UNRBA Board Meeting
January 19, 2022

Remote Access Only
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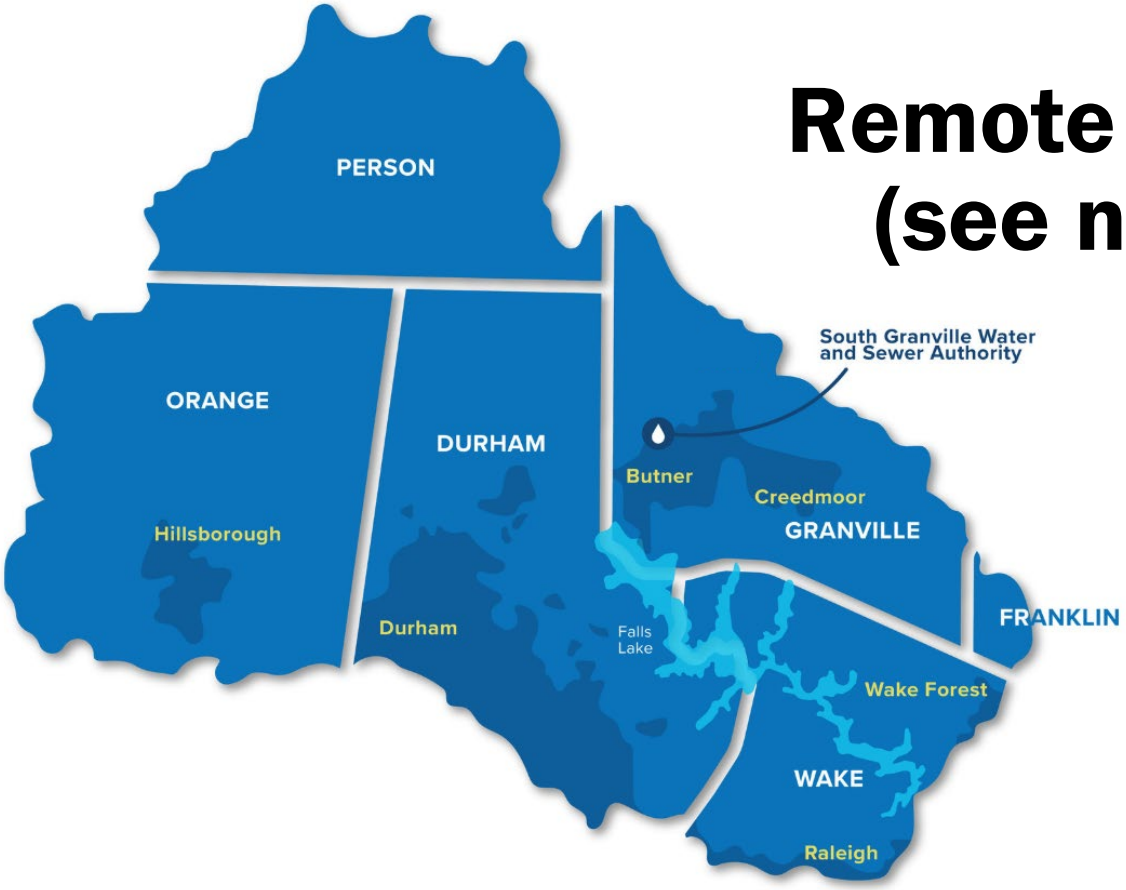


Remote Access for UNRBA Board Meetings

Equipment Type	Access Information	Notes
Computers with microphones and speakers	Join Microsoft Teams Meeting Please mute your microphone unless you want to provide input.	Press control and click on this link to bring up Microsoft Teams through the internet. You can view the screen share and communicate through your computer's speakers and microphone.
Computers without audio capabilities, or audio that is not working	Join Microsoft Teams Meeting (888) 404-2493 Passcode: 981 714 577# Please mute your phone unless you want to provide input.	Follow instructions above. Turn down your computer speakers, mute your computer microphone, dial the number through your phone and enter the passcode.
Phone only	(888) 404-2493 Passcode: 981 714 577# Please mute your phone unless you want to provide input.	Dial the toll-free number and enter the passcode.

Remote Access Guidelines

- This meeting will open 30 minutes prior to the official meeting start time to allow users to test equipment and ensure communication methods are working
- If you dial in through your phone, mute your microphone and turn down your speakers to avoid feedback
- Unless you are speaking, please mute your computer or device microphone and phone microphone to minimize background noise
- UNRBA meetings are open meetings; however, for this remote access meeting, please limit the discussion to UNRBA Board Members to facilitate moving through action items

January 19, 2022 UNRBA Board Agenda – Action Items

- Opening—Sig Hutchinson, Chair
- Initial Action Items of UNRBA Board of Directors
  - Approval of November 17, 2021 Meeting Minutes
  - Approval of the Treasurer's Report
  - Officer Elections for 2022
  - Personnel Committee Report
  - Revisions to UNRBA Policies and Procedures Manual
  - Authorization to Submit Letters Regarding Proposed Chlorophyll-a Site Specific Standards for High Rock Lake
  - Approval of Town of Stem Rejoining the UNRBA
- Action Items of the Compliance Group Committee
  - Addition of Town of Stem to IAIA Program
  - Recommendation for Approval of Revisions to Attachment B of the Bylaws, IAIA Program Document
  - Stage I Existing IAIA Program Development
- Subsequent Action Items of UNRBA Board of Directors
  - Approval of Revisions to the Bylaws to Accept Town of Stem into the IAIA

January 19, 2022 UNRBA Board Agenda – Status Items

- **Status Reports and Informational Items**
  - Prospective Budget for FY2023
  - Modeling and Regulatory Support (MRS) Status
  - DWR 2022 Integrated Report and 303(d) Assessments
  - Reports Regarding Dog Death and Unconfirmed Relationship to Dog Drinking Lake Water
  - Statistical Model Development and Regulatory Options for the Chlorophyll-a Water Quality Standard
  - Communications
  - Ongoing Discussions/Issues
- **Closing Comments**

Opening—Sig Hutchinson

Opening

- Introductions, Board member changes, and announcements
- Roll call for quorum
- Identification of any conflicts
- Review and approval of agenda

