

# OPP Results Indicators

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# EPA Strategic Plan 2003 - 2008

- Goal 4 Healthy Communities and Ecosystems:
  - Protect, sustain, or restore the health of people, communities, and ecosystems using integrated and comprehensive approaches and partnerships



# EPA Strategic Plan 2003 - 2008

- Objective 4.1. Chemical, Organism and Pesticide Risks
  - Prevent and reduce pesticide, chemical, and genetically engineered biological organism risks to humans, communities, and ecosystems
  - Sub-objective 4.1.1. Reduce Exposure to Toxic Pesticides
    - Through 2008, protect human health, communities, and ecosystems from pesticide use by reducing exposure to the pesticides posing the greatest risk
  - Sub-objective 4.1.2. License Pesticides Meeting Safety Standards
    - Through 2008, protect human health, communities, and ecosystems from pests and disease by ensuring the availability of pesticides, including public health pesticides and antimicrobial products, that meet the latest safety standards



# What Do These Sub-Objectives Relate To?

- 4.1.1 - Ensuring safety of existing pesticides in the marketplace
- 4.1.2 - Ensuring safety and availability of new pesticides



# New EPA Strategic Plan

- New workgroup starting FY06
- Public process

# OPP Activities

Existing pesticides in the marketplace:  
Minimize/prevent adverse effects

- Reregistration/Tolerance reassessment
  - Risk assessment and risk management
- Communication
  - Information, education, outreach
- Field infrastructure for safe use
  - Worker protection training, certification and training, stewardship

# OPP Activities

New pesticides: License pesticides to allow the benefits of pest and disease control - economic, structural, food safety and availability, health protection

- Registration: New active ingredients, new uses, new products
  - Risk assessment and risk management
- Section 18 emergency exemptions
  - Risk assessment and benefit assessment



# How Do We Know If We Are Getting Results?

- What are some examples of results indicators or measures for the Office of Pesticide Programs' activities?

# What is a Good Measure?

- Meaningful
- Cost-effective
- Sustainable

High Value + Low Burden!

# Output Measures: Examples

- REDs completed
- Tolerances reassessed
- Inert tolerances reassessed
- Registration of new active ingredients
  - Conventionals, antimicrobials, biopesticides
- Registration of reduced risk pesticides
- Registration of new uses of existing pesticides
- Section 18 emergency exemptions



## Intermediate measures: Examples

- Pesticide residues on food:
  - Trends over time of the occurrence of residues of certain categories of pesticides on foods eaten by children
- Percent of acre treatments using reduced risk pesticides

