



Draft Updates to California CyanoHAB Guidance

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California CyanoHAB Network (CCHAB)

A Workgroup of the California Water Quality Monitoring Council

Government agencies; Tribal governments; Academics, researchers and other stakeholders

Where to find us: www.mywaterquality.ca.gov



The image shows the header and navigation bar of the California Water Quality Monitoring Council website. The header features the logo on the left, which includes the text 'CALIFORNIA WATER QUALITY MONITORING COUNCIL' and 'CA.GOV'. To the right of the logo, the text 'California Water Quality Monitoring Council' is displayed in a light blue font, followed by 'My Water Quality' in a larger white font. Below this, a smaller line of text reads 'A COLLABORATION BETWEEN THE CALIFORNIA ENVIRONMENTAL PROTECTION AND NATURAL RESOURCES AGENCIES'. On the far right of the header is a search bar with the word 'Search' and a magnifying glass icon. The navigation bar below the header is dark blue and contains four white icons: a house icon, the word 'Portals', the text 'About Us', and the text 'Work Groups'.

Draft Voluntary Statewide Guidance for CyanoHABs (2010 & 2016)

for local, state, and tribal regulators

to protect people, pets, and livestock from the
effects of CyanoHABs in recreation waters

CCHAB Webpage

→ Resources



2016 Draft Updates to the Voluntary Statewide Guidance

- Incorporate OEHHA's 2012 Risk Assessment
- Address additional cyanotoxins
- Expand and clarify risk management options
- Increase usability for new users



Guidance Document 2016 Updated Components *(as of May 9, 2016)*

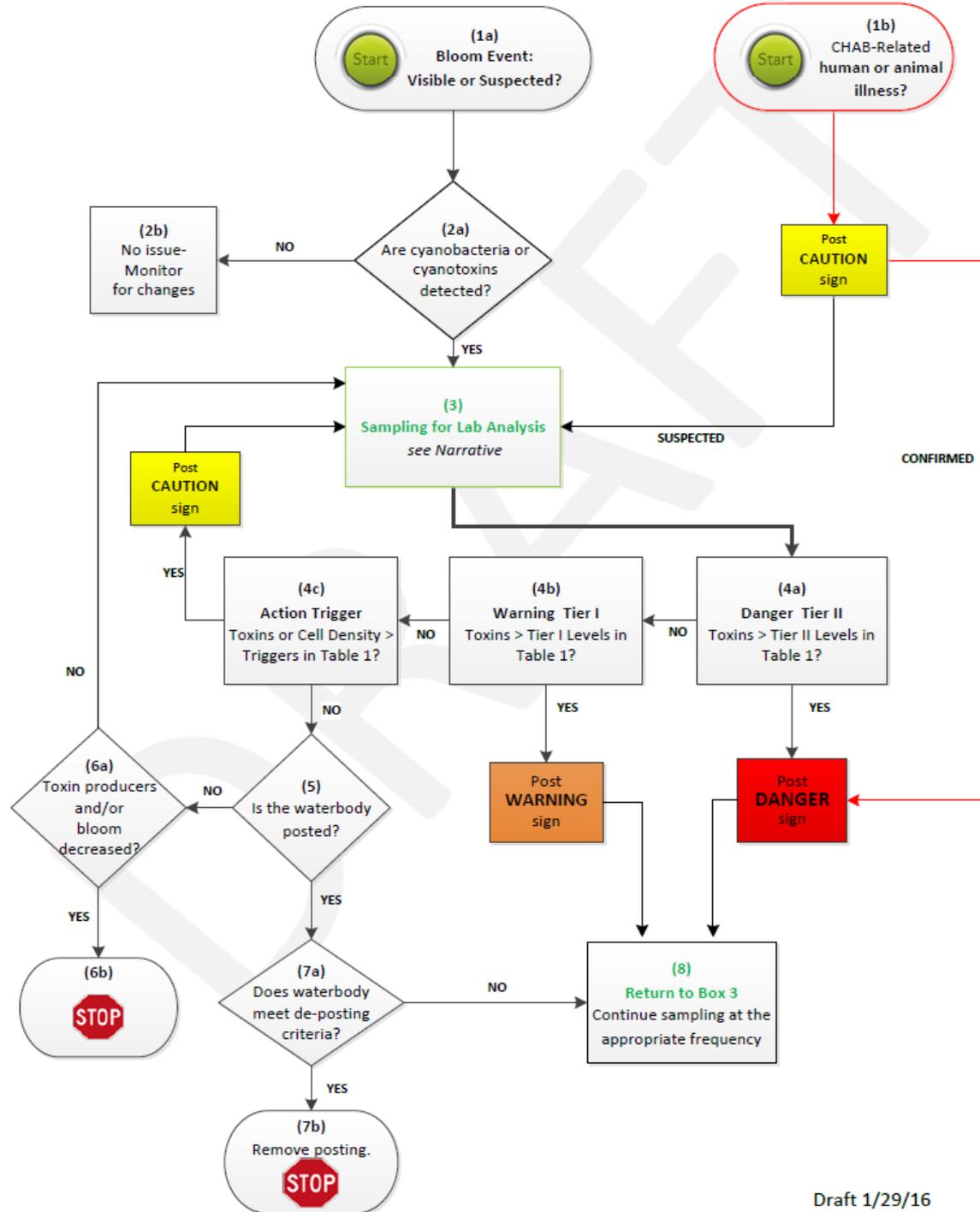
- **Toxin triggers** for management action
- Expanded **decision tree** with **narrative**
- Example **signage** to warn of potential health risks
- **Appendix** describing toxin trigger development

