DELBERT HOSEMANN
Secretary of State

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Mississippi River Commission

Low-Water Inspection Trip

Vicksburg, Mississippi

August 21, 2019

Introduction

- The repeated opening of the Bonnet Carré Spillway has resulted in devastating effects in the Mississippi Sound, affecting the entire Mississippi Coast - from our fishermen and aquaculture to the tourism industry.
- We are here to ask the Mississippi River Commission to authorize the following:
  - The study of the operating manuals and procedures for the Bonnet Carré Spillway, the Morganza Floodway, and other outlets, for simultaneous utilization during high water.
  - To conduct additional modeling concerning how the operation of the Bonnet Carré Spillway and the Morganza Floodway would affect tidelands both east and west of the Mississippi River.
  - As a separate matter, an environmental impact study.

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Operation of the Bonnet Carré Spillway and the Morganza Floodway

Timeline

Legal Authority

- 1927 - House Document 90
- 1928 - Flood Control Act of 1928
- 1935 - House Committee Document 1
- 2014 - Instructions for Water Control of the Morganza Floodway

Correspondence / Meetings with the Corps

- June 29, 2019: AG meeting with the Corps; alongside DMR, SOS
- July 11, 2019: SOS correspondence with Corps
- July 23, 2019: Louisiana correspondence with Corps
- August 6, 2019: SOS meeting with Corps
- August 14, 2019: SOS correspondence with Corps

House Document 90

(Adopted in the Flood Control Act of 1928)

70th Congress, 1st Session, 1927

Section 113 – "It is obvious that no more water can pass down the main channel of the Mississippi in this reach than can flow between the levees of that river at the upper end of this reach. The remainder must go down the Atchafalaya Basin. **The strengthened levees on the main river can safely discharge 1,500,000 second-feet, and with the relief levees as above outlined, will be called upon to pass no more**."

House Document 90

(Adopted in the Flood Control Act of 1928)

70th Congress, 1st Session, 1927

Section 114 – "At Bonnet Carré a controlled spillway emptying into a leveed flood way to Lake Pontchartrain is to be constructed **capable of discharging 250,000 second-feet. This leaves 1,250,000 second-feet to go by New Orleans** and should prevent the stage at Carrollton from rising above 20 on the gauge."

House Document 90

(Adopted in the Flood Control Act of 1928)

70th Congress, 1st Session, 1927

Section 115 – "The Bonnet Carré Spillway is so designed as to afford complete control of the discharge into Lake Pontchartrain. This discharge will be begun when the flood stage at New Orleans has reached 20 on the Carrolton gauge; it will be regulated to prevent the stage rising above 20, and will be cut off as soon as the stage has fallen below that figure. **Past records indicate that its operation will be required about once in five years; and for a period of from one to three months during each flood**. The discharge through the spillway, in a maximum flood, will be about 10 percent of the total flow at that latitude. Some of the silt carried by this discharge will be deposited in the flood way itself, the bulk of it in the upper end of Lake Pontchartrain."

House Document 90

(Adopted in the Flood Control Act of 1928)

70th Congress, 1st Session, 1927

Section 115 – *continued…*

"**With the infrequent and limited periods of operation**, the silting would not exceed an average of one-fourth of an inch of depth per annum, even if all the silt content were deposited in the lake within 10 miles of the flood way outlet. The average rate of silting for the entire lake would be one-thirty-second of an inch per annum. Discolored water from the discharge may, in high flood, extend well into Mississippi Sound, but there will be no appreciable silt content remaining in the water at such a distance. The spillway is especially heavily designed to prevent even the remote possibility that the discharge will cut a channel from the river into Lake Pontchartrain."

Bonnet Carrè Openings

-Prior to the last five (5) years, the Bonnet Carrè Spillway had only been opened a total of ten (10) times since 1937.

-2011 – present: Bonnet Carrè was opened five (5) times, twice in 2019.

