



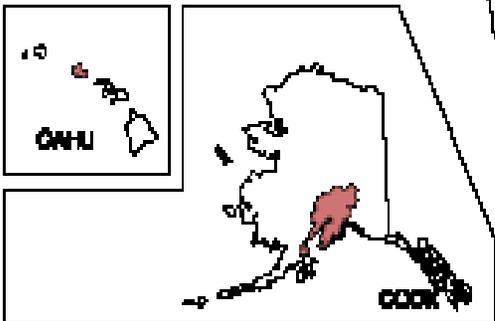
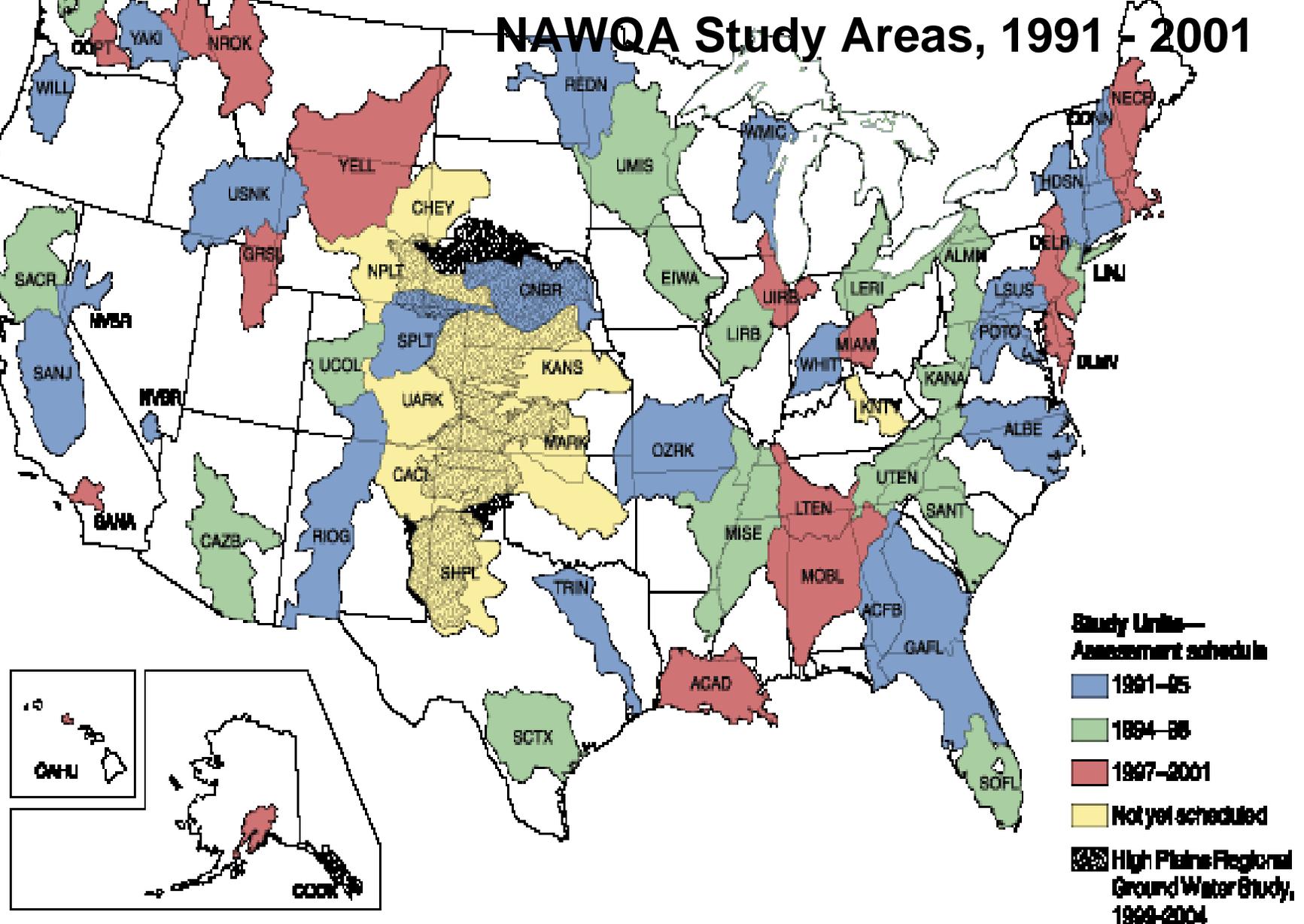
A Decade of Water-Quality Assessments: *NAWQA Monitoring for Decision Making at Local, Regional, and National Scales*