# Outcome Measures: Examples

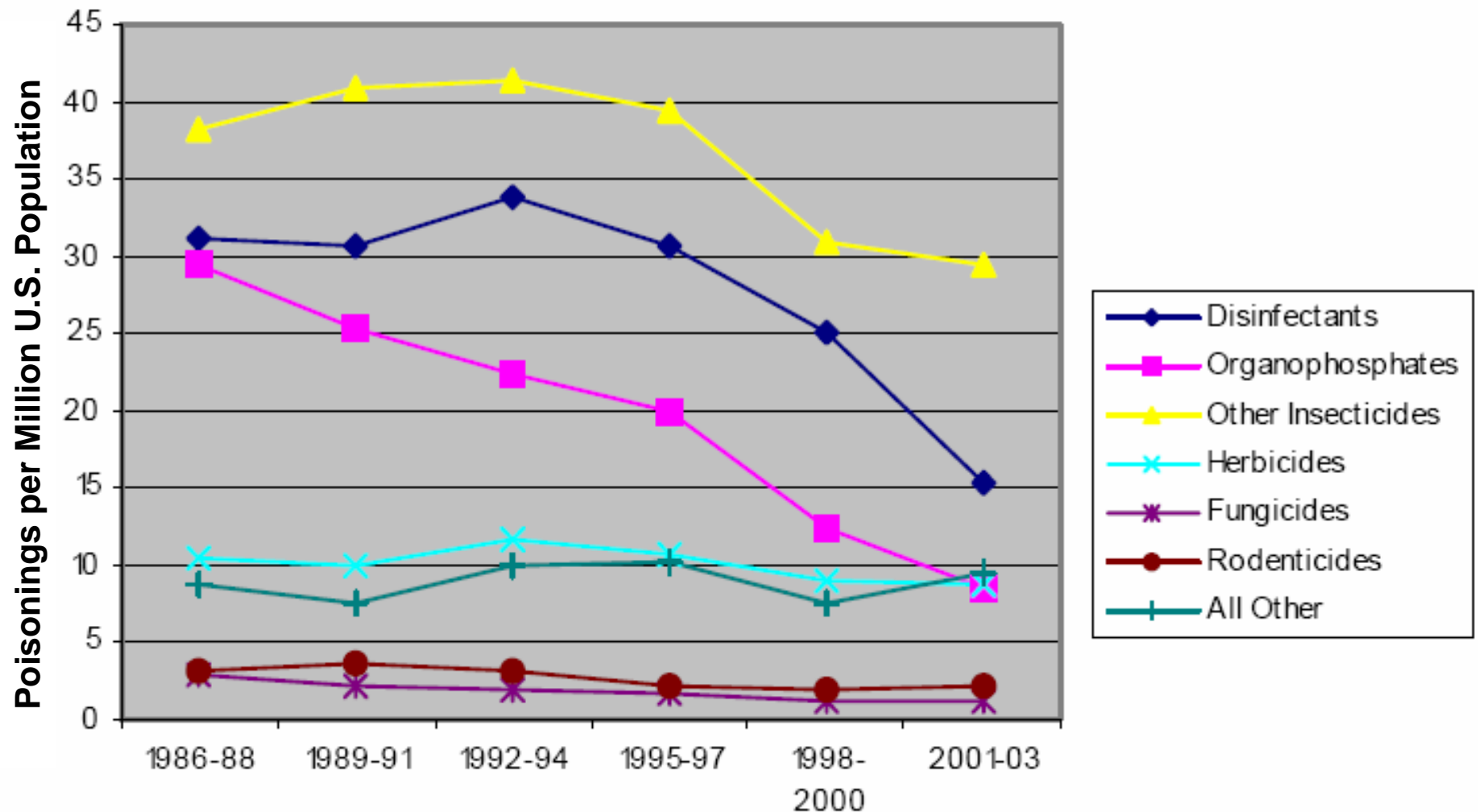
- Pesticide poisonings:
  - Trends over time of the number of systemic poisoning incidents associated with the use of pesticides
- Wildlife mortality:
  - Trends over time of the number of incidents involving mortalities of terrestrial and aquatic wildlife caused by pesticides
- Percentage of priority threatened and endangered species highly vulnerable to pesticides which are protected from jeopardy by pesticide use
- Economic
  - Economic losses avoided by use of pesticides allowed under emergency exemption, Section 18s, and under Section 3



