

# 2019 Bonnet Carré Spillway Monitoring Update

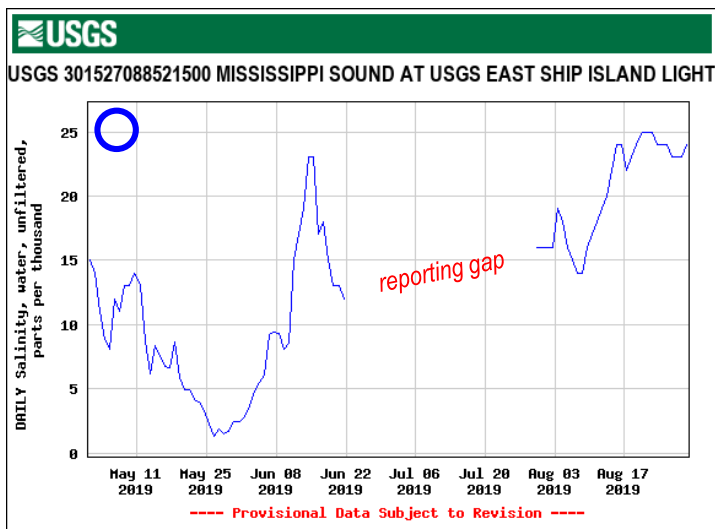
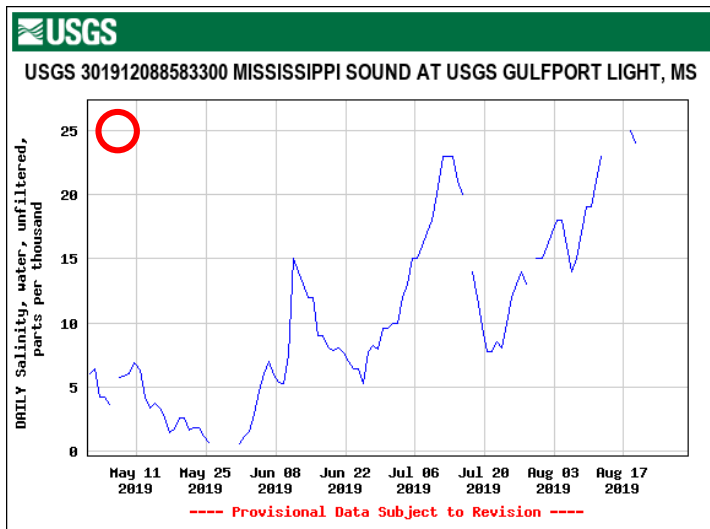
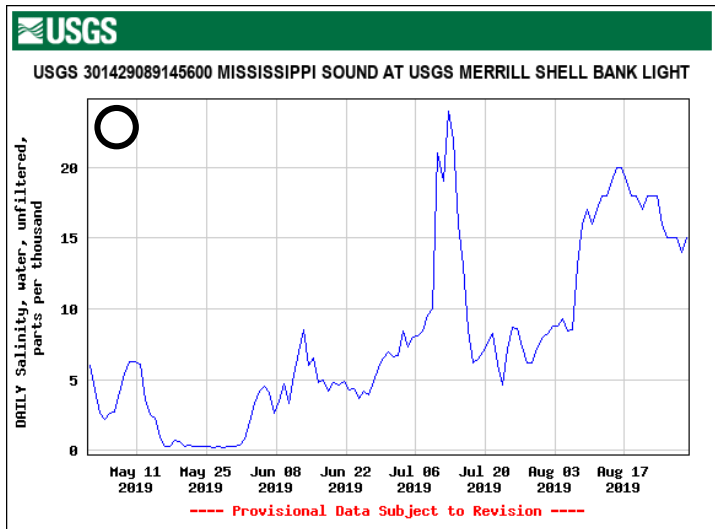
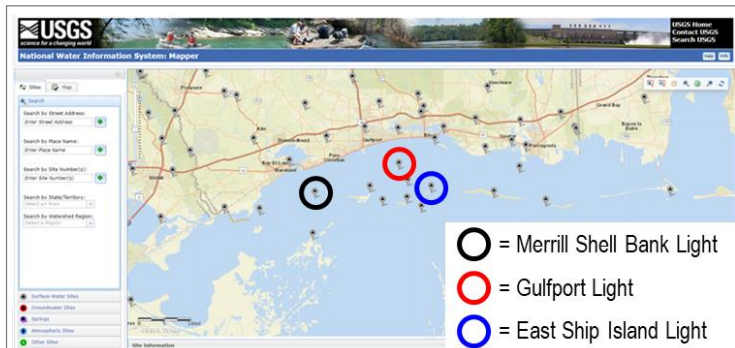
August 30, 2019



