

# **SOUNDING THE ALARM:**

## **Harmful Effects On Dolphins Caused By Polluted Mississippi River Water Released Into Mississippi Sound Through Bonnet Carré Spillway**

Dr. Moby Solangi, Institute for Marine Mammal Studies



**MISSISSIPPI  
SOUND**  
  
**COALITION**

# DEAD ZONE

Rivers and tributaries from 31 states flow into the Mississippi River and eventually empty into the Gulf of Mexico and, when the Bonnet Carré Spillway is opened, into Lake Pontchartrain, Lake Borgne and the Mississippi Sound.

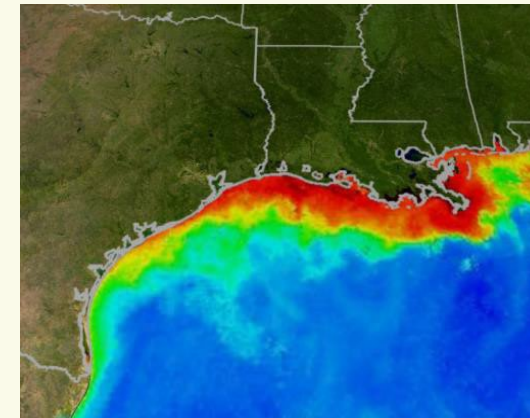
Animal waste and agricultural and industrial runoff present in the Mississippi River water drain into the Mississippi Sound, thereby polluting it with contaminants like antibiotics and mercury and nutrients like phosphates and nitrates.



Pollutants in the water travel up the food chain and are ultimately consumed by top predators, including dolphins.

Excess nutrients in the runoff allow algae to bloom, creating hypoxic (low oxygen) conditions and resulting in dead zones. Few organisms can survive under these hypoxic conditions.

