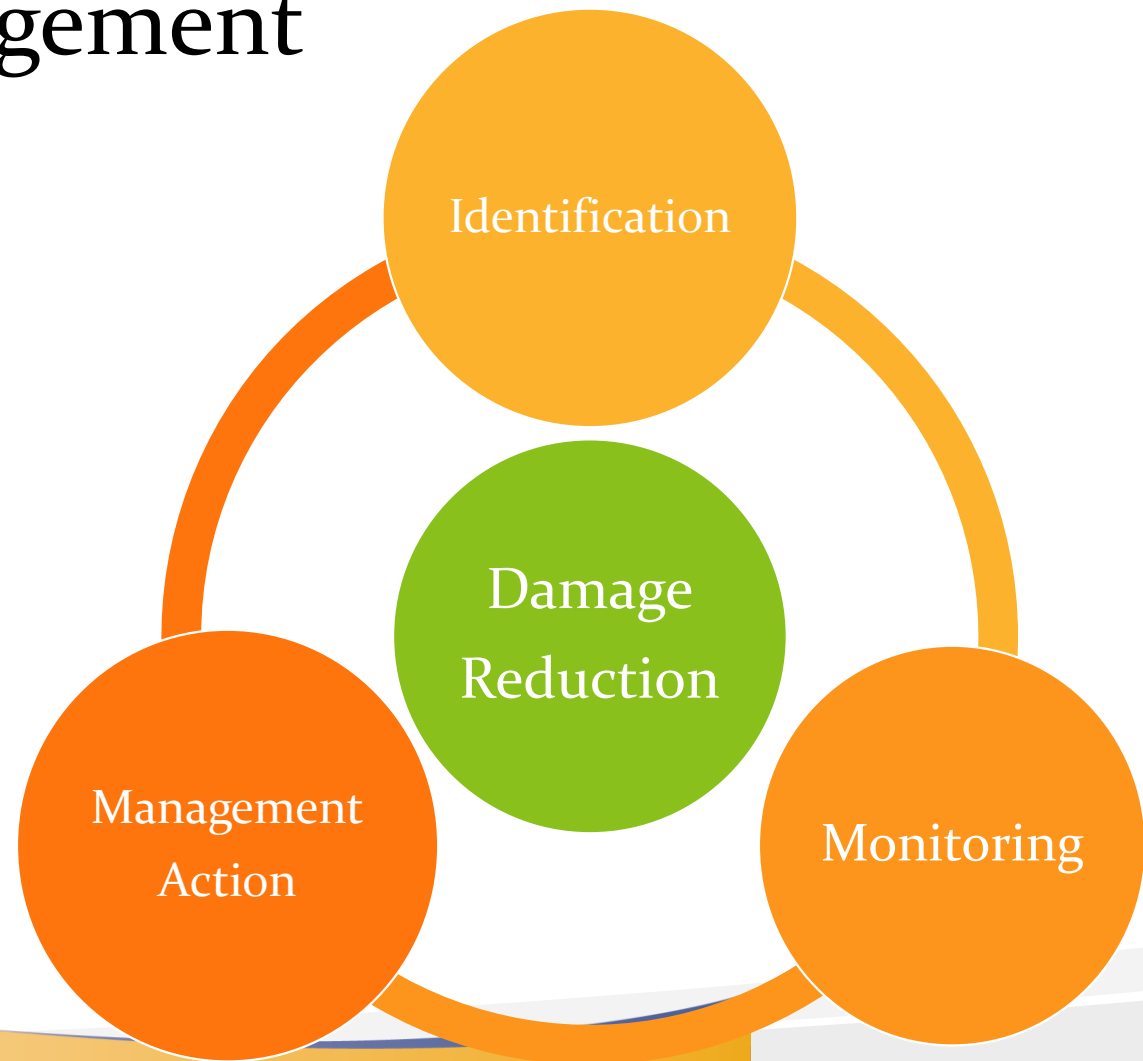
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Agriculture and Natural Resources



