



# Environmental Justice & Water Quality Monitoring

Susan Holdsworth

EPA Monitoring and Analysis Branch

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# Monitoring is Foundational

- Monitoring the chemical, physical and biological condition of water resources is fundamental to tracking progress toward achieving CWA goals.
- Monitoring answers key questions like
  - Are waters safe to drink?
  - Are they safe for swimming and other recreational activities like boating and fishing?
  - Are fish safe to eat?
  - Do waters support healthy aquatic life, including fish, shellfish and wildlife that depend on water
- Monitoring informs CWA programs
  - Inform water quality standards that protect aquatic life and human health
  - Prioritize high quality waters for protection
  - Identify local waterways in need of restoration to meet water quality standards
  - Develop restoration plans, like Total Maximum Daily Load (TMDL) plans, and watershed plans, that reduce pollution
  - Issue permits with water quality-based discharge limits
  - Target compliance and enforcement actions
  - Track overall water quality conditions, changes over time, and effectiveness of CWA

# Monitoring and EJ -

## Are limited resources applied equitably?

- Consider who is involved in monitoring
- Discuss how are the needs of communities with EJ concerns identified?
  - Consider data gaps
  - Seek input from community practitioners and organizations
- Identify what pollutants and other parameters are priorities for underserved communities?
- Evaluate where sites are selected for monitoring

# Who is involved in planning and conducting water quality monitoring?

- State, Tribal and other government agencies consider many factors and CWA program needs when planning monitoring.
- Volunteer monitoring or community monitoring organizations typically focus on a particular waterbody of interest or concern, such as a lake, beach or local rivers and streams.
- Underserved communities with fewer resources to participate are more likely to be missing from the table.
- Engage community practitioners and organizations to incorporate needs of communities with EJ concerns into monitoring plans.

# Water Quality Portal

## Premier Data Warehouse



*Launched by the National Water Quality Monitoring Council and operated under An Interagency Agreement (USGS & EPA)*

- Serves data in a standard format using EPA's WQX template
- Delivers data from >1,500 organizations, incl. Federal, state, Tribal and more
- Includes >425m records from >1m sites
- Stores data of all water types and all sample media
- Offers a Graphical User Interface (GUI) & Web Services
- Internet of Water Integrated Systems (IOW HUB)
- DATA Services can directly power analytics like those in HMW
- Growing Number of internal/external Tools built on top of this data source

The screenshot displays the Water Quality Portal interface. At the top, the National Water Quality Monitoring Council logo is visible. The main content area includes a welcome message and a search interface. The search interface has tabs for 'Basic' and 'Advanced'. Below the tabs, there are sections for 'Select Location Parameters', 'Filter Results', and 'Download the Data'. The 'Download the Data' section is expanded, showing options for 'Data Source' (NWIS (USGS), STEWARDS (ARS), WQX (EPA)), 'File Format' (Comma-Separated, Tab-Separated, MS Excel 2007+), and 'Data Profiles' (Organization Data, Site Data Only, Project Data, Project Monitoring Location Weighting Data, Sample Results (physical/chemical metadata), Sample Results (biological metadata), Sample Results (narrow), Sampling Activity, Sampling Activity Metrics, Result Detection Quantitation Limit Data, Biological Habitat Metrics). A 'Query URL' section shows a URL for downloading data. A 'Result' section shows a search result with a URL highlighted in red. A 'CURL' section shows a curl command for downloading data. A 'WFS GetFeature' section shows a WFS URL for downloading data. At the bottom, there are 'Clear search' and 'Download' buttons.

# What are the monitoring priorities of communities with EJ concerns?

- Discuss how waters are used by communities with environmental justice concerns, considering recreational activities and subsistence needs
- Identify potential sources of water quality degradation and potential pollution exposure for vulnerable communities and communities with environmental justice concerns
- Ensure monitoring plans include relevant indicators and parameters, in particular
  - pathogen indicators like E.coli or enterococcus;
  - harmful algal bloom indicators like chlorophyll-a, cyanobacteria, microcystin, or other algal toxins;
  - and fish tissue contaminants like mercury, PCBs, or PFAS

# Where are monitoring programs focusing data collection and is that focus equitable?

- Identify waters used by underserved communities
  - Use tools like CEJST to identify underserved, overburdened areas – Climate and Economic Justice Screening Tool, <https://screeningtool.geoplatform.gov/en/#4.38/36.97/-89.12>
  - Overlay with waterbody locations
  - Evaluate monitoring data availability
- Evaluate exposure risk and identify gaps in data
- Allocate resources to address gaps that are meaningful to communities

# When are decisions made on monitoring priorities and allocation of resources?

- State and local government monitoring programs typically develop annual or bi-annual workplans.
- Seeking external input as part of these planning efforts can be time intensive but is important for informing allocation of limited resources and for building cohesive partnerships.
- Develop opportunities or venues for community groups with environmental justice concerns to provide input on monitoring and assessment



# Monitoring and EJ -

## Are limited resources applied equitably?

- How are monitoring locations selected?
  - Proximity to potential sources of pollution, like municipal and industrial discharges
  - Proximity to public uses, like swimming and fishing
  - Varies by monitoring questions and resource availability
- How are pollutants and other parameters selected?
  - Routine indicators related to chemical measurements, physical characteristics, and biological conditions
  - Potential sources of pollution or degradation, like sanitary/stormwater overflow
  - Potential exposure pathways, like swimming and fish consumption
  - Availability of laboratory methods and benchmarks or criteria for determining health and environmental risks
  - Constrained by resources for sample collection and laboratory analysis
- How are the needs of communities with EJ concerns identified?
  - Consider data gaps
  - Seek input from community practitioners and organizations