US EPA ARCHIVE DOCUMENT

US EPA ARCHIVE DOCUMENT

OPP Results Indicators

Kathleen Knox
Office of Pesticide Programs
Pesticide Program Dialogue Committee
May 11, 2005

US EPA ARCHIVE DOCUMENT

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

US EPA ARCHIVE DOCUMENT

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

US EPA ARCHIVE DOCUMENT

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

US EPA ARCHIVE DOCUMENT

New EPA Strategic Plan

- New workgroup starting FY06
- Public process

US EPA ARCHIVE DOCUMENT

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

US EPA ARCHIVE DOCUMENT

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

US EPA ARCHIVE DOCUMENT

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?

US EPA ARCHIVE DOCUMENT

What is a Good Measure?

- Meaningful
- Cost-effective
- Sustainable

High Value + Low Burden!

US EPA ARCHIVE DOCUMENT

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

US EPA ARCHIVE DOCUMENT

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

US EPA ARCHIVE DOCUMENT

Outcome Measures: Examples

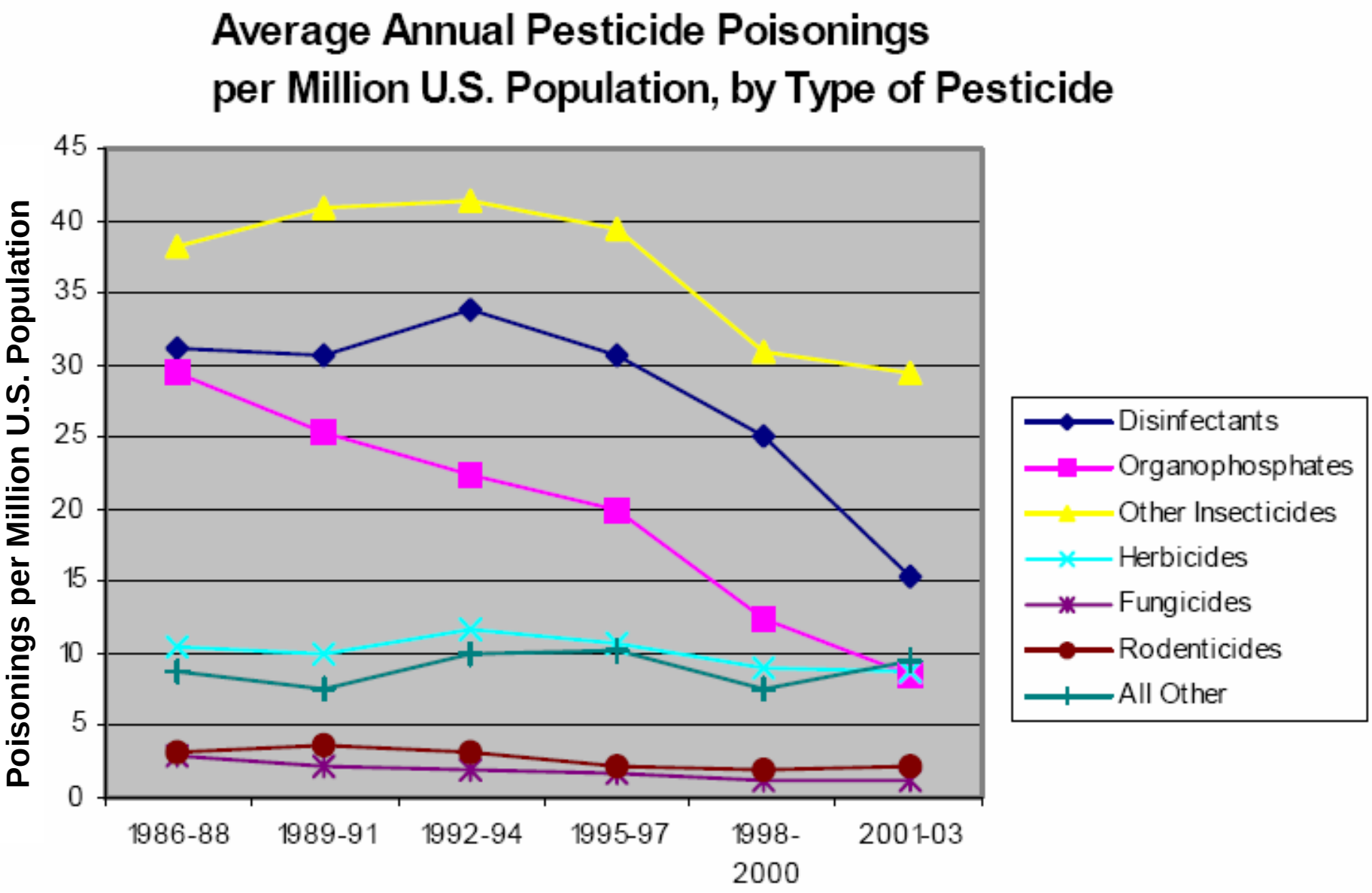
- Pesticide poisonings:
  - Trends over time of the number of systemic poisoning incidents associated with the use of pesticides
- Wildlife mortality:
  - Trends over time of the number of incidents involving mortalities of terrestrial and aquatic wildlife caused by pesticides
- Percentage of priority 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