Integrated Pest Management

- Combination of methods
- Thresholds
- Conserve beneficials
- Ecosystem based



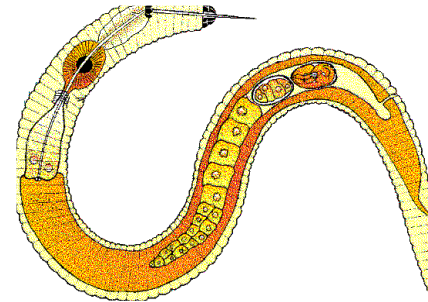
Management and Pests



Irrigation



Fertilizer



Nematodes



Insects



Plant
Pathogens



Weeds



Vertebrates



What is the idea behind IPM?

- Prevents problems
- Based on knowledge of pest, biology, and habitat
- Combine practices for long-term management
- Don't spray just because you see a pest
- Uses least-toxic methods to protect people and environment



IPM tools and techniques



<http://whp.altervista.org/horses.php>

- ✓ Prevention
- ✓ Cultural practices
- ✓ Physical/mechanical
- ✓ Biological control
- ✓ Pesticides, if needed

When are pesticides needed?



- When pests are causing intolerable damage
- Nonchemical methods aren't effective

How to know?

- Identify your pest
- Assess the problem
- Research and consider alternatives



Pesticide Use

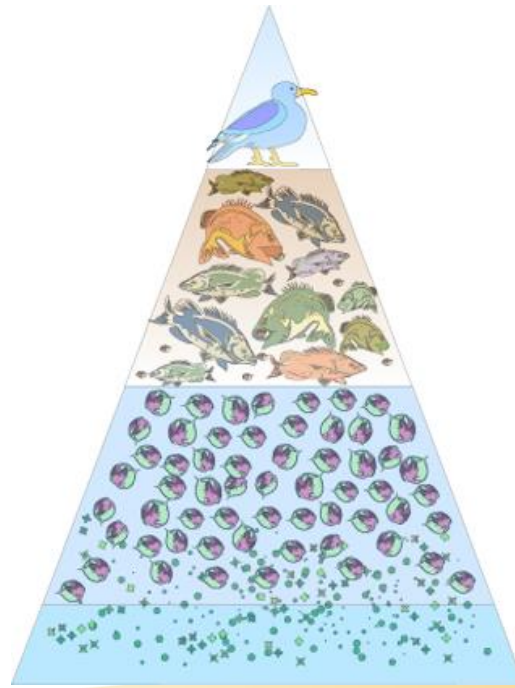
Pesticides should be used in combination with non-chemical methods.

When other non-chemical methods are used first, pesticides are often not needed or are reduced.



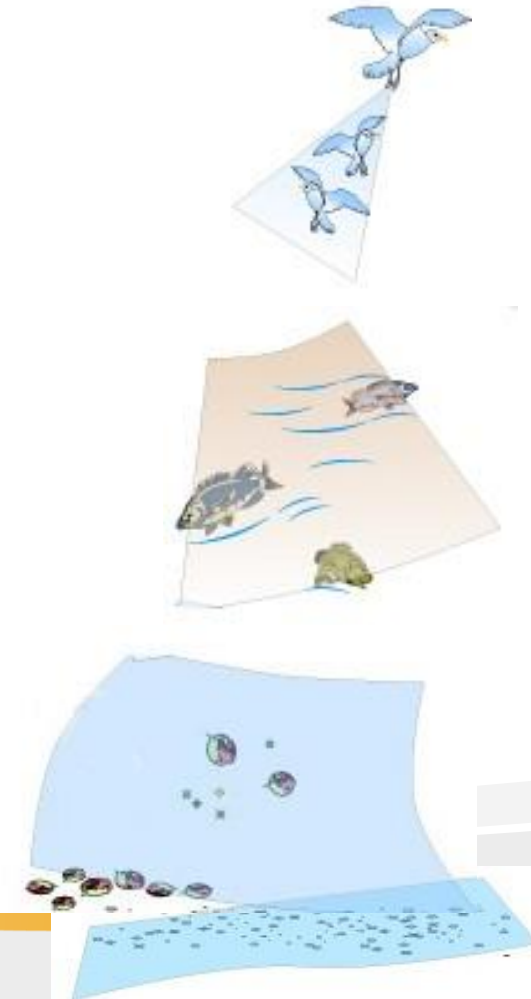
How do pesticides affect water quality?

