

# Emerging Issues - Beaches

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**GLSLCI, 13 July 2007**



# USEPA BEACH Act of 2000

- States having coastal recreational waters must adopt new/revised water quality standards
- Must use approved indicator organisms – *E. coli* or enterococci
- Must use approved testing methods – mTEC or modified mTEC agar, Colilert®<sup>®</sup>, Colisure®<sup>®</sup>
- Prompt public notification

**REVISED CRITERIA.**—Section 304(a) of the Federal Water

Pollution Control Act (33 U.S.C. 1314(a)) is amended by adding

at the end the following:

“(9) **REVISED CRITERIA FOR COASTAL RECREATION WATERS.**—

“(A) **IN GENERAL.**—Not later than 5 years after the date of the enactment of this paragraph, after consultation and in cooperation with appropriate Federal, State, tribal, and local officials (including local health officials), the Administrator shall publish new or revised water quality criteria for pathogens and pathogen indicators (including a revised list of testing methods, as appropriate), based on the results of the studies conducted under section 104(v),

for the purpose of protecting human health in coastal recreation waters

# USEPA Experts Scientific Workshop – March 2007

- 43 national and international experts
- Define critical research needs
- “critical path” research/scientific needs (2-3 years)
- Develop new or revised Clean Water Act (CWA) section 304(a) criteria for recreation
- Projected availability = 2012

# 7 Topics

- Criteria development
- Pathogens, pathogen indicators, indicators
- Methods development
- Risks from different sources
- Acceptable risk
- Predictive modeling
- Implementation realities

# Criteria Development

- Benchmarks
  - Applicable to human health effects
  - New criteria must work for all CWA purposes
  - Must address geographic variability
  - Must address point vs. non-point + risks
  - Must consider risks to subpopulations
  - Must be based on reliable methods
- Approaches to Criteria Development
  - **WHO model** (microbial assessment/sanitary inspection)
  - EU Approach
  - EPA 1986 Criteria (status quo)

# Methods Development

- Replace existing methods with more rapid ones (QPCR, 1-2 years)
- Replace existing indicators with ones more specific to human fecal contamination (1+ years)
- ***Determine site specific sources of pollution to characterize risk***

# Canadian Water Quality Guidelines

- 3<sup>rd</sup> Edition in DRAFT form
- Under peer review
- Recommended indicators
  - E. coli & enterococci
- Multi-barrier approach to risk management
- **Environmental Health & Sanitary Surveys**
- Addresses beach sands, algal blooms and secondary contact waters

# Rationale

- Indicators – no new evidence suggests that previous levels are not protective
- Fecal indicator limits alone are reactive and not sufficient to protect public health
- **Identify and control hazards prior to user contact**
- Multiple barriers provide risk reduction
- **Annual EHSS** provide working blueprint, recognizes uniqueness of each beach

# GLRC Coastal Health - GOAL 2

## *Risk Management*

- Contamination events will occur no more than 5% of available days per bathing season
- Sources of these events will be identified through ***standardized sanitary surveys***
- Remediation measures will address these events

# Recommended Actions

- Fully fund the BEACH Act
- Evaluate and trial real-time testing technologies including predictive models; eventually supplanting existing test methods
- Comply with BEACH Act requirements for public notification
- ***Draft and implement standardized sanitary surveys to identify pollution sources***

# **GLRC Coastal Health - GOAL 3**

## ***Indirect Sources***

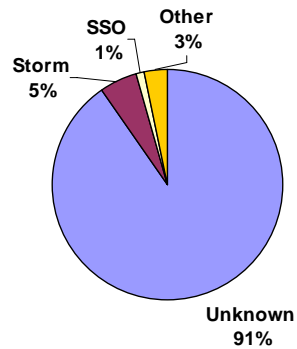
- Reduce bacterial, algal, and chemical contamination by 90-95 % at all local beaches by:
  - **Identification of indirect contamination sources**
  - Public education
  - Remediation

# Recommended Actions

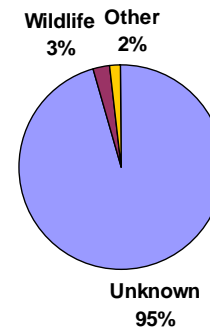
- Implement coastal community education and outreach programs
- Promulgate enforceable local ordinances which will serve to reduce inputs of direct and indirect contamination
- **Using sanitary surveys – ID 90-95% of all indirect pollutant sources resulting in beach closures**
- Control, manage, remediate sources identified by sanitary surveys

# What are sources - 2003

Reported Sources Causing Beach Actions in 2003  
(8,477 actions nationwide)



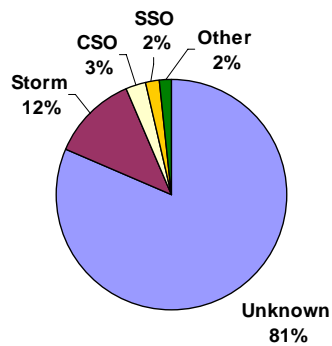
Reported Sources Causing Beach Actions  
in Great Lakes States in 2003  
(1,462 actions)



