

**CyanoHAB Management
Program Recommendations for
Washington State**

Mark Sytsma
Vice chair
Whidbey Island Conservation District

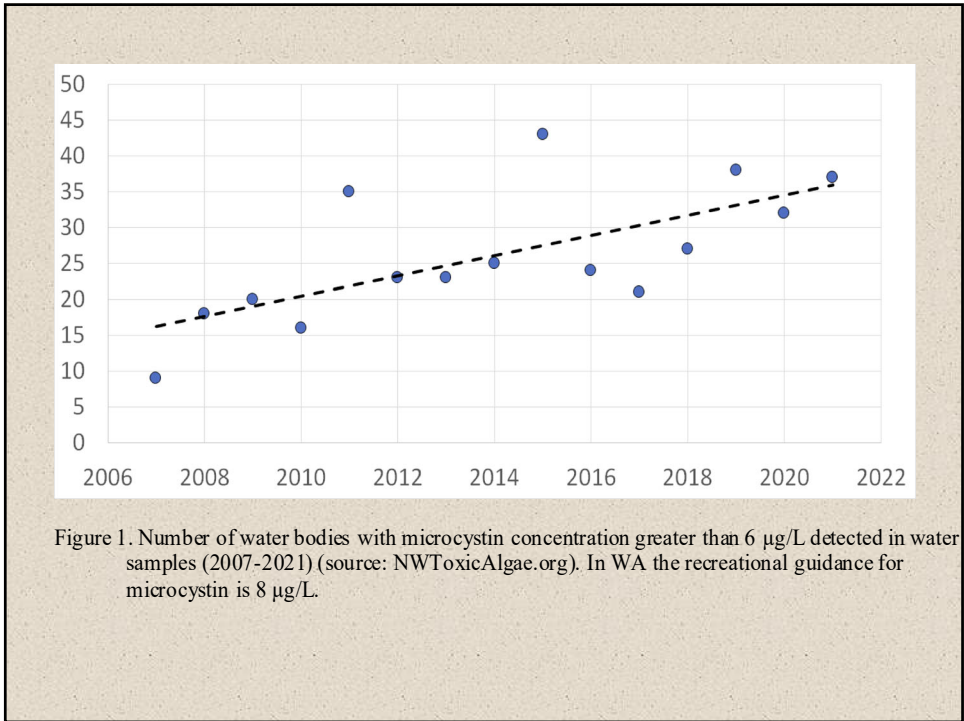
Emeritus Professor
Portland State University

OLA
Cyanobacterial Harmful Algae Bloom Meeting
8 March 2024

Corvallis, OR



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Reported HABS health impacts in 2021						
Type	Number	Outcome	Water Body	Month 2021	Toxin Detected	
Dog	3	Death	Little Spokane River	Jul	Anatoxin-a	
Human	1	Rash	Yale Reservoir	Aug	Anatoxin-a Saxitoxin	
Dog	1	Illness	Spokane River	Aug	Microcystin	
Bats	2000+	Death	Pass Lake	Aug	Anatoxin-a	
Cows	10	Death	Skamokawa Creek	Aug	Microcystin	
Dog	1	Death	Columbia River	Aug	Anatoxin-a Microcystin Saxitoxin Cylindrospermopsin	
Dog	1	Illness	Clarke Lake	Sep	Unknown	
Dog	6	2 ill, 4 died	Columbia River	Sep	Anatoxin-a	

Pass Lake 8.20.2021

Lone Lake Lake 9.28.2022

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Washington Association of Conservation Districts

2021 resolution sponsored by WICD

- Assess the status of HABS in the state
- Assess the adequacy of current funding for monitoring HABS
- Assess the adequacy of funding for programs to address HABS statewide,
- Recommend actions that conservation districts could take to reduce the frequency and duration of HABS in Washington

Chair Mark Sytsma, Whidbey Island CD
 Co-chair Heather McCoy, Whidbey Island CD
 Bill Blake, Skagit CD
 Glenn Gately, Jefferson County CD
 Mark Nielson, Franklin & Benton CD
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Paul Andersson, San Juan Island CD
 Marcella Appel, Benton CD
 Walt Edelen, Spokane CD
 Debbie Meisinger, King CD
 Ron Scerbicke, Grant County CD
 Ryan Baye, WACD

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Technical Advisory Committee