Initial Action Items of UNRBA Board of Directors

Approval of November 17, 2021 Meeting Minutes

Approval of the Treasurer's Report

Balance Forward: (per bank statement - 10/31/2021)		Checking	$	991,386.14
		Savings		571,117.06
Debits:				
	McGill Asso. (2021 Invs)		$	31,593.03
	Brown & Caldwell (MRS, FY 21, Invs)			10,790.13
	Barnes & Thornburg (Invs)			8,653.00
	Sauber Water Quality Consulting (2021 Invs)			5,250.00
	JMW Bookkeeping (2020 990 Tax Return)			630.00
	Brown & Caldwell (MRS, FY 22, Invs)			158,636.81
	Winston, Williams, Creech, Evans, & Co., LLP			2,000.00
	Phthisic Consulting, Inc. (2021 Invs)			420.00
	MFG Consulting, LLC (2021 Invs)			732.00
	Total Debits		$	218,704.97
Credits:	Interest (checking)		$	236.52
	Interest (savings)			716.29
	Bank Service Fee (stop payment)			-
Account Balance (per bank statement - 12/31/2021)		Checking	$	772,917.69
		Savings		571,833.35
	Total UNRBA Account Balance :		**$**	**1,344,751.04**
Outstanding invoices/deposits in process since the close of bank statement (12/31/2021):				
Debits:	McGill Asso. (December, 2021 Inv)		$	12,598.59
	Brown & Caldwell (MRS, FY 22, November, 2021 Inv)			43,374.65
	MFG Consulting, LLC (December, 2021 Inv)			285.99
	Sauber Water Quality Consulting (December 2021 Inv)			1,680.00
	CEA (August & September, 2021 Invs.)			611.25
	Phthisic Consulting, Inc. (Nov & Dec, 2021 Invs)			700.00
Credits:	Transfer from Savings to Checking		$	-
	Current Account Balances:	Checking		713,667.21
		Savings		571,833.35
	Total UNRBA Account Balance :		**$**	**1,285,500.56**

Officer Elections for 2022

- The Nominating Committee, which was appointed at the November 17, 2021, Board meeting, includes
  - Wendy Jacobson
  - Carolyn Bachl
  - Terry Hackett
- The Nominating Committee will provide recommendations for the officers of the UNRBA for 2022

Board of Directors elect officers during the January 2022 Board Meeting as required in the UNRBA Bylaws.

Personnel Committee Report

Recommended Revision to the Executive Director Contract—Beginning July 1, 2022

Executive Director compensation

(Current: $110/hour Proposed: $115/hour)

Current: $174,517.00 Proposed: $182,752.00 (4.7% increase)

Travel and other reimbursable support costs $ 16,000.00 no change)

Other support services

Current: $23,000.00 Proposed: $24,640.00

Budget Total:

Current: $213,517.00 Proposed: $223,392.00 (4.6% increase)

Revisions to UNRBA Policies and Procedures Manual

- As part of the audit review process, UNRBA Board members suggested revisions to the UNRBA Policies and Procedures Manual to address
  - Whistleblower protections
  - Record keeping requirements.
- The Board discussed these items during the September 15, 2021, Board meeting.
- A copy of a revised draft of the manual incorporating a whistleblower provision was provided to the Board prior to the November 2021 meeting.
- A final draft will be presented today for consideration and action by the Board.

Authorization to Submit Letters Regarding Proposed Chlorophyll-a Site Specific Standards for High Rock Lake

- In May UNRBA Submitted comments to the EMC noting that the DWR proposed site specific standards for High Rock Lake needed significant improvement before a public hearing.
- None-the-less in July, the EMC voted to send the proposed High Rock Lake Standards out to public hearing.
- The hearing was held virtually on October 28th and the Comment period ended on November 15th.
- Rule-Making Proposal is precedent setting for site specific chlorophyll-a criteria in NC lakes and reservoirs and will likely affect the process for Falls Lake site specific standards.
- At the September 15, 2021, Board meeting, the Board reaffirmed authorization of the Executive Director to comment on this rule-making precedent, and UNRBA comments were submitted on October 26, 2021, ahead of the hearing.

Authorization to Submit Letters Regarding Proposed Chlorophyll-a Site Specific Standards for High Rock Lake

- Comments were submitted by several organizations, and the comments were generally consistent with the issues identified in the UNRBA's comments.
- It is not clear if or to what extent DWR, the Hearing Officer, and the EMC will take into consideration the comments offered recommending revision to the High Rock Lake site-specific standard proposal that went to notice.
- The noticed proposal has specific and significant issues that need to be addressed before a site-specific standard is adopted.
- Because a Hearing Officer Report has not been released and action on the proposal has yet to be brought to the EMC and isn't planned for the January EMC meetings, it is possible that the action may be brought forward at the March, May or July 2022 EMC meetings

Authorization to Submit Letters Regarding Proposed Chlorophyll-a Site Specific Standards for High Rock Lake

- The Executor Director requests authorization from the Board to
  - Make appropriate efforts to encourage consideration of the comments offered
  - If necessary, develop and send a letter of objection to the Rules Review Commission (RRC) should the EMC adopt a final site-specific standard for High Rock Lake that fails to adequately address the substantial and valid concerns raised in the UNRBA's comments.
  - Include contact and coordination with the individual UNRBA member jurisdictions for the consideration of formal objection letters from these jurisdictions should a UNRBA letter be needed.
- Status report(s) of the adoption process will be provided to the Board at upcoming meetings, and the Executive Director will identify any requested revisions to this authorization.
- Should a letter be filed, the Executive Director will provide the letter to the Executive Committee for input and, once final, provide a copy to the Board members.

Request from Town of Stem to Rejoin the UNRBA

- The Town of Stem is requesting to rejoin the UNRBA and participate in the UNRBA's Interim Alternative Implementation Approach (IAIA) for compliance with Stage I Existing Development Rules.
- The UNRBA Bylaws describe the procedures for adding new members and calculating their prorated dues.
- The Town of Stem has provided a letter and a resolution requesting that the UNRBA consider these requests.
- The Executive Director will review these requests and summarize the provisions of the Bylaws governing joining the UNRBA and becoming a participant in the IAIA.
- Stem left the UNRBA effective July 1, 2019
- Stem's annual dues are $8,804.20
- Total UNRBA dues: $1,165,517.07
- Forrest will lay out the process for taking action and present a recommendation to the Board on rejoining
- The Board will take action on the request to rejoin the UNRBA and, if approved, refer the IAIA participation to the Compliance Group Committee (CGC).

