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."
Monitor and Assess waters based on WQ standards

Identify impaired/threatened waters (303(d) List)

Develop Watershed Plans and TMDLs

Implement water quality controls – point sources and nonpoint sources

Establish Water Quality Standards

Water Quality-Based Approach
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
TMDL = ΣWLA + ΣLA + MOS

WLA = Waste Load Allocation

LA = Load Allocation

MOS = Margin Of Safety

Point Source Pollution (Permitted)

Nonpoint Source Pollution (not Permitted)

accounts for uncertainty in calculations
Framework for Restoring Polluted Waters

**Problem Identification**

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

**Problem Solving**

- Monitor Water Quality - Assess Standards Attainment

- List Impaired Waters
  - All existing and readily available data

- 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

- Conduct Monitoring
- Develop Strategies
- Implement strategies
- Monitor Results
- Revise Strategies, if needed

CWA Goals and WQS
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

<table>
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<tr>
<th>Year</th>
<th>U.S. Population</th>
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<tr>
<td>1950</td>
<td>152 million</td>
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<tr>
<td>2008</td>
<td>304 million</td>
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<tr>
<td>2050</td>
<td>439 million</td>
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Questions?

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