

Swim At Your Own Risk!

E.coli Impaired Recreational Waters in Salt Lake County: Jordan, Parley's and Emigration



Presenters:

- Leah Ann Lamb, Utah Division of Water Quality
- Bob Thompson, Salt Lake County
- Teresa Gray, Salt Lake Valley Health Department
- Florence Reynolds, Salt Lake City



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Presentation Outline

- *E.coli* in natural recreational waters 101: what is the standard, how are waters assessed, which waters in SL County are impaired, and how can you protect yourself if you recreate in impaired waters?
- What's happening at the Parley's Historic Nature Park and Emigration?
- Proactive drinking water source protection efforts implemented by Salt Lake City.
- Under what conditions are swimming advisories issued by local health departments?



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Standards: Beneficial Uses & Criteria



- The Clean Water Act authorizes States to designate important “beneficial” uses for surface waters.
- Numeric criteria establish goals to protect uses
- Numeric criteria include acceptable recurrence frequencies
- Aquatic life and Recreation uses are required (CWA §101(2)(a))
“fishable/swimmable”



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Utah's Recreation Uses

Primary Contact



- Surface waters are protected for “recreation use and aesthetics” (UAC R317-2-6.2).

- Two subcategories exist for these “Class 2” waters:

- Frequent Primary Contact (2A): where there is a “high likelihood of ingestion of water or a high degree of bodily contact with the water”

- Infrequent Primary and Secondary Contact (2B): where there is “low likelihood of ingestion”



Secondary Contact

Leah Ann Lamb

www.ecoli.utah.gov



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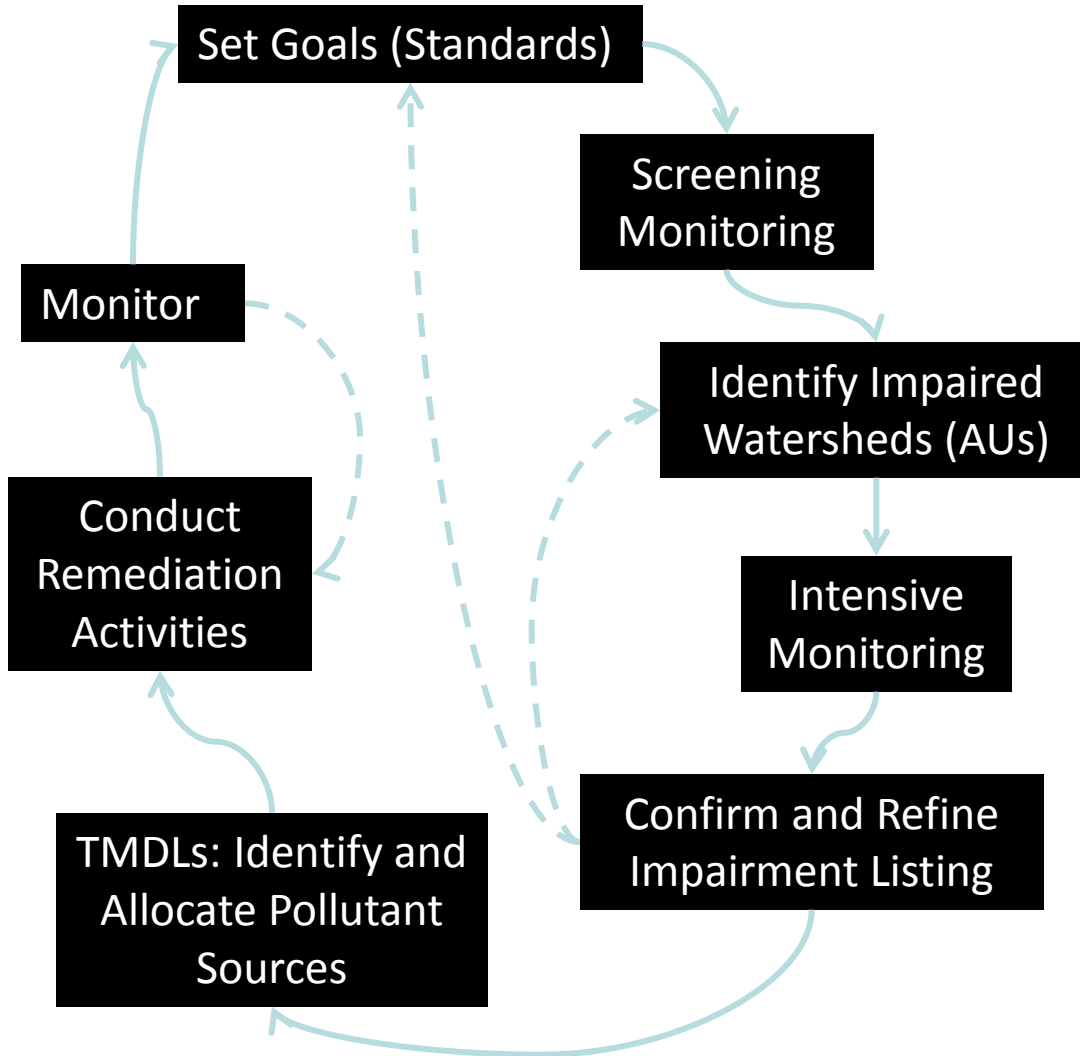
E. coli Criteria to Protect Recreation (2A &2B) and Domestic Uses (1C)