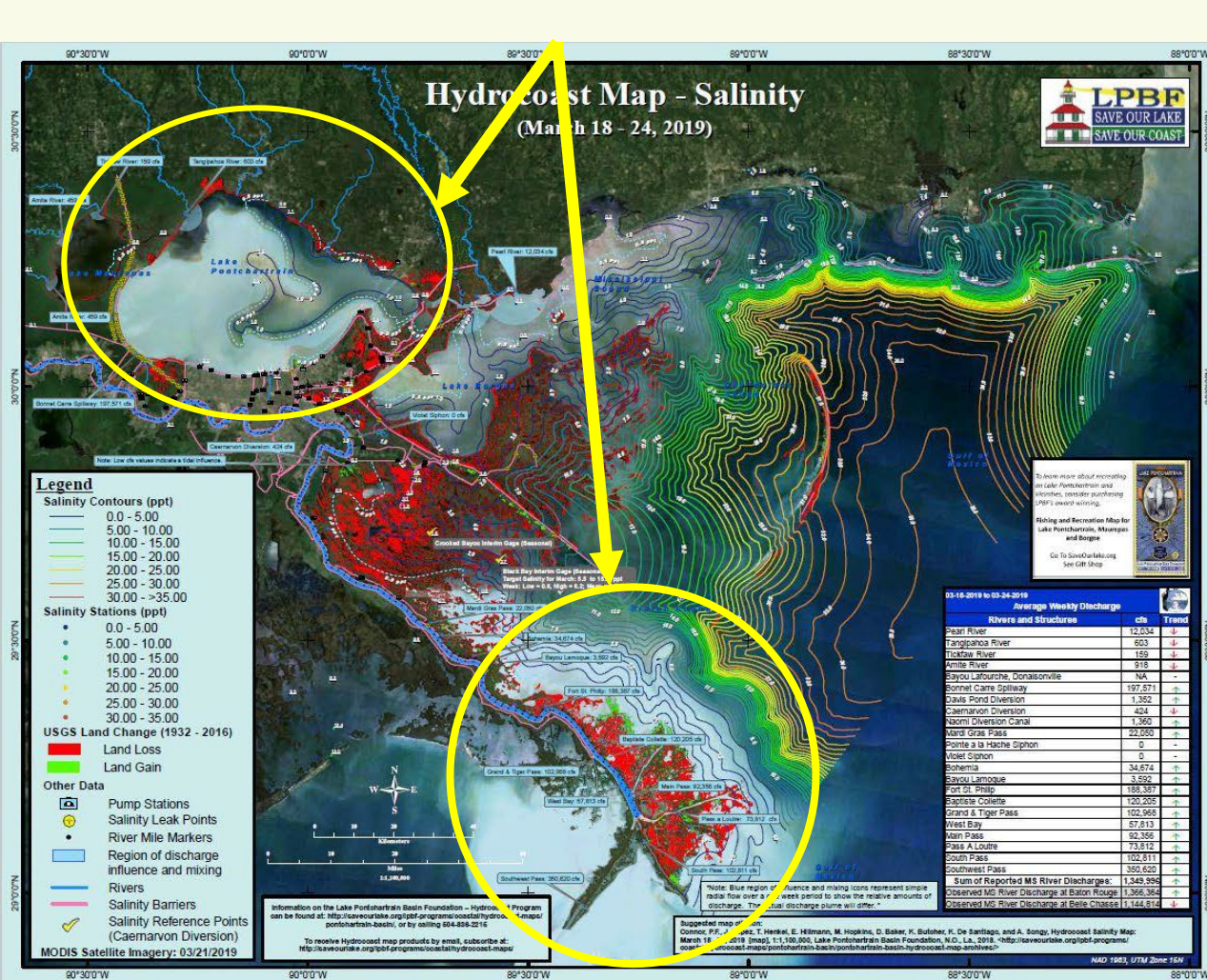
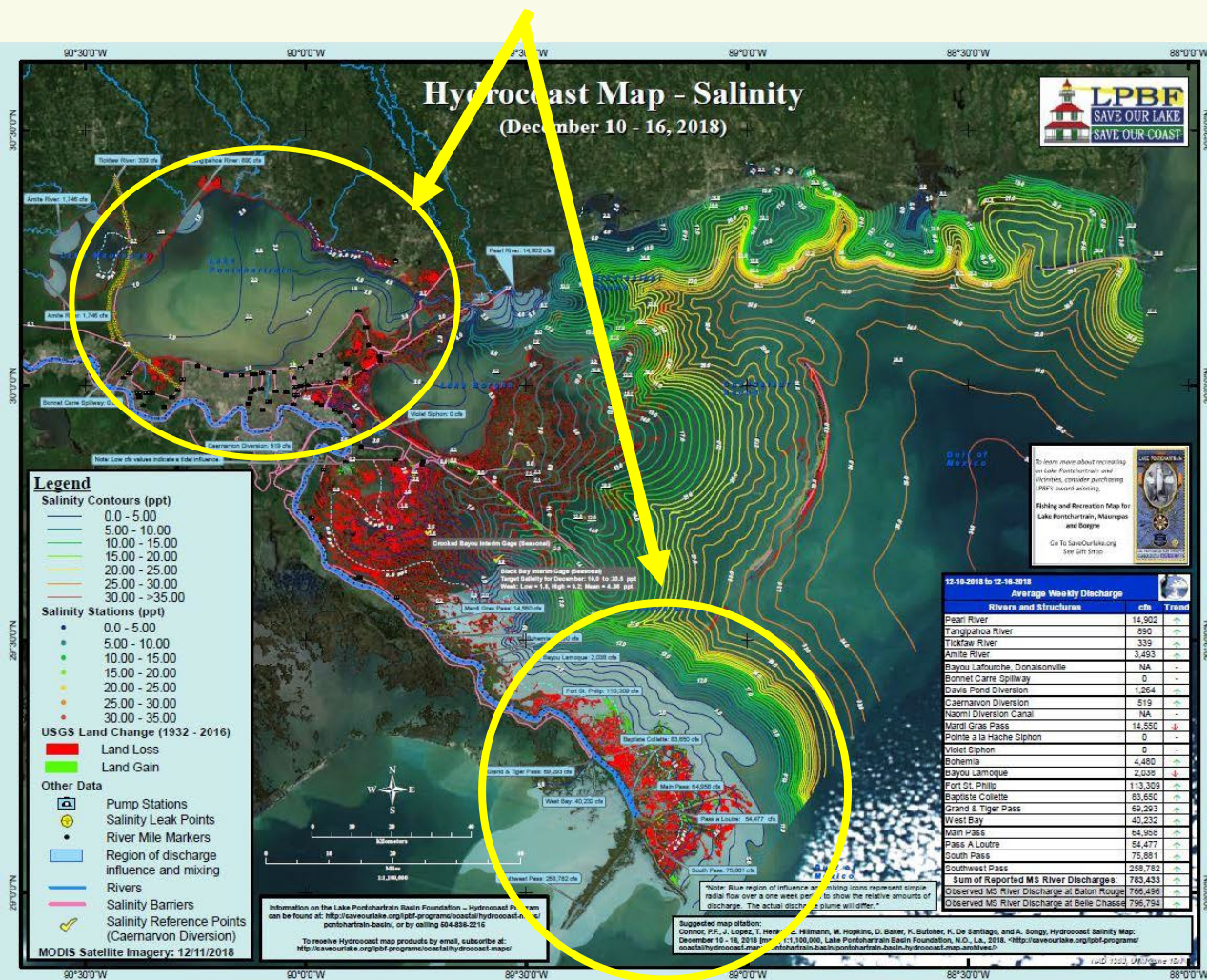
At the Mississippi River's mouth is a 10,000 square-mile Dead Zone. The Dead Zone expands every summer, affecting coastal ecosystems from Florida to Texas.