Angela Strecker, Institute for Watershed Studies, WWU
 Lizbeth Seebacher, WA Dept. of Ecology
 Gopal Mulukutla, WA Dept. of Health
 Rob Zissette, WA Lake Protection Association
 Justin Spinelli, WA Dept. Fish and Wildlife

Rochelle Labiosa, US EPA
 Will Hobbs, WA Dept. of Ecology
 Jason Armstrong, WA State Parks
 Kyrre Flege, WA Dept. Agriculture
 Bill Sharp, Yakama Nation Fisheries



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Current Roles of State Agencies

Department of Health

Provide technical support to local health jurisdictions on HABs
 Create and distribute signs for risk communication as part of the state lake management protocol
 Environmental epidemiology - investigate human and animal illness incidents
 Health impacts of climate change
 Create, review, and update guidance values for cyanotoxins
 Protect drinking water (Safe Drinking Water Act implementation)

Parks and Recreation Commission

Manage public access to water bodies in state parks

Department of Agriculture

Manage nonpoint nutrient runoff from dairy facilities

Department of Fish and Wildlife

Manage fish and wildlife populations
 Respond to animal mortality events
 Maintain recreational opportunities
 Manage public access on WDFW owned sites
 Permitting process for in-water projects
 Technical assistance in aquatic and terrestrial ecology

Department of Ecology

HAB assessment, management planning, and permitting
 Aquatic weed management
 Manage Freshwater Algae Control Program and grants
 Funds toxin analysis through King County Environmental Laboratory
 Clean Water Act Implementation

State Conservation Commission

Conserve natural resources in Washington State, through voluntary and incentive-based programs, in collaboration with conservation districts and other partners

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Programmatic Gaps

- Lack of a whole-of-government approach to HABs management
- Lack of adequate and dedicated funding to address fundamental questions about the causes and management of HABs in the state
- Lack of funding for prevention, monitoring, and response to freshwater HABs
- Inadequate communication of the risks of HAB exposure with the public

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Recommendations to Address Gaps

Lack of whole-of-government approach

- Form a Washington State HAB Coordinating Committee consisting of representatives from each state agency with HAB monitoring and response responsibilities for the production of a biennial report to the legislature on the status of HABs and the state's response.
 - Committee coordinated by the Washington State Conservation Commission (WSCC)
 - Requires 0.3 FTE + \$75,000/biennium to fund meetings and agency participation
- Form a Technical Assistance and Program Review Committee consisting of nongovernmental experts in HAB biology, ecology, and management to advise state agencies on their freshwater HAB response, and provide additional recommendations to improve the state's response as conditions are modified in the future with climate change.
 - Committee coordinated by WSCC
 - Requires 0.2 FTE + \$100,000/biennium to fund meetings and participation
- Hire individuals with limnology expertise at all levels of government to ensure effective implementation of the HAB program

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Recommendations to Address Gaps

Lack of adequate and dedicated funding to address fundamental questions about the causes and management of HABs

- Form a HAB Research Program to provide dedicated grant funding for addressing current and future questions about HAB management in the state.
 - Program run by WSCC
 - Requires 0.25 FTE + \$1,000,000/biennium for grants

Potential research areas:

- HABs impacts to wildlife
- Interaction between aquatic plant management and HABs
- Effect of fish stocking on HAB development



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Recommendations to Address Gaps

Lack of funding for prevention, monitoring, and response to freshwater HABs

- Increase grant funding for outreach / education and nutrient source management in agriculture to be planned and implemented by Washington conservation districts.
 - Funded through WSCC
 - Requires 0.25 FTE + \$3,000,000/biennium for grants
- Access of Public Trust Fund Loans from the Department of Ecology to local agencies for prevention, treatment and response to HABs.
- Advocate for federal support for addressing HABs in large rivers and reservoirs managed by federal agencies with costs that exceed the ability of the state to implement.
- Provide dedicated grant funding for development and implementation of Best Management Practices in watersheds of freshwater bodies currently experiencing HABs or that could experience HABs in the future.
 - Funded through Washington Department of Ecology
 - Requires 0.5 FTE + \$2,000,000/biennium for grants

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Recommendations to Address Gaps

