



California Department of Pesticide Regulation Surface Water Protection Program

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SWRCB & RWQCB

DPR

Federal



Clean Water
Act

FIFRA

State



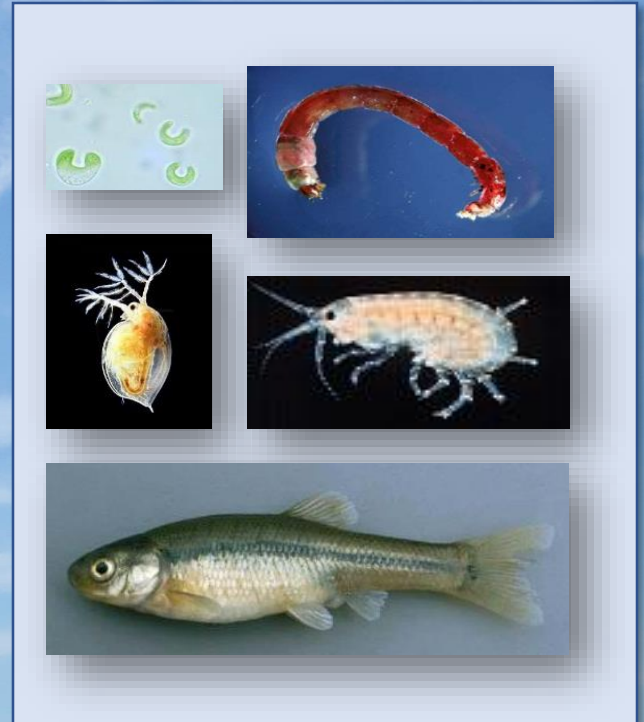
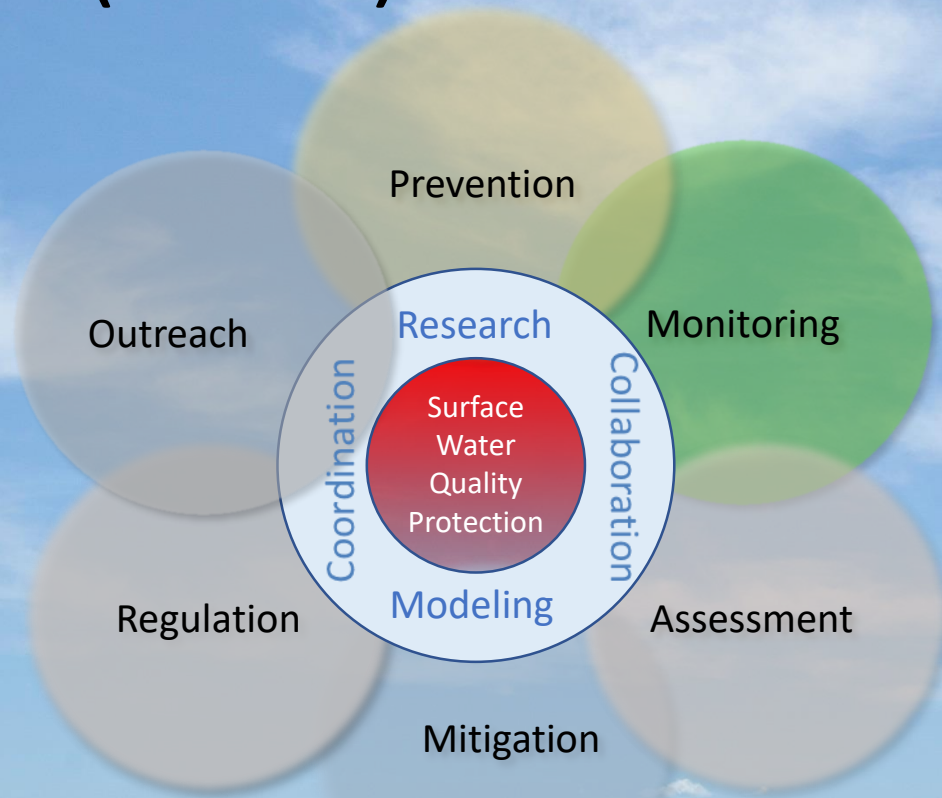
Porter-
Cologne