-
- Full document finished – 12/2016



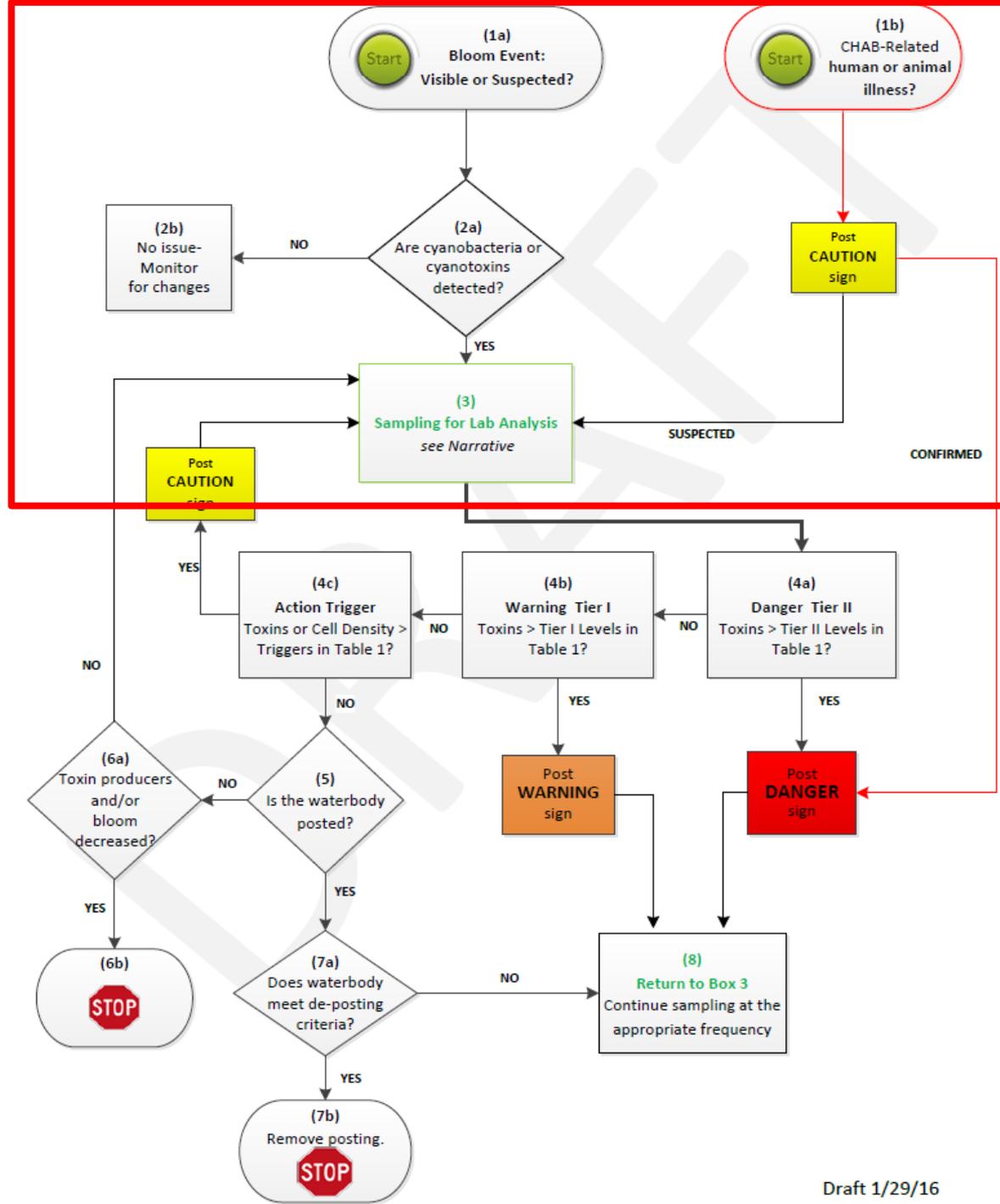
2016 Draft Decision Tree