US EPA ARCHIVE DOCUMENT

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

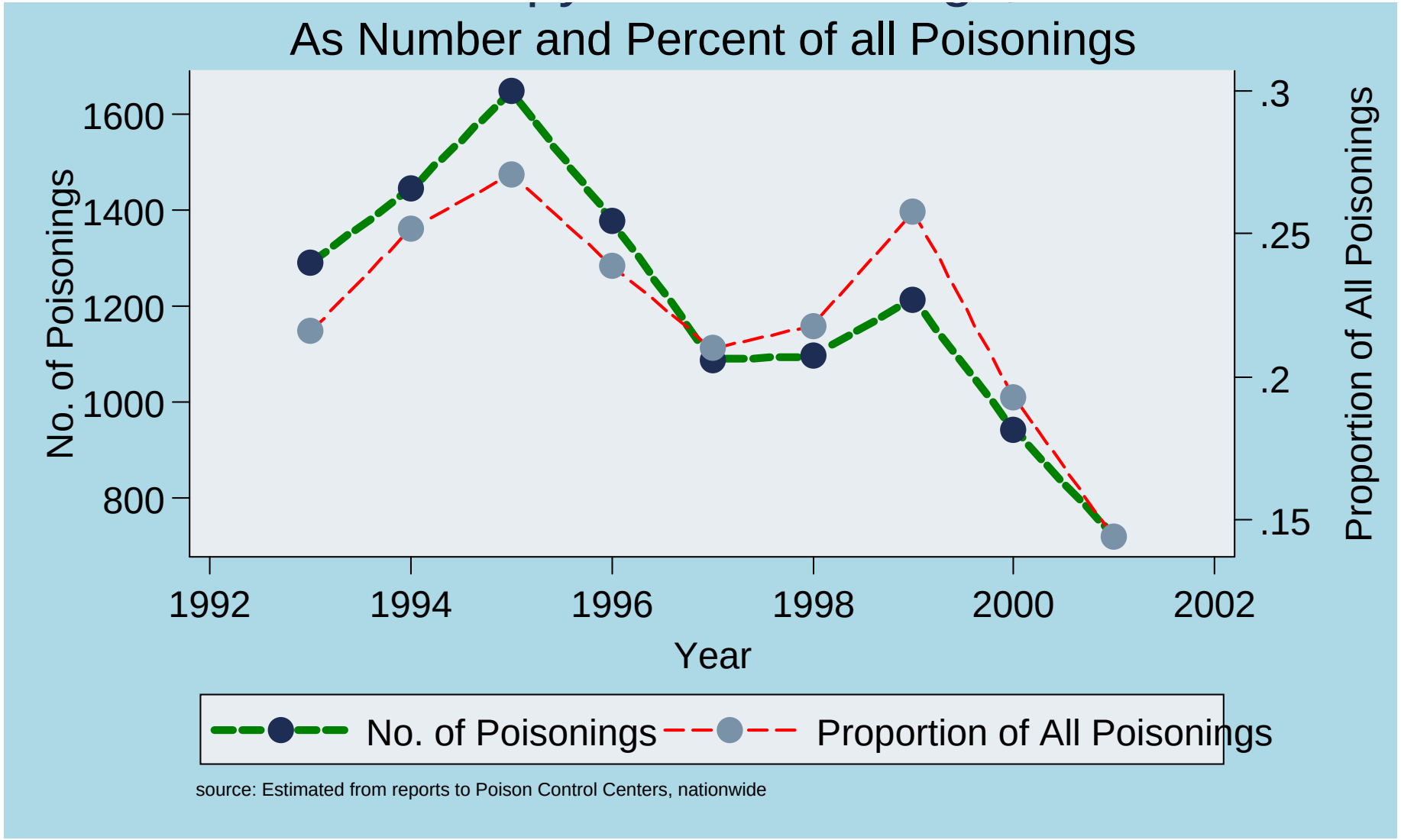
- Pesticide poisonings
- Biomonitoring
- Residues on food
- Reported 6(a)(2) incidents before and after risk mitigation action
- Economic losses avoided by Section 18s