- Frequent Primary Contact (2A)
 - 30-day geometric mean of 126 MPN
 - Maximum of 409 MPN
- Secondary Contact (2B) and Domestic (1C)
 - 30-day geometric mean of 206 MPN
 - Maximum of 668 MPN
- With the Caveat (footnote)
- Where the criteria are exceeded and there is a reasonable basis for concluding that the indicator bacteria *E. coli* are primarily from natural sources (wildlife),...the criteria may be considered attained provided the density attributable to non-wildlife sources is less than the criteria.



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Assessing Support of Uses

- ❑ Assessing all waters of the state necessitates triage—adaptive management—water quality programs
- ❑ Assessments identify water quality problems or concerns, whereas advisories notify the public of health potential concerns.
- ❑ An iterative process—as are all scientific investigations
- ❑ Refinements are made as we better understand the scope of the problem



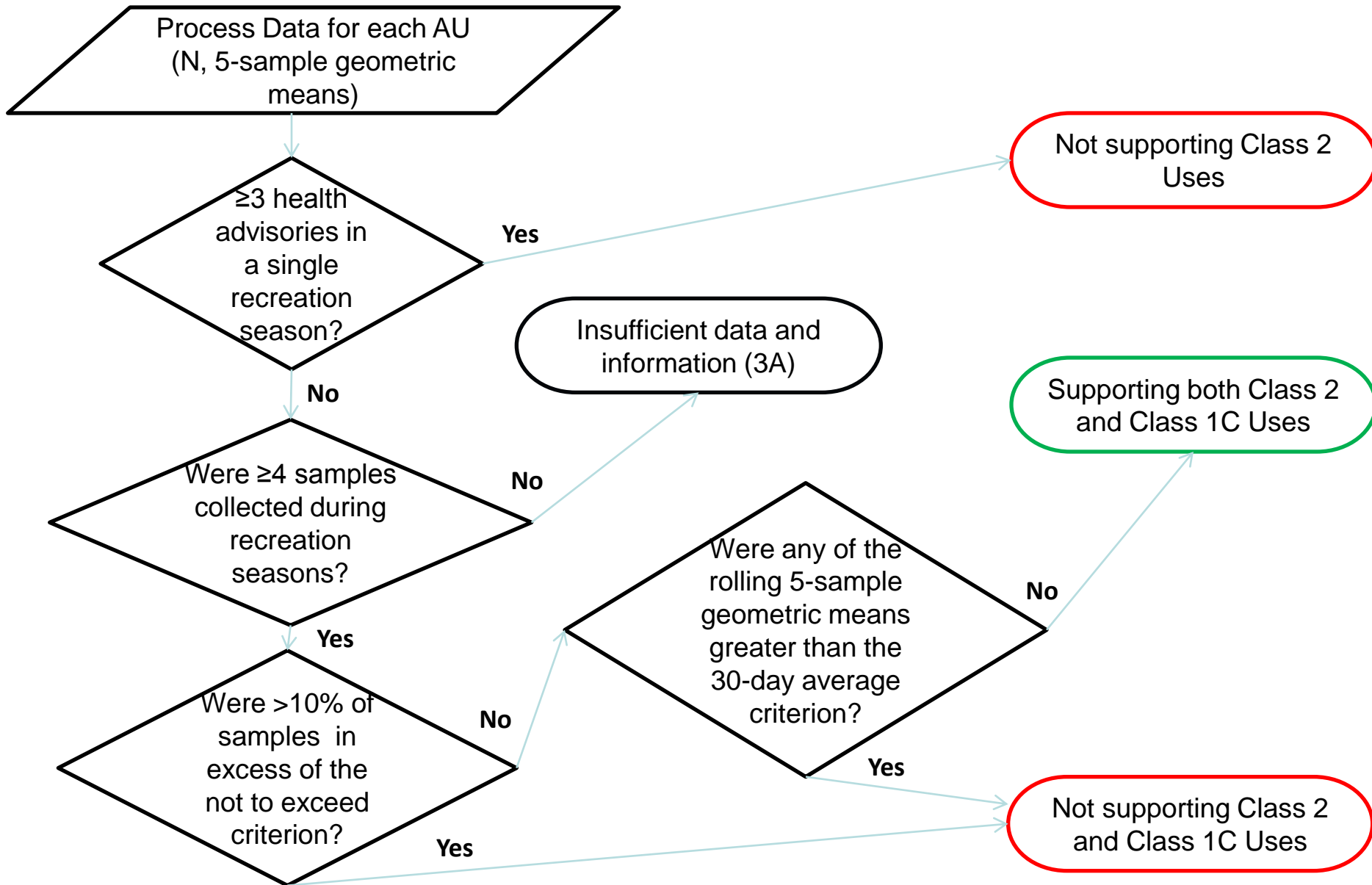
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Use Assessments: The Integrated Report