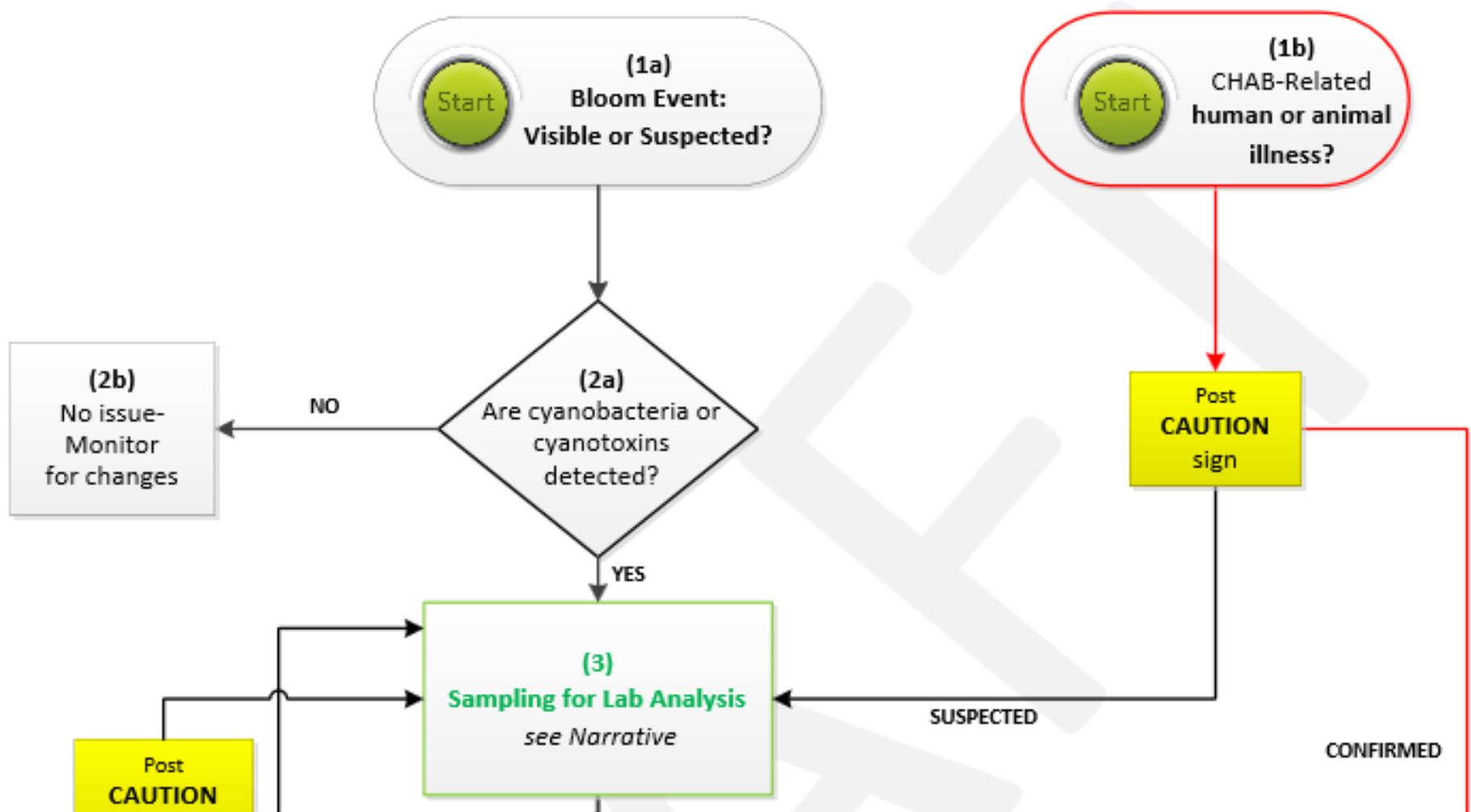
- 2 entry points
- Tiered response
- Iterative approach
- Clear exit points



