



Mobile Bay National Estuary Program
Community Action Committee
Tuesday, February 11, 2020
Five Rivers Delta Center - Blakely Hall Classroom
10:00 am - 12:00 pm

AGENDA

1. Welcome and Introductions
2. Guest Speakers
 - a. Cade Kistler, Mobile Baykeeper- Sewage Spill Tracking Program. How data is analyzed and modified for public understanding.
 - b. Mimi Fearn, Dog River Clearwater Revival- What are the collection parameters, why they're important.
 - c. Dennis Hatfield, Little Lagoon- Why the Little Lagoon monitoring program is a success and continues to gain momentum.
 - d. Mike Shelton, Weeks Bay- Weeks Bay's system wide monitoring program and the availability of data; climate monitoring program and microbial source tracking.
3. Announcements/Updates
4. Adjourn

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In Attendance:

Dr. Mimi Fearn, Dog River Clearwater Revival
Eric Holladay, Dog River Clearwater Revival
Ronald Phelps, Little Lagoon Preservation Society
Mike Shelton, Weeks Bay NERRS/ ADCNR
Harold White, Fowl River Area Civic Association
Julie Day, Dog River Clearwater Revival
Dennis Hatfield, Little Lagoon Preservation Society
Chandler Ogburn, Dog River Clearwater Revival
Cade Kistler, Mobile BayKeeper
Kelley Barfoot, MBNEP
Madison Blanchard, MBNEP

MINUTES

Take-aways:

- **Mobile Bay Keeper's Sewage Spill Explorer tool allows citizens to look up information about recent and past sewage spills, such as the location, how many gallons were spilled, what caused the spill, and what waterbody(s) were affected, and is available on their website: <https://www.mobilebaykeeper.org/sewage-spills>**
- **Dissolved oxygen is one of the most important parameters due to aquatic organisms being dependant on it for survival and because it's levels are easily affected**
- **LLPS phytoplankton monitoring alerts members of potential for HABs, Red Tide, and health risks to humans and wildlife.**
- **LLPS's success is attributed to sharing information with local entities for the purpose of collaborative research**
- **Weeks Bay has started a new flood monitoring program to determine if it's flash flooding or high tide flooding and is seeking volunteers to participate**

Welcome and Introductions

Ms. Kelley Barfoot opened the meeting by welcoming everyone and gave a brief overview of the Agenda for today's meeting and the remaining meetings in 2020. She asked everyone to introduce themselves and asked the CAC members to welcome the first guest speaker. She then opened the floor to the guest speakers.

Guest Speaker- Cade Kistler, Mobile Bay Keeper (MBK)

Mr. Kistler introduced himself to the group and began his presentation by giving an overview of who MBK is and what the focus of their work is. MBK is Mobile and Baldwin counties 'environmental

watchdog' for issues within the community. MBK's mission is to educate and engage citizens, resolve environmental issues, and protect our natural resources for the future. Educating citizens about environmental issues means making them aware that these issues are happening, and making resources accessible that allows them to see how the issue is impacting their area or them personally. Cade states that there was a time when it was nearly impossible to find public information online about local sewage spills. MBK recognized this need and created the Sewer Spill Explorer tool, an online database paired with an interactive map that allows citizens to look up information about recent and past sewage spills, such as the location, how many gallons were spilled, which waterbody(s) were affected and what caused the spill. The Sewage Spill Explorer database was created from EPA's sewage spill records. Cade closes his presentation by informing the group that they can subscribe to email notifications from ADEM. Mr. Hatfield asks if local utilities contribute to the Sewage Spill Explorer database. Cade answers, yes, Mobile and Baldwin county utilities both send in their data to MBK. Mr. Holladay asks if MAWSS plans to enhance their system. Cade answers, yes, Charles Hyland with MAWSS and his team have done extensive planning and have strategized how to fund the enhancements. Link to Cade Kistler's Presentation:

<https://drive.google.com/file/d/1B2uiFlwy9wMzE8B666n0V-9GYBEUzGsv/view?usp=sharing>

Link to Sewage Spill Explorer tool: <https://www.mobilebaykeeper.org/sewage-spills>

Guest Speaker- Mimi Fearn, Dog River Clearwater Revival

Ms. Fearn introduced herself to the group and began her presentation by stating that the majority of the CAC members have experience in water quality monitoring but some may not be aware of how each of the monitoring parameters affect habitats, fish, and wildlife and how the parameters affect one another. Temperature is the first parameter to be discussed- warmer water holds less oxygen than cold water; at the same time, warmer water increases the decomposition rate of organic material which causes demands to DO to increase. Temperature also affects metabolic processes in fish by increasing their demand for food and oxygen. Ms. Fearn moves on to discuss pH, a measure of the concentration of hydrogen ions in the water which determines the biological availability of nutrients and the solubility of heavy metals. The pH scale is logarithmic, meaning that each step on a pH scale indicates 100 times more basic or acidic; this is why we cannot average pH. A pH reading of 6.5-7.5 indicates healthy living conditions for aquatic organisms. Sudden shifts in pH are not healthy for aquatic organisms and are caused by wastewater, chemical spills, and acid rain. Alkalinity is the next parameter discussed- alkalinity determines the water's ability to neutralize and maintain a stable pH; it acts as a buffer due to the presence of bicarbonates, carbonates, and hydroxides (negative ions). Alkalinity differs from region to region due to soil conditions. Ms. Fearn moves on to discuss hardness, which indicates the concentration of calcium and magnesium ions in the water (positive ions). Aquatic life is impacted by hardness due to its effect on toxic metals- the harder the water, the lower the toxicity. Hardness can be used as an indicator that saltwater is present. Dissolved Oxygen (DO) is the next parameter discussed. The following conditions cause DO to increase: turbulence (mixing of water), photosynthesis in aquatic plants, and an increase in atmospheric pressure. The following conditions cause DO to decrease: an increase in water temperature, salinity and decomposing organic material. DO levels below 5mg/l are stressful to aquatic organisms- this feeling can be compared to how a human feels when hiking at very high elevations. Algal blooms can create large diurnal swings in DO, causing high levels during the day and low levels at night. Ms. Fearn moves on to discuss turbidity, a measure of cloudiness of water caused by soil (especially clay and silt sized particles) in the water. Excessive turbidity smothers bottom dwelling organisms by clogging gills, and can be