- The Clean Water Act requires States to assess attainment of beneficial uses (§303(d)) and to report the results of these assessments on a biennial basis (§305(b)). *Both requirements = Integrated Report*
- To make these assessments States are required to use all “existing and readily available” data and information (40 CFR 130.7(b)(5)).
- Utah sets “cutoff dates” to allow time for data interpretation: mostly 2008 for the 2010 IR.

The Assessment Process





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2010 Bacteriological Assessment Results

- Due to data cutoff dates and an immature monitoring program, only 21 stations had sufficient data to make an assessment
- Many stations were in close proximity, so assessments were conducted for 13 Assessment Units (AUs)
- Of the 13 statewide AUs, 10 were impaired; 6 in SL County
- The ratio of impaired sites: fully supporting sites is high because most collection efforts were targeted to areas with known problems



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E.coli Impaired Waters in Salt Lake County : 2010 IR

- **Emigration Creek** - Emigration Creek and tributaries from Foothill BLVD to headwaters
- **Parleys Canyon Creek** - Parleys Canyon Creek and tributaries from 1300 East to Mountain Dell Reservoir
- **Jordan River-1** - Jordan River from Farmington Bay upstream contiguous with the Davis County line
- **Jordan River- 2** - Jordan River from Davis County line upstream to North Temple Street
- **Jordan River-3** - Jordan River from North Temple to 2100 South
- **Jordan River-5** - Jordan River from the confluence with Little Cottonwood Creek to 7800 South

Assessments vs. Health Advisories

	Assessments	Advisories
Program Goals	Formal Regulations: Standards	Local Processes
Purpose	Broad: identify problems	Narrow: communicate immediate concerns
Regulatory Authority	Clean Water Act	Local Health Dept.
Solutions to Problems	Identify and limit sources	Rapid modification of the advisory

Health advisories are an immediate communication tool, whereas assessments seek to identify waterbodies in need of remediation (long-term solutions).