Action Items of the Compliance Group Committee (CGC)

The CGC will be called into Session--Chair

Request from Stem to Join the IAIA Program

- Pending the UNRBA Board's approval of the Town of Stem joining the Association, the CGC will consider Stem's request to participate in the IAIA.
- Stem has provided a resolution of the Town Commission accepting the conditions of the IAIA and agreeing to abide by those provisions
- DWR has issued a letter on the compliance determination of Stem and that letter has been provided to the CGC members
- The UNRBA Bylaws include, in Attachment B, the provisions for participation and the guidelines and requirements for meeting the IAIA.
- The Bylaws, in Article VIII, Section 8.8, provide the provisions for participation in the IAIA.
- Stem's annual investment level would be $11,605, page 25 of the revised Attachment B to the Bylaws (Program Doc.)
- Stem's inclusion would not change the level of investment of other jurisdictions' investment levels
- Current total investment $1,510,016; with Stem $1.521,621
- Based on the Town of Stem's request, the CGC must vote, unanimously to approve Stem's participation in the IAIA.
- The CGC will vote on participation of the Town of Stem in the IAIA Program.

Recommendation for Approval of Revisions to Attachment B of the Bylaws, IAIA Program Document

- Provided the CGC approves inclusion of Stem in the IAIA, Attachment B of the Bylaws needs to be revised to reflect the addition of Stem to the participant list and to include their annual investment commitment.
- A revision to Attachment B has been developed for consideration by the CGC and final action by the Board.
- The annual investments of the original list of UNRBA member participants have not been changed.
- Stem's investment level was determined by applying the same calculation approach for developing the other participants' investment levels.
- The CGC will consider and vote on recommending approval of the revision to the UNRBA Board.

Stage I Existing Development Interim Alternative Implementation Approach (IAIA) Program Development: Reporting Tool Review and Approval

- A reporting tool has been developed and reviewed by the IAIA Reporting Workgroup to assist the IAIA participants in tracking eligible projects and compliance with the Program.
- This tool was discussed by the PFC in November, and DWR provided some additional recommendations for clarification that have been incorporated.
- The Workgroup and PFC agreed that the Reporting Tool is ready for approval
- The CGC will be asked to vote on approval of the reporting template.

Subsequent Action Items of UNRBA Board of Directors

Approval of Revisions to the Bylaws to Accept Town of Stem into the IAIA

- Anticipating approval of the Town of Stem's request to rejoin the UNRBA, the CGC's approval of the Town's request to participate in the IAIA, and the CGC's recommendation to adopt the revised Attachment B of the Bylaws, the following changes to the UNRBA Bylaws are required to formalize Stem's participation in the IAIA:
  - Minimum investment level for the IAIA Program for the Town of Stem calculated based on the method described in Attachment B of the UNRBA Bylaws. This amount is added to the minimum investments of the other IAIA participants which would not be revised from the current levels.
  - Attachment B of the UNRBA Bylaws revised to add the Town of Stem to the IAIA Program Document.
- Following a recommendation from the Executive Director, the UNRBA Board will consider and vote on approval of the revised Bylaws.

CGC Action to submit revised IAIA Program to DWR and the EMC

Submittal of Revised IAIA Program to DWR and EMC

- Provided the Board approves the revision of the IAIA Program Document in the Bylaws, the CGC will consider resubmittal of the IAIA Program to DWR and the EMC.
- A revised Resolution from the CGC has been prepared to reflect the changes made in the IAIA program and the inclusion of Stem as a participant.
- The CGC will consider and vote on a revised Resolution for the IAIA and authorize the CGC Chair to sign on behalf of the CGC.

CGC closes its Session

Status Reports and Informational Items

Prospective UNRBA Membership Fee Schedule for FY 2022-23

$ 1,165,517.00 Projected Revenue

Date: 1/12/2022

Member	Base Rate (10%)	2021 Raw Water Demands (50%)			Jurisdiction's Land Area (40%) (Revised 2021)			FY 2022-23 Fees (Proposed)
	$ 116,551.70 Member's Sub-Share of Cost	2020 Average Raw Water Demand (MGD)	$ 582,758.50 (%)	Member's Sub-Share Cost	Jurisdiction's Acres Within Watershed	$ 466,206.80 (%)	Member's Sub-Share Cost	Total Membership Fees
Town of Butner	$ 8,325.12	NA			8,822	1.8	$ 8,352.63	$ 16,677.75
City of Creedmoor	8,325.12	NA			3,544	0.7	3,355.44	11,680.56
City of Durham	8,325.12	28.740	38	$ 220,116.96	32,680	6.6	30,941.27	259,383.35
Durham County	8,325.12	NA			97,803	19.9	92,599.43	100,924.55
Franklin County	8,325.12	NA			5,284	1.1	5,002.87	13,327.99
Granville County	8,325.12	NA			71,698	14.6	67,883.34	76,208.46
Town of Hillsborough	8,325.12	1.526	2	11,687.49	3,593	0.7	3,401.84	23,414.45
Orange County	8,325.12	NA			121,561	24.7	115,093.40	123,418.52
Person County	8,325.12	NA			83,090	16.9	78,669.23	86,994.35
City of Raleigh	8,325.12	42.710	56	327,111.88	1,241	0.3	1,174.97	336,611.97
SGWASA	8,325.12	3.113	4	23,842.17	NA		-	32,167.29
Town of Stem	8,325.12	NA			506		479.08	8,804.20
Wake County	8,325.12	NA			61,669	12.5	58,387.93	66,713.05
Town of Wake Forest	8,325.12	NA			914	0.2	865.37	9,190.49
Total	$ 116,551.68	76.089	100	$ 582,758.50	492,405	100	$ 466,206.80	$ 1,165,516.98

Based on the Board's action on Stem rejoining the UNRBA, Board action on the Personnel Committee Report and other adjustments needed, revision will be necessary before a final budget is proposed.