- Full closure of the Bonnet Carré Spillway was achieved on July 27, 2019 (35 days ago).
- Salinity levels, as measured by USGS/MDMR gauges, continued to increase in the central Mississippi Sound since the closure of the spillway and have ranged between 15 and 20 ppt in the western Sound in recent days (Figure 1).
- Surface salinity modeling for August 28 again projects a continued but diminishing freshwater influence in the western Mississippi Sound (Figure 2); animated imagery available at: [http://131.95.1.37/~BCS\\_share/CircModel/hourly/20190829/ngofs\\_saltUV\\_20190829.gif](http://131.95.1.37/~BCS_share/CircModel/hourly/20190829/ngofs_saltUV_20190829.gif).
- Surface and bottom salinity levels measured during last week's field sampling (August 22; Figure 3) remained considerably higher than early August measurements and as observed during the spillway's extended period of opening. Dissolved oxygen levels also remained seasonally low in the south-central survey region on August 22 but had shown an increase in the north-central Sound (Figure 3).
- The distribution of river-borne sediments at the surface of coastal waters of the northern Gulf, as derived from satellite imagery, for August 22 illustrated a pronounced reduction in sediment input in the western Mississippi Sound (Figure 4).
- Field observations from expanded sampling conducted by USM on August 29:
  - Stations 1 - 7: no algal blooms noted; water more turbid than last week; salinities still fairly high (lower 20s)
  - Stations 8 - 16: no visible algal blooms observed; low bottom dissolved oxygen measured at offshore stations 8, 11, and 14; no low surface dissolved oxygen measurements
- For August 2019, five dead dolphins and four dead sea turtles have been reported. A total of 143 dead dolphins and 191 dead sea turtles have been reported during 2019, through August 30. *Source*: IMMS
- Water contact warnings remain in effect for coastal waters immediately adjacent to Mississippi Gulf Coast beaches (<http://opcgis.deq.state.ms.us/beaches/>) as a result of the presence of freshwater cyanobacteria capable of producing toxins. MDEQ and MDMR continue to sample waters from those areas on a daily basis to test for the presence of the freshwater cyanobacteria.
- The MDMR continues to test water and fish samples to ensure seafood safety in Mississippi waters and is advising fishermen to avoid catching seafood in waters where algae is present. Recreational and commercial fishing offshore in Mississippi waters remains unaffected by the algal bloom, and those catches are safe for consumption.

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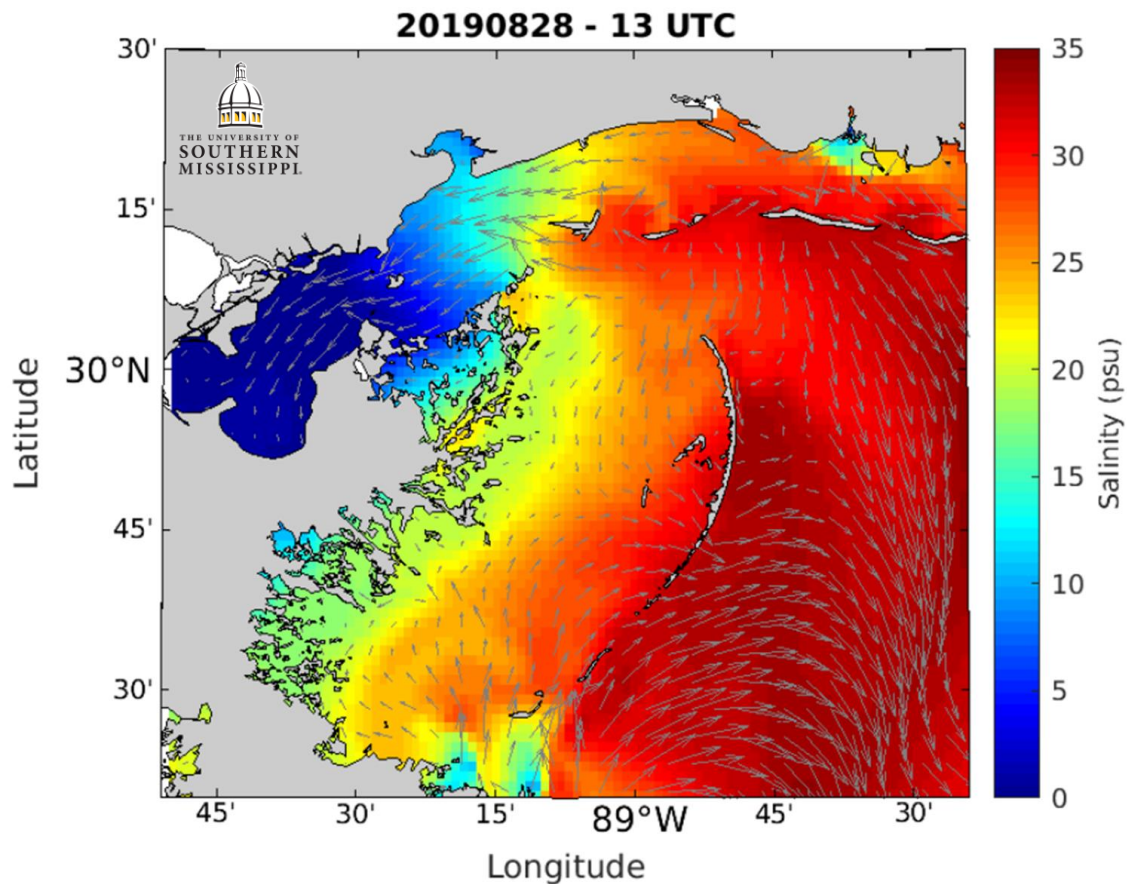