Food and
Agricultural
Code

Pesticide
Discharge

Pesticide Use

Surface Water Protection Program (SWPP)



Prevention: Pesticide Registration

Products 1st registered with US EPA

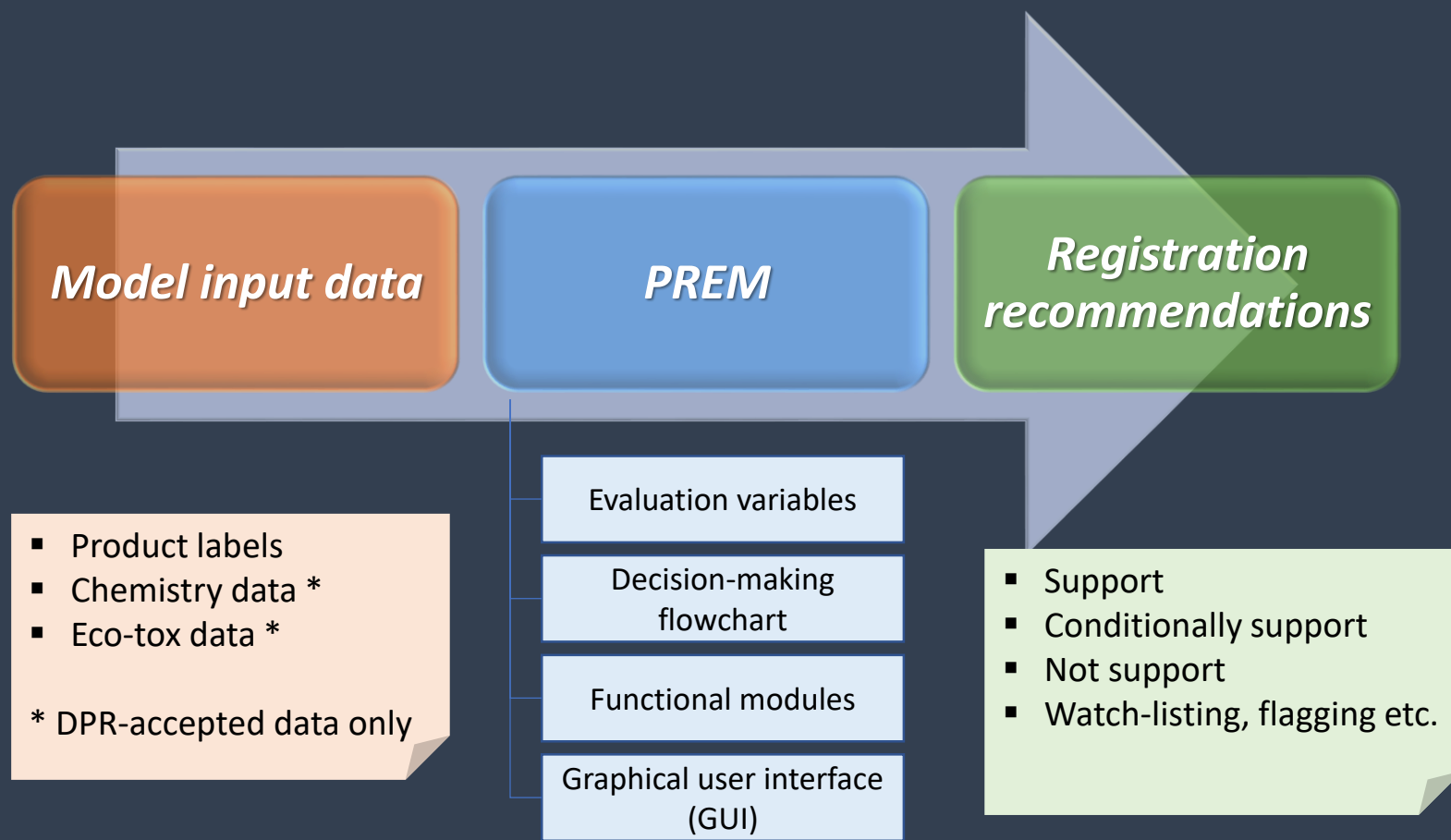
Surface Water evaluates products that pose a risk to surface water using expert judgement supported by modeling where possible.