<u>February 27, 2019</u>

- Carrollton Gage: 16.17 ft.
- Opened for 44 days
- Closed on April 11th with Carrollton gage at 16.23 ft.
- Carrollton gage never reached 20 ft. before or during the Spillway opening

<u>May 10, 2019</u>

- Carrollton Gage: 17.25 ft.
- Opened for 79 days
- Closed on July 27th with Carrollton gage at 15.24 ft.
- Carrollton gage never reached 20 ft. before or during the Spillway opening

House Committee Document 1

(Adopted in the Flood Control Act of 1936)
74th Congress, 1st Session, 1935

Section 28 – *(Referring to the Morganza Floodway)* "In the Southern section the Commission proposes to substitute for the floodway east of the Atchafalaya River, a floodway with a controlled intake on the Mississippi River north of Morganza. **The control works are to be designed so that flow will not commence until the flood has reached a stage corresponding to 49 feet on the Angola gage (11.5 feet below levee grade), and will be stopped when the flood has receded to that stage. It is not to be operated at all unless the predicted flood exceeds the safe capacity of the leveed channels.**"

Red River Landing Gage*

- Crested at 61.94 ft. on March 29, 2019

*Cannot find data for Angola Gage. Believe Red River Landing is present day Angola Gage.

House Committee Document 1

(Adopted in the Flood Control Act of 1936)
74th Congress, 1st Session, 1935

Section 32 – "The United States should have sufficient control of this floodway to improve flowage conditions and to regulate the times and extent of use, including the right to pass into this floodway such waters from the main river, at any stage of the river, as may be safely carried in floodway drainage channels as they are naturally or as they may be connected up and/or developed in the future. It is intended to construct control works so that flood flow into the floodway will not commence until a stage corresponding to 49 feet on the Angola gage has been reached, not if anticipated stages indicate that the use of the floodway will not be necessary. IF the floodway does come into use, it is intended that flood flow into he floodway will be progressively reduced as the river falls and finally stopped at a stage corresponding to **49 feet** on the Angola gage."

Operating Manual of the Morganza Floodway

- The Operating Manual of the Morganza Floodway implements House Document 90 and the Flood Control Act of 1928.
- Our Office requested this manual on July 11 from the Corps.

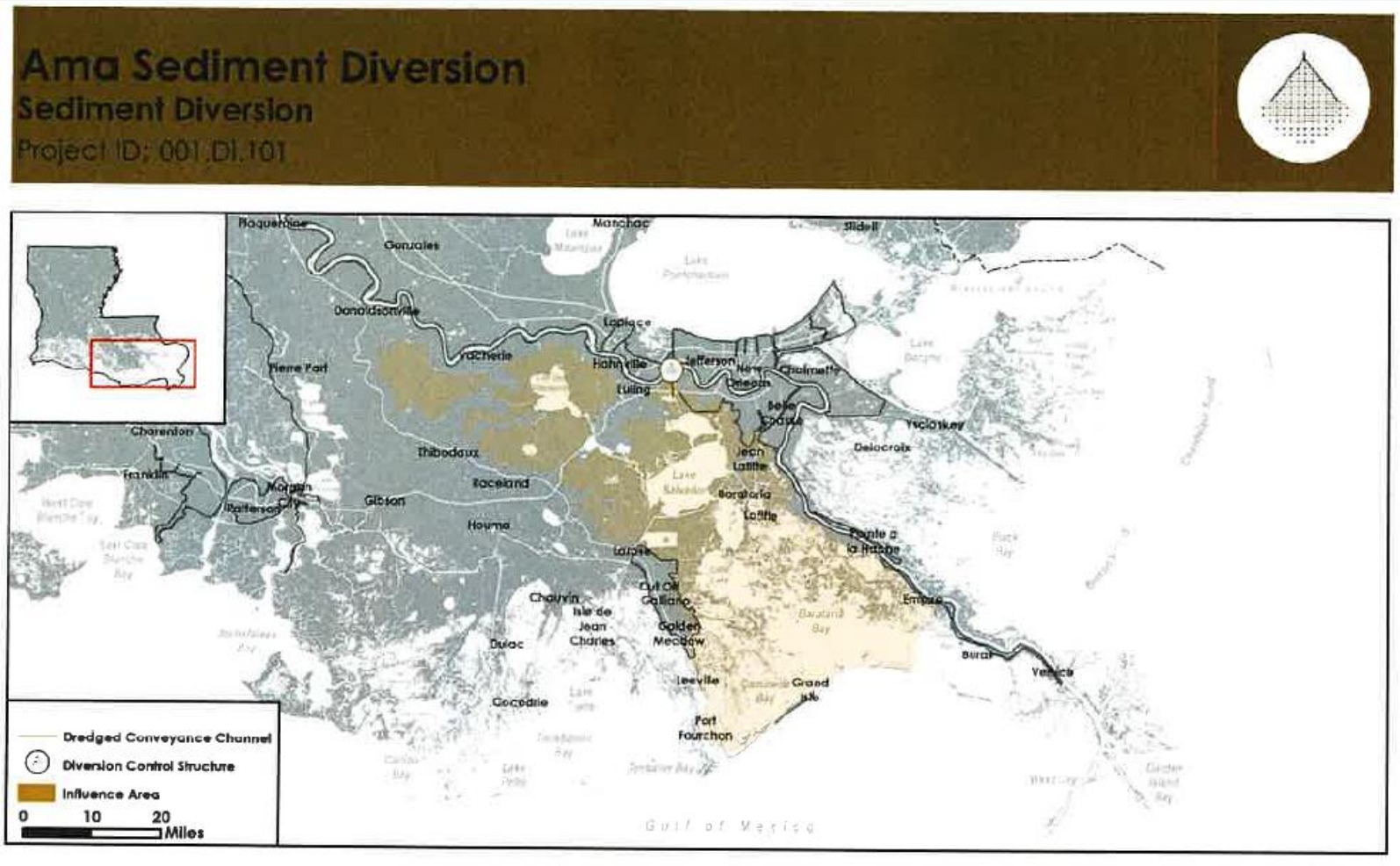
Interim Standing Instructions to the Project Manager for Water Control: Morganza Control Structure

