DWQ Recreational Health Outline

Harmful Algal Blooms

- 2019 Advisory Season
- 2020 Season
  - Incorporating latest EPA recreational health threshold

Escherichia coli

- Program ‘tear down’ & reboot
- Joint guidance with DOH
- Strategy for strategy going forward
  - Timeline
- Assessment strategies
  - MST
HABs
**DWQ HAB Advisory Process**

**Monitoring**
- **Routine**
  DWQ and partners monitor prioritized lakes on a monthly basis
- **Response**
  DWQ and partners monitor lakes on advisory on a weekly basis
- **Data Collected**
  Microcystin and Anatoxin-a Cell Count (Taxonomy)

**Detection**
Inform LHD
Present data collected along with DWQ recommendation. Assist in answering site specific questions

**Communication**
Phone call with all stakeholders (i.e. DNR, USFS, etc.) for site specific context

**Advisory**
- **Signs**
  Work with LHD and partners to post signs, make sure signs get posted
- **Communication**
  Alert stakeholders to advisory decision. Post information, maps, and narrative about advisory on habs.utah.gov
**DWQ HAB Advisory Process**

**Monitoring**
- **Routine**: DWQ and partners monitor prioritized lakes on a **monthly** basis.
- **Response**: DWQ and partners monitor lakes on advisory on a **weekly** basis.

**Data Collected**
- Microcystin and Anatoxin-a
- Cell Count (Taxonomy)

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**Advisory**
- **Signs**: Work with LHD and partners to post signs, make sure signs get posted.
- **Communication**: Alert stakeholders to advisory decision. Post information, maps, and narrative about advisory on habs.utah.gov.
HAB Data and Thresholds

Anatoxin-a
- Also known as Very Fast Death Factor (VFDF)
- Neurotoxin
- Produced by many cyanobacteria species, including those found in Utah waterbodies

Microcystin
- Hepatoxin
- Produced by many cyanobacteria species, including those found in Utah waterbodies

Cell Count & Taxonomy
- Number of HAB cells
- Species present within sample

UPHL

PhycoTech

Data Delivery
- 24 hours for response monitoring
- 72 hours for routine monitoring
# 2019 Advisory Thresholds

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<th>Danger</th>
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2019 HAB Advisory Season

2019 Utah DWQ HAB Program

**Monitoring**
- 175 unique sites monitored
- 784 site visits
- 65 water bodies visited

**Travel**
- 25,000 miles driven

**Sampling**
- 1317 samples collected

**Advisories**
- 35 advisories
- 1 fishing closure

**Coordination**
- 11/13 local health departments with advisories

**Human Health**
- 12 state park advisories
- 40 reported HAB-related illnesses

Field Monitoring & Sampling Summary Statistics: June - November 2019

05-27-2019
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## Health Risks

- Reported: Variable/Negligible
- Warning: Potential for long-term illness
- Danger: Potential for acute poisoning
- Potential for long-term illness
- Short term effects (e.g. skin and eye irritation, nausea, vomiting, diarrhea)

## Recommended Actions

- LHD specific
- Issue Warning Advisory
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- No primary contact recreation
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## Recommended Human Health Recreational Ambient Water Quality Criteria or Swimming Advisories for Microcystins and Cylindrospermopsin

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- Updated to reflect new studies
  - Ingestion & exposure rates

# Proposed Timeline of EPA CyanoHABs and Recreational Health Criteria Implementation

<table>
<thead>
<tr>
<th>Draft High-level Implementation Q&amp;As (Tasks)</th>
<th>Start Date</th>
<th>End Date</th>
<th>Notes</th>
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<tbody>
<tr>
<td>OST Office Director Review</td>
<td>4/29/19</td>
<td>5/10/19</td>
<td>Must schedule meeting</td>
</tr>
<tr>
<td>Federal Register Notice publication of criteria</td>
<td>4/30/19</td>
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<td>Revise document to address OST Office Director comments.</td>
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<td>5/17/19</td>
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<td>6/7/19</td>
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<td>Put Draft out for public comment (docket at regulations.gov).</td>
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<td>7/25/19</td>
<td>45-day public comment period</td>
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<td>Address public comments.</td>
<td>7/26/19</td>
<td>8/02/19</td>
<td>EPA-State focus group</td>
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<td>OW Management, coregulator review of final document(s)</td>
<td>8/05/19</td>
<td>10/11/19</td>
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<td>Issue final materials.</td>
<td>10/15/19</td>
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Utah DEQ/DOH Timeline

August 2019
Propose new thresholds to Utah Conference of Local Environmental Health Administrators (CLEHA)

