E. coli Monitoring Program Updates

Water Quality Health Advisory Panel
April 23, 2018

Calah Worthen
WQHAP – *E. coli* Program Updates

Presentation Overview

1. 2018 Monitoring Plan
2. *E. coli* response plan
3. Changes to *E. coli* advisory process
4. *E. coli* response worksheet
5. Changes to *E. coli* advisory sign template
2018 *E. coli* Monitoring Plan
2018 *E. coli* Monitoring Plan

Priority waterbodies – how are they identified?

- Beneficial use class of the waterbody
- Recreational use or visitation
- Population density
- Potential for *E. coli* problems or history of *E. coli* problems
- Special request by state, local, or federal agency
- Waterbody location (rotating basin targeted monitoring)
- Available resources for monitoring
- TMDL development

Monitoring plan available online at: [deq.utah.gov/legacy/divisions/water-quality/health-advisory/ecoli/monitoring.htm](http://deq.utah.gov/legacy/divisions/water-quality/health-advisory/ecoli/monitoring.htm)
2017 Prioritization

1. Spatial exercise to prioritize Assessment units (AUs)
2. Assigned a score to 9 different categories
3. Final score determines priority

<table>
<thead>
<tr>
<th>Scoring Category</th>
<th>Description</th>
<th>Draft Score</th>
<th>Draft Score Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>2A Beneficial Use</td>
<td>Assessment unit has a 2A beneficial use (protected for frequent primary contact)</td>
<td>1 or Blank</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Perennial Waterbody</td>
<td>Assessment unit contains a perennial waterbody</td>
<td>0.5</td>
<td>Yes/No</td>
</tr>
<tr>
<td>State Park</td>
<td>The assessment unit intersects a State Park</td>
<td>1 or Blank</td>
<td>Yes/No</td>
</tr>
<tr>
<td>State Park Visitation</td>
<td>Annual State Park Visitation</td>
<td>0-1</td>
<td>Percentile</td>
</tr>
<tr>
<td>National Park</td>
<td>The assessment unit intersects a National Park</td>
<td>1 or Blank</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Fisheries Visitation (Lakes Only)</td>
<td>Fisheries visitation from 2011-2012 Department of Natural Resources Survey (lakes only)</td>
<td>0-1</td>
<td>Percentile</td>
</tr>
<tr>
<td>Impaired for E. coli (2016 Integrated Report)</td>
<td>The assessment unit was impaired for E. coli in the 2016 Integrated Report</td>
<td>1 or Blank</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Boat Ramp</td>
<td>Score based on number of boat ramps in the Assessment Unit</td>
<td>0-1</td>
<td>Percentile</td>
</tr>
<tr>
<td>Special Request</td>
<td>Local knowledge, Health Department request, DWQ water quality study (TMDL), etc.</td>
<td>1 or Blank</td>
<td>Yes/No</td>
</tr>
</tbody>
</table>
2018 Prioritization

1. Select individual monitoring locations within Aus
2. Assigned a score to 9 different categories
3. Final score determines priority
4. Good overlap between AU prioritization and individual site selection
5. ~400 sites sampled by DWQ and agency partners in 2018
E. coli Response Plan

Purpose

1. Provide guidance for local health departments to determine when an E. coli related advisory should be considered, including when an existing advisory can be removed.

2. Provide information about the Utah Division of Water Quality (DWQ) Recreational E. coli Monitoring Program.

3. Describe DWQ’s response to a potential E. coli problem in surface water.

4. Provide background information about E. coli in surface waters and DWQ’s assessment of E. coli data.
PREVIOUS UDOH & DWQ *E. coli* Advisory Protocol

**PREVIOUS PROTOCOL**

**Issue Advisory**
- 2 samples \(>\text{WQS}\)

**Remove Advisory**
- All results \(<\text{WQS}\) for 5 days

*unrealistic monitoring schedule*
*lack of clarity on duration of closure*

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*Cooperators and HD may choose to sample particular locations more frequently.*
PROPOSED UDOH & DWQ *E. coli* Advisory Protocol

**PROPOSED PROTOCOL**

**Issue Advisory**
- 2 samples >WQS

**Remove Advisory**
- 4 consecutive samples <WQS
- Samples collected 2X per week during advisory
- Advisory in place for two minimum of two weeks

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* DWQ and the local health department may jointly decide to increase or decrease the frequency of sampling during an active advisory on a case-by-case basis.
# E. coli Response Plan