- Many are found at levels above concentrations lethal to aquatic invertebrates or aquatic plants (phytoplankton)



Fewer phytoplankton means fewer food sources

**Phytoplankton,
base of the
aquatic food web**



If applied incorrectly, pesticides can have toxic affects on non-target organisms.



•Children



•Pets



•Beneficial Insects

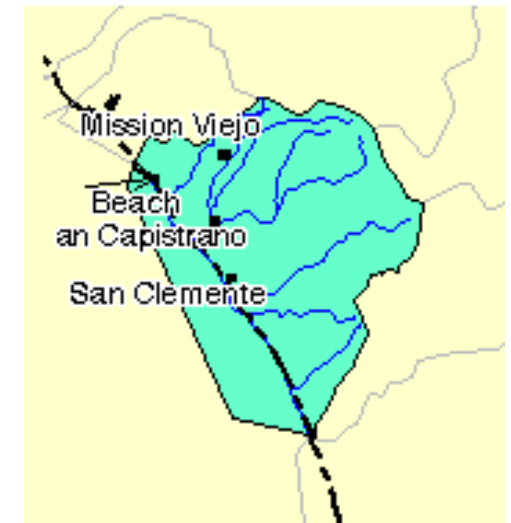


•Plants

UC Statewide IPM Project
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Our Watershed Provides Water Resources

- Municipal & Domestic Water Supply
- Recreation
- Wildlife and Estuarine Habitat



Aliso-San Onofre Watershed



Why is this not good?



How do pesticides get into waterways?

- ✦ Washed off of soil or treated plants by rain or irrigation
- ✦ Moved away from the site of application over the soil surface and carried in runoff down streets, through gutters, and into storm drains
- ✦ In storm drains, they flow through pipes into streams, rivers, lakes



Environmental conditions that affect movement

Runoff is likely

- ✦ When it rains
- ✦ If the area is irrigated soon after an application
- ✦ If the area treated is on a slope

