Public Health Response to Algal Blooms In Florida

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Division of Disease Control and Health Protection

University of Florida Institute of Food and Agricultural Science Sea Grant
Harmful Algal Bloom: State of the Science Symposium
August 20-21, 2019
St. Petersburg, Florida
What is the Department’s Role?

Protect, promote and improve the health of all people in Florida

- Evaluate Human Health Effects
- Surveillance of Human Illness
- Educate Health Care Professionals
- Outreach to the Public
Potential Exposure Pathways

- Direct Skin Contact
- Ingestion of Food
- Incidental Ingestion
- Drinking Water
- Inhalation of Aerosols
Complete Exposure Pathway

1. Toxic Compound
2. Contaminated media and transport
3. Contact with Compound
4. Uptake
5. Toxicity
Inland Transect Sampling Locations

Pinellas

Sarasota

VENF1 wind

[Wind Speed Chart: m/s, October 2008 - 2014, 10 m/s]
Aerosol Sampling

Sarasota Sampling: October 8 – October 16, 2018
Pinellas Sampling: October 26 – November 3, 2018
Hydrogen Sulfide Testing

- Rotten egg smell
- Odors at very low concentrations
- Below human health impacts
- Sensitive people include those with Asthma
Red Tide Blooms

- People in coastal areas can experience varying degrees of eye, nose and throat irritation.
- When a person leaves an area with a red tide, symptoms usually go away.
- People with severe or chronic respiratory conditions like asthma or chronic lung disease avoid areas with active red tides.
- If experience irritation, get out and thoroughly wash off with fresh water.
- Swimming near dead fish not recommended.
- Wearing a particle filter mask may lessen the effects; using over-the-counter antihistamines may decrease symptoms.
At very high exposures, cyanotoxins affect the liver, nervous system and skin.

Most problems when substantial amounts of water with high toxin amounts swallowed; ie: people drink untreated surface water.

Besides drinking the affected surface water, difficult to get cyanotoxins into the body - not easily airborne and do not pass through the skin readily.

Most people avoid a blue-green algae bloom because they tend to be icky-looking and smelly.
Public Health Surveillance Tools

- **EpiCom**: Public Health Bulletin Board
- **Florida Poison Information Centers**
  - Tampa, Jacksonville, Miami
  - Aquatic Toxins Hotline
- **Florida Reportable Disease System**
  - Merlin
- **ESSENCE**
  - Syndromic Surveillance
    - Includes Florida Hospital ED and Acute Care Facility data
Health reports

Red Tide Weekly Report

Weekly report for September 16 to September 22, 2018 (week 38)

Most human health effects caused by exposure to red tide (caused by Karenia brevis) are mild (e.g., irritation of the eyes, nose, and throat) and go away without the need for medical treatment. If you are experiencing mild health effects from red tide, please contact your Florida poison control center at 800-222-1222 to report your illness. If you have more serious symptoms, please see your health care provider for evaluation.

Visits to emergency departments in Florida with reported exposure to red tide or algae increased from the end of July 2018, peaked in mid-August and have since decreased. The number of visits increased last week (September 16 to September 22).

Emergency Department Visits
Health reports

Florida Poison Control Exposure Calls
Health reports

BLUE-GREEN ALGAE WEEKLY REPORT

Blue-green algae health effects
Weekly report for September 16 to September 22, 2018 (week 38)

Human health effects caused by exposure to blue-green algae (cyanobacteria) are very rare. At high levels of exposure, such as when domestic animals drink untreated surface water with thick cyanobacteria blooms, cyanotoxins can cause significant health impacts. However, cyanotoxins do not aerosolize to significant amounts and exposure via inhalation is not a risk to the general public.

Information on how to keep your family safe while enjoying Florida's waterways.

If you are experiencing mild health effects from possible exposure to blue-green algae, please contact your Florida poison control center at 800-222-1222. If you have more serious symptoms, please see your health care provider for evaluation.