*Examples ONLY - DPR does not endorse any product

Burden of proof for safe use lies with registrants prior to registration

Overview of Pesticide Registration Evaluation Model



Pesticide Registration Evaluation Model

$$RQ = \frac{EEC}{TOX}$$


- “Estimated Environmental Concentration”

- USEPA models (PRZM, VVWM, PFAM)
- USEPA modeling scenarios for agricultural pesticide uses
- SWPP development for
 - Urban outdoor uses
 - Pesticide degradates
 - California receiving water
 - Wastewater Effluent

- “TOX” determination

- Generally, =min(all available acute data)

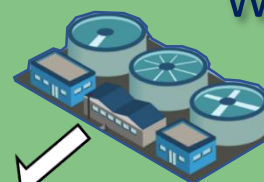
~1990

Agriculture
Runoff



Urban
Stormwater &
Irrigation Runoff

2008



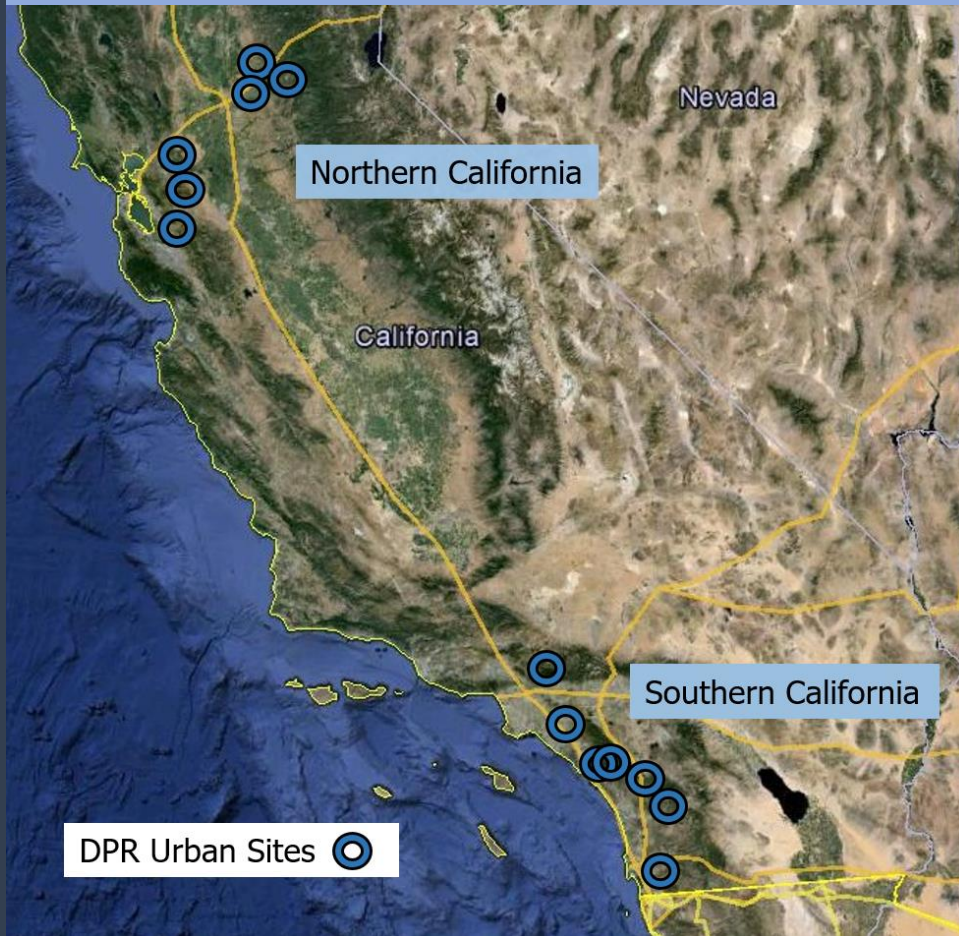
Wastewater
Effluent

2019

California Department of Pesticide Regulation
Surface Water Protection Program
Monitoring Efforts