Leaching is likely

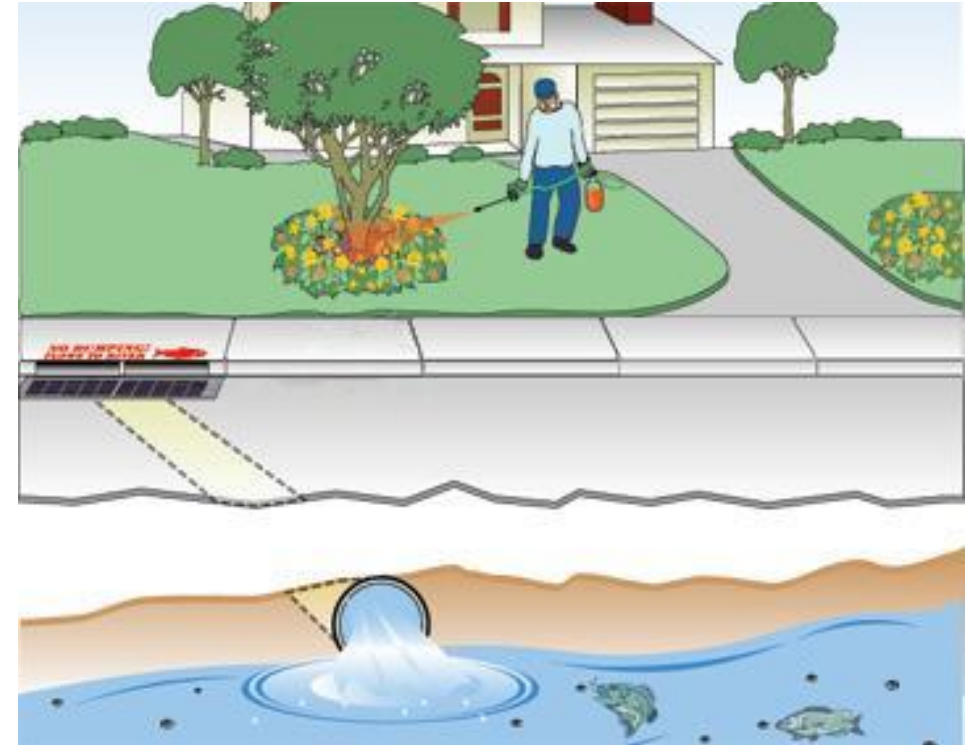
- ✦ When a site is overwatered

The environmental conditions, properties of pesticides, and soil type all affect the extent of runoff and leaching

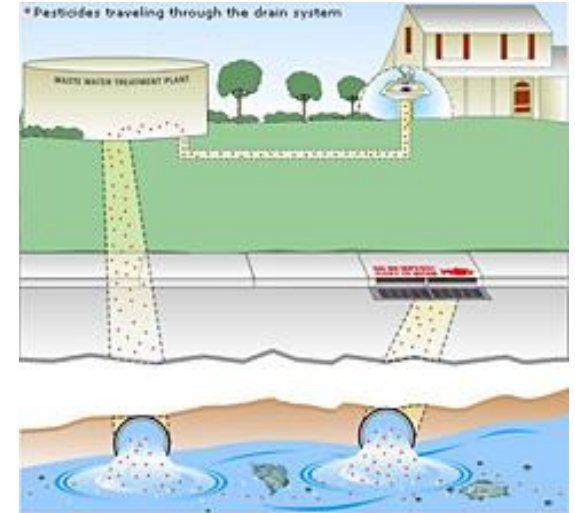
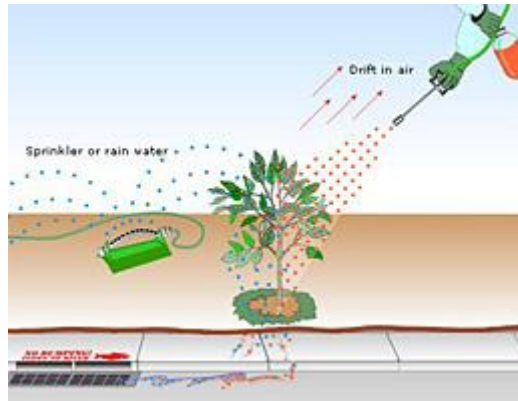


Why Should I Care?

- Landscaping practices and pest control methods can impact water quality
- Pesticides are a leading contributors to water pollution in Orange County
- Chemicals and nutrients found in pesticides and fertilizers are harmful or lethal to organisms that live downstream



IPM Helps Improve Water Quality



IPM.UCANR.EDU

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UC IPM

Statewide Integrated Pest Management Program

What is IPM? Identify & Manage Pests Research Publications Training & Events Links About Us Contact Us Subscribe

Solve your pest problems with UC's best science


What's New

- **Pest Alert!** [Huanglongbing found in Riverside](#)
- **Highlights:** [2016 Annual Report](#)
- [Strategic plan 2015-2025](#)
- **Ag Pest Management:** [Walnut and Lettuce revised](#), [Prune, Plum, Pistachio, Cherry, Asparagus, Apricot, and Grape updated](#)
- **Retail Nursery & Garden Center IPM Newsletter:** [Summer 2017](#)
- **Pest Notes:** [Dyer's Wood added](#), [Woody Weed Invaders](#), [Invasive Plants and Widow Spiders and Their Relatives updated](#)
- [More...](#)


QUICK LINKS

- Newsletters
- Recursos en español
- Online training
- Weather, models, & degree-days

Home, Garden, Turf & Landscape Pests



Agricultural Pests



Natural Environment Pests



Exotic & Invasive Pests



- ### ON THIS SITE
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