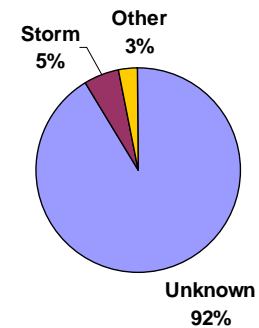
C. Kovatch, USEPA National Beaches Conference, 2006

# What are sources - 2004

Reported Sources Causing Beach Actions in 2004  
(11,951 actions nationwide)

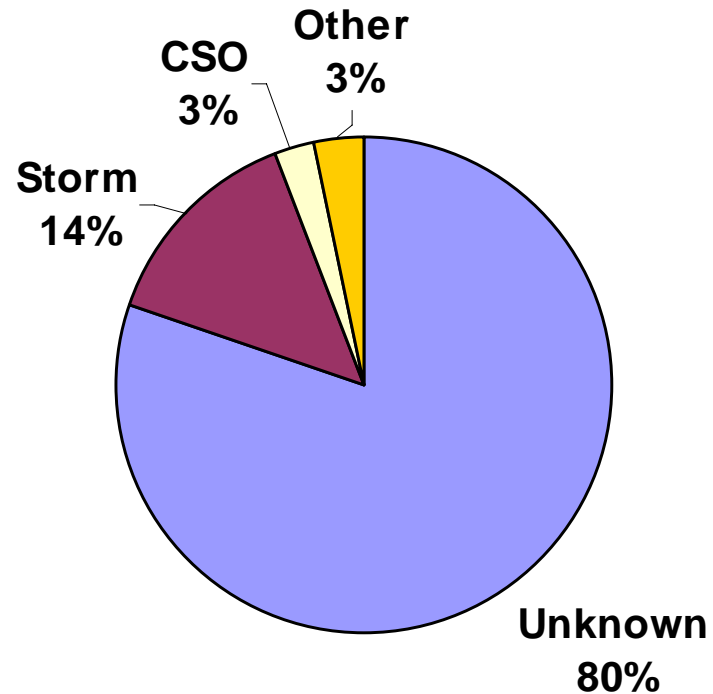


Reported Sources Causing Beach Actions  
in Great Lakes States in 2004  
(2,281 actions)



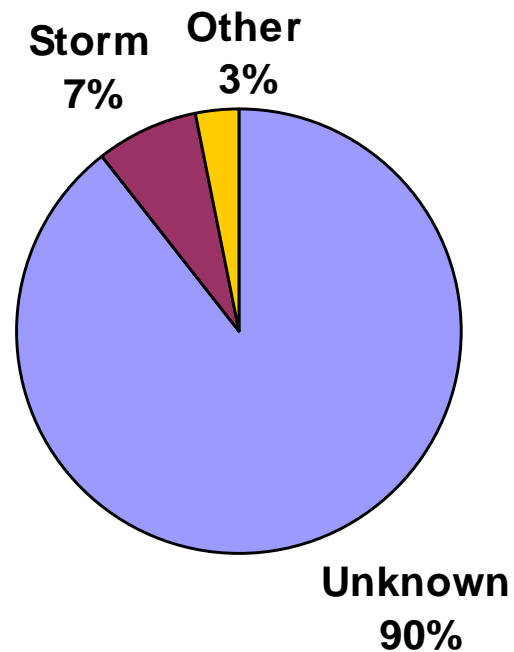
# What are sources - 2005

Reported Sources Causing Beach Actions in 2005  
(5,104 actions nationwide)



# What are GL sources - 2005

**Reported Sources Causing Beach Actions  
in Great Lakes States in 2005  
(1,481 actions)**



# Standardized Sanitary Surveys

- Early 2006 – Draft tools created
- 5-year watershed assessment, annual, routine
- Summer 2006 – Routine & annual tools piloted at volunteer GL beaches
- Autumn 2006 – US EPA GLNPO releases RFP
- Summer 2007 – grant-funded projects begin

# Current Projects

- GLSLCI call for volunteer municipalities
- USEPA Beach Sanitary Survey Pilot Projects
  - 9 grant awardees (8 US, 1 Canada)
  - \$500,000+
  - 60 Great Lakes beaches
- Alliance for the Great Lakes
  - Adopt-A-Beach program
  - Expand to include BSS
  - Implement in Chicago, 2007

# ***Potential New Criteria***

- WHO model, Annapolis Protocol (US/WHO), Multiple Barrier Approach (Canada)
- Traditional numerical standards
- New or existing bacterial indicators
- Identified pollution sources
  - Beach Sanitary Surveys (US)
  - Environmental Health & Safety Survey (Canada)
- **The “big picture”**

# Links

- **USEPA Beach Sanitary Survey Pilot Project**
  - <http://www.epa.gov/glnpo/fund/2006guid/2006guid.pdf>.
- **US EPA Experts Scientific Workshop report**
  - [www.epa.gov/waterscience/criteria/recreation/](http://www.epa.gov/waterscience/criteria/recreation/)
- **Health Canada**
  - [gordon\\_yasvinski@hc-sc.gc.ca](mailto:gordon_yasvinski@hc-sc.gc.ca)