## **Examples of Data Which Can be Used as Indicators of OPP Results**

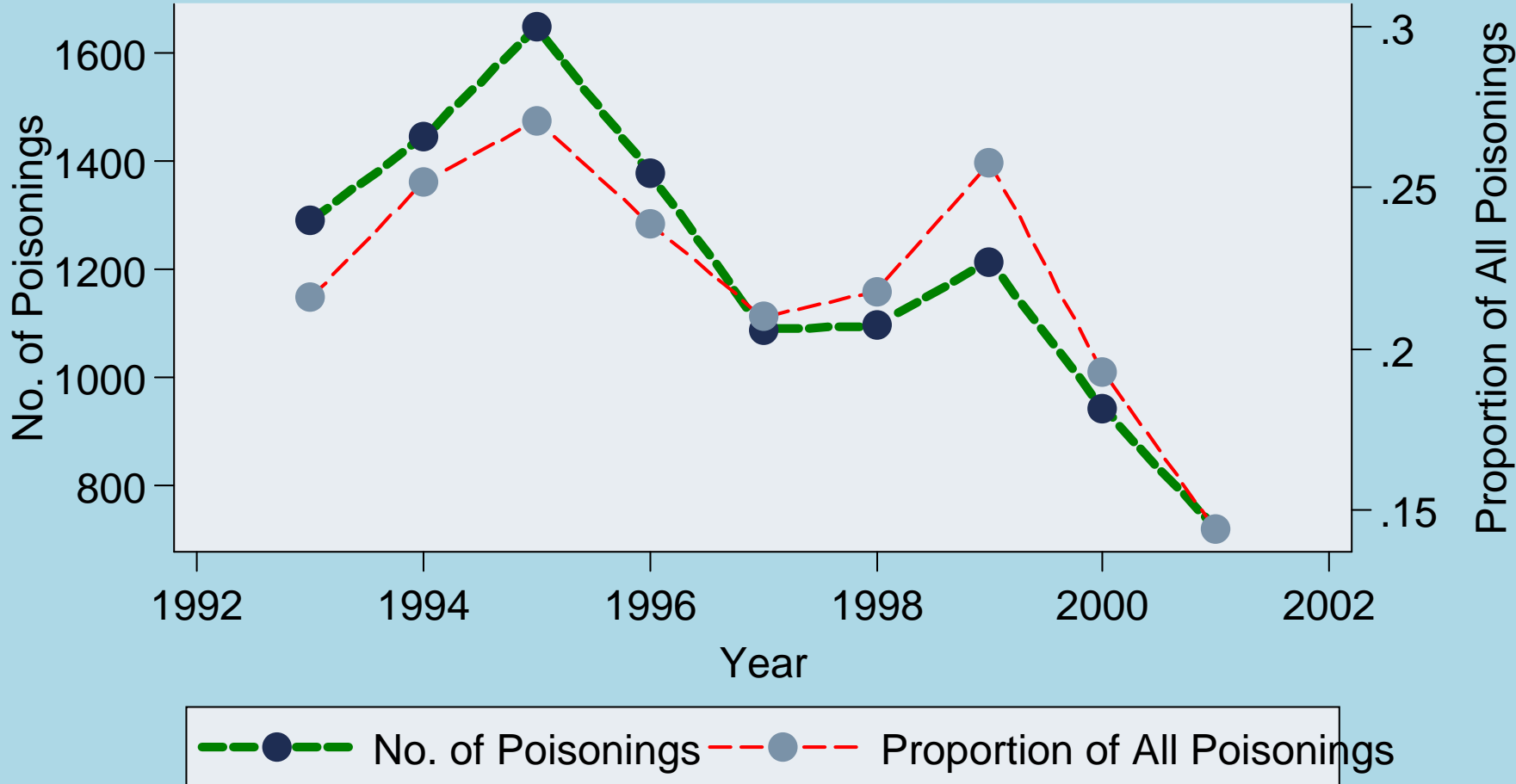
- Pesticide poisonings
- Biomonitoring
- Residues on food
- Reported 6(a)(2) incidents before and after risk mitigation action
- Economic losses avoided by Section 18s