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Salt Lake County Watershed Planning and Restoration: Roles and Responsibilities

1. Collect data for Water Quality Stewardship Plan (WaQSP) update; fill in existing data gaps
2. Assist regulatory agencies with identification of problem areas
3. Determine likely sources of contamination
4. Include problem areas in WaQSP update with suggested remedies



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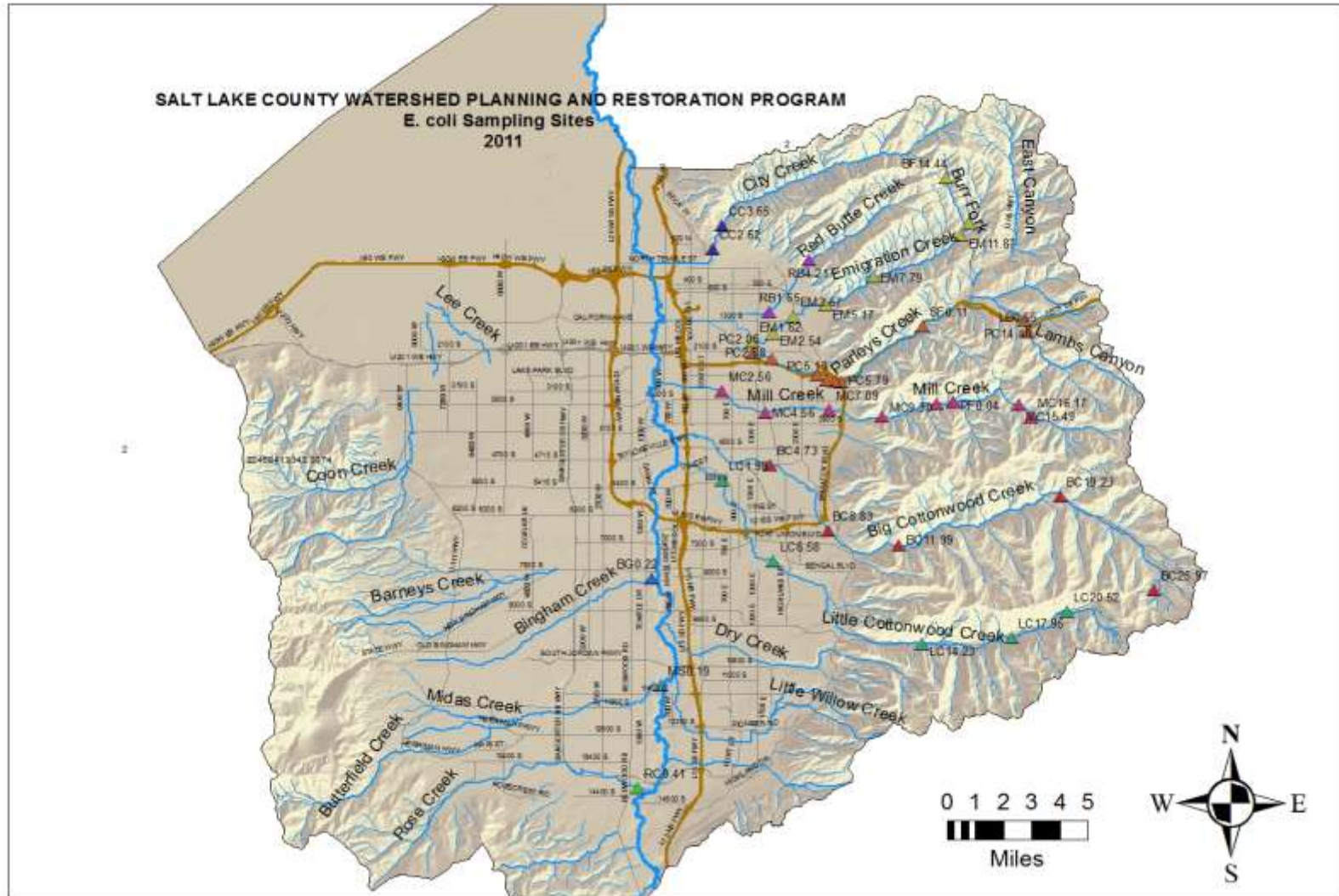
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Metric	Sub-Group	Functional Group	Ecosystem Health Index	Stream Function Index
Pool/Riffle ratio	Stream Channel	Habitat	EHI	SFI
Water Depth				
Fish Passage				
Habitat Structures				
Flow Diversion				
Riparian Width				
Riparian Density	Riparian Corridor			
Floodplain Development	Flood Conveyance	Hydraulics		
Floodplain Connectivity				
Bank Stability	Stream Stability			
Hydraulic Alteration				
303(d) list	Regulatory	Water Quality		
Macroinvertebrate	Aquatic			
Total P	Monitoring			
Temperature				
TDS				
DO				
<i>E. coli</i>				
Management	Aesthetics	Social		
Visual Aesthetics				
Location	Amenities (Nodes)			
Accessibility (ADA Approved)				
Restrooms				
Resource Compatibility (Nodes)	Amenities (Trails)			
Trail Corridor				
Connectivity				
Resource Compatibility (Trails)				



