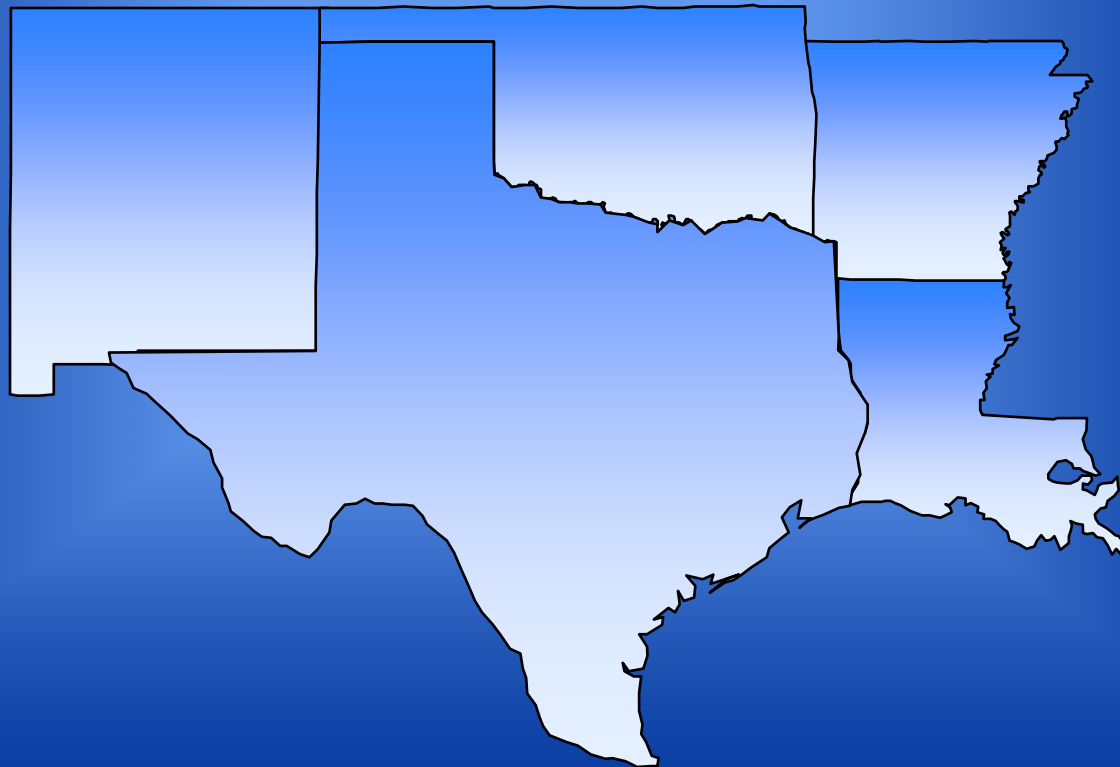




EPA Region 6 Dallas, Texas



Clean Water Act (CWA)

Federal law promulgated in 1972. Applies to surface water – lakes, rivers, streams, coastal areas