Donna N. Myers

Chief, National Water-Quality Assessment Program

May 17, 2004

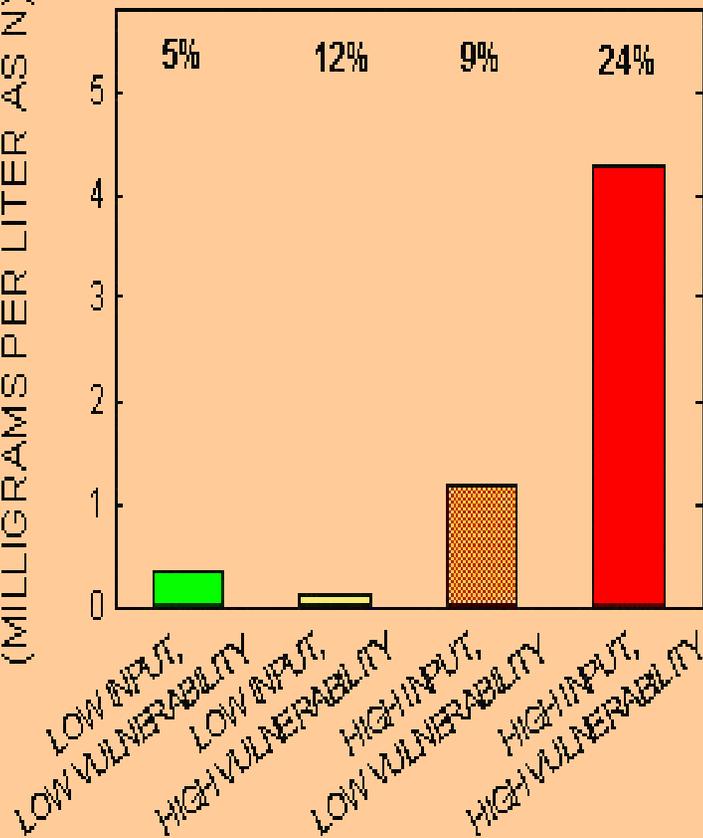
NAWQA Study Areas, 1991 - 2001



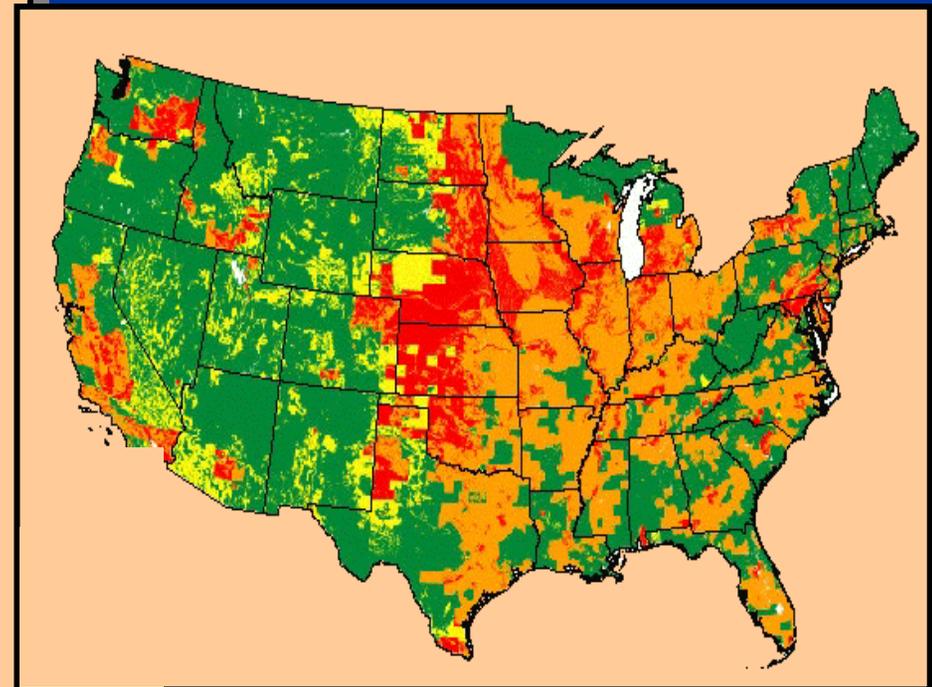
Nitrogen Contamination in Ground Water

PERCENT OF WELLS EXCEEDING DRINKING-WATER STANDARD:

MEDIAN NITRATE CONCENTRATION
(MILLIGRAMS PER LITER AS N)



INCREASING RISK OF GROUND-WATER CONTAMINATION

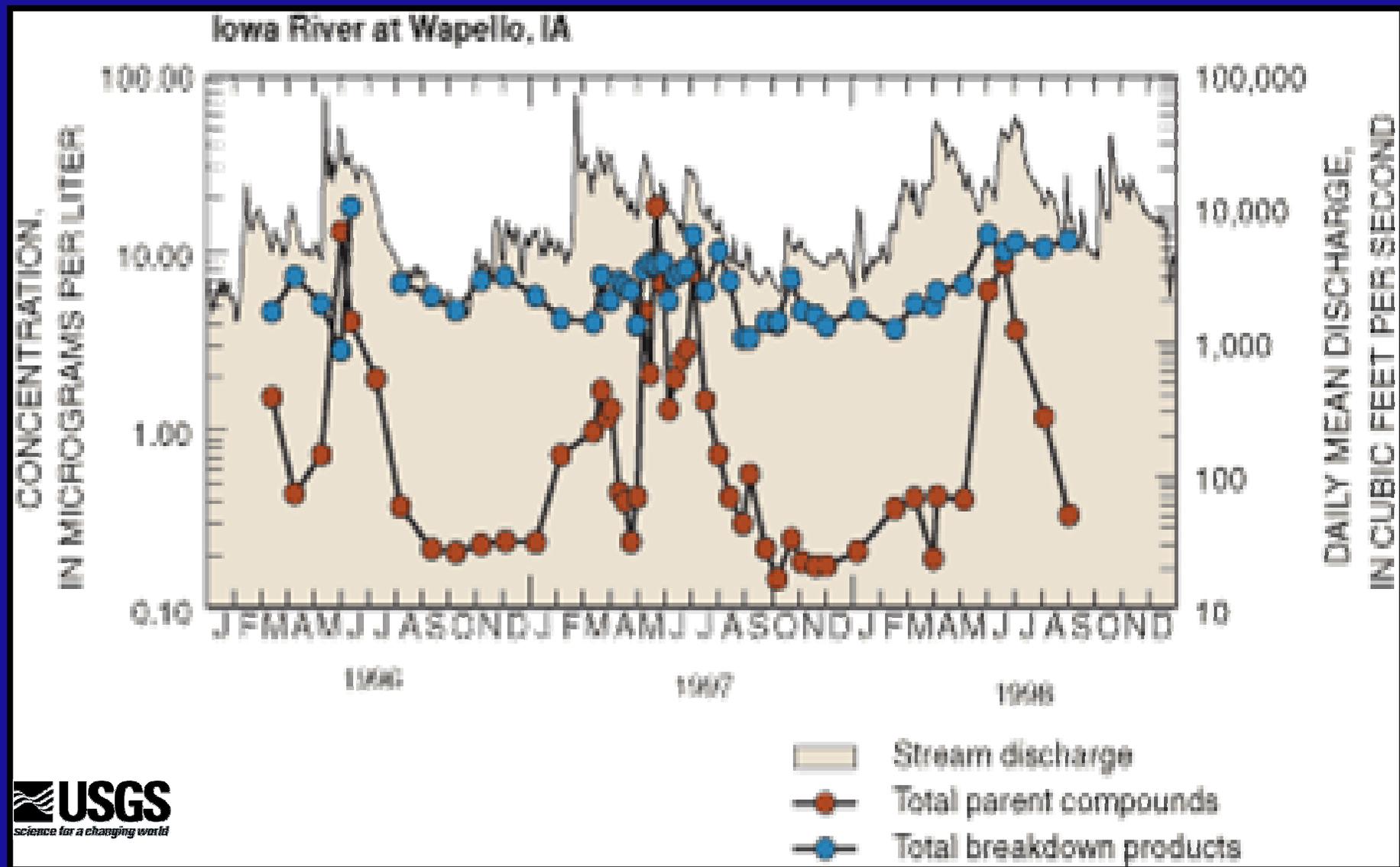


Mixtures
are
common



On Oahu, for example, VOCs and pesticides were detected together in more than half of sampled public-supply wells