## Average Annual Pesticide Poisonings per Million U.S. Population, by Type of Pesticide



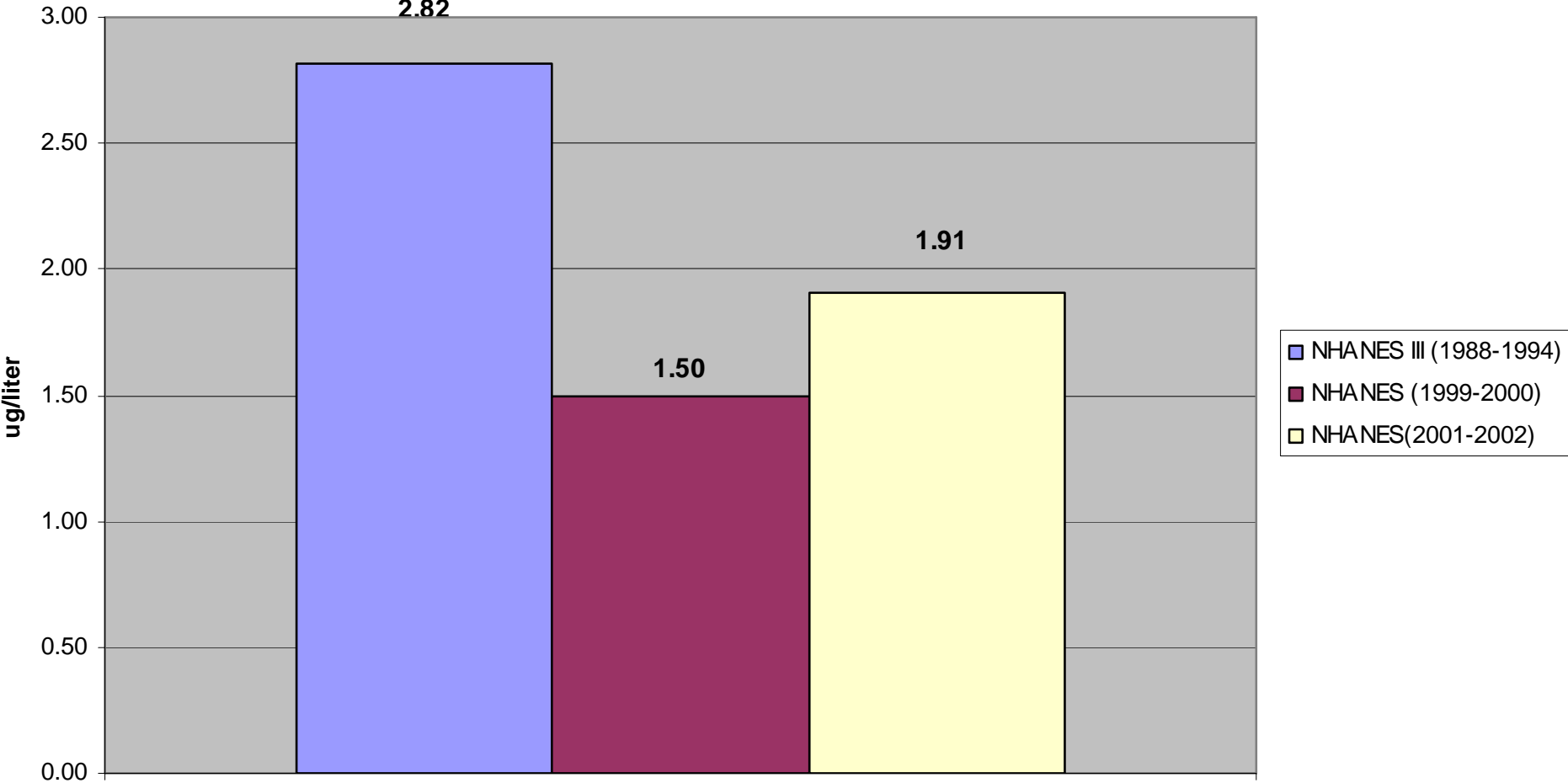
# Estimated Poisonings for one OP, 1993-2000

