

Lake Okeechobee and Caloosahatchee Freshwater Discharges Frequently Asked Questions

Q: Why are we seeing so much freshwater being discharged to the Caloosahatchee River and estuary?

A: A strong El Niño weather pattern this winter influenced rainfall patterns throughout the United States. As a result, recorded rainfall throughout South Florida was more than 400% above average for January and February.

The Caloosahatchee River is part of a much larger water management system developed as part of the Central and Southern Florida Project, draining over 7,000 square miles south of Orlando, including the Kissimmee, Lake Okeechobee, Caloosahatchee and St. Lucie watersheds. South Florida's water management system was designed to drain the interior of the state for agricultural and development purposes. To our detriment, the system is very effective at draining the landscape and moving water quickly to tide through the Caloosahatchee on the west coast and the St. Lucie on the east.

Lake Okeechobee is managed by the U.S. Army Corps of Engineers. The Army Corps manages the Lake according to the Lake Okeechobee Regulation Schedule (LORS 2008). Under the Lake Regulation Schedule, the Army Corps attempts to maintain water levels within the Lake between 12.5 and 15.5 feet. When water levels exceed the optimal level the Army Corps conducts regulatory discharges to the Caloosahatchee and St. Lucie estuaries. Because of high rainfall within the Kissimmee and Lake Okeechobee watersheds in January, the Lake level exceeded 15.5 feet prompting the Army Corps to begin sending larger volumes of freshwater to the estuaries. In February, water levels within the Lake reached a peak elevation of 16.38 feet requiring the Army Corps to discharge maximum practicable discharges the estuaries. As a result, the Caloosahatchee received weekly average discharges exceeding 10,000 cubic feet per second (cfs) at the Franklin Lock and Dam (S-79). Because the elevation of Lake Okeechobee remains above optimal levels, the Corps continues regulatory discharges to the estuaries in an effort to protect the integrity of the Herbert Hoover Dike.

For more information on the current discharges please visit the City's H2O Matters website at: <http://www.mysanibel.com/Departments/Natural-Resources/Protecting-Our-Water-Quality/Sanibel-H2O-Matters>

Q: Where is all of the freshwater coming from?

A: On average, approximately 60% of the freshwater the Caloosahatchee estuary receives annually originates from the watershed between the Moore Haven Lock (S-77 and the Franklin Lock (S-79), with the remainder coming from Lake Okeechobee. When Lake Okeechobee levels are outside of the preferred elevation based on the Lake Okeechobee Regulation Schedule (LORS), the Army Corps conducts regulatory releases to the estuaries. When regulatory discharges are being conducted Lake discharges can make up a much greater proportion of the total discharges to the estuaries. As of May 27, 2016 target discharges from the Lake to the Caloosahatchee averaged 4,000 cubic feet per second (cfs). Combined with watershed runoff, flows to the Caloosahatchee have been substantially higher than the target flows. For example, from June 12th–June 19th flows at the Franklin Lock averaged 9,399 cfs. These flows are substantially above the 2,800 cfs high-flow ecological "harm threshold" established by water managers for the estuary.

Q: Why is the water not being sent south into the Everglades and Florida Bay where it is needed?

A: The Comprehensive Everglades Restoration Plan (CERP) includes a suite of projects that are aimed at restoring freshwater flows south to the Everglades National Park and Florida Bay. Because of a number of lawsuits and water quality restrictions on the amount of phosphorus that can enter Everglades National Park, water managers cannot move water south unless total phosphorus concentrations are less than or equal to 10 parts per billion (ppb). In addition, there are physical constraints to moving water south that can result in flooding of private property or tribal lands and impacts to endangered species, further complicating our ability to move water south. A number of CERP projects must be completed before we can move additional water south. These projects include the Central Everglades Planning Project (CEPP), Tamiami Trail Bridging, and several non-CERP projects like the State's Water Quality Restoration Strategies project to help clean the water before sending it south.

To restore freshwater flows south and to reduce the high-flow impacts to the estuaries the CERP plan outlined storage of approximately 1 to 1.35 million acre-feet of water storage north and south of Lake Okeechobee, 200 thousand acre-feet east of the Lake, and 400 thousand acre-feet of storage west of the Lake. Until the necessary storage is achieved and the projects needed to clean and move the water, the St. Lucie and Caloosahatchee estuaries will continue to receive damaging high-flow discharges from the Lake and our respective watersheds.

Q: How are the freshwater discharges impacting Sanibel?