Urban Monitoring

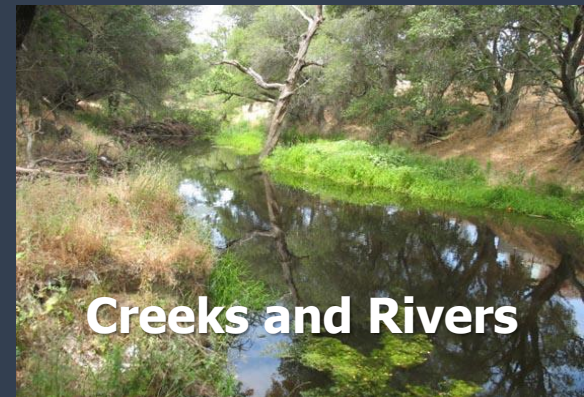
NorCal – 11 sites | SoCal – 15 sites



Google Earth, 2017

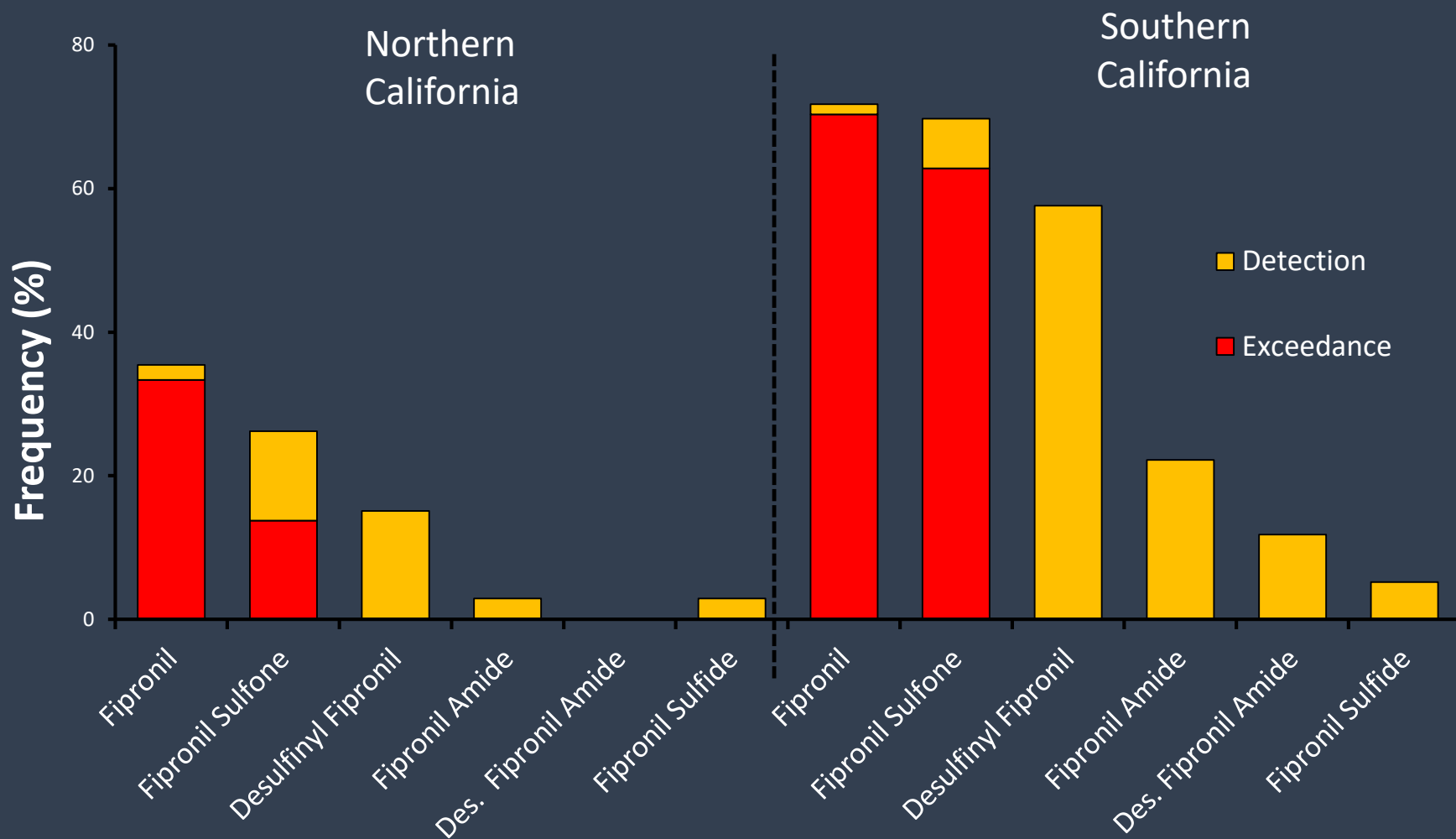


Drains neighborhood runoff
Info on pesticide sources



Waterbodies w/ aquatic organisms
Channelized or natural

Model supported analytical selection



Fipronil Chronic BM = 11 ng/L

Fipronil Sulfone Chronic BM = 37 ng/L

Old Fipronil Labels