As Number and Percent of all Poisonings



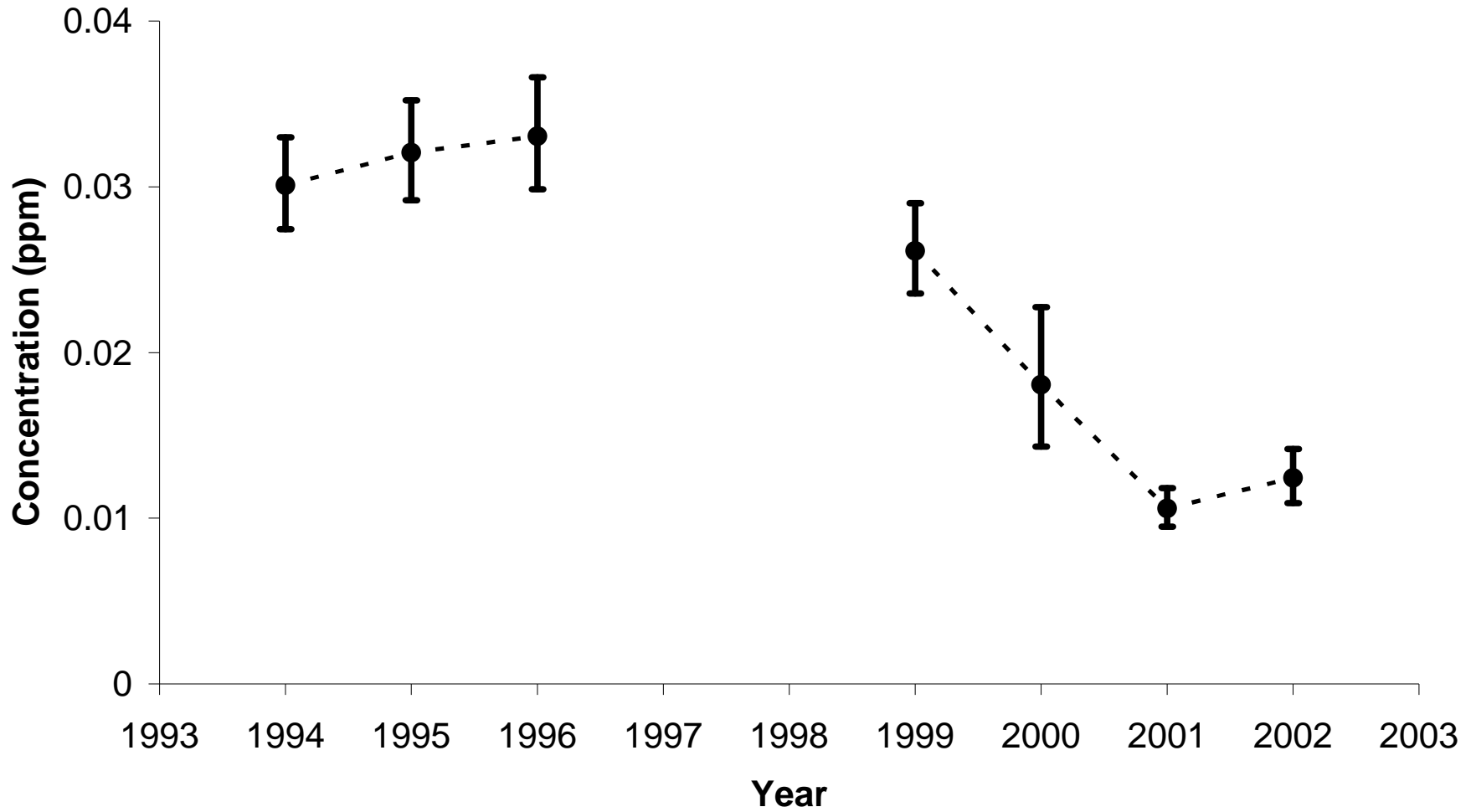
source: Estimated from reports to Poison Control Centers, nationwide