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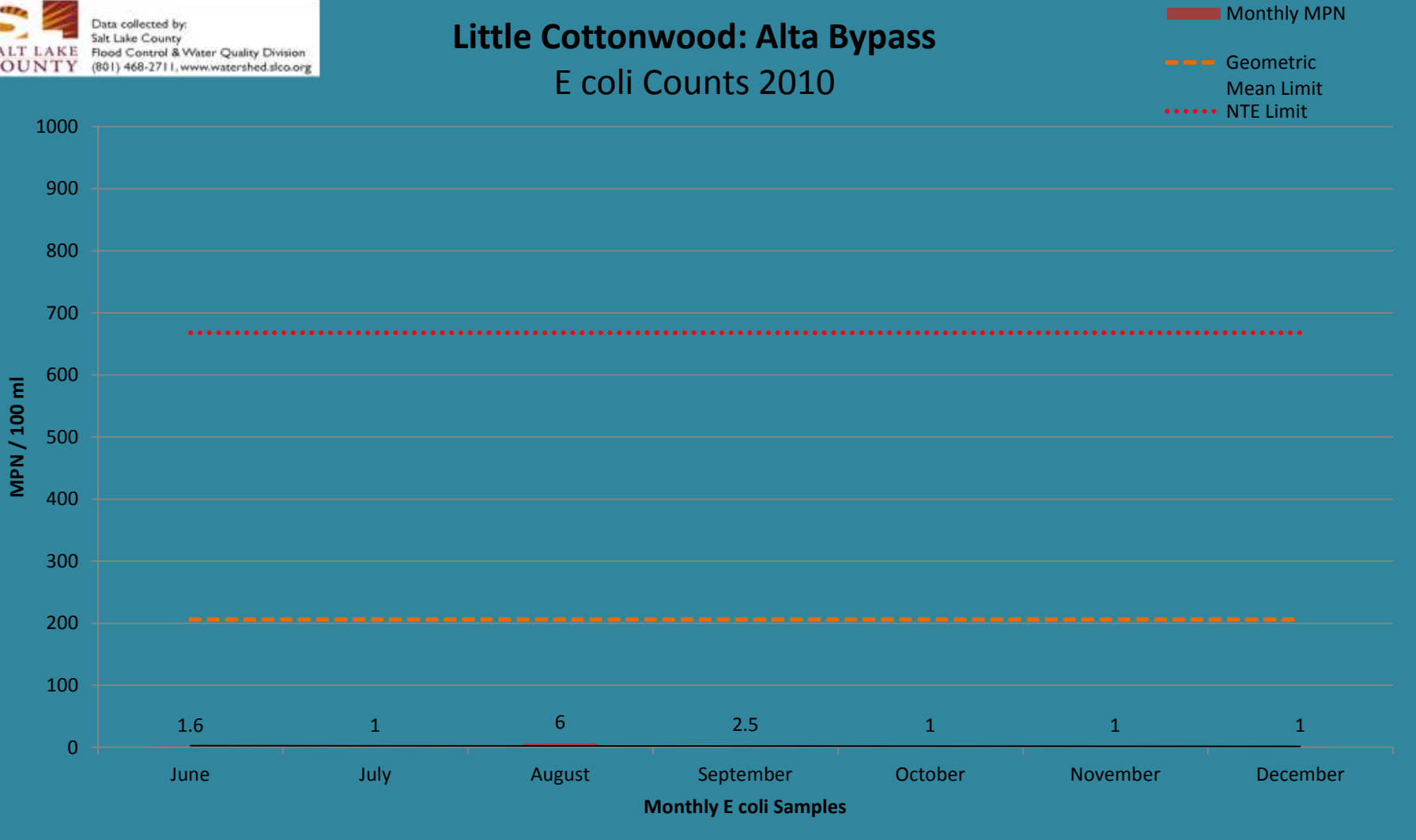