2016 Draft Decision Tree

- 2 entry points
- Tiered response
- Iterative approach
- Clear exit points





Entry Points:

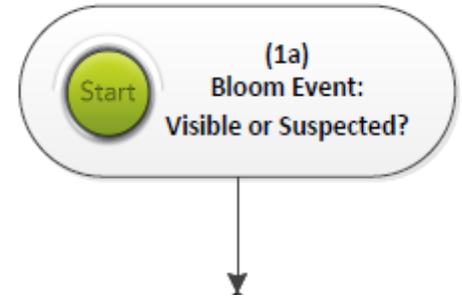
- Visible or suspected bloom event
- Human or animal illness or death

Narrative of Decision Tree

- Succinct explanation of each step
- Refers to other sources for details
- Local interpretation and professional judgement is expected
- Voluntary guidance to assist local managers



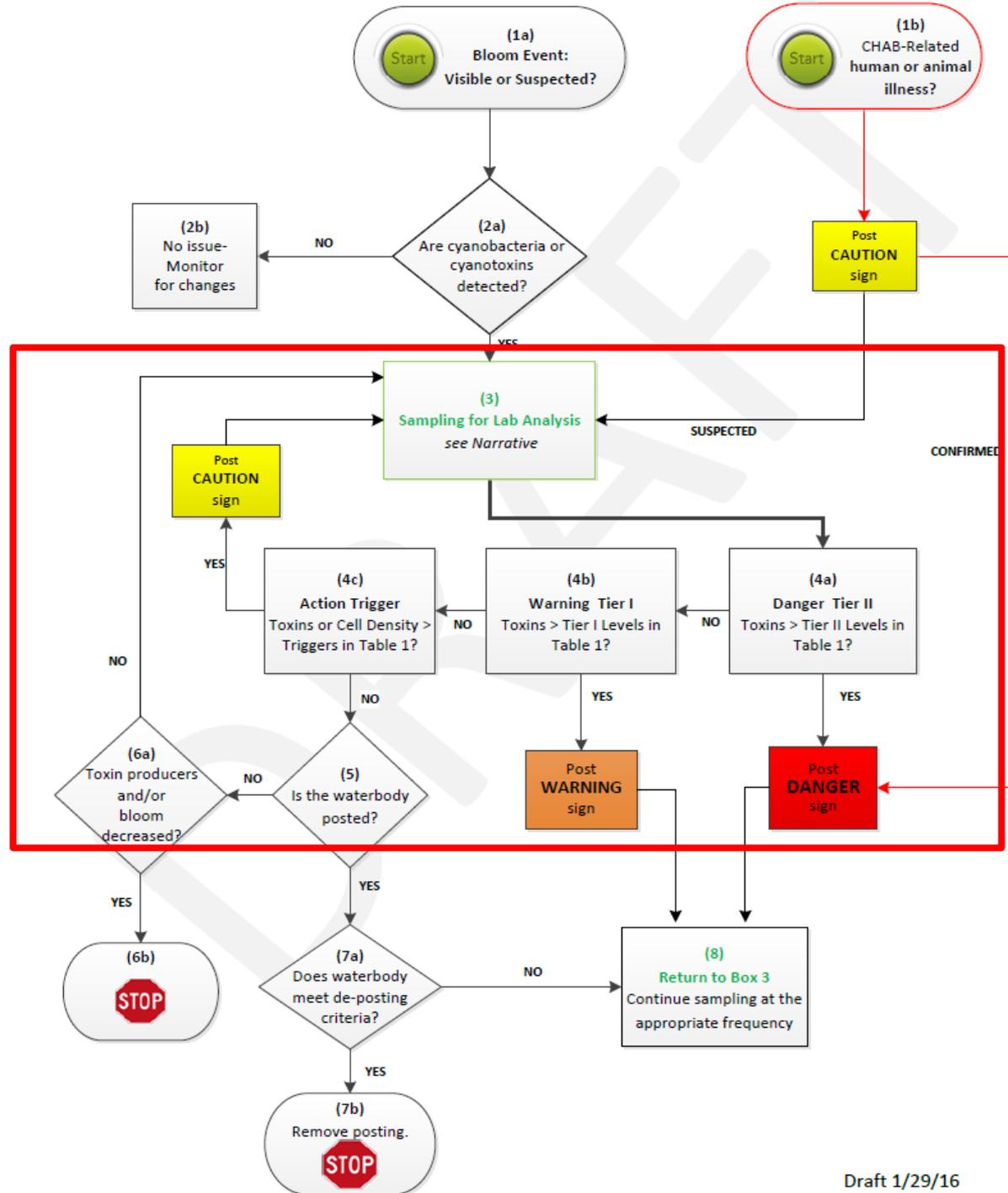
Narrative for Box 1a

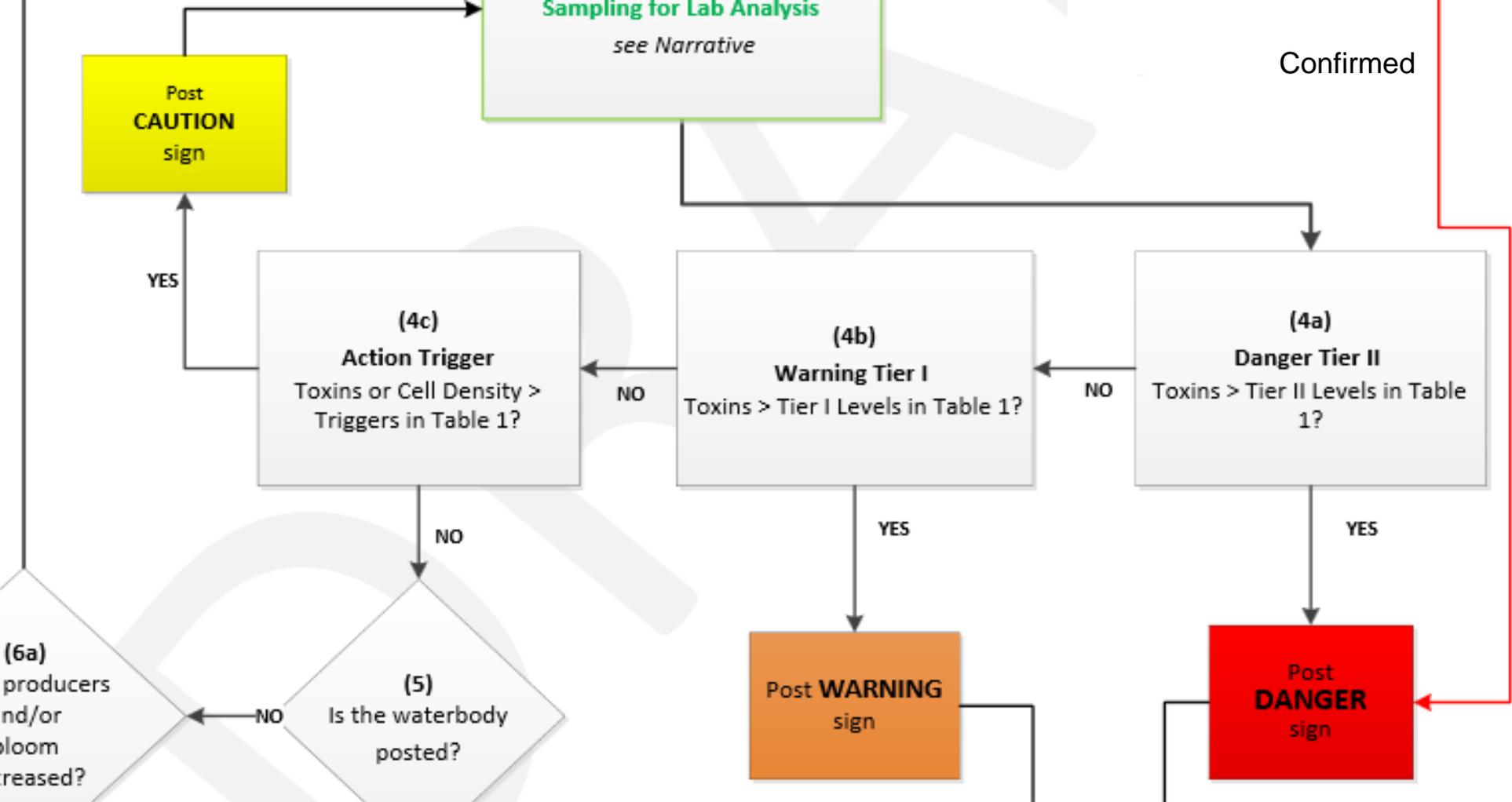


- **Visual**
 - color or opacity change, surface scum
 - foul odors
- **Measureable chemicals**
 - pH, N, P
- **Satellite imaging**
 - coming for larger lakes in CA
- **Historic evidence**
 - Water temp ↑, flow ↓, time of year

