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The Workboat Edition



Propulsion:
Moving Ahead with Innovation

**Commercial
Fishing Vessels:**
The Ultimate Workboats

Inland Waterways:
Funding Infrastructure & Ecosystems

Sediment Recycling for the Greater Good

By Sean Duffy, Executive Director, Big River Coalition



Duffy

In 2009, and in response to challenges to the status quo practice of disposing of dredged material from hopper dredges as utilized to maintain the deep-draft navigation channel in Southwest Pass (the main stem of the Mississippi River Ship Channel), members of the navigation industry embraced new ideas to help promote the beneficial use of dredged material. The Big River Coalition formed a stakeholder group to focus on recommendations made in a 2007 report from the Corps (USACE) Mississippi Valley New Orleans (MVN) designed to increase the beneficial use of dredged material by utilizing hopper dredge pump-out.

At the time of the initial report, cutterhead dredges were much more expensive than hopper dredges. The stakeholder group established guidelines and a path forward that included areas where hopper dredge pump-out operations could and/or could not be conducted. The stakeholder group included representatives from the Big River Coalition, the Associated Branch Pilots of the Port of New Orleans (Bar Pilots), the dredging industry, the MVN and from the state of Louisiana's Office of Coastal Management.

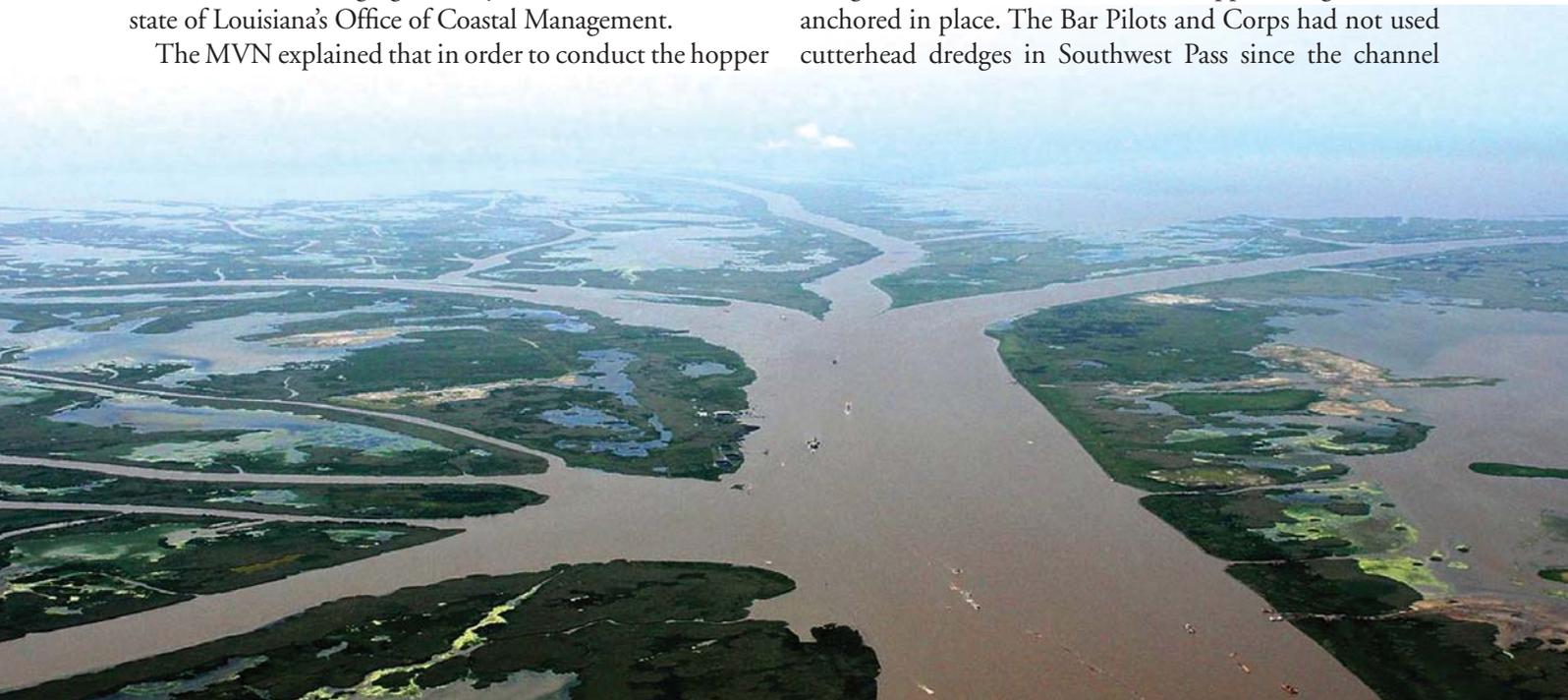
The MVN explained that in order to conduct the hopper