August 2014

Exhibit B to the Water Control Manual for Morganza Floodway:

- Page 8: "The structure shall be operated such that the stage on the river side of the structure **does not exceed 57 feet** NGVD29 (56.7 feet NAVD88 [2004.65]) and the Mississippi River discharge below the floodway **does not exceed 1,500,000 cfs** on a project rise, **based upon a 10 day forecast**. **The structure may also be operated to minimize flood damages in the lower river reaches, minimize stress in leveed reaches, prevent stages from exceeding the approved flowline (i.e. encroachment on freeboard requirements), and prevent the discharge in the Mississippi River from exceeding 1,250,000 cfs at New Orleans**, but will **not** be operated to increase the total discharge in the Atchafalaya Basin beyond 1,500,000 cfs unless discharge in the Mississippi River below the structure will also exceed 1,500,000 cfs. A **river stage of 57 feet NGVD29 at the structure equates to a Mississippi River discharge of approximately 1,400,000 cfs** as of the most recent update of this document."

Ama Sediment Diversion



Requests to the Mississippi River Commission

- Conduct a study of the operating manuals and procedures for the Bonnet Carré Spillway and the Morganza Floodway to exercise your authority under the Interim Standing Instructions to minimize flood damages to the lower river.
- Such study should include:
  - Hydrology model of the opening of the Morganza Floodway in amounts equal to 10%, 20%, 30%, 40% or 50% of the flow expelled by the Bonnet Carré Spillway using actual conditions during the 2019 calendar year and also during the previous four (4) years.
  - Prepare models with a range of flows in both high and low flows on the Red River.

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Environmental Impact Study Justification