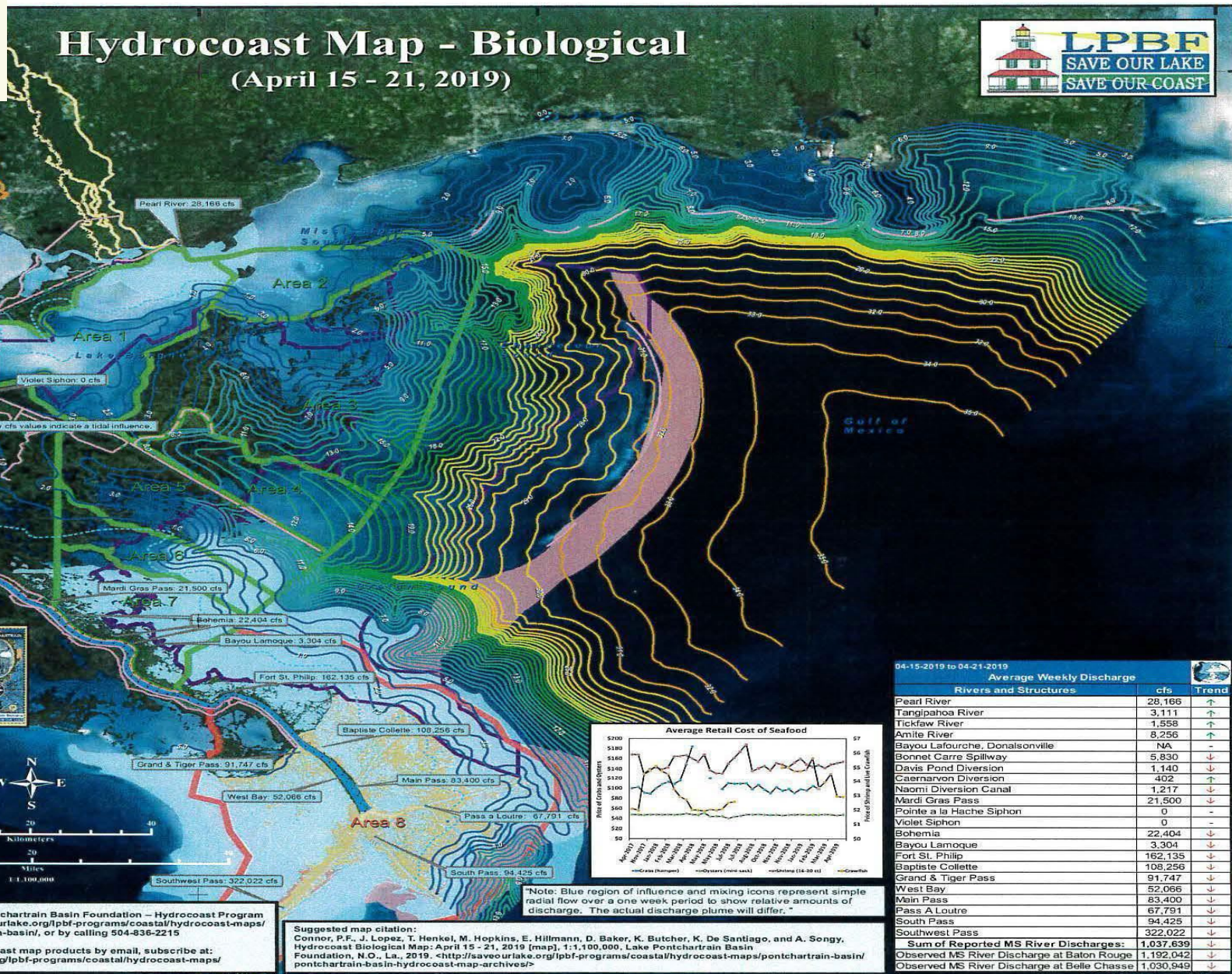
# BONNET CARRÉ SPILLWAY 2019

The 2019 opening to relieve pressure on levees – caused **polluted, low-salinity water** to pour into Lake Pontchartrain and the Mississippi Sound





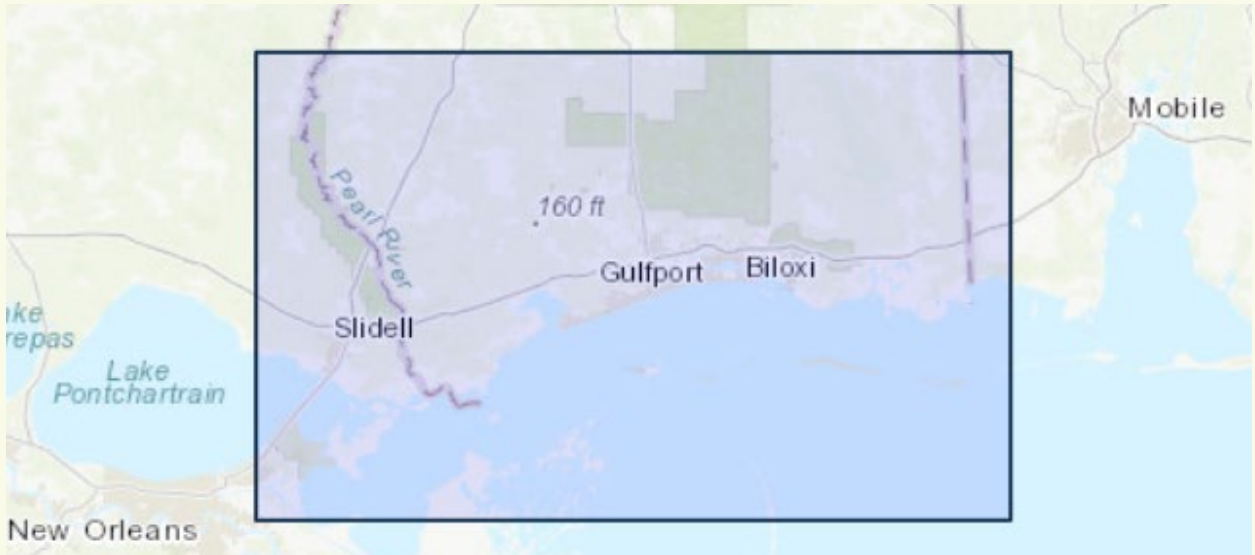
The lighter colors in Lake Pontchartrain and Eastward into the MS Sound depict **low-salinity, polluted river water.**





