

2019 Bonnet Carré Spillway Update

June 14, 2019



- Today is Day 78 of the two spillway openings in 2019; 168 bays have been open since May 21, with a flow rate between 135,000 and 161,000 cubic feet per second (cfs) over that time (presently 147,000 cfs).
- Unprecedented events in 2019:
 - First time in history Bonnet Carré spillway has been opened in consecutive years.
 - First time in history the spillway has opened multiple times in the same year.
 - As of June 12, 2019, this year includes the longest number of days open in a single year (Figure 1).
 - The spillway was opened eight times in its first 70 years; now opened six times in past eleven years.
- A recent increase in salinity levels was observed in the central Mississippi Sound, although salinity remains low in the western Sound (generally off St. Louis Bay and west). The higher salinity levels appear to be associated with a shift in wind direction from the north; as winds shift back from the south, the expectation is that salinities in the central Sound will decrease again (as the southerly wind flow pushes to the north and “holds” the Bonnet Carré discharge in the Sound).
- As of today, 130 dolphins and 154 sea turtles have been found dead along the Mississippi coastline in 2019. Thus far in June, the frequency of dolphin and turtle strandings has decreased.
- If dead dolphins and sea turtles are still floating in nearby waters, the return shift to southerly wind flow may lead to an increase in the number of strandings along the Mississippi coastline.
- NOAA has officially declared an Unusual Mortality Event (UME) for bottlenose dolphins in the northern Gulf of Mexico and will be investigating the causes of mortality in collaboration with its stranding partners in each state.
<http://www.fisheries.noaa.gov/national/marine-life-distress/2019-bottlenose-dolphin-unusual-mortality-event-along-northern-gulf>
- USM and MDMR continue to monitor coastal ecosystem conditions through routine and expanded monitoring. Expanded sampling was recently initiated to fully assess water quality conditions throughout the Mississippi Sound (Figure 2). Water quality data are being analyzed, will be integrated into the comprehensive impact assessment, and significant initial findings will be relayed. General information from the June 13, 2019, survey:
 - **Stations 1-3** – An algal bloom was encountered in the western Mississippi Sound (Figure 3), and samples were collected for analyses. Salinities remain low in this area.
 - **Stations 4-8 and 11** – Water column was highly stratified for dissolved oxygen and salinity at stations 4, 5, 6 and 7; dissolved oxygen ranged from 0.7 to 1.7 on the bottom (low) and 8 to 12 at the surface (normal); salinity ranged from 21 to 29 on the bottom and 3 to 12 at the surface.
 - **Stations 9-10 and 12-16** – Low dissolved oxygen was measured on the bottom at multiple stations, which likely relates to the “jubilee” reported midweek. No algal blooms were observed, but turbid water was found throughout the Mississippi Sound.

Report any unusual observations associated with the Bonnet Carré spillway opening to the USM Hotline at 228-818-8099. Dolphin and turtle strandings should be reported to the IMMS 24-hour hotline at 888-767-3657.

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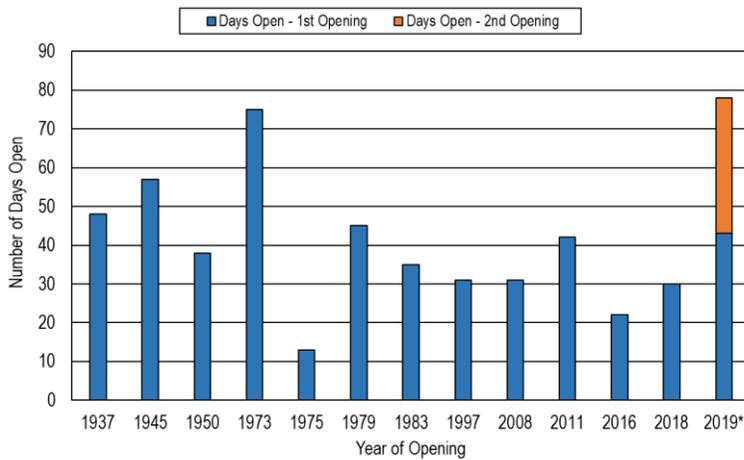


Figure 1. History of Bonnet Carré spillway openings and number of days open annually.

Figure 3. Algal bloom encountered in western Mississippi Sound on June 13, 2019.

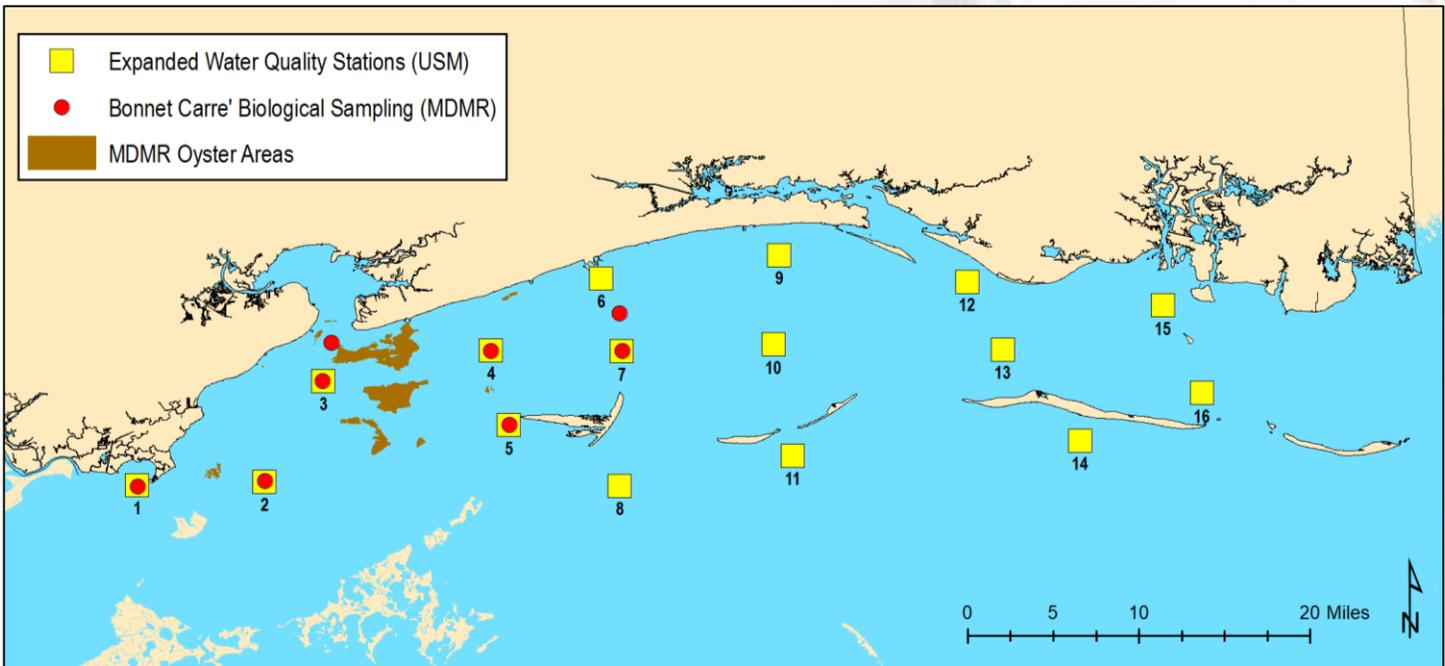


Figure 2. Expanded water quality (yellow, numbered) and biological (red) monitoring stations sampled by USM and MDMR in the Mississippi Sound.

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