Lack of funding for prevention, monitoring, and response to freshwater HABs

- Provide dedicated grant funding for treatment and prevention (e.g., nutrient inactivation and aeration) of HABs in freshwater bodies.
 - Funded through Washington Department of Ecology
 - Requires 0.5 FTE + \$3,000,000/biennium for grants
- Create a program aimed at evaluation of freshwater HAB program effectiveness to include detailed characterization of individual water bodies needed to develop management and treatment plans.
 - Funded through, and coordinated by, Washington Department of Ecology
 - Requires 1 FTE + \$1,500,000/biennium
- Create a volunteer program to provide basic long-term data on the condition of Washington water bodies through grants to conservation districts, counties, cities, and other local jurisdictions for outreach and education, equipment, technical assistance, and coordination of volunteers.
 - Funded through, and coordinated by, Washington Department of Ecology
 - Requires 1 FTE + \$500,000/biennium for grants

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Recommendations to Address Gaps

Inadequate communication of the risks of HAB exposure

- Conduct risk assessments and provide technical support on epidemiology of HABs, drinking water treatment, and climate change impacts to local health jurisdictions to reduce recreational and drinking water exposure incidents, including prevention, investigation, and mitigation efforts.
 - Funded through the Washington Department of Health
 - Requires 1.5 FTE + \$1,500,000/biennium for grants

The image shows three posters related to Toxic Algae Present in Lake. The first poster on the left is titled "When in doubt STAY OUT!" and "Toxic algae blooms happen in this lake". It features a red kayak and lists various water bodies affected by the bloom, including Lake Stevens, Lake Sammamish, and Lake Washington. The second poster in the middle is titled "WARNING TOXIC ALGAE PRESENT Lake unsafe for people and pets". It lists safety instructions: "Do not swim or water ski", "Do not drink lake water", "Keep pets and livestock away", "Clean fish well and discard guts", and "Avoid areas of scum when boating". The third poster on the right is titled "WARNING PELIGRO TOXIC ALGAE IN LAKE Lago inseguro para personas y mascotas" and includes bilingual safety instructions. All posters provide contact information for the Washington Department of Ecology and the Washington Department of Health.

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Summary Whole-of-Government Biennial Costs for HABs Program

	Function	FTE	FTE Cost*	Grants and other costs	Total Cost*
WSSC	Coordination committee	0.3	\$66,000	\$75,000	\$141,000
	Technical assistance	0.2	\$44,000	\$100,000	\$144,000
	Research program	0.25	\$55,000	\$1,000,000	\$1,055,000
	Agricultural Nutrient Source Reduction	0.25	\$55,000	\$3,000,000	\$3,055,000
		<u>1</u>	<u>\$220,000</u>	<u>\$4,175,000</u>	<u>\$4,395,000</u>
WDOE	Watershed BMPs	0.5	\$110,000	\$2,000,000	\$2,110,000
	In-water treatment and prevention	0.5	\$110,000	\$3,000,000	\$3,110,000
	Detailed characterization and planning	1	\$220,000	\$1,500,000	\$1,720,000
	Volunteer monitoring	1	\$220,000	\$500,000	\$720,000
		<u>3</u>	<u>\$660,000</u>	<u>\$7,000,000</u>	<u>\$7,660,000</u>
WDOH	Environmental epidemiology of HABs	0.5	\$110,000		\$110,000
	Drinking water HABs and local assistance	0.5	\$110,000	\$1,500,000	\$1,610,000
	Climate change impacts	0.5	\$110,000		\$110,000
		<u>1.5</u>	<u>\$330,000</u>	<u>\$1,500,000</u>	<u>\$1,830,000</u>
Totals		5.5	\$1,210,000	\$12,675,000	\$13,885,000

*Assumes \$110,000 for salaries and benefits/FTE/year

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Following Actions

- Recommendations approved by full WACD membership (November 2021)
- \$75k budget proviso by Senator Muzzall for recommended Coordinating Committee failed at end of 2022 legislative session
- Ad hoc interagency committee met regularly in 2023 for further discussion
- Ecology taking lead on developing Joint Decision Package targeting 2025 session
 - Budget request drafted for Ecology Water Quality Program consideration
 - Primarily for interagency coordination and continued program development
- Milestones
 - Follow up with WQ team (any day now)
 - WQ team approval (April)
 - Agency approval with DOH and SCC alignment (July)
 - Submit package to Office of Financial Management (September)
 - Governor’s budget and January 2025 legislative session
 - Advocacy during legislative session



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Thanks to:

WACD Workgroup

Technical Advisory Committee

Joan Hardy