US EPA ARCHIVE DOCUMENT

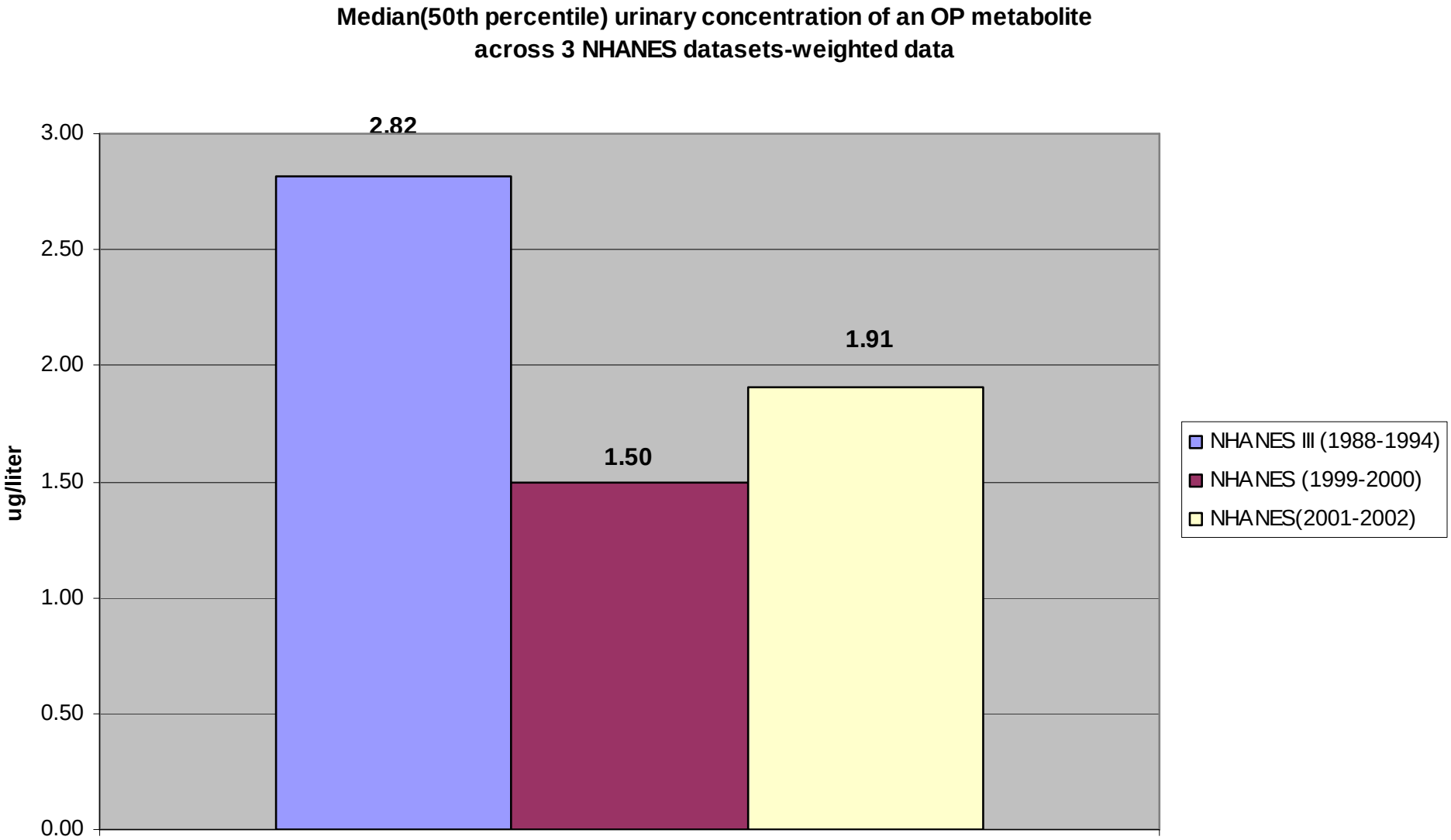


US EPA ARCHIVE DOCUMENT