Prospective UNRBA Membership Fees for FY 2022-23

Date: 1/12/2022

Member	Prospective Membership Fees FY 2022-23	Current Membership Fees FY 2021-22
Town of Butner	$ 16,677.75	$ 17,326.74
City of Creedmoor	11,680.56	12,324.41
City of Durham	259,383.35	257,670.11
Durham County	100,924.55	101,660.21
Franklin County	13,327.99	13,973.53
Granville County	76,208.46	76,918.69
Town of Hillsborough	23,414.45	25,672.25
Orange County	123,418.52	124,177.31
Person County	86,994.35	87,715.68
City of Raleigh	336,611.97	337,057.73
SGWASA	32,167.29	33,775.12
Town of Stem	8,804.20	-
Wake County	66,713.05	67,413.51
Town of Wake Forest	9,190.49	9,831.78
Total	$ 1,165,516.98	$ 1,165,517.07

Modeling and Regulatory Support for the Re-examination of Stage II

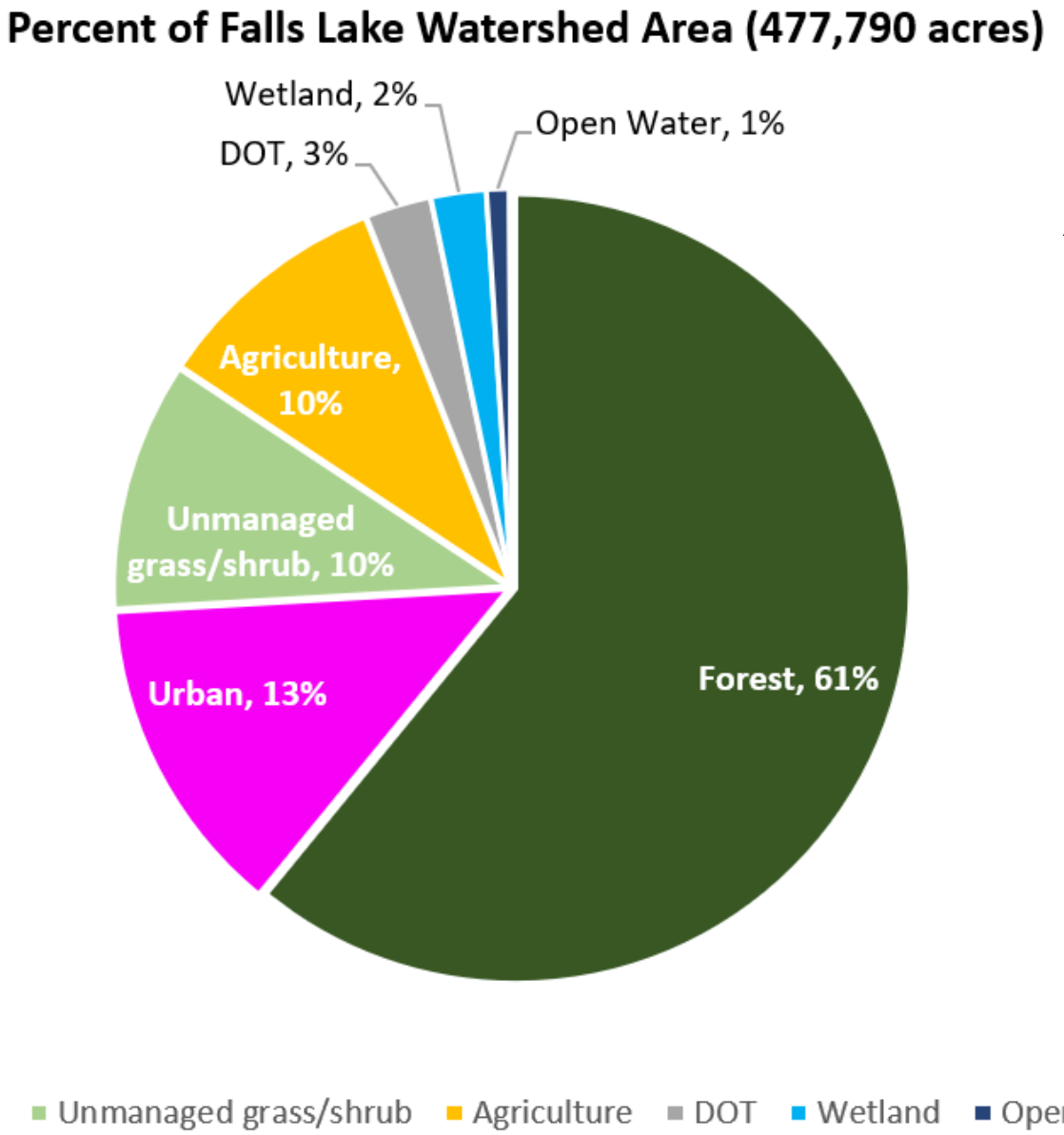
Watershed Modeling Status

- Watershed Analysis Risk Management Framework (WARMF) model has been
  - Calibrated for stream flows and water quality.
  - Run over the UNRBA's four-year monitoring period
  - Used to identify sources of loading to the lake
  - Reviewed by subject matter experts (SMEs) and third-party reviewers of the modeling effort.
    - Two special meetings to discuss
    - Refinements to model made in response
  - Reviewed by the Modeling and Regulatory Support Workgroup on January 4th

Importance of Identifying Sources

- The source loading information provides the best available information on sources of loading and what is “controllable.”
- This information lays the foundation for the development of an updated management strategy for Falls Lake that takes into realistic account the feasibility and potential effectiveness of management actions to reduce nutrient input to the lake.
- Contributions from nutrient sources in the watershed have been categorized into major land use activities (urban land, agricultural land) and land conditions that reflect more natural, undeveloped and unmanaged lands in the watershed.