**Figure 1.** Daily salinity measurements from May 01 to August 29, 2019, at USGS/MDMR gauges in the Mississippi Sound. Increased salinity levels observed for July 10 to 14 were a result of the passage of Hurricane Barry. *Source:* USGS/MDMR

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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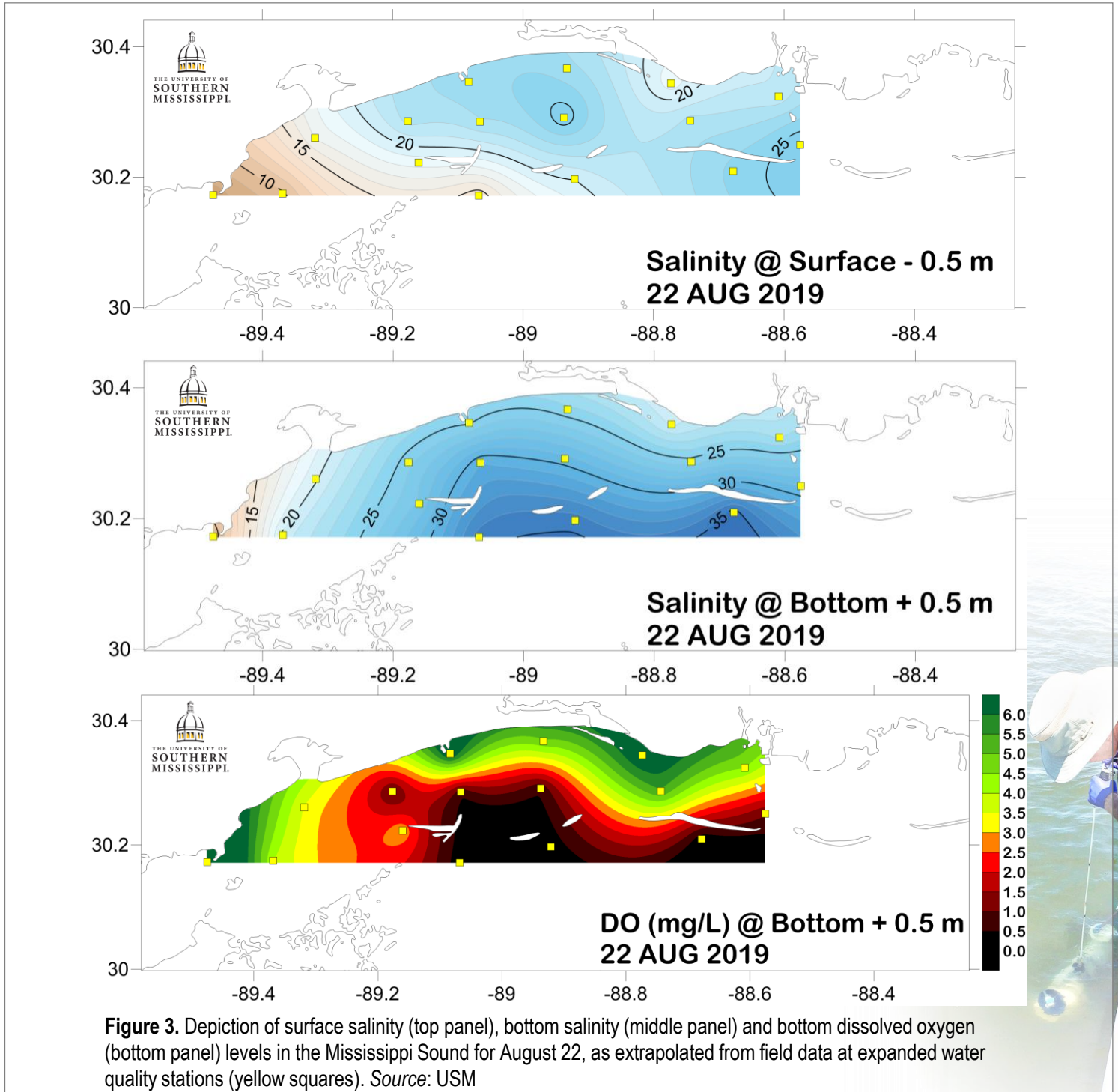