Estimated Poisonings for one OP, 1993-2000



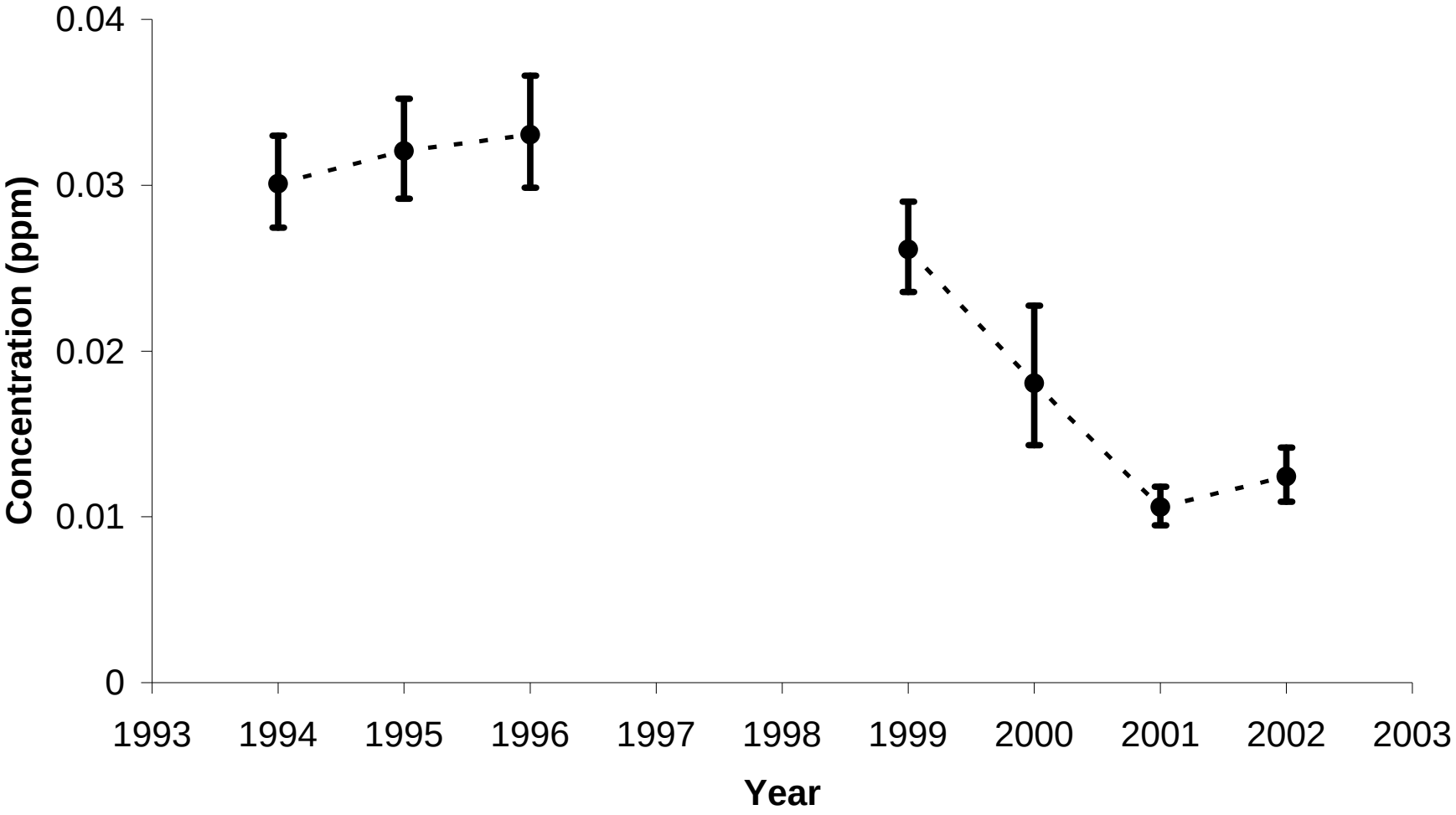
US EPA ARCHIVE DOCUMENT