Land Use Composition for the Falls Lake Watershed



Agriculture:

- *57% pasture*
- *12% full season soybeans*
- *10% hay*
- *7% double-cropped soybeans*
- *6% flue-cured tobacco*
- *6% no-till grain corn*
- *2% wheat or other crops*

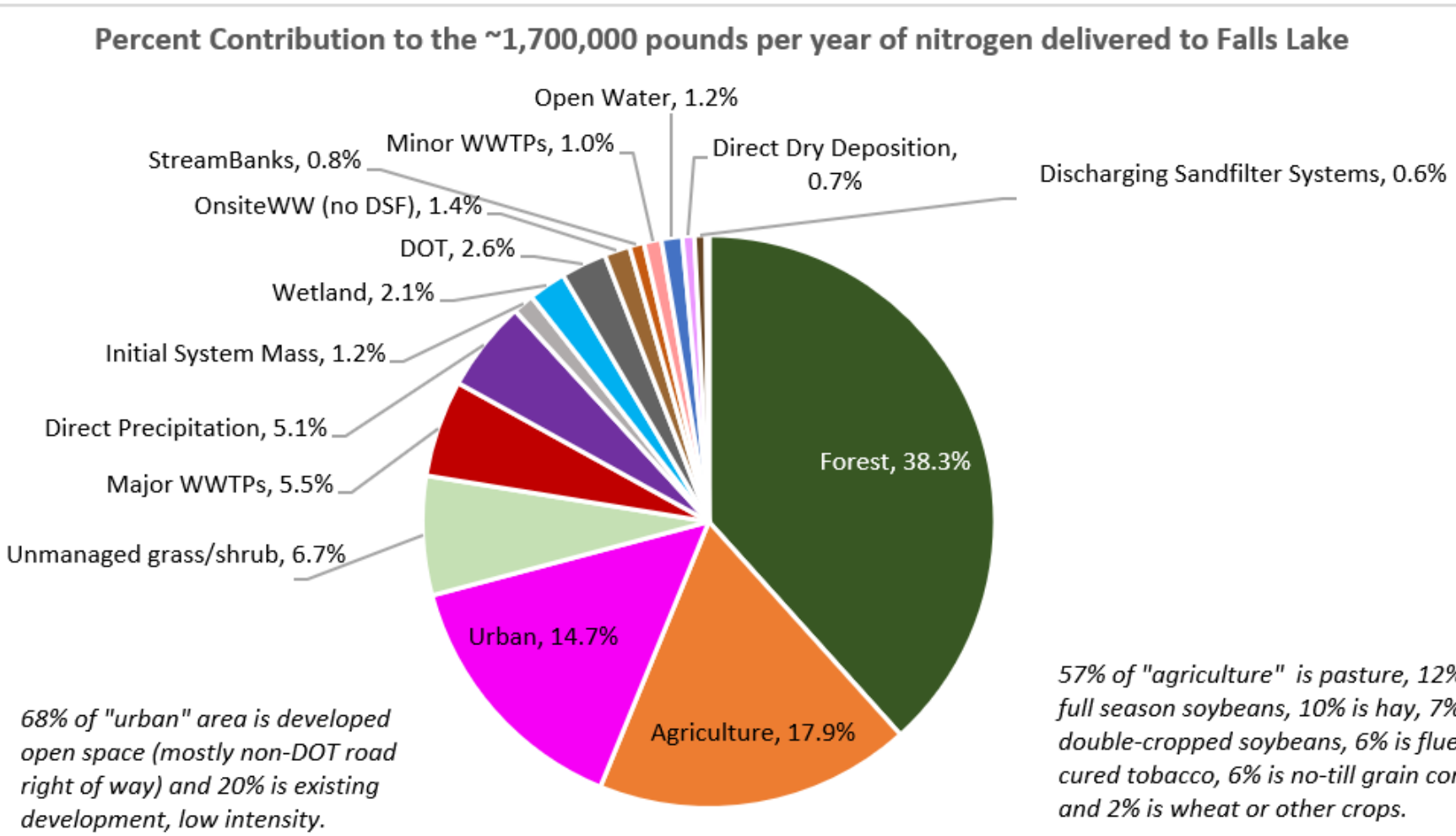
Urban:

- *68% developed open space (mostly non-DOT road right of way)*
- *20% existing development, low intensity.*

Total Nitrogen Inputs to the Watershed

- Over 8 million pounds per year of total nitrogen are input the Falls Lake Watershed each year
  - Nutrient application to agriculture and urban lands
  - Atmospheric deposition
  - Treated wastewater
- Many processes occur that reduce loading
  - Processes on or under the land surface
  - Processes in stream and impoundments
  - Crop harvesting
  - Best management practices/stormwater control measures
- Approximately 1.7 million pounds per year reaches Falls Lake (average from 2014 to 2018)
- The watershed processes and activities reduces these inputs by ~ 79 percent prior to delivery to Falls Lake