# TOXIC ALGAE BLOOM

The Bonnet Carré Spillway opening also resulted in a toxic algal bloom in the MS Sound, which **closed beaches, caused economic losses and killed marine life.**



Algae-affected areas from Louisiana to Alabama



# TOXIC ALGAE EFFECTS

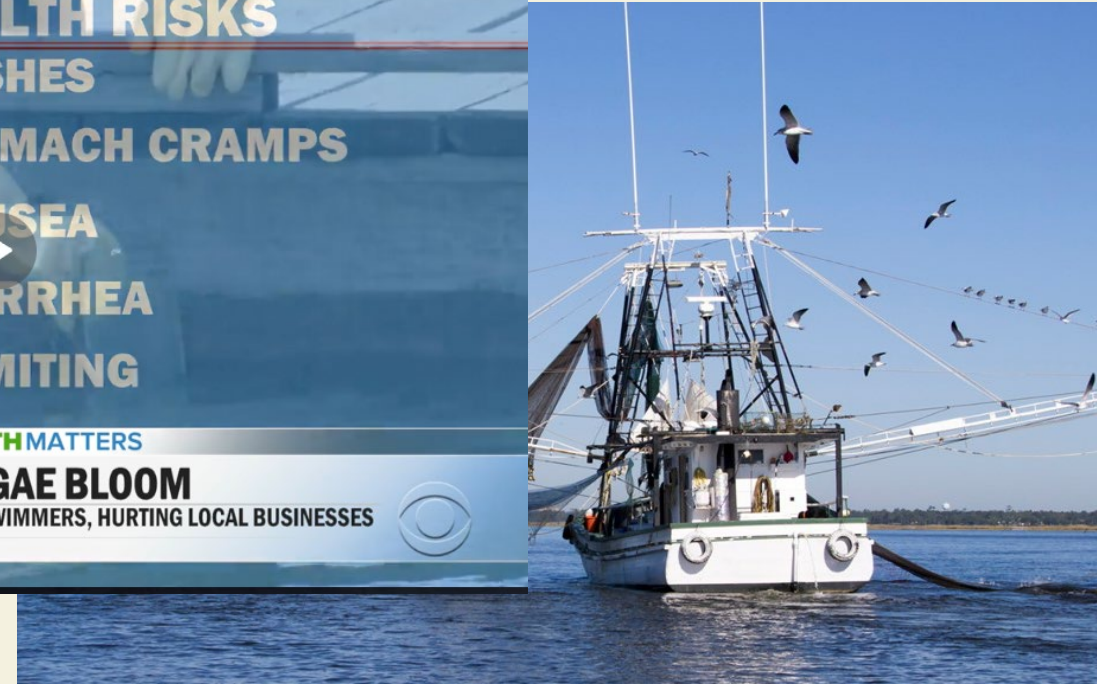
## Marine Life



## Human Life

The image is a composite. On the left is a beach advisory sign with a red 'X' over a swimmer icon and a red 'X' over a fish icon. The sign reads: "MISSISSIPPI BEACH WATER QUALITY MONITORING PROGRAM", "ADVISORY", "SWIMMING IN THIS AREA IS NOT RECOMMENDED AT THIS TIME.", "WATER QUALITY TESTING INDICATES A LEVEL OF BACTERIA THAT EXCEEDS EPA STANDARDS. THIS ADVISORY AFFECTS WATERS IN THIS AREA.", and "Please Try Another Beach Access". On the right is a video thumbnail with a blue background and white text: "ALGAE BLOOM HEALTH RISKS", "RASHES", "STOMACH CRAMPS", "NAUSEA", "DIARRHEA", "VOMITING", "EARTH MATTERS", "CTM | TOXIC ALGAE BLOOM", and "MISSISSIPPI BEACHES CLOSED TO SWIMMERS, HURTING LOCAL BUSINESSES".

