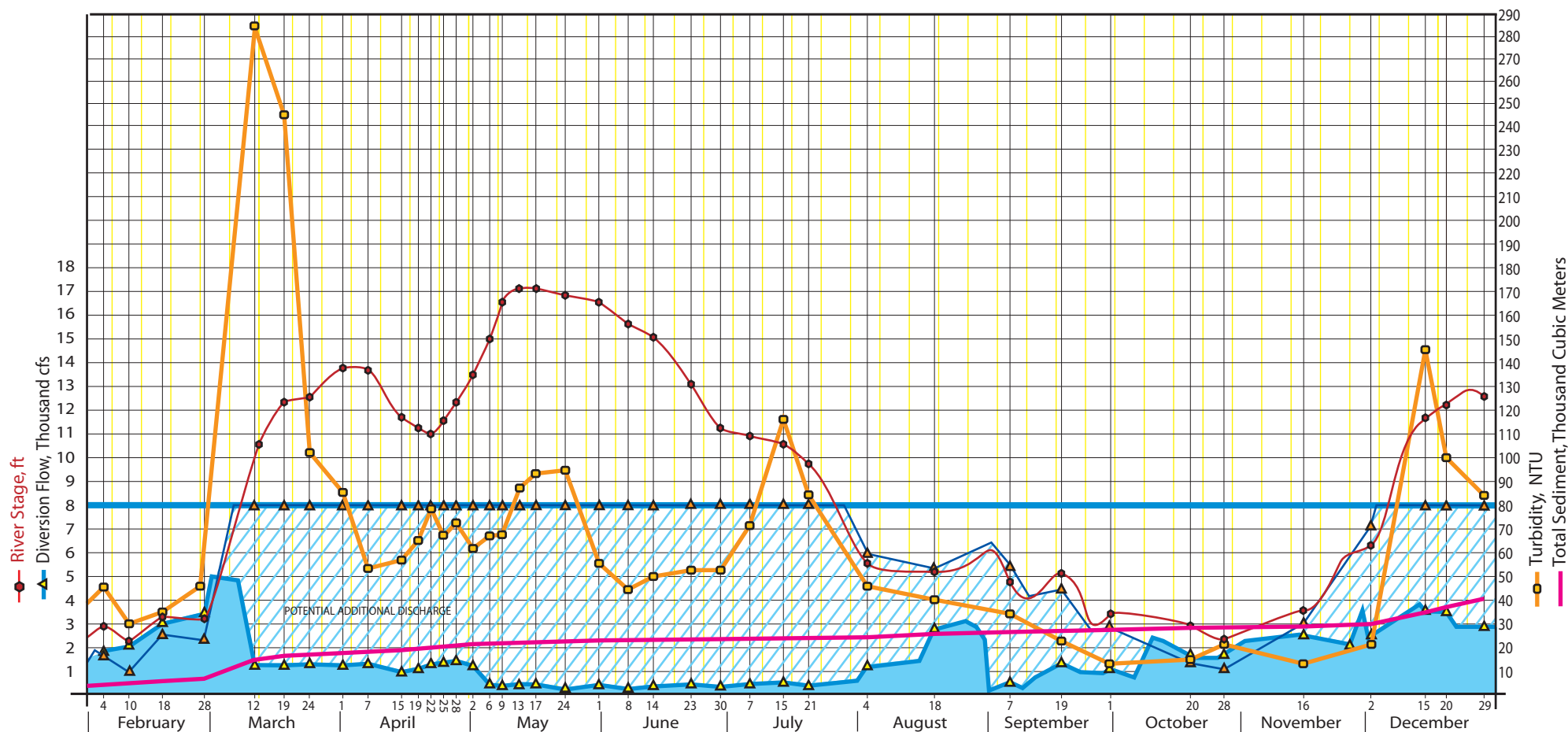


Caernarvon Diversion Turbidity Sampling 2/2011 - 12/2011

A Project of the Lake Pontchartrain Basin Foundation



This graph shows the results of water sampling at the Caernarvon diversion in St. Bernard Parish, Louisiana. The orange line shows the measured turbidity (cloudiness), which tells how much sediment is suspended in the water. The red line shows the river stage (height). The lower blue line indicates the actual discharge of water from the diversion in cubic feet per second (cfs). The magenta line is an estimate of the sediment delivered by the diversion.

2011 was a dynamic year on the Mississippi River, with a historic flood from March to July. There was a pulse of very high turbidity at the beginning of the rise, possibly from sediment in the channel being flushed out by the water's rising energy. Turbidity stayed at moderate levels during the flood, as the large amount of sediment in the river was diluted by the great volume of water. Following a moderate rise in July on the falling edge of the flood, turbidity stayed low until the river rose again in December.

LPBF estimates that ~40,000 m³ of sediment entered the marsh through the Caernarvon diversion in 2011. Almost half was due to the turbidity spike in March, even though the diversion flow was reduced as the river rose. If the diversion had been run at full capacity for the month of March, ~60,000 m³ more sediment would have been delivered. Decisions about managing diversions must balance many factors, and monitoring turbidity is important if maximum sediment delivery is a management goal.

LEGEND

- Turbidity of Diversion Discharge (Suspended Sediment)
- ▲ Actual Diversion Flow
- River Stage (at Carrollton)
- ▲ Potential Diversion Flow (Calculated from river stage)
- Diversion Operational Limit
- Total Delivered Sediment