

US EPA ARCHIVE DOCUMENT

# EPA's Critical Path Science Plan: Overview

Multi-stakeholder Engagement on New/Revised  
Recreational Water Quality Criteria

February 20, 2008

Washington, DC



## EPA's Critical Path Science Plan for New/Revised Criteria

- Describes research and science for establishing the scientific foundation for new/revised criteria
- Is an integrated approach to answering key science questions for scientifically sound criteria



## Goals of the Science Plan Research

- Assess Human Health Risk
- Develop Indicators
- Develop Methods
- Extrapolate Research Results



3

## Key Research Questions (1)

- *What is the risk to human health from swimming in water contaminated with human fecal matter as compared to swimming in water contaminated with non-human fecal matter?*
  - Risks from Human Sources of Fecal Contamination
  - Risks from Non-Human Sources of Fecal Contamination



4

## Key Research Questions (2)

- *How well do culture and molecular methods for various indicators (singly or in combination) correlate with swimming-related illnesses?*
  - Develop, Evaluate and Validate Indicators and Methods
  - Assess Linkages between Indicators and Methods
  - Characterize Temporal and Spatial Variability in Measurements



5

## Key Research Questions (3)

- *Are the indicators, methods and models suitable for use in different types of waters and for different CWA programs?*
  - Assess Variability in Diverse Geographic and Aquatic Conditions
  - Assess Methods Suitability to Different CWA Purposes
  - Develop, Evaluate and Validate Predictive Models and Tools



6

## Categories of Research Activities

- Epi Studies and/or QMRA
- Indicators, Methods
- Fate & Transport Studies
- Predictive Modeling
- Site Characterization Studies
- Research to Support Extrapolation to Inland Waters



7

## What To Expect

Implementation Guidance Discussion

Critical Path Science Plan Activities

Criteria Development Plan

2008

2009

2010

2011

2012

Stakeholder Engagement

8

## For More Information

For a copy of EPA's Critical Path Science Plan:

Contact Shari Barash at

[Barash.shari@epa.gov](mailto:Barash.shari@epa.gov)

or Samantha Fontenelle at

[fontenelle.samantha@epa.gov](mailto:fontenelle.samantha@epa.gov)

For other information on recreational water quality criteria:

[www.epa.gov/waterscience/criteria/recreation](http://www.epa.gov/waterscience/criteria/recreation)





www.epa.gov/ord

WATER QUALITY RESEARCH PROGRAM  
BUILDING A SCIENTIFIC FOUNDATION FOR SOUND ENVIRONMENTAL DECISIONS

# Critical Path Science Plan Identified Research Priorities

Charles I. Noss, Sc.D.  
ORD NPD for Water Quality  
February 20, 2008  
Washington, DC

U.S. Environmental Protection Agency  
Office of Research and Development



WATER QUALITY RESEARCH PROGRAM

## CPSP Research Issues

- Freshwater and Marine Studies
  - Indicators and Microbial Survival
- Studies in POTW Impacted Waters
- Other Microbial Sources

2



## Water Contamination Issues

- Human Sources
  - POTWs
  - Urban
- Animal Sources
  - Domestic Animals
  - Wildlife
- Tropical Waters
  - Indicator Occurrence/Growth

3



## Study Indicators

- *Enterococcus* Method 1600
- *Enterococcus* qPCR
- *E. coli* qPCR
- *Bacterioides* qPCR
- Human Specific *Bacterioides* qPCR
- F-Specific Coliphage
- *C. perfringens* qPCR

4