1'

0.06%

APPLY to
driveway
and garage!

- 2x a year
- No restriction during rainy seasons

RUNOFF TRIALS



Ant population =
efficacy

% Fipronil Lost in
Runoff



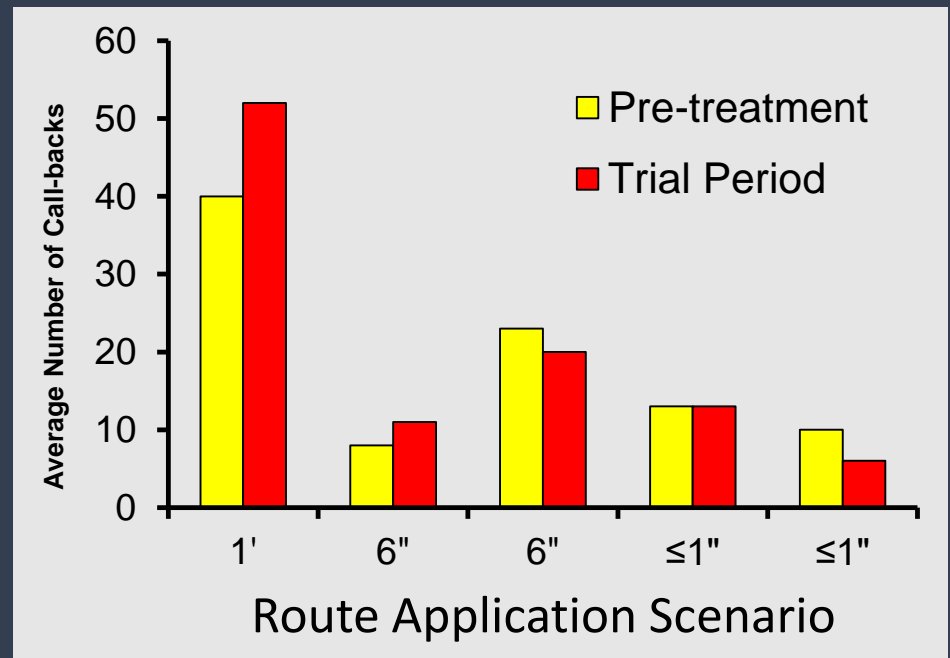
All treatments = efficacious

Pin stream gave variable
concentrations in runoff.

EFFICACY TRIALS

Contracted with PCOs

No change in number of callbacks



EFFICACY IS THE SAME

Has it worked?