The terms "blue green algae" and "cyanobacteria" are not found in the statewide emergency department data; therefore, those data are not presented here. Please see the poison control centers call data for health complaints associated with blue-green algae.

In Florida, the number of blue-green algae-associated calls to Florida poison control centers increased in August 2018.

Florida Poison Control Exposure Calls
Guidance

What are some tips for avoiding cyanobacteria/blue-green algae?
Avoid swimming in or drinking water with blue-green algae. Do not contact areas where you see foam, scum, or mats of algae on the water.

What should I do if I come in contact with cyanobacteria/blue-green algae?
If you come into contact with an algae bloom, wash with soap and water. If you experience an illness, please contact your healthcare provider.
Public Health Education

- Website information
- Presentations
- Citizen contacts
- Health care providers
- Community events
- Signage and rack cards
- Alerts & press releases
Outreach/Education

Know when to

**swim it**
With a buddy.
When safety flags & signs say thumbs-up!

**shore it**
If you have a cut on your skin, your immune system is weak, or you don’t have a buddy with you.

**dodge it**
Stay clear of living things near the shoreline & in the water like mosquitoes & algae blooms.

Learn more at FloridaHealth.gov/SwimIt-ShoreIt
Blue Green Signage

CAUTION
Blue Green Algae may be in these waters. THERE MAY BE TOXINS.

Use caution if you see algae at this time:
- You should not swim at this location.
- Avoid getting water in your eyes, nose or mouth.
- You should not eat shellfish from this location.
- Rinse fish fillets with tap or bottled water. Throw out guts. Cook fish well.
- You should keep pets and livestock away from the waters in this location.

HEALTH ALERT
Blue Green Algae are in these waters. STAY SAFE FROM TOXINS.

During this health alert:
- Do not swim at this location.
- Do not get this water in your eyes, nose or mouth.
- Do not eat shellfish from this location.
- Rinse fish fillets with tap or bottled water. Throw out guts. Cook fish well.
- Keep pets and livestock away from these waters.

Florida HEALTH
Blue Green Signage

CAUTION

Blue Green Algae may be in these waters
THERE MAY BE TOXINS.

Use caution if you see algae at this time:

- You should not swim at this location.
- Avoid getting water in your eyes, nose or mouth.
- You should not eat shellfish from this location.
- Rinse fish fillets with tap or bottled water. Throw out guts. Cook fish well.
- You should keep pets and livestock away from the waters in this location.
Caution

**Caution** sign used to emphasize “If you see it, stay out”

| Place at beginning of season; Remove at end | Let us know where signs are placed/removed |

**Caution** sign placed where public may contact HABs

| Choose locations with local partners | Partner to find resources for signage |
Outline: Health Alert

Local partners may desire data driven action

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<tr>
<th>Work with local partners</th>
<th>Flexibility resides locally</th>
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</thead>
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**Health Alert** uses laboratory certified data

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<tr>
<th>Presence of toxins is trigger</th>
<th>Absence is removal</th>
<th>Using data from FDEP’s data portal</th>
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**Health Alert** can provide more tailored information

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<tr>
<th>Can include local CHD website alert</th>
<th>Can include press release</th>
<th>Can include <strong>Health Alert</strong> signage</th>
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Communicating Information

- The Bureau monitors DEP’s website daily for bloom activity and toxin data
- Emails sent to EH Director, Health Officer/Administrator, Epidemiology, and others outside of Department
- Bloom activity notification email
  - CHD to place caution signage.
  - Bureau collects sign locations
- Sampling data notification email
  - Data driven actions with local partners
Existing Red Tide Signage
Sarasota County Health Department

**FLORIDA RED TIDE PRESENT**
- May cause eye, throat or skin irritation
- May cause coughing or sneezing
- Avoid the beach if you have asthma or a respiratory condition
- Onshore winds and rough surf worsen its effects