Outline

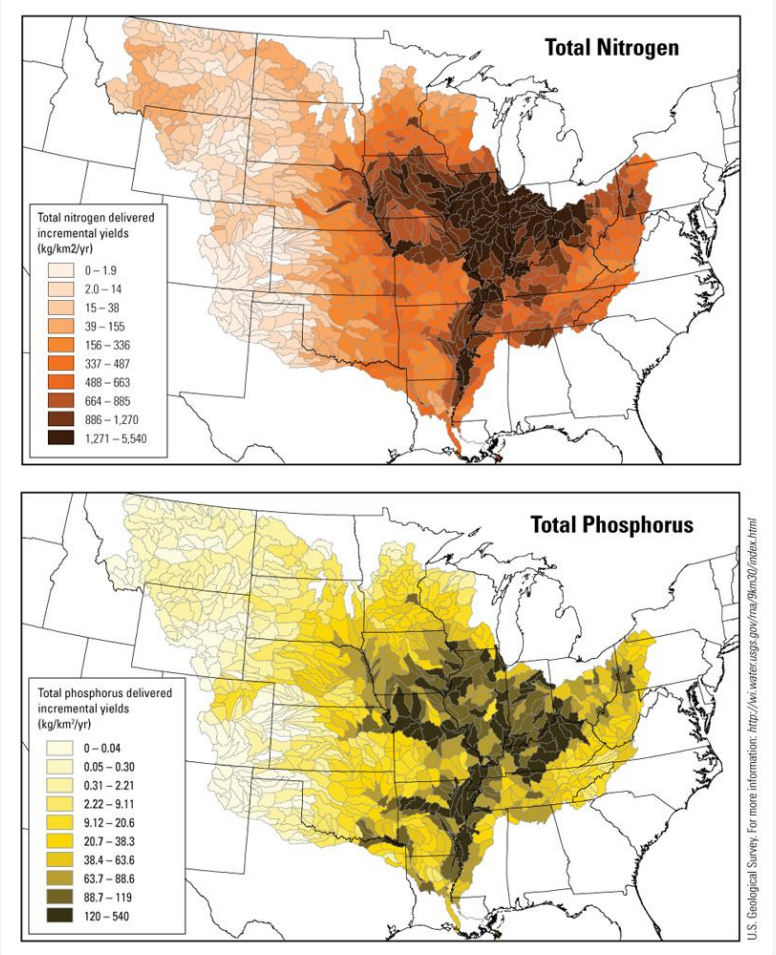
- Background and Problem
- Current Regulations
- Impacts to Mississippi Sound and State of Mississippi
- Long Term Impacts
- EIS Request

Background

- Bonnet Carré Flood Control Structure
  - Only functional during flood stage of the Mississippi River
  - Frequency of operation estimated by the USACE

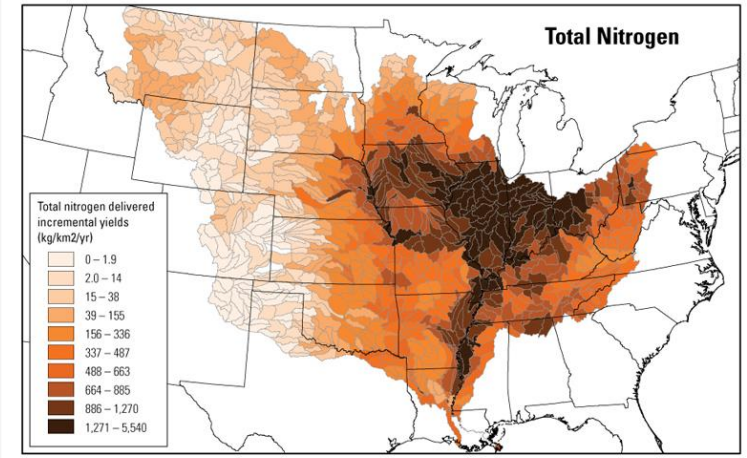
The Problem

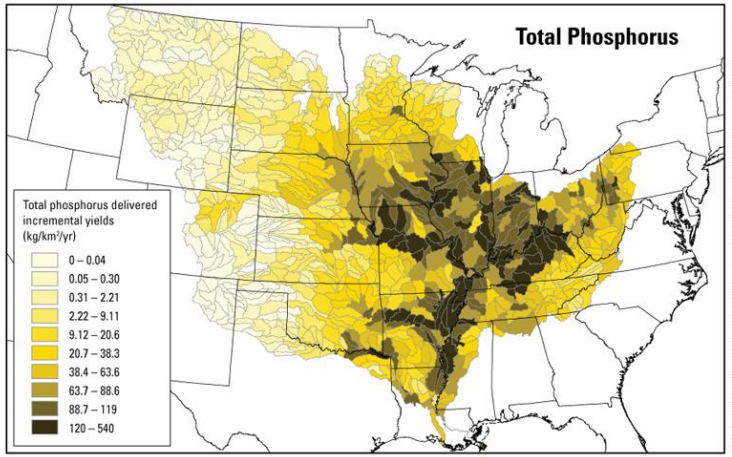
- Mississippi River Basin has 31 states and two Canadian provinces within it (www.epa.gov)
- Mississippi River drainage has changed since control structures were built
- Recent annual rain fall trends well above the 100 year average
- Bonnet Carré Spillway used as a flood control device by diverting excessive flows into Lake Pontchartrain