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 Data collected by:
Salt Lake County
Flood Control & Water Quality Division
(801) 468-2711, www.watershed.slco.org

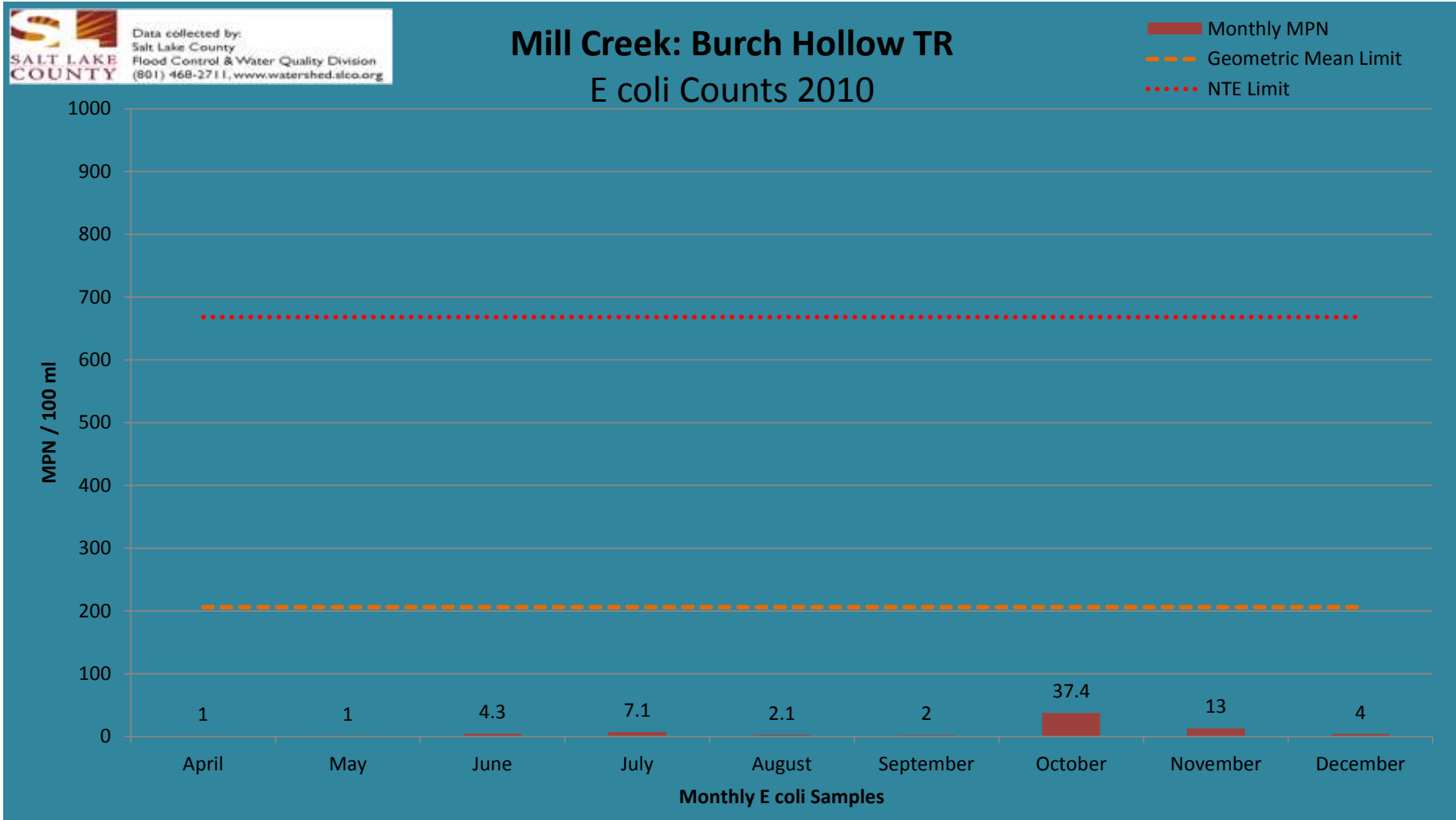
Little Cottonwood: Alta Bypass E coli Counts 2010