**Red Tide is caused by naturally occurring algae.**
- Can kill fish and other sea animals
- Do not swim near dead fish or touch them
- Wear shoes to prevent injuries from stepping on bones of dead fish
- Keep pets away from water, sea foam and dead fish

**Florida Red Tide may not be present at all Sarasota County Beaches**

**FLORIDA RED TIDE ALSO PRESENT**
- May cause eye, throat or skin irritation
- May cause coughing or sneezing
- Avoid the beach if you have asthma or a respiratory condition
- Onshore winds and rough surf worsen its effects

**“NO SWIM” ADVISORY**
- Bacteria levels are currently outside acceptable limits.
- **Swimming is NOT recommended.**
  - Increased risk of illness if water is swallowed or gets in eyes, nose, ears
  - Cuts or sores in skin may become infected
  - This advisory will be lifted when the results of water testing return to an acceptable range.
Dodge it

blue green algae?

Enjoy Florida’s waters—know when to swim it, shore it or dodge it.

Stay clear of living things near the shoreline & in the water like mosquitoes & algae blooms.

Blue green algae are organisms naturally found in all types of water—large concentrations are called blooms. Blooms can form a thick mat that can be foamy, scummy and give off a bad odor.

Don’t swallow, swim, wade, use personal watercrafts, water ski or boat in waters where there are blooms.

Bloom can cause ear, eye and skin reactions, and hay fever and flu-like symptoms (diarrhea). Wash your skin and clothing with soap and water if you touch blooms, or discolored or smelly water. See your doctor if you have symptoms.

Waters where there are blooms are not safe for animals.

Don’t cook or clean dishes with water contaminated by blooms. Boiling water will not eliminate chemicals.

Fillets from healthy fish caught in freshwater lakes experiencing blooms are safe to eat. The Florida Department of Health recommends that fish are not harvested from areas near or in the bloom.

Florida HEALTH
Outreach Cards

**blue green algae?**

**dodge it!**

Don’t wade, swim or swallow water where there are algae blooms.

With so many places in Florida to explore we sometimes forget our beaches, lakes, and rivers are natural places that change with the seasons. Enjoy Florida’s wild and not-so-wild areas, and know when it’s time to swim, shore it or dodge it.

Blue green algae are tiny organisms naturally found in all types of water. Blue green algae (also known as cyanobacteria) can grow in many of Florida’s water bodies. Large concentrations, called blooms, can change the water color to blue, green, brown, orange or red. Blooms can appear year-round but are more frequent in summer and fall.

Algae blooms can look like a thimble mat. Blue green algae can grow rapidly and sometimes form a foamy surface scum and an unpleasant odor.

Stay away from blooms.

Swimming in water with blue green algae blooms may cause eye and skin reactions, and may cause flu-like symptoms (including diarrhea). These reactions are often common. Because blooms can remove oxygen from the water, fish kills can occur.

Report fish kills, algae blooms or illnesses:
Human Illnesses: Florida Poison Control Center, 1-800-222-1222

**red tide?**

**dodge it!**

Don’t wade, swim or swallow water where there is red tide.

With so many places in Florida to explore, we sometimes forget our beaches, lakes, and rivers are natural places that change with the seasons. Enjoy Florida’s wild and not-so-wild areas, and know when it’s time to swim, shore it or dodge it.

In Florida, red tide is caused by a naturally occurring microscopic alga called Karenia brevis or K. brevis. K. brevis produces a toxin that can affect the central nervous systems of fish, birds, mammals and other animals. Large concentrations called blooms can change the water color to red, light or dark brown, or green.

Red tides occur all over the world.

No single factor causes a red tide. K. brevis is found almost exclusively in the Gulf of Mexico but has been found on the east coast of Florida and off the coast of North Carolina.

Red tide blooms can last days, weeks or months.

Blooms can change daily due to wind conditions and water currents. Sometimes winds normally bring it near the shore and offshore winds drive it out to sea.