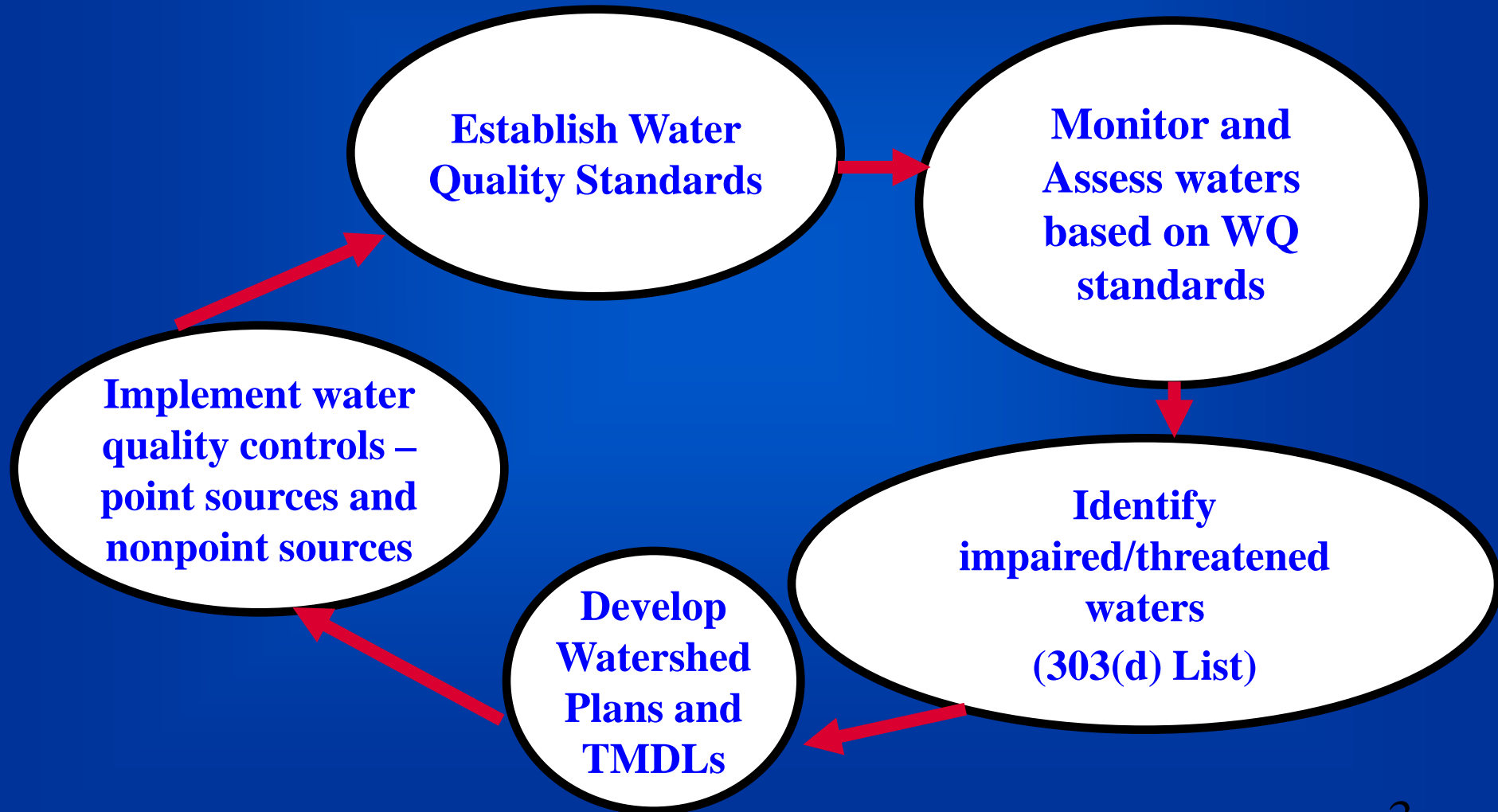
Uses regulatory and non-regulatory tools to protect and restore the nation's waters

Goals:

reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff

restore and maintain the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water."

Water Quality-Based Approach



Surface Water Quality Standards

Water Quality Protection Division
Watershed Management Section

Water Pollution Sources

Two General Categories

- **Point Source Pollution**

- Regulated under the Clean Water Act with permits/enforcement

- **Nonpoint Source Pollution**

- No permitting provisions for NPS in the Clean Water Act

Water Pollution Sources

- **Point Source Pollution**

- **Pollution from a discrete source**
(a pipe or other conveyance)
 - Industry
 - Sewage treatment plants
- **Regulated under the Clean Water Act**
with permits/enforcement

Water Pollution Sources

- **Nonpoint Source Pollution**

- **Pollution from land runoff**
(rainfall, snowmelt, irrigation)

- Agricultural areas
- Urban runoff

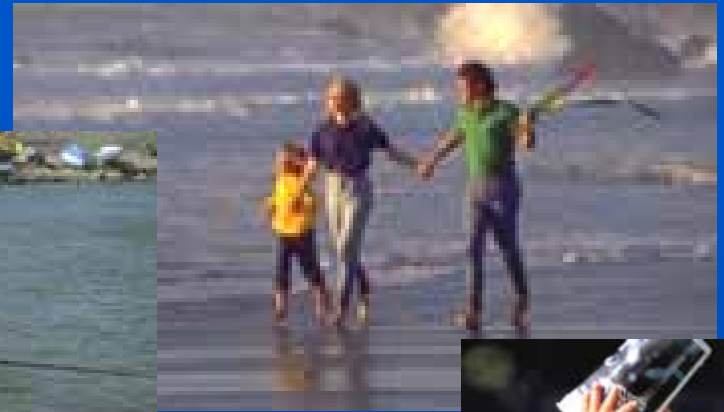
- **Largest source of water pollution in U.S.**

- **No permitting provisions for NPS in the Clean Water Act**

Surface Water Quality Standards

- **Beneficial Uses**

- fishing
- swimming
- public water supplies



- **Criteria to protect these uses**
- **Antidegradation policy to limit additional water pollution**

Adopted by State, Reviewed by EPA

CRITERIA

Numeric Criteria

Chloride - 250 mg/l

Lead - 5 ug/l

Narrative Criteria

"Toxic chemicals shall not be present in toxic amounts"

"No objectionable algal densities or nuisance aquatic vegetation"