US EPA ARCHIVE DOCUMENT

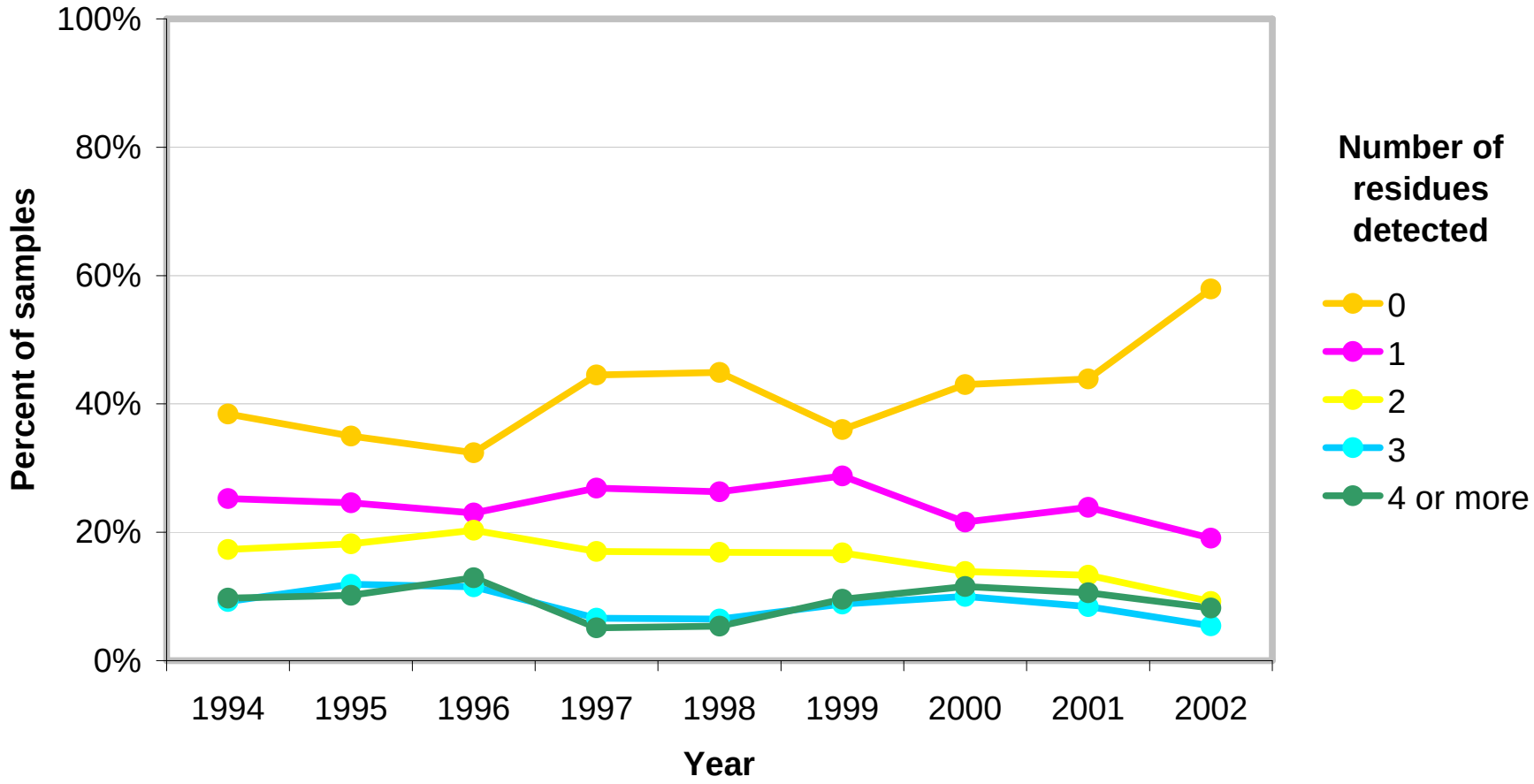
An OP Pesticide on a Treated Domestic PDP Commodity