Report fish kills or illnesses:
Human Illnesses: Florida Poison Control Center, 1-800-222-1222

**9,000+ miles of SALTY & FRESH Florida shoreline**

Know when to:

swim it
With a buddy. When safety marks & signs say thumbs-up!

shore it
If you have a cut on your skin, your immune system is weak, or you don’t have a buddy with you.

stay out of the water
Shore it if you have an open cut or wound on your skin.

Avoid bloom-forming and dead fish. Some people who swim in red tide experience skin irritation and eye irritation. After contact, thoroughly wash off with fresh water. Red tide can also produce airway chemicals, Gulf blooms that can cause you to cough, sneeze, and tear. For most people, these are temporary symptoms. Wearing a particle mask and using antihistamines can help with symptoms. If you have a chronic respiratory problem like asthma or are sensitive to red tide, areas and check current marine conditions.

Do not swim in areas where there are dead fish in the water including when a red tide is present.

Commercial seafood. Commercial seafood purchased in restaurants, grocery stores and seafood markets is safe to eat.

Seafood harvested from areas with a red tide:
-鲜fish caught live, healthy are eaten if filleted and skinned thoroughly.
- Edible meat of corals, shrimp and lobsters (shellfish) can be eaten, but should not be eaten in tandem with the cyanide-based gill of shellfish.
-Do not eat distressed or animals found dead under any circumstances.

For current red tide conditions visit:
MyFWC.com/REDTIDES, or VisitFLShore.org or call 1-866-BEACHES (232-2237).
Press Release

July 9, 2019

BLUE GREEN ALGAL BLOOM
Health Alert for Fellsmere WMA/Headwaters Lake, Fellsmere

Contact:
Cheryl Dunn, Environmental Manager
cheryl.dunn@flhealth.gov
772-794-7450

Fellsmere, FL Department of Health in Indian River County is correcting the location of the existing Health Alert for the presence of Microcystin Toxin. Blue green algae produce and release this toxin. Fellsmere WMA/Headwaters Lake is accessed through the parking area for the Stick Marsh.

Blue green algae (also known as cyanobacteria) can grow in many of Florida’s waterbodies. Large concentration, called blooms, can change the water color to blue, green, brown, orange or red. Blooms can appear year-round but are more frequent in summer and fall. Blue green algae can grow rapidly and sometimes form a foamy surface scum and an unpleasant odor. Because algae blooms can remove oxygen from the water, fish kills can occur.

Don’t swallow, swim, wade, use personal watercraft, water ski or boat in waters where there are algae blooms. Algae blooms can cause ear, eye and skin reactions and hay fever and flu-like symptoms like diarrhea. Wash your skin and clothing with soap and water if you have contact with algae, discolored or smelly water.

Waters where there are algae blooms are not safe for animals. Pets and livestock should have a different source of water when algae blooms are present.

Don’t cook or clean dishes with water contaminated by algae blooms. Boiling the water will not eliminate the toxins.

Fillets from healthy fish caught in freshwater lakes experiencing blooms are safe to eat. Rinse fish fillets with tap or bottled water, throw out the guts, and cook fish well. Do not eat shellfish from this location.

Attached is a map showing the location of the blue green algae bloom. For more information on algae blooms visit the Florida Department of Environmental Protection webpage https://floridadep.gov/algae
www.floridahealth.gov/algaeblooms
Environmental Health SharePoint

Welcome to the HABs Community Site!

Welcome to the Harmful Algal Blooms community. If you are not already a community member, you will see an option to the right of the page to Join the Community. Please utilize the message board for questions that may not have been answered. We want to hear from you. Ask a question. Share your thoughts. Get smarter and help others.

Approved HABs Documents

- Name
- Approved Ryers and Informational Items
- Approved Press Releases
- Approved Signage and Processes
- Approved Talking Points
- References
- Trainings

Florida HEALTH
Bureau of Environmental Health

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