**Median(50th percentile) urinary concentration of an OP metabolite  
across 3 NHANES datasets-weighted data**

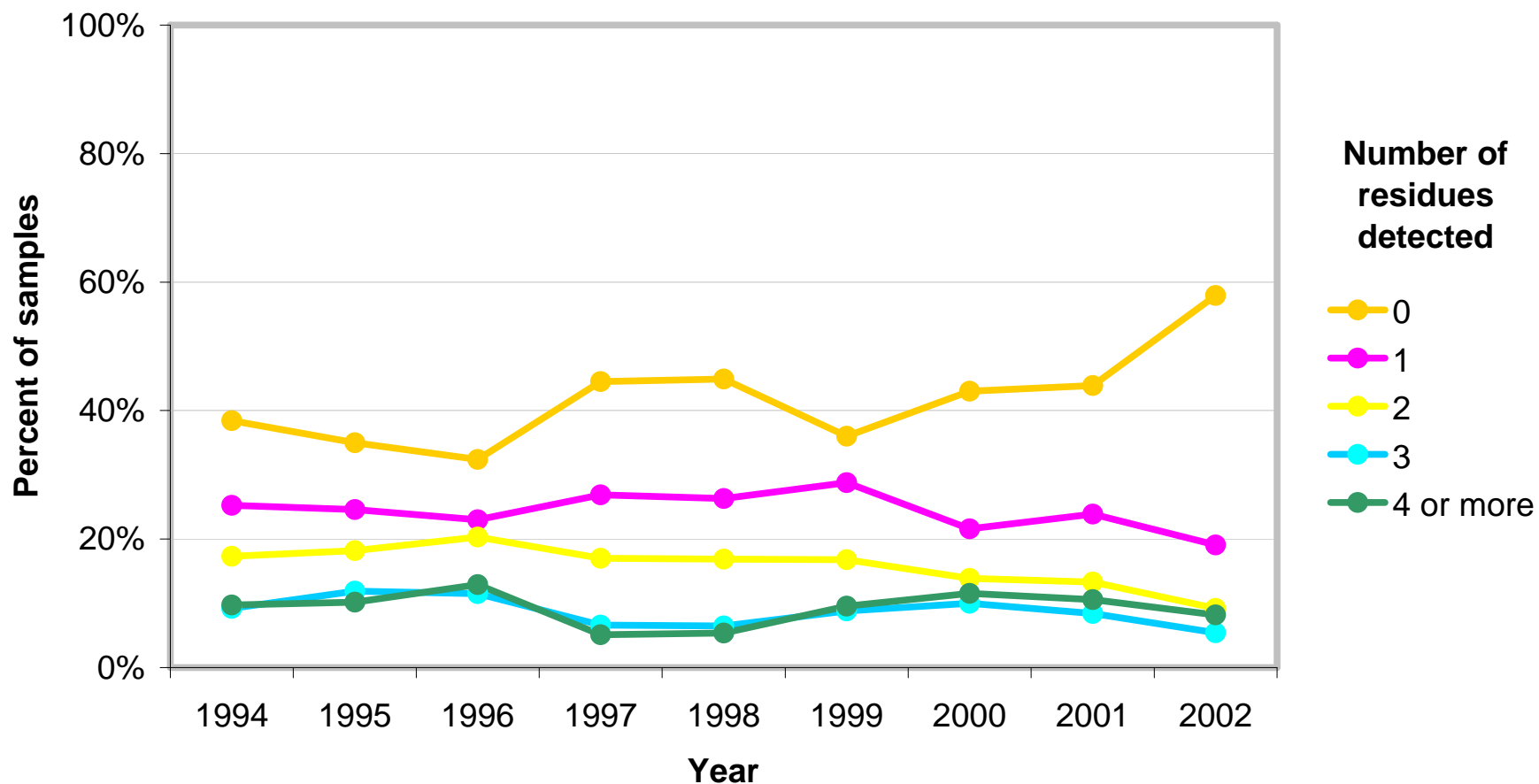


# An OP Pesticide on a Treated Domestic PDP Commodity

## Geometric Mean Concentrations with 95% Confidence Intervals

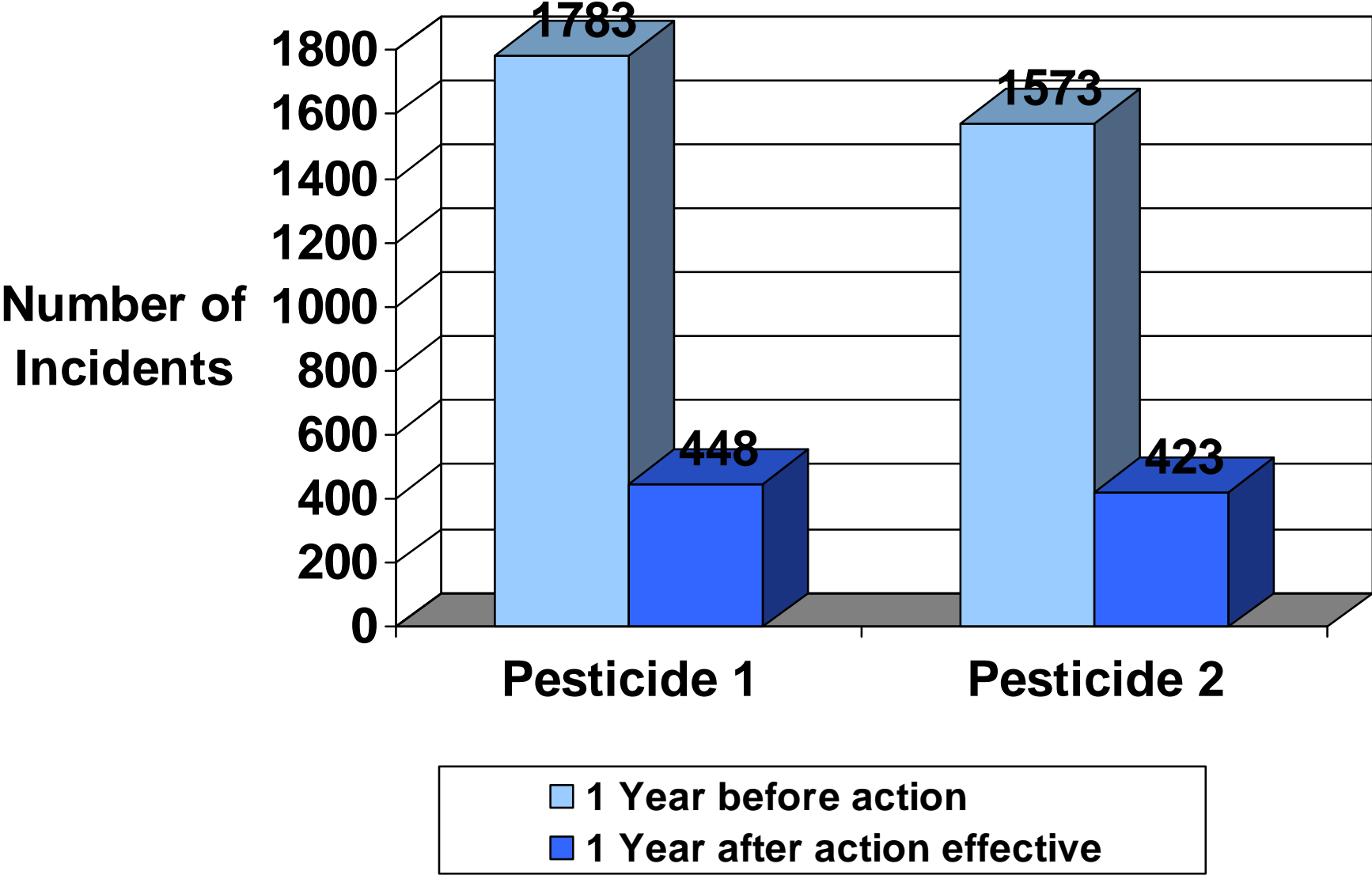



**Figure 064-1: Pesticide detects in food, 1994-2003**



Data Source: United States Department of Agriculture (USDA), Pesticide Data Program. Annual summary reports available at <http://www.ams.usda.gov/science/pdp/download.htm#reports> Graphical interpretation by USEPA.

# Number of reported incidents under 6(a)(2) prior to and after regulatory action for risk mitigation





**Economic Benefits of the Section 18 Program:  
5 case studies of Emergency Exemptions  
Issued 2000 – 2003**

- These case studies used post-emergency use data on 16 Section 18s in 5 crops to represent field and specialty crops as well as geographical distribution of the crops
- Results measure the economic benefits associated with particular state, crop, pest, and pesticides

# Analysis Results

<b>Site</b>	<b>California Strawberry</b>	<b>Montana Barley</b>	<b>Minnesota Sugar beets</b>	<b>Kansas Sorghum</b>	<b>Florida Tomatoes</b>