Geometric Mean Concentrations with 95% Confidence Intervals



US EPA ARCHIVE DOCUMENT

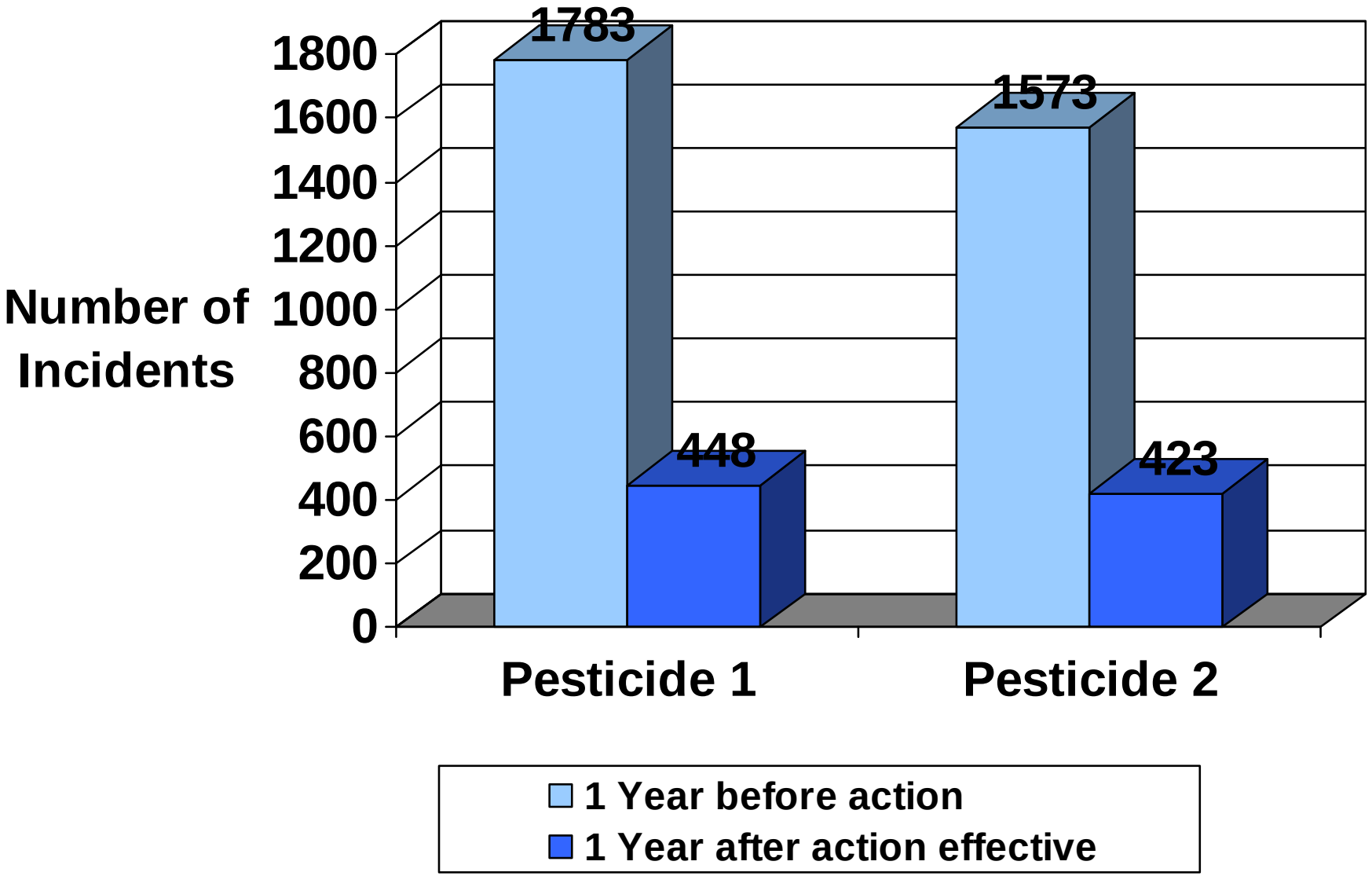
Figure 064-1: Pesticide detects in food, 1994-2003



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.

US EPA ARCHIVE DOCUMENT

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



US EPA ARCHIVE DOCUMENT

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

US EPA ARCHIVE DOCUMENT

Analysis Results

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

US EPA ARCHIVE DOCUMENT

High Priority Areas That Need Measures Development

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

US EPA ARCHIVE DOCUMENT

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

US EPA ARCHIVE DOCUMENT

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?