## Way of Life



"It's 128 (dead) dolphins and 154 sea turtles. The dolphins have quite a large number of lesions on them from the low-salinity water."

- Dr. Moby Solangi , IMMS  
*(Clarion Ledger – June 7, 2019)*

The shrimp industry has never seen a worse season. Not only from the effects of the Bonnet Carré on the ecosystem, but the algae warnings for seafood have been detrimental to their business.

*(Jerry Forte Seafood, The Sun Herald – August 6, 2019)*



# Dolphin & Sea Turtle Deaths Caused By Bonnet Carré Openings (2011-2020)

Overall Openings						Volumes of River Water	Mortalities		
Number of Openings	Year	Date Opened	Days Open	(%) Opened	Discharge (cfs)	Volume (gallons)	Dolphin Mortalities	Turtle Mortalities	
1	1937	28-Jan	48	81.40%	203,571	6,315,831,640,627	-		
2	1945	23-Mar	57	100%	250,000	9,210,607,200,000	-		
3	1950	10-Feb	38	100%	250,000	6,140,404,800,000	-		
4	1973	8-Apr	75	100%	250,000	12,119,220,000,000	-		
5	1975	14-Apr	13	64.30%	160,714	1,350,424,970,669	-		
6	1979	17-Apr	45	100%	250,000	7,271,532,000,000	-		
7	1983	20-May	35	100%	250,000	5,655,636,000,000	-		
8	1997	17-Mar	31	85.10%	212,857	4,265,039,208,413	-		
9	2008	11-Apr	31	45.70%	114,286	2,289,961,199,174	-		
-	<b>2010</b>	<b>BP Oil Spill</b>						<b>91</b>	<b>309</b>
<b>10</b>	<b>2011</b>	<b>9-May</b>	<b>42</b>	<b>94.30%</b>	<b>235,714</b>	<b>6,398,940,403,699</b>	<b>147</b>	<b>266</b>	
-	2012	-	-	-	-	-	48	154	
-	2013	-	-	-	-	-	49	209	
-	2014	-	-	-	-	-	48	147	
-	2015	-	-	-	-	-	33	61	
<b>11</b>	<b>2016</b>	<b>10-Jan</b>	<b>22</b>	<b>60.00%</b>	<b>203,000</b>	<b>2,886,636,614,400</b>	<b>82</b>	<b>136</b>	
-	2017	-	-	-	-	-	51	62	
<b>12</b>	<b>2018</b>	<b>8-Mar</b>	<b>22</b>	<b>48.00%</b>	<b>196,000</b>	<b>2,787,097,420,800</b>	<b>51</b>	<b>123</b>	
<b>13</b>	<b>2019</b>	<b>27-Feb &amp; 10-May</b>	<b>123</b>	<b>58.90%</b>	<b>213,000</b>	<b>10,366,942,377,600</b>	<b>153</b>	<b>201</b>	
<b>14</b>	<b>2020</b>	<b>3-April through 30-April</b>	<b>28</b>			<b>1,005,000,000,000</b>	<b>58</b>	<b>113</b>	

Note: Areas highlighted in yellow show years in which the spillway was open since 2011, and dolphin and sea turtle deaths are documented.







# Effects of Bonnet Carré Spillway Discharges on Dolphin Health

## Malnutrition



## Fresh Water Lesions





# SUMMARY

- The Mississippi River is highly polluted and is not an indigenous river connected to the MS Sound.
- The diversion of polluted Mississippi River water into the MS Sound has and will continue to cause serious and long-term damage to the ecosystem, resulting in losses to marine mammals, fisheries and the economy.
- The Mississippi River diversions of low-salinity, polluted water into the MS Sound are contrary to the Endangered Species Act, the Marine Mammal Protection Act, and the Magnuson-Stevens Act.
- A complete, independent EIS should be conducted by the Corps ASAP regarding the operation of all Mississippi River flood control structures – and before any construction permits are issued for new diversions.
- The Corps has the authority to consider other options for the management of the Mississippi River in ways that would protect people and property from flooding without killing the dolphins in the Mississippi Sound.