A: The freshwater discharges are impacting Sanibel both ecologically and economically. From an ecological perspective, the freshwater discharges are reducing salinity throughout the Caloosahatchee estuary, San Carlos Bay and the nearshore waters of the Gulf of Mexico. Reduced salinity and highly colored water are impacting seagrasses, oysters, economically important sportfish and other marine organisms that depend on these areas for reproduction and survival, including endangered species like the manatee and smalltooth sawfish. In addition to salinity and color, the water delivered to our coast also contains excess nutrients that can fuel harmful algal blooms, impacting ecological resources and local beaches.

The freshwater discharges are also having a measurable impact on our local economy. In Lee County Tourism generates more than \$3 billion annually and supports approximately 54,000 jobs (Lee County VCB 2014). A large portion of those jobs are directly supported by water-related activities. Currently, the low salinity and dark freshwater plume extending into San Carlos Bay and Pine Island Sound is impacting our world-class sport fishery. This occurred during the peak of our 2016 tourist season and continues to today. Local fishing guides and related marine industries are losing business and seasonal income that they depend on as a result. The City of Sanibel continues to field complaints from visitors and island residents concerned about the appearance of the water. Hoteliers are reporting cancelations and island realtors are reporting failed deals because of concerns about water quality.

Q: What makes the water appear so dark in color?

A: Organic matter and tannins leached from soils and vegetation runoff the landscape and into rivers, creeks and tributaries making the water appear dark-brown or black in color. Because the lands within the eastern Caloosahatchee watershed are predominately used for agricultural purposes, there tends to be a lot of sediment and tannins in the watershed runoff. This results in freshwater discharges that appear very dark in color. On the other hand, water that is discharged from Lake Okeechobee tends to

be lighter in color because some of the chemicals that make it dark are broken down by sunlight. Suspended sediments in the water can also change the appearance of the water, making it appear muddy or turbid. When discharges exceed 2,800 cubic feet per second (cfs) we often see more sediment in the water and the color of the water appears darker in color in San Carlos Bay. When discharges exceed 4,500 cfs the freshwater plume extends out into the Gulf of Mexico during ebb tide and can alter the appearance of the water along Sanibel's eastern beaches. When flows exceed 6,500 the plume extends further out into the Gulf and north into Pine Island Sound, impacting the beaches of western Sanibel and Captiva.

Q: Is it safe to swim in the dark water?

A: Because the water is dark in color it does not necessarily mean that it is unsafe to swim in the water. However, when the water appears dark it is often an indicator of stormwater runoff. If stormwater originates from areas with poorly maintained septic systems or areas that drain intense animal agricultural operations, bacteria levels could be elevated and pose a human health concern. Because Sanibel is almost entirely on centralized sewer and the water that we receive from the Caloosahatchee typically has relatively low bacterial levels by the time it reaches the coast, we generally do not see elevated bacteria levels along our beaches. Even during the peak of the discharges to the Caloosahatchee in February 2016, bacteria levels reported by the Florida Health Department through the Healthy Beaches Program were all within the "Good" range for Sanibel's beaches. For more information please see the links below.

<http://www.floridahealth.gov/environmental-health/beach-water-quality/index.html>

<http://www.floridahealth.gov/environmental-health/beach-water-quality/county-detail.html?County=Lee&Zip=33916-2205>

Q: What are Lee County and the six municipalities of Lee County doing to address the problem?

A: Lee County and the six municipalities of Lee County are working together to address the Lake Okeechobee and Caloosahatchee water resource issues. Recognizing that the problem originates in the Kissimmee watershed, just south of Orlando, and includes Lake Okeechobee and the Caloosahatchee watersheds, the County and municipalities are working with federal and state agencies responsible for water management and are working in their local watersheds to advocate for and implement projects that will address the problem. Collectively, the County and municipalities have developed a document titled the *Caloosahatchee Regional Water Management Issues White Paper*, which provides a list of short-term, low-cost strategies, as well as a longer-term list of state and federal priorities to address water storage and treatment throughout the Kissimmee, Lake Okeechobee, and Caloosahatchee watersheds. The goal is to improve the quantity, quality, timing and distribution of water to the coast of Lee County and restore historic flows to the Everglades and Florida Bay. This document is available at: <http://www.mysanibel.com/content/download/22442/136973>

Q: Is there anything the Chamber or hospitality industry can do to help reduce the discharges from Lake Okeechobee?

A: Local businesses should work together to ensure that our voices are heard by our legislators in Washington and Tallahassee and our local elected officials. Make sure they understand the impacts that poor water quality is having on your businesses and Florida jobs. Hold our legislators and elected

officials accountable for the decisions that they make and advocate for projects that are needed to store, treat and move more water south and demand that we change the policies that maintain the status quo.