Most pesticide compounds in the Eastern Iowa Basin streams are **breakdown products**



**Emerging
Contaminants
Fipronil is
widespread in
southern
Louisiana
streams**



Common pesticides found in streams: by land use type

Agriculture

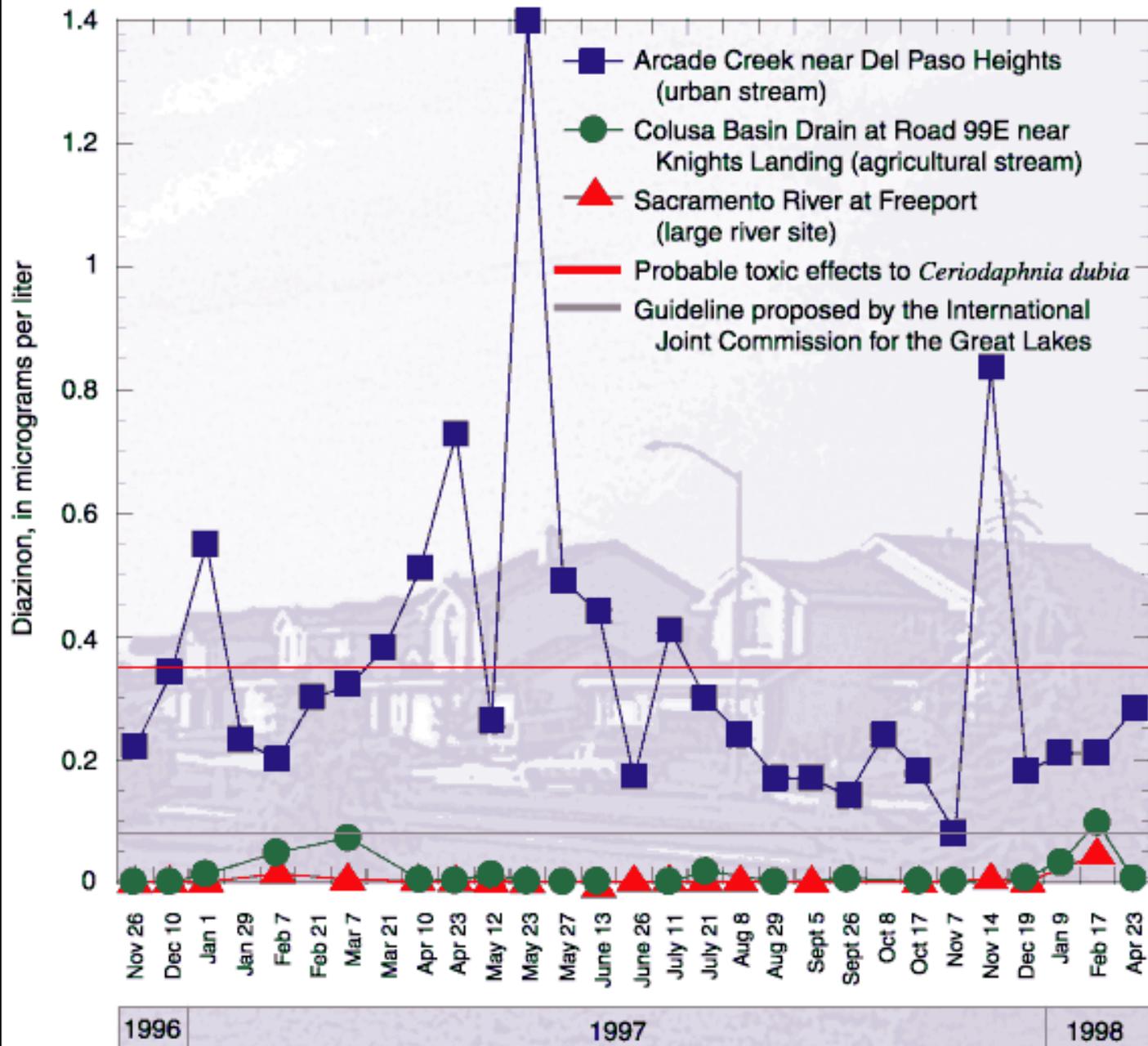
- atrazine
- [deethylatrazine]
- metolachlor
- cyanazine
- alachlor