New Fipronil Labels

6"

0.03%

No Applications

Models predict an 89% reduction in
estimated concentrations

Apply

60 days

Apply

60 days

Apply

60 days

Apply

No Applications

March

April

May

June

July

Aug

Sept

Oct

Nov

Dec

Jan

Feb



Wastewater Monitoring

Monitoring Goals

- Spatial coverage
- Establish temporal trends

Current Study Participants

- 25+ Plants currently participating
- Predominantly in urban centers



Potential Concentrated Sources of Pesticides to Wastewater



Pest Control Operators



Laundromat/ Professional Laundry



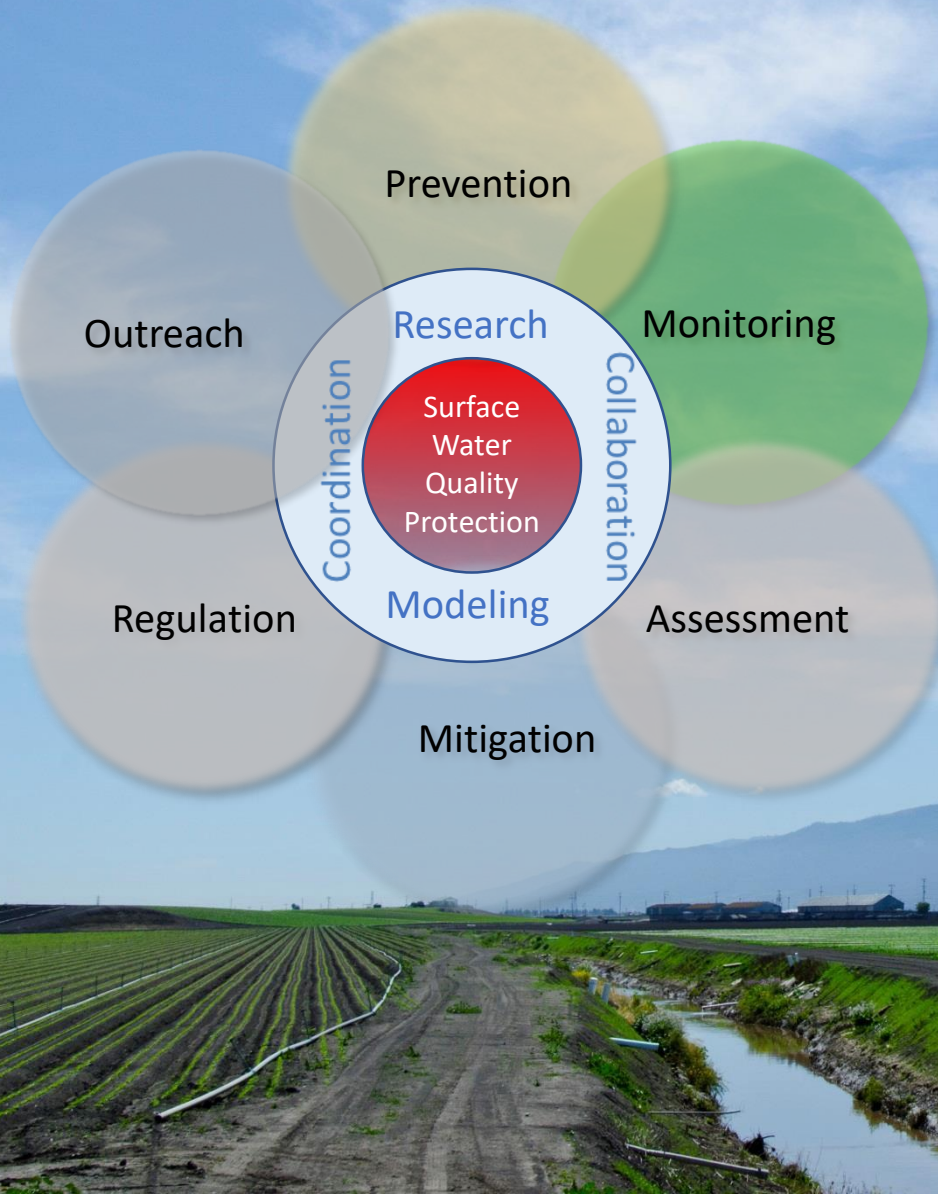
Pet Grooming/Boarding



Nurseries

Ubiquitous versus concentrated sources

Summary



Relatively more environmental fate and toxicity data available for pesticides than general CECs.

Registration is a preventative tool

Monitoring data can help us with:

- Continuous evaluation
- Assessing mitigation/regulation