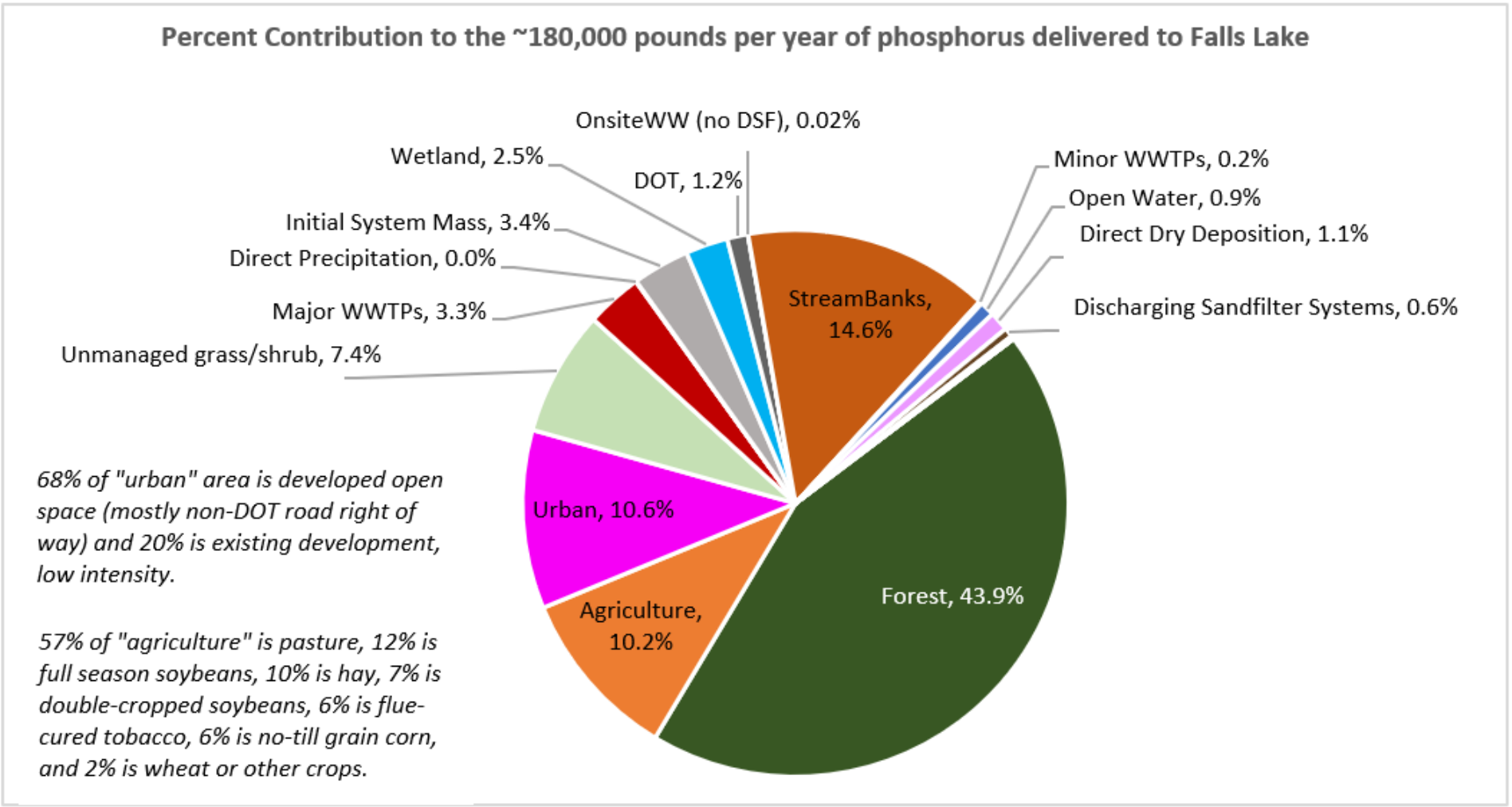
Total Nitrogen Delivered to Falls Lake



Total Phosphorus Inputs to the Watershed

- Over 1 million pounds per year of total phosphorus are input the Falls Lake Watershed each year
  - Nutrient application to agriculture and urban lands
  - Treated wastewater
  - Atmospheric deposition
- Many processes occur that reduce loading
  - Processes on or under the land surface
  - Processes in stream and impoundments
  - Crop harvesting
  - Best management practices/stormwater control measures
- Approximately 180,000 pounds per year reaches Falls Lake (average from 2014 to 2018)
- The watershed processes and activities reduces these inputs by ~84 percent prior to delivery to Falls Lake

Total Phosphorus Delivered to Falls Lake



EFDC Modeling Status

- Environmental Fluid Dynamics Code (EFDC) Falls Lake Model (more complex than WARMF Lake model)
  - Modelers are calibrating the model for water quality using the output (stream flows and concentrations) from WARMF watershed
  - Reporting is underway

Status 2022
NC DWR 303(d) List and Integrated Report

2022 303(d) list and Integrated Report

- 2022 Draft 303d list is now located on the DWR Web Site.

https://deq.nc.gov/about/divisions/water-resources/water-planning/modeling-assessment/water-quality-data-assessment/integrated-report-files

- The 2022 Draft Integrated Report (IR) has not yet been posted for public review. The IR includes Falls Lake Assessments.
- Deadline for commenting on the Draft 2022 303(d) list is February 28, 2022; submit to TMDL303dComments@ncdenr.gov
- DWR will likely provide an information update to EMC in March.
- DWR on track for submittal to EPA by April 1, 2022

Summary DWR Draft 2022 303(d) New Listings above Falls Lake Dam

- Lick Creek Arm of Falls Lake adds 474.6 Acres
  Turbidity Category 5 Exceeding Criteria
- Beaverdam Creek Reservoir adds 291.7 acres
  from backwaters to 1.5 miles upstream of the dam
  Chlorophyll-a Category 5 Exceeding Criteria
- Little River Reservoir (adds 32.4 acres) from
  0.1 mile ups of SR 1461 to dam
  Chlorophyll-a Category 5 Exceeding Criteria
- East Fork Eno River (Lake Orange) From source to Eno River
  adds 143.6 Acres
  Chlorophyll-a Category 5 Exceeding Criteria

Summary DWR Draft 2022 303(d)
Legacy (older) Listings above Falls Lake Dam

• Falls Lake From source to I-85 bridge	Turbidity 2008
• Falls Lake From I-85 bridge to Panther Creek	Turbidity 2010
• Ledge Creek (Lake Rogers)	Chlorophyll-a 2018
• Lick Creek	Benthos 1998
• Upper Barton Creek	Benthos 2008
• Flat River	Dissolved Oxygen 2008
• Knapp of Reeds Creek	Zinc 2008 Benthos 1998
• Ellerbe Creek	Fish Community 1998 Benthos 2008
• Little Lick Creek	Benthos 1998 Dissolved Oxygen 2008 Turbidity 2008

News Report:

How to Keep Pets Safe from Toxic Algae

News and Observer December 9, 2021

also…

- CBS 17
- newskudo
- WNCN

2A | THE NEWS & OBSERVER | THURSDAY DECEMBER 9 2021

How to keep pets safe from toxic algae

BY KORIE DEAN
kdean@newsobserver.com

A recent report of a dog dying after drinking water from the lake near Blue Jay Point County Park in northern Wake County is circulating on social media, renewing warnings about blue-green algae — a toxic, and sometimes lethal, algae that thrives in warm, slow-moving bodies of water.

Amy Walter reported the incident to the N.C. Department of Environmental Quality on Monday evening, according to the department's Fish Kill & Algal Bloom Dashboard.