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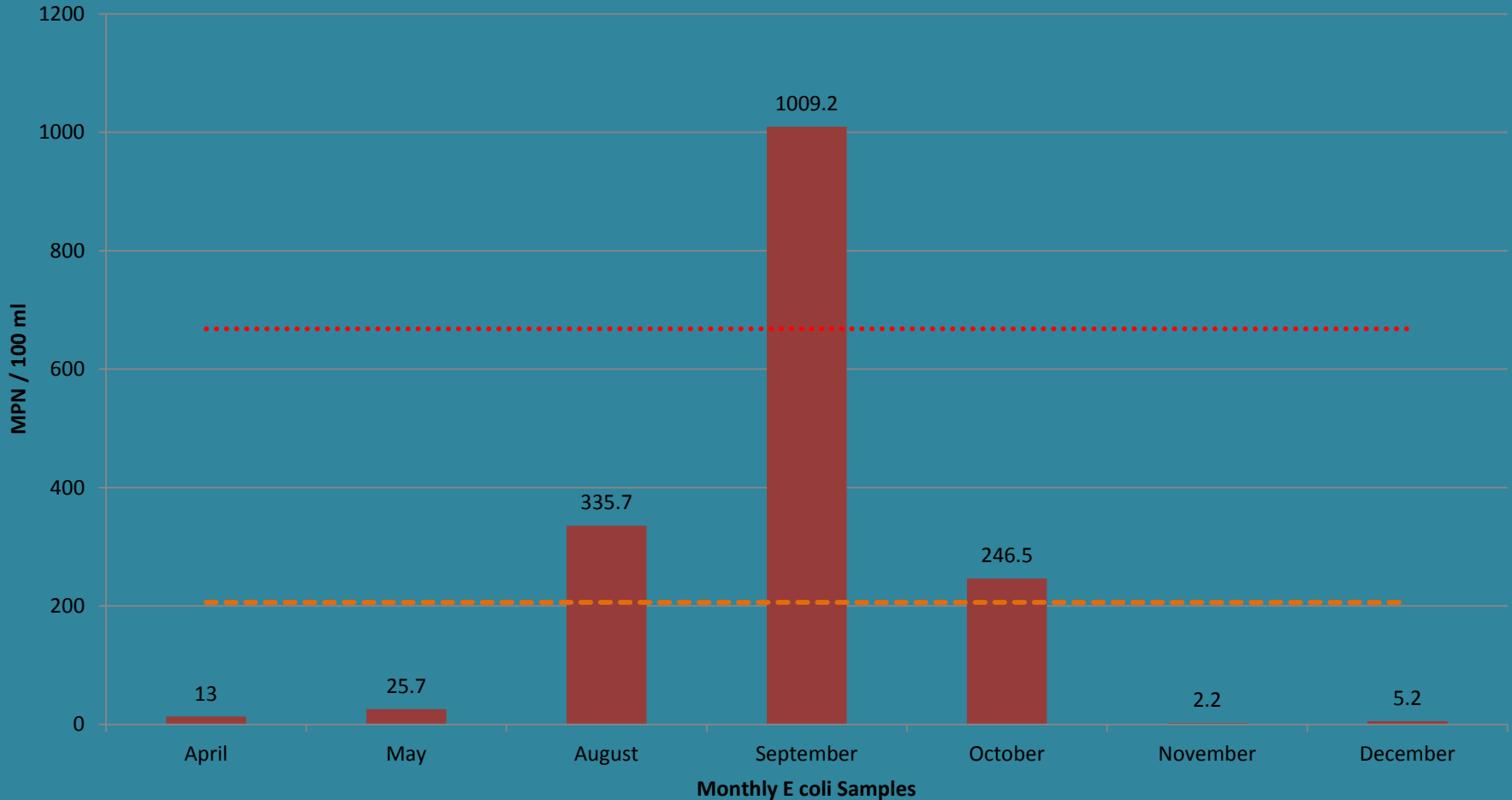
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Emigration Creek: Rotary Glen Park E coli Counts 2010

- Monthly MPN
- Geometric Mean Limit
- NTE Limit





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Posting Swim Advisories

- 668 MPN is exceeded
- Advisory has risky behaviors, steps to take to protect yourself, and fish are safe to eat



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Swimming Advisory Parley's Creek

Testing of this water indicates it is unsafe for swimming, deep wading, and ingesting due to bacterial contamination.