Urban

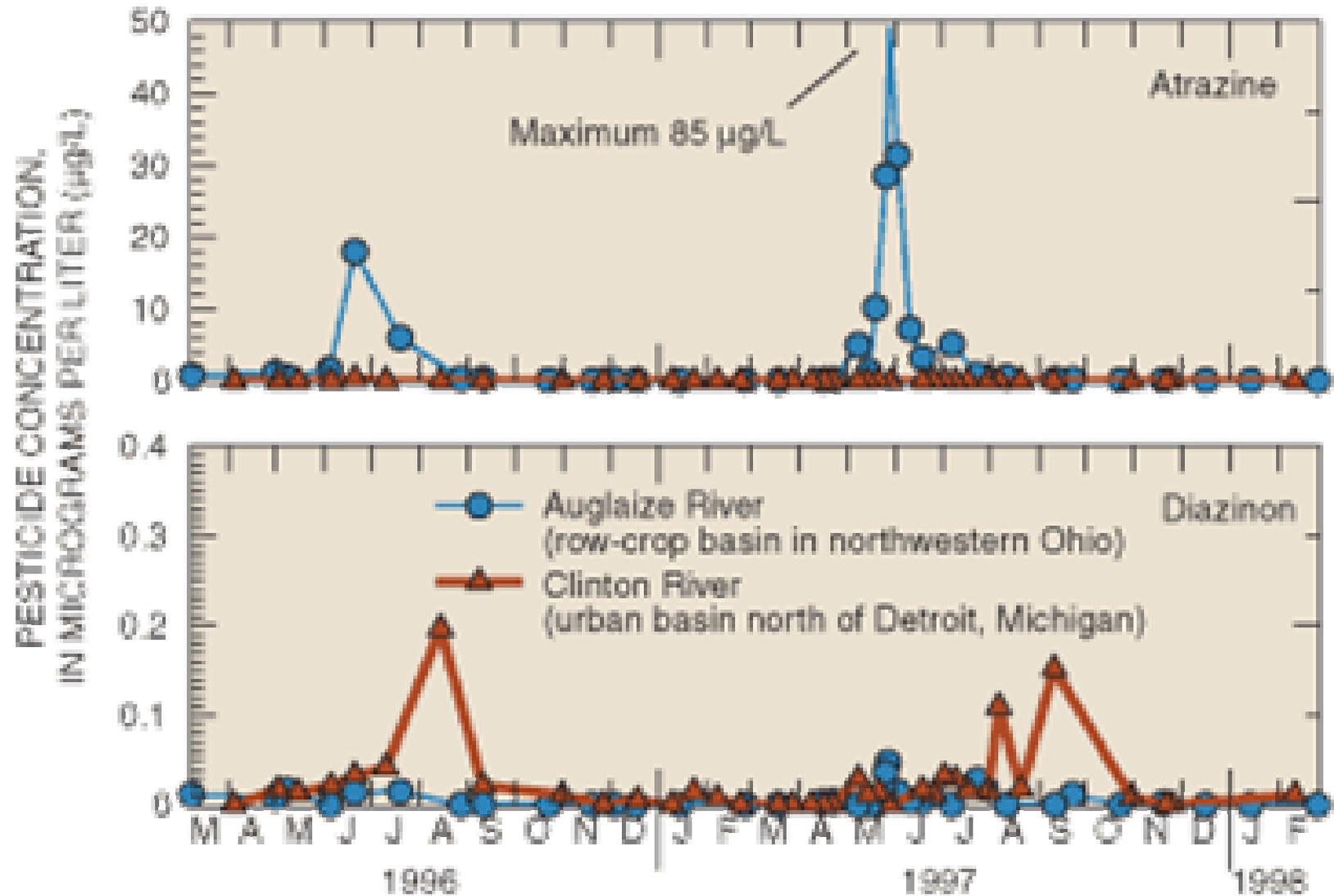
- atrazine
- simazine
- prometon
- 2,4-D
- diuron
- *diazinon*
- *carbaryl*
- *malathion*
- *chlorpyrifos*