**Figure 2.** Screen shot of regional surface salinity model animation for August 28; animation of modeled salinity circulation is available at [http://131.95.1.37/~BCS\\_share/CircModel/hourly/20190829/ngofs\\_saltUV\\_20190829.gif](http://131.95.1.37/~BCS_share/CircModel/hourly/20190829/ngofs_saltUV_20190829.gif). Depiction illustrates the interaction of freshwater outflow, still influenced (but to a lesser degree) by remnants of the Bonnet Carré spillway discharge, and typical coastal circulation patterns influenced by wind, ocean currents and tides. *Source:* USM

*Image Interpretation:* Warmer colors (yellow to red) represent higher salinity waters typically observed in the region, while cooler colors (blue) are representative of lower salinity waters.

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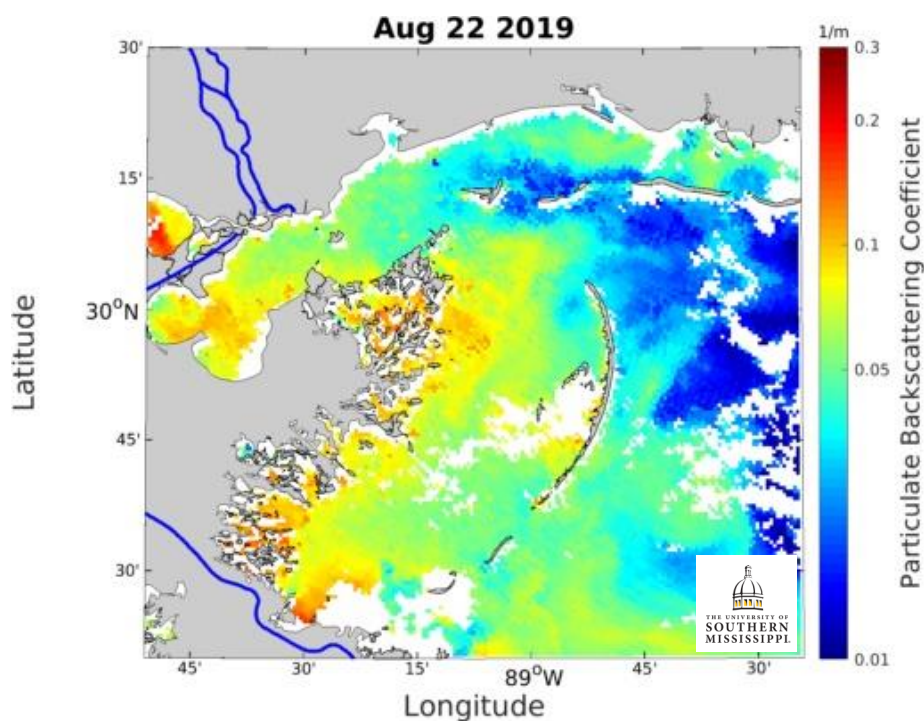
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**Figure 4.** Satellite imagery of the distribution of river-borne sediments at the surface of coastal waters of the northern Gulf for August 22. *Source:* USM

*Image Interpretation:* Warmer colors (yellow to red) represent the extent of suspended sediments associated with freshwater influence from diverted river waters from the Bonnet Carré spillway discharge and the Pearl River in the western Mississippi Sound. Deep red colors are generally representative of salinities less than 5 ppt, and blue colors represent high salinity waters. White areas are gaps in satellite data.