2016 Draft Decision Tree

- Sampling
- Analyses
- Posting
- Re-evaluate

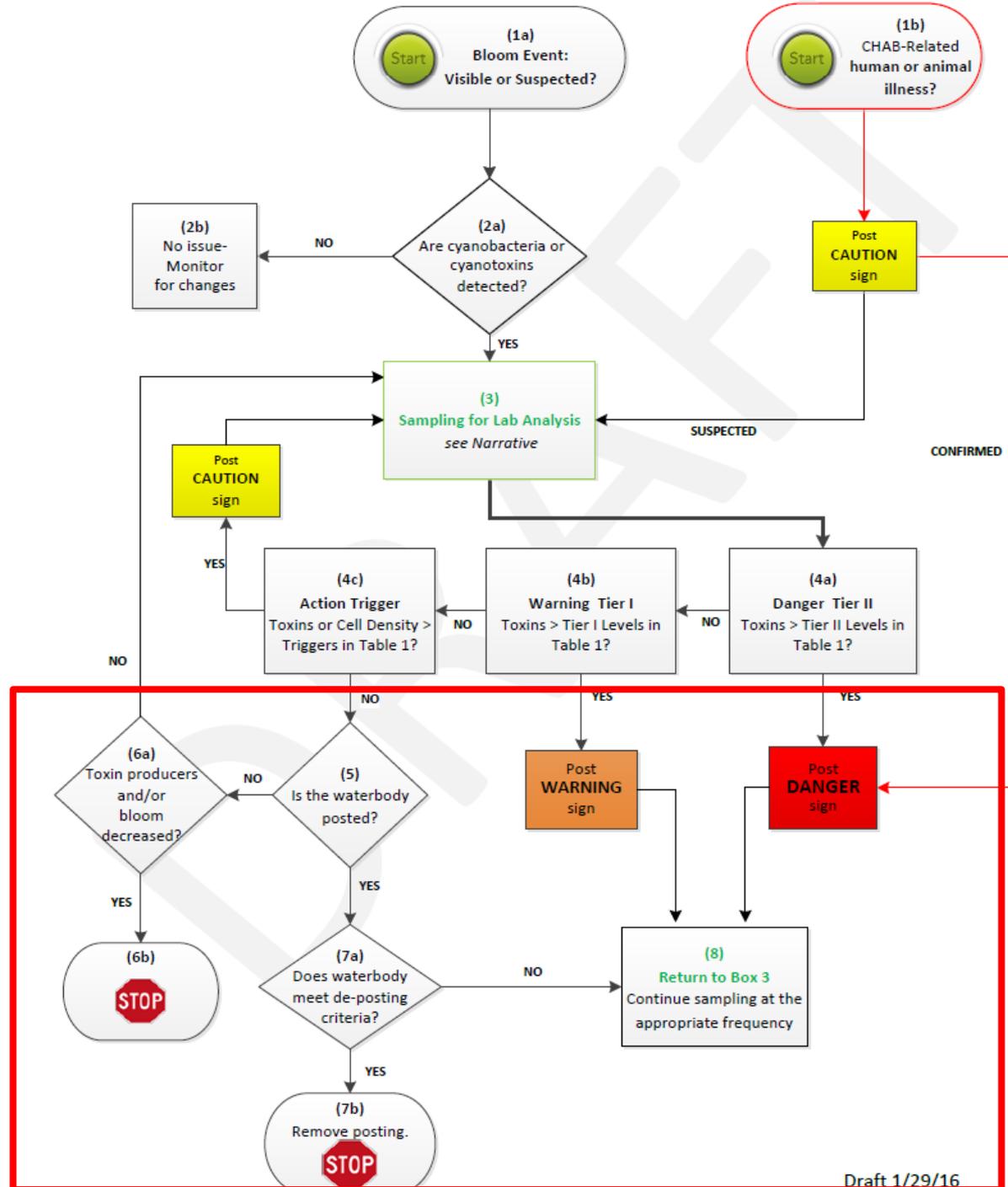


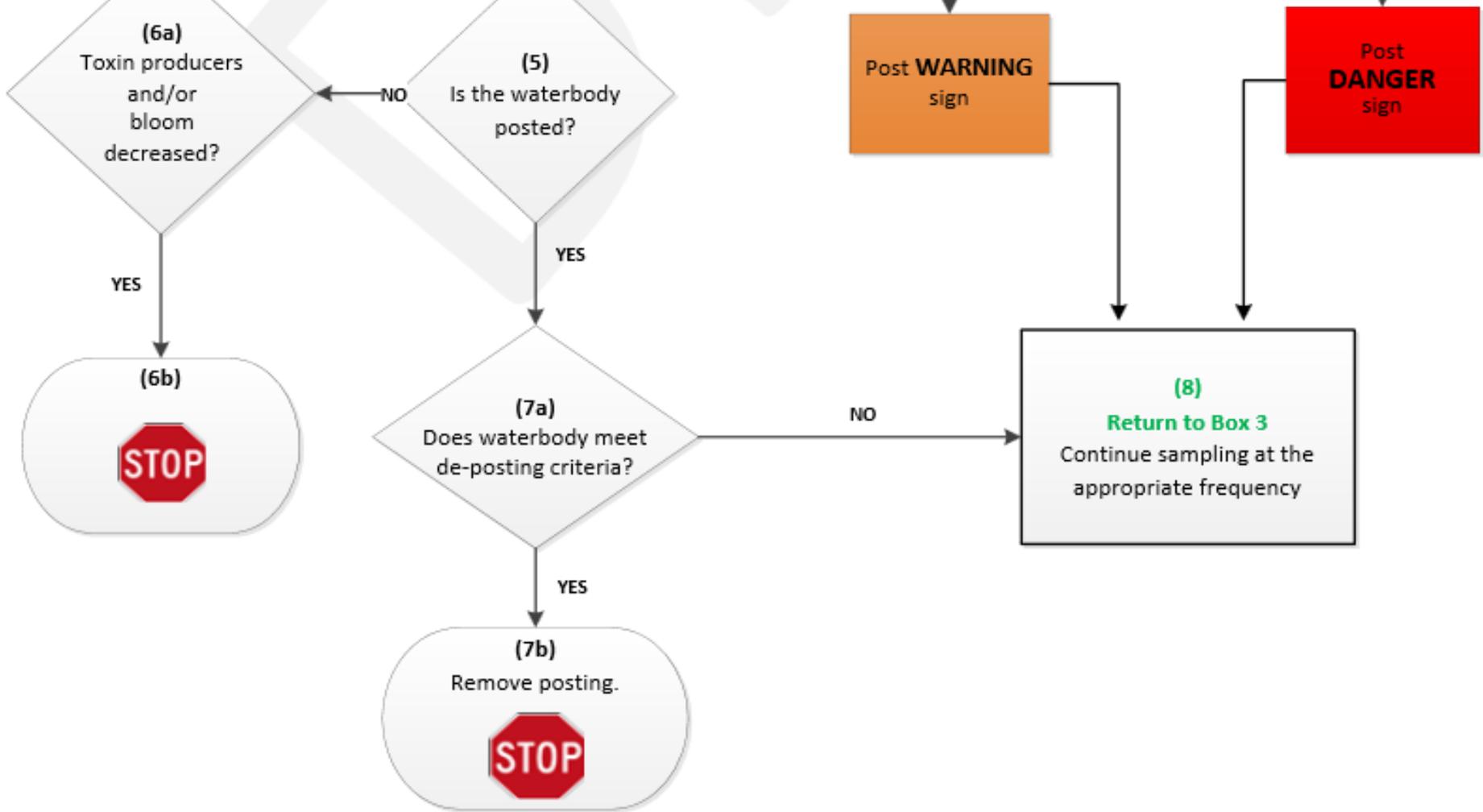


- Compare data to triggers, post signage as needed.
- Evaluate progress of bloom.

2016 Draft Decision Tree

- Iterative approach
- Sample, analyze, evaluate
- Remove posting





- Iterative sampling and signage until toxins and bloom dissipates

CAUTION

**Harmful algae may be present in these waters.
For your family's safety:**



DO NOT SWIM OR WADE
near algae or scum



DO NOT let pets or livestock
go into or drink the water, or
eat scum on the shoreline.