<b>Pest</b>	Whitefly	Aphid	Waterhemp	Kochia	Nutsedge
<b>Years Granted</b>	2000 - 2003	2000 - 2003	2001 - 2003	2002 - 2003	2002
<b>Average Yield Loss Estimate</b>	20%	25%	17%	10%	20%
<b>ECONOMIC INDICATORS</b>					
<b>Avoidance of Economic Loss to State Growers (AEL)</b>	\$22.81 million	\$288,361	\$16.97 million	\$185,337	\$34.70 million
<b>AEL as a % of National Production in Value</b>	1.94%	0.04%	1.52%	0.02%	2.96%
<b>AEL as a % of State Production in Value</b>	2.41%	0.28%	4.81%	0.06%	6.83%



# High Priority Areas That Need Measures Development

- Human health
  - Worker
  - Food safety
- Ecological
  - Aquatic, terrestrial, endangered species
- Surface and ground water
- Benefits
  - Economic, health

# Next Steps in OPP

- New workgroups
  - Including regional, State, & Tribal participation
- Continue to work on available data to refine indicators
- Work with other EPA programs
  - ORD, OW
- Work with other Federal Agencies and Departments
  - HHS/CDC, USDA, USGS, DOI, DOC
- Work with stakeholders



# Three Areas For Advice From PPDC

- What is your advice about measures presented today?
  - Do these measures show OPP results?
- What is your advice about measures OPP should develop?
- How can PPDC contribute to work in these areas?