The Problem (continued)

- Lake Pontchartrain drains into western Mississippi Sound
- Mississippi Sound is an enclosed estuarine system balanced with outflows from relatively small coastal rivers
- Human introduced flows from the Mississippi River are not part of the natural input that balances the water quality and ecology of the Mississippi Sound





Structures Current Regulations on Lower Mississippi River

- Opening of the Bonnet Carré structure
  - Initiate opening when river stage reaches 20 ft or greater on the Carrollton gauge (1929 House Directive 90 part 115)
- Opening of the Morganza structure
  - Initiate opening when river flows reach (1.5 mil. ft^3/s) or greater at Red River landing

Impacts to Mississippi Sound and State of Mississippi

- Bonnet Carré openings introduce large amounts of continental river water (Mississippi Sound estuary is dependent on coastal river water)
  - Creating extremely low salinities
  - Introducing agricultural and industrial compounds
  - Introducing extreme nutrient loads
  - Introducing extreme sediment loads
  - Invasive species introductions

Impacts (continued)

- Shrimp loss (currently 56% as result of 2019 BC opening)
- Blue Crab loss (>50% as result of 2019 BC opening)
- Oyster loss (>95% as result of 2019 BC opening)
- Finfish loss (still being determined for BC 2019)
- Habitat degradation
  - Marsh grass loss (still being determined for BC 2019)
  - Seagrass loss (still being determined for BC 2019)
  - Oyster reef mortalities (still being determined for BC 2019)

Impacts (continued)

- Commercial fishing revenue loss (still being determined for BC 2019)
- Recreational fishing revenue loss (still being determined for BC 2019)
- Charter boat revenue loss (still being determined for BC 2019)
- Tourism loss (still being determined for BC 2019)

Prior Bonnet Carré Disaster Declaration of Fisheries Loss

- September 2012, the Secretary of Commerce determined that a commercial fisheries failure had occurred for the years 2011-12 for the Mississippi oyster fishery and for 2011 for the Mississippi blue crab fishery.
- Declaration made under section 308(b) of the Interjurisdictional Fisheries Act and Section 312 of the Magnuson Stevenson Act.
- Legislation was approved and signed by the President; included $75M for fisheries disaster assistance to eligible fisheries in Alaska, New England, Mid-Atlantic, Gulf Coast and Samoa.
- MDMR received official approval of the Bonnet Carré Fisheries Disaster Grant $10.9M for the restoration of Mississippi’s oyster and blue crab fisheries.

Long-Term Consequences

- Years to recover from a single event
  - Age classes of crab, oysters, fish will be absent and not reproduce
  - Estimated times for important species to recover from 2019 openings
    - Blue Crab – Approximately 3-4 years
    - Oysters – Approximately 5-10 years
    - Fish – Still being determined on a species specific basis

Long-Term Consequences (continued)

- Lower ecological production altering species communities in the MS Sound (growth rates of species will be altered)
- Exotic species displacing and out competing economically important species (examples: Silver Carp, Blue Green Algae, etc.)
- Habitat alteration
  - Seagrass species shifts (different species of grasses more freshwater tolerant move)
  - Flood recovery of oyster reefs (oyster reefs are buried under the sediment and the habitat is no longer present)
  - Benthic community shifts (all the animals that live in the mud and sand and feed the important species are changed to different freshwater species)

Environmental Impact Study (EIS) Request

The Mississippi Department of Marine Resources and the Mississippi Secretary of State's Office requests the Mississippi River Commission conduct an Environmental Impact Study to identify the impacts on the Mississippi Sound, from the western Louisiana to coastal Alabama waters, resulting from the opening of the Bonnet Carré Spillway.

Previous EIS have spatially stopped at Lake Pontchartrain and have not encompassed the documented effects of Bonnet Carré spillway in the State of Mississippi.

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Thank You

Scientific Literature Cited Within Presentation

- Heck at al. 2000. Limnology Oceanography 45(5), 2000, 1041–1057
- Beseres 2011. Estuaries and Coasts (2011) 34:187–19
- Cardoso et al. 2008 Estuarine, Coastal and Shelf Scient 76 (2008) 553-565
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