KEEP CHILDREN AWAY
from algae in the water or
on the shore.



For fish caught here, **THROW
AWAY GUTS AND CLEAN
FILLETS** with tap water or
bottled water before cooking.



DO NOT drink this water or
use it for cooking.



DO NOT eat shellfish from
these waters.

Call your doctor or veterinarian if you or your pet get sick after going in the water.
For more information, contact:

WARNING

Toxins from algae in these waters can harm people and kill pets and livestock



NO SWIMMING



STAY AWAY from scum, and cloudy or discolored water.



DO NOT use these waters for drinking or cooking. Boiling or filtering will not make the water safe.



DO NOT let pets or livestock go into or drink the water, or go near the scum.



DO NOT eat shellfish from these waters.



For fish caught here, **THROW AWAY GUTS AND CLEAN FILLETS** with tap water or bottled water before cooking.

For people, the toxins can cause:

- Skin rashes, eye irritation
- Diarrhea, vomiting

For animals, the toxins can cause:

- Diarrhea, vomiting
- Convulsions and death

Call your doctor or veterinarian if you or your pet get sick after going in the water.

For more information, contact:

DANGER

Toxins from algae in these waters can harm people and kill pets and livestock



STAY OUT OF THE WATER UNTIL FURTHER NOTICE. Do not touch scum in the water or on shoreline.



DO NOT let pets or livestock drink or go into the water or go near the scum.



DO NOT eat fish or shellfish from these waters.



DO NOT use these waters for drinking or cooking. Boiling or filtering will not make the water safe.

For people, the toxins can cause:

- Skin rashes, eye irritation
- Diarrhea, vomiting

For animals, the toxins can cause:

- Diarrhea, vomiting
- Convulsions and death

Call your doctor or veterinarian if you or your pet get sick after going in the water.

For more information, contact:

Table I. CyanoHAB Trigger Levels for Human Health

	Caution Action Trigger	Warning TIER 1	Danger TIER 2
<i>Primary Triggers</i> ^a			
Total Microcystins ^b	0.8 µg/L	6 µg/L	20 µg/L
Anatoxin-a	Detection ^c	20 µg/L	90 µg/L
Cylindrospermopsin	1 µg/L	4 µg/L	17 µg/L
<i>Secondary Triggers</i>			
Cell Density	4,000 cells/mL	--	--
Site Specific Indicators	Blooms, scums, mats	--	--

Cyanotoxin Triggers for Action

	2010		2016	
Toxin	Conc. (µg/L)	Public health action	Conc. (µg/L)	Public health action
MC	≥8	Advisory sign	0.8*	Caution sign
			6	Warning sign
			20	Danger sign
ANA-a	detect	Advisory sign	detect	Caution sign
			20	Warning sign
			90*	Danger sign
CYN	-	-	1	Caution sign
	-	-	4*	Warning sign
	-	-	17	Danger sign

*** OEHHA action level for protection of human health**



Cyanotoxin Concentrations in Recreational Waters that Prompt Management Action

- For ongoing, repeated exposures
(short term and subchronic)
- Measured in whole water
(unfiltered water; swimmable areas)

Development of Trigger Levels

- OEHHA Action Levels
- Modified OEHHA Action Levels
- Risk Management Decisions

OEHHA Action Levels

- Animal Study → Uncertainty Factors → Exposure Estimate
- Conservative Assumptions

Modified OEHHA Action Levels

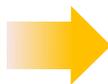
- Adjust uncertainty and exposure assumptions
- Remains Conservative

Risk Management Decision

- Precautionary *or* Maximum

Microcystin

CAUTION



WARNING



DANGER

Trigger ($\mu\text{g/L}$)	0.8	6	20
Basis	OEHHA's Action Level	Modified OEHHA AL	Risk Management WHO



Anatoxin-a

CAUTION



WARNING



DANGER

**Trigger
($\mu\text{g/L}$)**

Detect

20

90

Basis

**Precautionary
Approach**

**OHA's
Guideline**

**OEHHA's
Action Level**



Cylindrospermopsis

CAUTION



WARNING



DANGER

Trigger ($\mu\text{g/L}$)	1	4	17
Basis	Precautionary Approach	OEHHA's Action Level	Modified OEHHA AL



Questions and Comments



For questions contact:

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