detrimental to submerged aquatic vegetation. Clay particles can stay suspended in the water for days until they group together and settle out in flocs (via flocculation). Link to Presentation:

<https://drive.google.com/file/d/14Y-tbrwWAFzdfqw1SrebLz3HW8j-i4uo/view?usp=sharing>

Guest Speaker- Dennis Hatfield, Little Lagoon Preservation Society (LLPS)

Mr. Hatfield introduced himself to the group and began his presentation by giving an overview of the characteristics of Little Lagoon; it is a coastal lake with abundant flora and fauna that's also a popular recreation site for citizens. Mr. Hatfield states that LLPS would not have been able to undertake many of their efforts and projects without partner collaborations. The community interest in Little Lagoon began with concerns about eutrophication (excessive of nutrients which causes a dense growth of plant life and death of animal life from lack of oxygen). In 2007, Dr. MacIntyre, with the Dauphin Island Sea Lab, reached out to the Little Lagoon community after attending a CAC meeting where LLPS gave a presentation. This triggered the creation of LLPS's water quality monitoring group; DISL trained the group to monitor. Two teams of 4+ LLPS volunteers capture data from six sites every two weeks and upload it to the Water Rangers database. LLPS monitors the following parameters: dissolved oxygen, salinity, pH, clarity, bacteria, phytoplankton, and nutrients. LLPS's water quality data was impetus in source tracking human E.coli in the lagoon. Phytoplankton monitoring revealed the presence of Pseudo-nitzschia, a toxic diatom that causes harmful algal blooms and health risks for wildlife and humans, and Karenia brevis, which causes the Red Tide phenomenon, fish kills, and respiratory issues in humans. Presence of these two single-cell organisms was reported to the Alabama Department of Public Health. The Phytoplankton Monitoring Network (PNM) trained LLPS members in phytoplankton monitoring. Mr. Hatfield attributes much of LLPS's success to sharing information with local entities for the purpose of collaborative research. LLPS plans to continue to build their database and conduct outreach, the group is also interested in nutrient monitoring and bottom water monitoring. LLPS's water quality data is available on their website; nutrient and phytoplankton data is not available on website.

Link to Presentation:

https://drive.google.com/file/d/1u365_sFuam-GOhjmPbrzydrykqfydv9C/view?usp=sharing

Guest Speaker- Mike Shelton, Weeks Bay NERRS

Mr. Shelton introduced himself to the group and began his presentation by giving an overview of how Weeks Bay Reserve was established through the National Estuary Research Reserve Systems, a federal and state partnership that focuses on research, monitoring, stewardship, education and training for the purpose of protecting estuaries and coasts. ADEM has listed Weeks Bay as an Outstanding Water Resource. The watershed covers 200 square miles while the Reserve extends over roughly 10,000 acres of uplands, wetlands, and fresh and salt water marshes. Mr. Shelton discusses the details of the Weeks Bay System-Wide Monitoring Program. Water quality data is collected via data sonde every fifteen minutes and can be downloaded from the Advanced Data System website. Nutrient data is collected monthly and is analyzed in a lab setting. Weeks Bay's climate monitoring includes: marsh surface elevation, vegetation and habitat changes. A weather station is located on site near the mouth of Fish River and data is available on the NERRS Central Data Management Office (CDMO) website (<http://cdmo.baruch.sc.edu/>). Mr. Shelton moves on to discussing the Weeks Bay Citizen Science Programs. Citizens monitor water quality under the Alabama Water Watch Protocol for water chemistry and bacteria; there is a total of 13 volunteer monitors. Weeks Bay has started a new flood monitoring program to determine if it's flash flooding or high tide flooding and is seeking volunteers to participate; citizen scientists record the frequency of

floods, rainfall, and water height in the MyCoast app. Weeks Bay is interested in expanding monitoring to socioeconomic measures. Microbial source tracking was conducted to identify sources of pathogens in Fish River and Weeks Bay watersheds; findings revealed sources of human, cattle and horses. Currently, more sensitive methods are being used to better quantify sources of pathogens.

Link to Presentation:

<https://drive.google.com/file/d/1V0r32b3-DIU51Um9SByNgGTgAP7W0-cO/view?usp=sharing>

Meeting Adjourn

11:55 a.m.