Herbicides **Insecticides**

Urban land use Diazinon in Northern California streams



Seasonal contamination relates to chemical use, land use, and precipitation

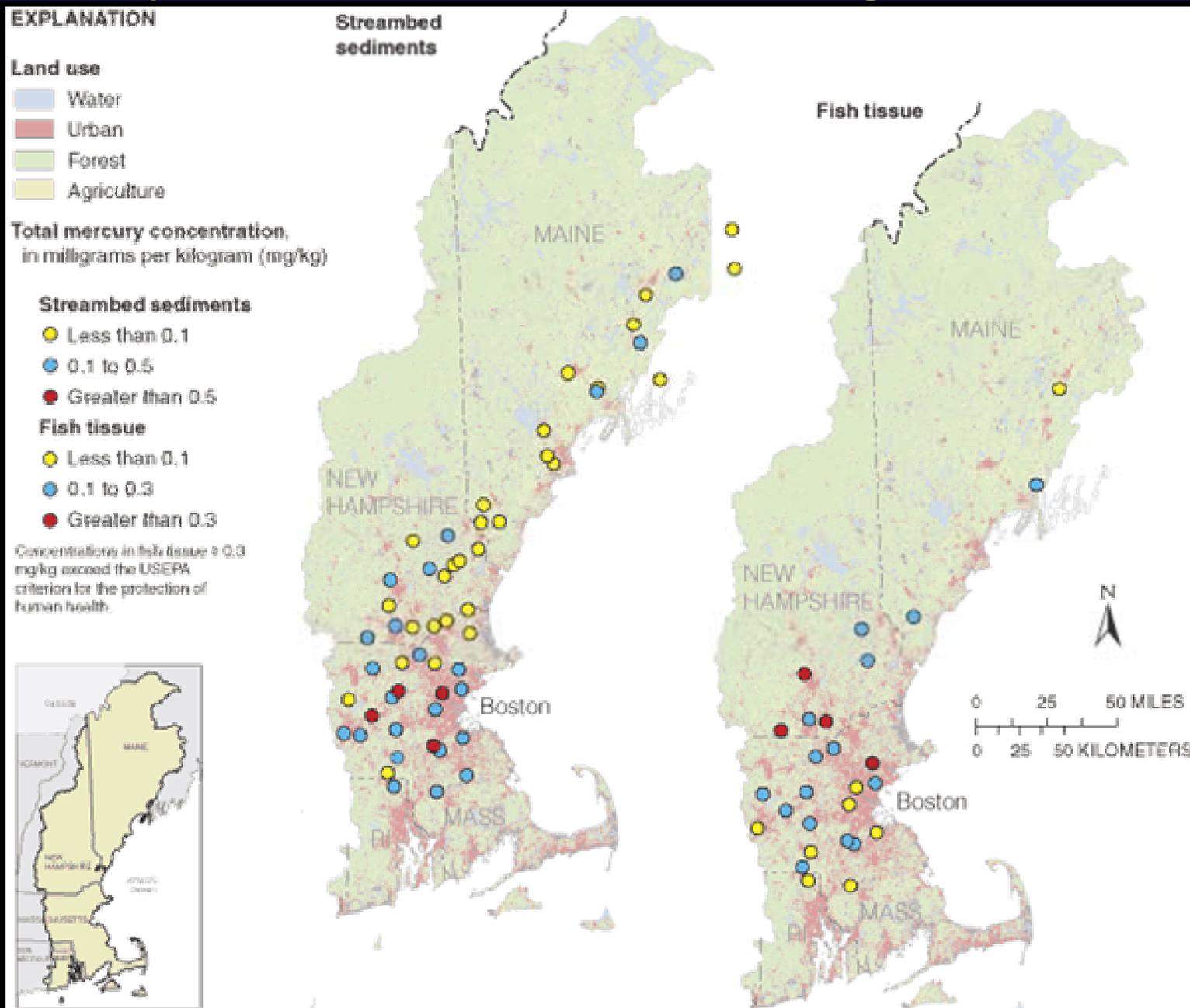


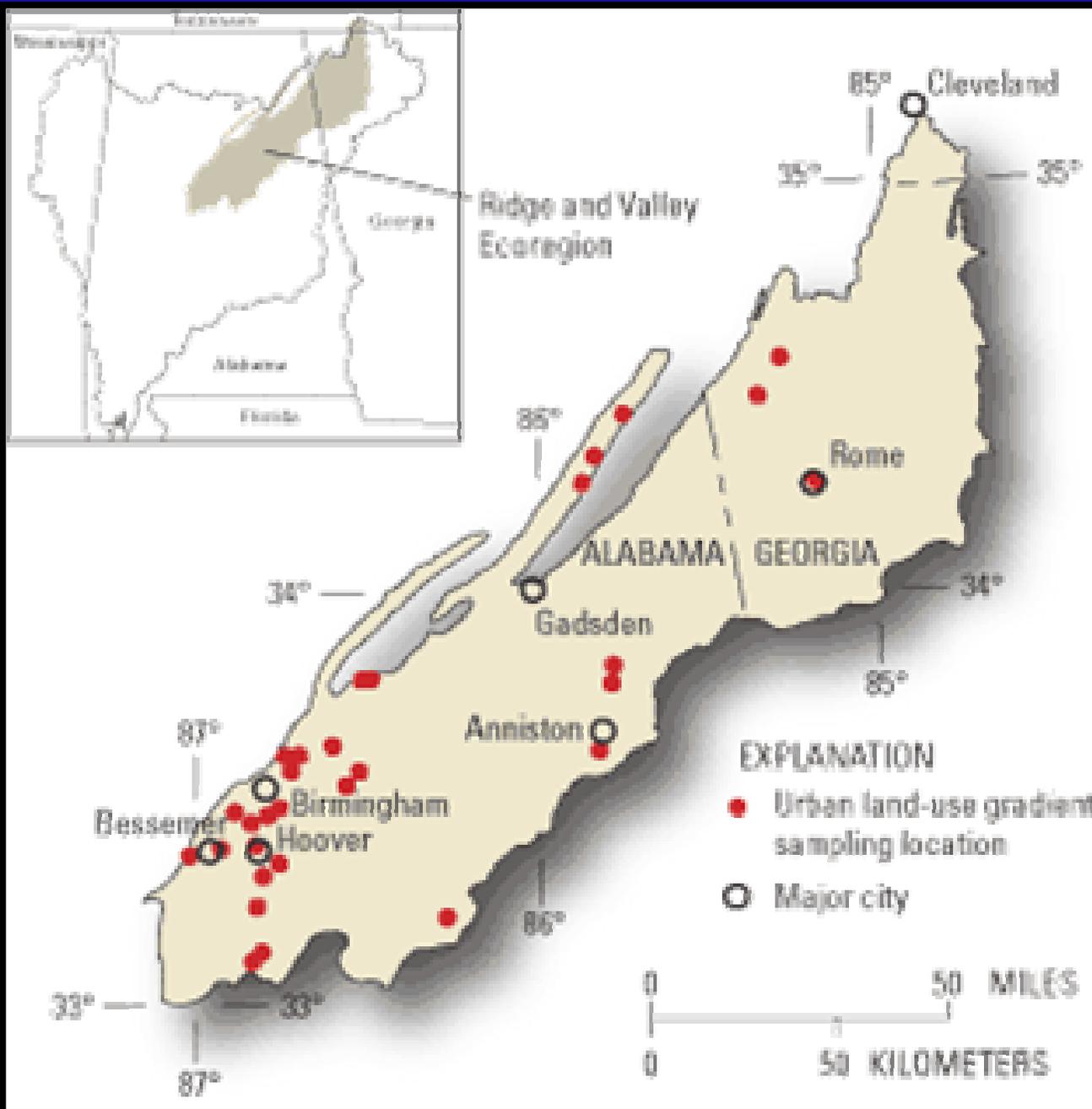


Yellowstone River at Corwin Sprints, WY

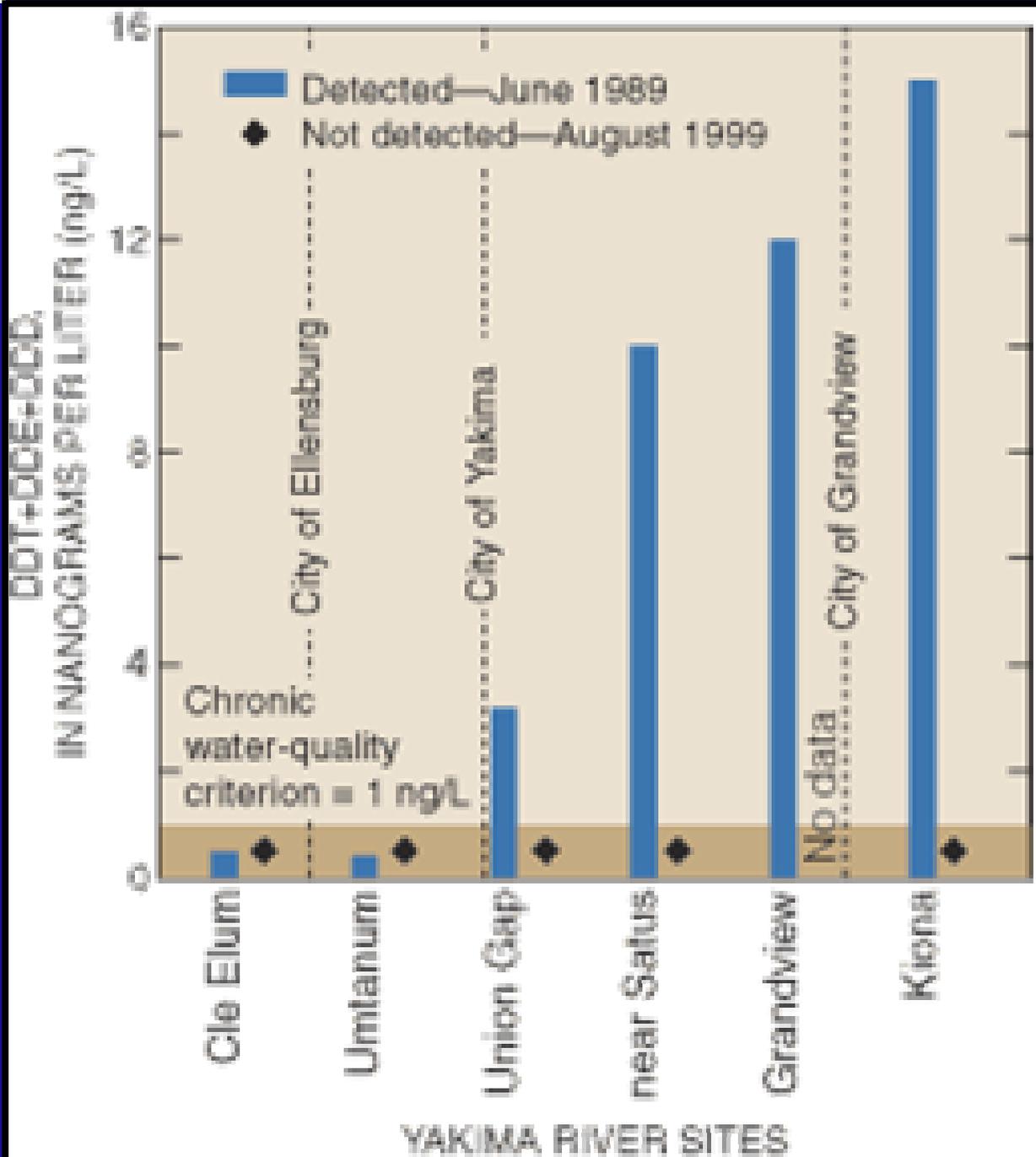
Naturally occurring contaminants, including arsenic, ammonia, and phosphorus, are elevated in pristine streams draining the Yellowstone River Basin

Mercury in watersheds in the New England Coastal Basins





Abundance and diversity of fish and insects decline in urbanizing watersheds near Birmingham, Alabama



Trends:

**DDT is declining
in the Yakima
River Basin,
central
Washington**

Data characteristics that aid Decision Making

- **Consistent and comparable methods**
- **Broad suite of compounds**
- **Low detection levels**
- **Seasonal and long-term sampling**
- **Information on land use, chemical use, and environmental settings**
- **Integrated assessments: chemical, physical, and biological characteristics**