In the report, Walter wrote that her dog drank from the lake near the park and died three days later. The report is currently listed as "in progress" on the dashboard, meaning that N.C. DEQ has received the report but has not yet confirmed whether blue-green algae is present at the location.

Blue-green algae poisoning was in the national spotlight in 2019 after four dogs in the Southeast, including three from Wilmington, died within a matter of days after drinking from or playing in lakes.

The algae is naturally occurring, but as global temperatures warm up, it could form more often.

"It's a growing problem not just here in North Carolina, but worldwide," said Dave Dorman, a professor of toxicology at N.C. State's College of Veterinary Medicine. "It's thought that it's due in part to global warming, that the longer summer seasons and increased use of fertilizers creates the growth conditions for the blue-green algae."

The News & Observer talked with Dorman to learn more about blue-green algae and the risk it poses to your pets.

Here's what we learned.

WHAT IS BLUE-GREEN ALGAE?

Though referred to as blue-green algae, it isn't actually algae — it's a naturally occurring bacteria called **cyanobacteria**.

- Cyanobacteria are photosynthetic bacteria that get their energy from light.
- Dorman said cyanobacteria can be found in almost any body of water, including salt and fresh bodies. According to the N.C. Division of Water Resources, cyanobacteria are present in most bodies of freshwater in North Carolina.
- Under certain conditions, such as under bright sunlight and warm temperatures, cyanobacteria can rapidly reproduce to form a **cyanobacterial bloom**.
- Blooms typically form during the **warm summer season**, or when water temperatures are warmer than usual. **Drought** has also been linked to an increase in harmful algal blooms, according to the Environmental Protection Agency.
- Once cyanobacteria bloom, they may be able to produce **toxins**, called cyanotoxins, which can cause illness in humans and animals that come into contact with water affected by a bloom. The toxins can be **lethal to animals**, mostly dogs and livestock.
- According to N.C. DEQ, there are no effective means of treating a cyanobacterial bloom once it appears. Treatment with algacides is not recommended, as they can cause the cyanobacteria to rupture and release toxins contained within the cells.

WHAT DOES BLUE-GREEN ALGAE LOOK LIKE?

Blue-green algae may or may not be visible on the surface of water as microscopic analysis is necessary to confirm the presence of cyanobacteria, but some signs that could indicate the presence of the bacteria in bodies of water are:

- **Discoloration of the water.** As its name suggests, "blue-green algae" can make water appear blue or green, but it can also make water take on other colors, including red and brown.
- **Surface scums.** Dorman said cyanobacteria can have a **"paint-like" appearance** on the surface of the water — as if someone had dumped paint in the water and it's now lingering on the surface.
- Floating or submerged **clumps, flecks or mats** of algae.
- **Decaying** cyanobacteria can produce milky blue and white surface scum.

Dorman noted that it can be easy to mistake **pine pollen** on the surface of water for cyanobacteria or algal blooms. **Remember:** Blue-green algae surface scums will generally have a paint-like appearance.

- If you think a body of water in North Carolina contains blue-green algae, or you're unsure, you can make a report with N.C. DEQ.

CAN BLUE-GREEN ALGAE HARM PETS?

Blue-green algae can cause illness to humans or animals that come into contact with water affected by a cyanobacteria bloom. It can be **lethal** for livestock and dogs.

- Dorman said illness is generally caused by the animals **drinking** water with the toxins, or getting the toxins in their skin by making contact with or submerging in the water — such as by **swimming**.

Dorman said there are generally two types of illness related to blue-green algae that occur in animals:

- **Liver damage to the animal.** This type of illness generally produces symptoms within two to three days of ingesting or making contact with the water.
- **Neurological damage to the animal.** This type of illness is much more rapid, with the animal showing symptoms within minutes or hours of ingesting or making contact with the water.

Illness with symptoms including itching, redness and blistering of the skin may also be possible within hours of contact, according to Veterinary Centers of America (VCA). These signs are not fatal, but may take several days to weeks to resolve, which can be uncomfortable for your animal.

The type of illness that an animal contracts generally depends on the class of toxins each algal bloom contains, Dorman said. Some algal blooms aren't toxic, but there's no way to tell just by looking at them, he said.

WHAT ARE THE SYMPTOMS FOR A DOG WITH BLUE-GREEN ALGAE POISONING?

If your dog has **liver damage** from blue-green algae, symptoms might include:

- Weakness
- Lethargy
- Vomiting
- Diarrhea
- Pale gums
- Jaundice of the gums and skin

Signs of **neurological damage** to your dog caused by blue-green algae include:

- Weakness or inability to walk
- Seizures
- Muscle tremors and rigidity
- Paralysis
- Increased salivation
- Difficulty breathing
- Disorientation

WHAT SHOULD I DO IF I THINK MY DOG HAS BLUE-GREEN ALGAE POISONING?

If your dog gets sick after ingesting or swimming in water, Dorman said it is an **emergency situation** and you should **immediately seek medical care** for your pet by **contacting your local veterinarian.**

- The ASPCA also offers a national hotline for any animal poison-related emergencies. If you think your pet may have ingested a potentially poisonous substance, you can **call 888-426-4435.** A consultation fee may apply.
- The national **Pet Poison Helpline** is also available. The helpline staff provides treatment advice for poisoning cases of all species, including dogs, cats, birds, small mammals, large animals and exotic species. The helpline charges **$65 per incident,** which includes all follow-up consultations. You can call the helpline at **855-764-7661.**

Dorman said some animals can recover from illnesses caused by blue-green algae, but there is not a specific antidote to treat the poisoning. Instead, veterinarians can offer treatment for specific signs or symptoms that the animal is showing, offering **symptomatic and supportive care.**

- VCA says if the possible illness is caught before clinical signs occur, therapy can be directed at ridding the body of the toxin, such as by pumping the animal's stomach.
- Because the toxins can enter the animals body so quickly, though, it is often too late to treat the animal once symptoms emerge.

"Despite aggressive treatment, the prognosis with blue-green algae toxicity is very poor," VCA says. "Some animals actually pass away before reaching a veterinarian."

HOW CAN I PREVENT MY PET FROM GETTING BLUE-GREEN ALGAE POISONING?