Changes to UDOH and DWQ Recommended *E. coli* Advisory Protocol

<table>
<thead>
<tr>
<th><strong>PREVIOUS PROTOCOL</strong></th>
<th><strong>PROPOSED PROTOCOL</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Issue Advisory</strong></td>
<td><strong>Issue Advisory</strong></td>
</tr>
<tr>
<td>• 2 samples &gt; WQS</td>
<td>• 2 samples &gt; WQS</td>
</tr>
<tr>
<td><strong>Remove Advisory</strong></td>
<td><strong>Remove Advisory</strong></td>
</tr>
<tr>
<td>• All results &lt; WQS for 5 days</td>
<td>• 4 consecutive samples &lt; WQS</td>
</tr>
<tr>
<td></td>
<td>• Samples collected 2X per week during advisory*</td>
</tr>
<tr>
<td></td>
<td>• Advisory in place for two minimum of two weeks</td>
</tr>
</tbody>
</table>

*DBW and LHD may jointly decide to increase or decrease the frequency of sampling during an active advisory on a case by case basis*

*unrealistic monitoring schedule*

*lack of clarity on duration of closure*
Feedback and Discussion

Changes to Advisory Process

1. Number of samples needed to remove closure
2. Duration of closure
3. Frequency of monitoring during active advisory

**PREVIOUS PROTOCOL**

Issue Advisory
- 2 samples > WQS

Remove Advisory
- All results < WQS for 5 days

*unrealistic monitoring schedule
*lack of clarity on duration of closure

**PROPOSED PROTOCOL**

Issue Advisory
- 2 samples > WQS

Remove Advisory
- 4 consecutive samples < WQS
- Samples collected 2X per week during advisory*
- Advisory in place for two minimum of two weeks

* DWQ and LHD may jointly decide to increase or decrease the frequency of sampling during an active advisory on a case by case basis
**E. coli** Response Worksheet

**Purpose**

- Evaluate the level of response to an *E. coli* related incident on any waterbody.

**Process**

- Assign a score for each criterion
- DWQ response is based on total number of points
## Discussion

- General feedback?
- Points value?

### E. coli Response Criteria Worksheet

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterbody classified as 2A in <a href="#">Utah Administrative Code R317-2-13</a> or <a href="#">DEQ Interactive Map</a></td>
<td>15</td>
</tr>
<tr>
<td>Waterbody identified as Priority on DEQ website? (heavy recreational use, high risk based on land use, special request, or previous impairment)?</td>
<td>10</td>
</tr>
<tr>
<td>Initial sample result value &gt;WQS AND sample collected by DWQ trained individual (government agency/trained private volunteer)?</td>
<td>5</td>
</tr>
<tr>
<td>Report received between May 31st – October 31st?</td>
<td>5</td>
</tr>
<tr>
<td>Other indication of E. coli problem such as animals in or around water, such as human or animal waste, foul odor, improper waste dumping, or stormwater runoff?</td>
<td>15</td>
</tr>
<tr>
<td>Heavy recreational use observed at time of sampling?</td>
<td>10</td>
</tr>
</tbody>
</table>

### Total Points

**Evaluation Key:**

**Level 1: Total Points > 30**
- Information forwarded to LHD and local DEQ District Engineer (DE)
- Coordinate inspection and verification sampling (response within 24 hours or ASAP)

**Level 2: Total Points 15 to 30**
- Information forwarded to LHD and local DEQ District Engineer (DE)
- Coordinate inspection and verification sampling (response time within 1 week)

**Level 3: Total Points <15**
- Information forwarded to LHD and local DEQ District Engineer (DE)
- Response time and actions at discretion of LHD and DE
Changes to *E. coli* Advisory Sign Template

Minor Changes

- Updated Spanish translation
- Added “Date Posted” field
- Added phone number for Utah Poison Control Center
- Updated DWQ website
- Added Utah Association of LHDs logo

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**CAUTION**

**WATER QUALITY ADVISORY**

A temporary advisory has been issued for this area based on recent monitoring for *E. coli* bacteria.

**FOR YOUR SAFETY**

- Do not ingest lake water.
  No ingerir agua del lago.
- Water is unsafe for swimming and deep wading.
  Agua no es segura para nadar y vadear profundamente.
- Wash hands after handling fish and lake water.
  Lávese las manos después de manipular el pescado y el agua del lago.

For more information visit:
http://eq.utah.gov/divisions/water-utility/health-advise/ecoli

Contact your local health department:

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- Wash hands after handling fish and lake/river water.
  Lávese las manos después de manipular el pescado y el agua del lago/rio.

Data Posted:  
Contact your local health department:

Call your doctor if you have sudden or unexplained sickness.
For more information visit:
http://eq.utah.gov/divisions/water-utility/health-advise/ecoli

Utah Poison Control Center
(800) 222-1222
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Division of Water Quality
Discussion or Questions