Fish in Parley's Creek are safe to eat.

Wash hands after handling the fish and lake water to reduce your risk.

For more information visit: www.ecoli.utah.gov or call (801) 313-6700



Salt Lake Valley Health Department

Teresa Gray

www.ecoli.utah.gov



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Challenges

- Sign Durability and Location
- Suspected Sources of Contamination
 - Dogs, Septic Tanks, Wildlife
- Multiple waterways Impacted Potentially
- Dogs in Parley's Hot Topic



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When to Close a Waterway???

- Epidemiological Evidence
 - High Sample Levels
 - Ill Individuals
 - River Suspected Source of Illness



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Long Term Solutions

- Is a group effort:
 - Property Owners
 - Public Land Users
 - Government Bodies
 - Politicians



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Long Term Solutions

Includes

- Education
- Infrastructure improvements
- Recognition of known sources of E. coli
- Know your role as a recreation water user



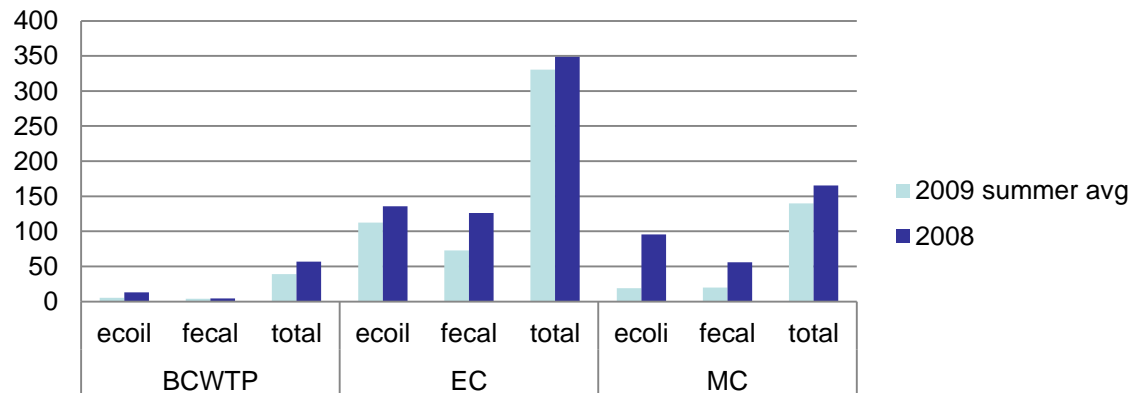
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Impact of long standing policy

- Pet ban in watershed canyons*
- Encourage dog waste removal by supplying equipment*

Summer Average Bacterial Counts





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Policy and County Foothill Canyon Overlay Zone (FCOZ) impact to water quality and bacterial impairment

- *Development restricted in riparian and wetland areas*
- *Vegetation removal limited*
- *When homes are upgraded - septic systems are evaluated*



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City Efforts to Address Impairments

- *Establish a Riparian Corridor Ordinance*
- *Encourage setbacks and native vegetation along streams*
- *Cooperate with County and State on monitoring programs*
- *Encourage public participation in riparian improvements*



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Potential Stormwater Impacts

- *Residential use impacts streams*
 - *Hard surface impacts drainage*
 - *Lawn fertilization and residual runoff*
 - *Car washing and soap discharge*
 - *Pet walking and waste control*
 - *Improper household product disposal*



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Take Away Issues

- *Cooperative monitoring in place*
- *Long-standing regulations and ordinances for protection*
- *Increased public awareness*
- *Need all stakeholders engaged for long-term solutions*