December 2019
Propose new thresholds to Utah Health Advisory Panel

January 2020
Finalize new thresholds, publish on HAB website

May 2020
Implement new thresholds in 2020 monitoring season
### 2020 Advisory Thresholds

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- **Issue Danger Advisory**
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  - Consider Closure
  - Weekly sampling minimum
Anatoxin-a and Cell Counts for 2020 Season

Utah DOH Proposals (no updated guidance from EPA)

Anatoxin-a
- Remains at ‘detection’
  - Based on quality assurance of detection limits from UPHL or other partner labs

Cyanobacteria Cell Counts
- Increase from 20,000 cells/mL to 40,000 cells/mL

Incorporate into same timeline as microcystin and cylindrospermopsin
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Reintroducing third, non-advisory tier

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**Cyano Cell Density**
- Low: <40,000
- Moderate: 40,000 - 10,000,000
- High: >10,000,000

**Microcystin**
- Low: <8
- Moderate: 8 - 2,000
- High: >2,000

**Cylindrospermopsin**
- Low: <15
- Moderate: 15
- High: >15

**Anatoxin-a**
- Low: non-detect
- Moderate: Detection - 90
- High: >90

**Health Risks**
- Low: Variable/Negligible
- Moderate: Potential for long-term illness
- High: Potential for acute poisoning
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**Recommended Actions**
- Low: Issue Warning Advisory
- Moderate: Post Warning signs
- High: Consider Closure
- Low: No primary contact recreation
- Moderate: Weekly sampling minimum
- High: Weekly sampling minimum
Reintroducing third, non-advisory tier?

- Possibly triggered by:
  - Public report
  - DWQ observation
  - Satellite imagery
  - Absence of complete data set
- Increases LHD flexibility towards protecting and informing public without an advisory
- ‘Caution’, ‘Observed’, ‘Reported’, ?
- Separate signs

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Permanent Signs

- Requested by LHDs
- Need to be prioritized (limited budget)
  - DWQ can provide guidance/recommendations on water bodies but ultimately a LHD decision
- **Will not replace warning and danger signs**
  - Serve as more permanent and continuous caution to recreators
  - Placeholder if advisory signs cannot be placed immediately after detection of HAB above threshold
2020 E. coli Program
## E. coli Program Re-build Goals

| Joint program support (in spirit and practice!) across UDWQ, UDOH, and state health agencies | Credible, timely data and communication to support advisory decisions | Efficiently identify water bodies that pose unacceptable exposure to human pathogens |
Assessment vs. Advisory

- Long-term monitoring for the purpose of assessment listing
- Clean Water Act
  - Restore and maintain the chemical, biological, and physical integrity of the Nation’s waters
  - National Goal – “Fishable and Swimmable”
  - Primarily focused on point sources of pollution
  - Amended in 1987 to address nonpoint sources
- Short-term monitoring for the purpose of advisory and response
- Uses rapid monitoring and data collection to protect recreational human health more instantaneously
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- Short-term monitoring for the purpose of advisory and response
- Uses rapid monitoring and data collection to protect recreational human health more instantaneously

• Assessment of the water quality of flowing surface waters of the State
• Period of record: 10/01/2010 to 09/30/2018
• Assesses readily available and credible data (Call for Data ended July 20)
• Automated using R-code and reviewed using R shiny app
• Assessment Methods were publicly vetted and finalized May, 2019
Working towards a cohesive strategy

**Identified issues with current program**

1. Currently disjointed program implementation across LHDs
2. Lacks consistent response protocol (data sharing, TAT, response, etc.)
3. Lacks DOH/LHD input
4. Advisory criteria lack a connection to current recreational health risks
5. Priorities not efficiently or clearly conveyed to cooperative agencies
   a. currently focuses on an assessment or TMDL context
6. Missing multiple efficiencies to align with HAB program
Joint DOH/DWQ response guidance

1. Review/update response criteria and implementation
   a. Science and literature review
   b. Scoping across other states

2. Establish priority waterbodies
   a. Develop transparent method
   b. DWQ’s at-risk identification (2A designation, spatial analysis, MST)
   c. LHD input for local high recreation waters
   d. Cooperator input for local high recreation waters

3. Communication
   a. Align with current HAB program processes
Utah DEQ/DOH Timeline

- **August 2019**: Inform CLEHA that E. coli program will be rebuilt for 2020
- **December 2019**: Propose to HAP that E. coli program will be rebuilt for 2020
- **January 2020**: Propose new strategies to CLEHA. Request membership for E. coli working group
- **February 2020**: E. coli working group kickoff
- **April 2020**: Finalize new thresholds, and guidances. Publish on E. coli website. Host E. coli workshop (jointly with annual HAB workshop)
- **May 2020**: Implement new thresholds in 2020 monitoring season.
Questions/Discussion