Total Maximum Daily Load

- TMDL -

- **A tool for implementing State Water Quality Standards**
- **Establishes allowable pollutant loadings for a water body**
- **Provides basis for States to establish water quality based controls**
- **Addresses both Point Source and Nonpoint Source Pollution**

$$\text{TMDL} = \text{SWLA} + \text{SLA} + \text{MOS}$$

WLA = Waste Load Allocation

**Point Source Pollution
(Permitted)**

LA = Load Allocation

**Nonpoint Source Pollution
(not Permitted)**

MOS = Margin Of Safety

**accounts for uncertainty
in calculations**

Framework for Restoring Polluted Waters

Problem Identification

**Establish Water Quality Standards
Uses, Criteria, Anti-Degradation Policy**

Monitor Water Quality - Assess Standards Attainment

List Impaired Waters
All existing and readily available data

Problem Solving

Develop TMDL
- Determines allowable Loading
- Allocates loading reductions needed

Issue Point Source Permits
Must comply with Standards

Control Nonpoint Sources
BMPs, technical assistance, \$\$\$

Key Elements of the CWA

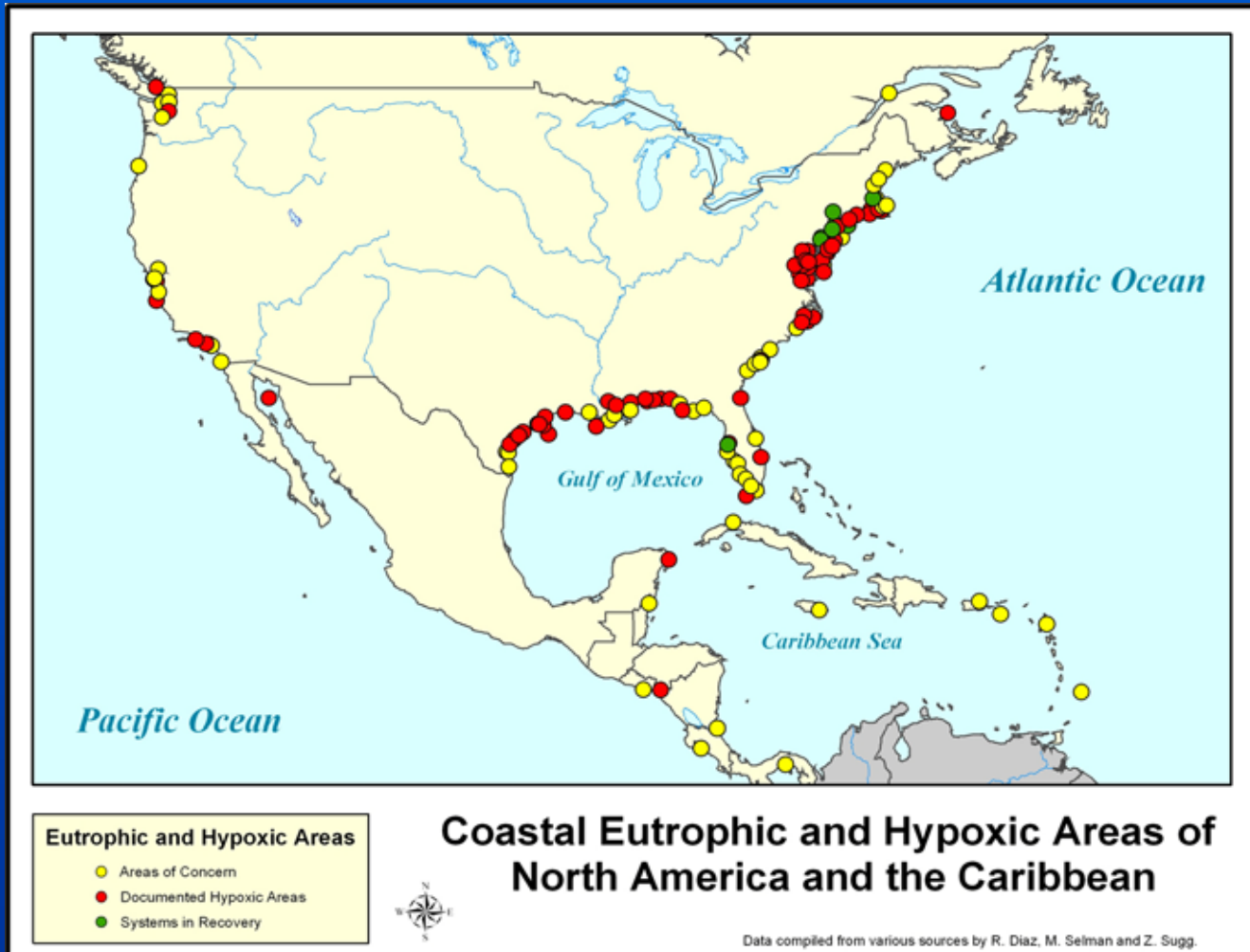


National Population Growth

- Increase in Nutrient Pollution Over Past 50 Years Reflects Doubling of U.S. Population
- Additional 135 Million People by 2050
- Nutrient Pollution Expected to Accelerate

Year	U.S. Population
1950	152 million
2008	304 million
2050	439 million

Hypoxic Zone Locations



Questions?

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www.epa.gov/owow/nps/watershed_handbook/