The best way to prevent your pet from developing blue-green algae poisoning is by **keeping them away** from waters that may have blue-green algae.

- Dorman recommended regularly checking DEQ's dashboard for any reports of fish kills or algal blooms at locations you frequent with your dogs, such as ponds, lakes and parks.
- Always pay attention to the appearance of bodies of water. If they show any signs of blue-green algae, do not let your pet go near the water.
- If you see a fish kill, also known as a fish die-off, in the water near somewhere you've taken your dog to walk, avoid the water. Fish kills are a sign of algal bloom activity.

The N.C. Department of Health and Human Services offers the following tips to safeguard humans and pets from cyanobacteria:

- Keep children and pets away from waters that appear discolored or scummy.
- Do not handle or touch large accumulations of algae, also called "scums" or "mats".
- Do not water ski or jet ski over algal mats.
- Do not use scummy water for cleaning or irrigation.
- If you accidentally come into contact with an algal bloom, wash thoroughly.
- If your child appears ill after being in waters containing a bloom, seek medical care immediately.
- If your pet appears to stumble, stagger, or collapse after being in a pond, lake or river, seek veterinary care immediately.
- If you are unsure whether or not a bloom is present, it is best to stay out of the water.

HOW TO REPORT ALGAL BLOOMS

If you suspect a blue-green algae bloom in your community, you can report it to N.C. DEQ using the department's **reporting app** or by contacting your **DEQ regional office.**

- Find the reporting app at: survey123.arcgis.com/share/c23ba14c74bb47f3a8aa895f1d976f0d?portalUrl=https://ncdenr.maps.arcgis.com
- Find your regional office at deq.nc.gov/about/contact/regional-offices.
- You can also call the N.C. Division of Water Resources (DWR) emergency hotline at **1-800-858-0368.**

When public health concerns arise from algae blooms, local health departments and NCDHHS determine an appropriate response with technical support from DWR.

- Common actions include swimming closures, contact advisories and the issuance of public notifications.

Korie Dean: 919-335-8507, @koriedean

Report to DWR and DWR Follow-up Testing

- **Amy Walter** reported to DWR 12/6/2021, dog drank from lake around Thanksgiving and three days later dog died.
- **Daniel Wiltsie**, DWR Algal Bloom Response Coordinator. algal and microcystin samples collected 12/7/21 east of Blue Jay Park. Pseudanabaena and Cylindrospermopsis were present but algae below algal bloom levels. Toxin test results for microcystin were below method detection limit. DWR November Falls samples "normal".
- **Kennedy Holt**, DHHS, Occupational and Environmental Epidemiology. Conversation with owner. Dog off leash walking around the lake, dog "had a few laps of water from the lake". Perhaps a mid sized dog. Owner took dog to vet lethargic, limp, no samples analyzed, no lab work. No confirmation tests. Dog euthanized. Owner wanted to make other dog owners aware. Did not want to make "a big production out of it"

Conclusions

- Appears to be a single report as mini survey of area veterinarians by the media yielded only this report.
- Veterinarian samples from the dog were not collected.
- Falls Lake algae were below bloom levels.
- Microcystin sample below detection.
- Location of Blue Jay Point County Park is in lower Falls Lake below Highway 50 and below Highway 98. This area typically has lower concentrations of algae than further upstream.
- <u>Available evidence can not confirm the possibility that this was an episode of algal toxin exposure.</u>
  - Mushroom poisoning has similar effects
  - Anatoxin algal poisoning normally has a rapid response (hours)
  - Delays in reporting and sampling contribute to the unknowns
  - Multiple lines of evidence suggesting algal toxicity are missing

Statistical Model Development and Regulatory Options for the Chlorophyll-a Water Quality Standard

Statistical Model Development and Regulatory Options for the Chlorophyll-a Water Quality Standard

- The UNRBA is developing a statistical/Bayesian model to link the water quality in Falls Lake to its designated uses
- The Technical Advisors Workgroup for the legal group, MRSW, and PFC have identified local subject matter experts to provide data and information regarding satisfaction with the designated uses of Falls Lake
- The modeling team has been conducting virtual meetings with these experts to understand the types of data and information that are tracked with respect to designated uses to inform development of the statistical/Bayesian modeling
- Development of a site-specific chlorophyll-a standard represents an important consideration for a revised Falls Lake management strategy and is linked to this modeling effort
- Subject matter expert, Dr. Marty Lebo, was approved by the Board in June and has begun his work in support of this effort.

Communications

Upcoming Stakeholder Workshops/Conferences

- The UNRBA is planning a technical stakeholders' workshop for Spring 2022 to discuss the status of the modeling efforts.
- Planning has also begun for a joint symposium with the Collaboratory to be held in Spring 2022.
- We are also working with the Collaboratory-funded researchers to develop a proposed session on Falls Lake at the upcoming Water Resources Research Institute's Annual Meeting in March 2022.

Meetings with DWR

- DWR planning and modeling groups
  - Review of technical work
    - Monitoring
    - Modeling
    - Collaboratory research and coordination
  - Approach for re-examination
  - Continued participation in MRSW and PFC meetings

External Stakeholder Communication Needs

- Objectives continue to be reviewed relative to communication opportunities with stakeholders.
- To support the re-examination process and achieve broad support for the UNRBA recommendations, additional outreach to external stakeholders including DWR, DEQ, and other interested stakeholders is needed;
- Coordination with local leaders to convey messages and facilitate outreach will be necessary.
- This effort will require the support of the UNRBA membership, staff and Board representatives.
- As a reminder, the Infographic and Fast Facts are available online https://upperneuse.org/resource-library
- An Overview of the Work of the UNRBA provided to the UNC Collaboratory for inclusion in their reporting is available online https://nutrients.web.unc.edu/resources/

Ongoing Discussions/Issues

Ongoing Discussions/Issues

- Continue discussions on the MOA—reengage UNRBA on the goal of the MOA and work to reconnect with DEQ
- Neuse Watershed Model Information Session / Delivery Factors for WWTP

Closing Comments

Next UNRBA Board Meeting is Scheduled for March 16, 2022 Remote Meeting

The location and access for this meeting may be modified at a later date.