dredge pump-out it would need a financial commitment from the Louisiana Office of Coastal Management for the incremental cost difference over the normal dredging operations as per the Federal Standard. But, an agreement could not be reached for the incremental cost difference between the normal channel maintenance costs of a hopper dredge and the additional cost incurred during hopper dredge pump-out. The stakeholder group had run its course and developed a plan that could not be executed.

In 2009, however, the MVN advised navigation industry representatives that the cost of a cutterhead dredge was now much more comparable to that of a hopper dredge. After reviewing the new information and the established stakeholder group information, the Bar Pilots, the MVN and Big River Coalition agreed to a pilot project to utilize a cutterhead dredge for maintenance dredging in Southwest Pass.

INDUSTRY CONCERNS

The Bar Pilots had legitimate concerns about cutterhead dredges working in Southwest Pass because cutterheads dredges are less maneuverable than hopper dredges and are anchored in place. The Bar Pilots and Corps had not used cutterhead dredges in Southwest Pass since the channel



was deepened from 40 feet to 45 feet (1988). However, in an effort to increase the beneficial use of dredged material the Bar Pilots agreed to a one-time test. In 2009, the industry cutterhead dredge *E.W. Ellefsen* was utilized for channel maintenance in Southwest Pass. The pilot project was successful and when the Ellefsen pumped dredged material over the foreshore rocks along Southwest Pass, 46 new acres of Louisiana were created in the environmentally sensitive bird's-foot delta of the Mississippi River.

The Bar Pilots agreed to continue the use of cutterhead dredges along with the hopper dredges that are both needed to maintain the Mississippi River's deep-draft channel. The channel maintenance of Southwest Pass requires both types of dredges, working cooperatively and in tandem with each other.

PROVEN RESULTS, MEASURABLE BENEFITS

Over time, the Bar Pilots have become more comfortable with passing cutterhead dredges. Beyond this, they have also noticed the cutterhead dredges cut a consistent channel. The pilots are also proud of the new acreage being created each year and agree with the Big River Coalition's message that the increased beneficial use of dredged material serves to protect the navigation channel. The Big River Coalition has focused on changing the historical notion that the material removed from navigation channels are "dredge spoils" in order to highlight the benefits by promoting the preferred term of "sediment recycling." Dredge spoils are in fact a precious resource along the Louisiana coast and each year since 2009 cutterhead dredges have played an important part in channel maintenance and increasing the sediment recycling program.

In 2014, two cutterheads were utilized for the first time in channel maintenance in the same fiscal year, and the number of acres created each year since 2009 has increased. In Fiscal Year 2015 a record amount of sediment recycling was achieved with 20.7 million cubic yards creating approximately 2,000 new acres of Louisiana along the bird's-foot delta. The new cubic yard record is the highest amount of beneficial use ever achieved by the United States Army Corps of Engineers although the previous two records were also directly related to dredging on the Mississippi River.

The previous record amounts of cubic yards were both achieved when the Mississippi River Ship Channel was deepened, the second (previously first) in 1961 when the channel was deepened from 35 feet to 40 feet and the third

in 1987 when the channel was deepened from 40 feet to 45 feet. Since the cutterheads were added to the tool box for channel maintenance and coupled with the cutterheads being used to dredge beneficial material from the Hopper Dredge Disposal Area at the Head of Pass, nearly 5,000 acres of new Louisiana have been created.

Along the Louisiana coastline there are few areas that have more land than they did 10 years ago, the land loss attributed to sea-level rise, subsidence and even tectonic fault slippage being the common suspects. However, due to the sediment recycling program as demonstrated by the following photos there is clearly more land along the Mississippi River Delta than there was 30 years ago (1985 to 2015). The Big River Coalition, Bar Pilots and MVN have made advancements through the sediment recycling program that will prove valuable if the Mississippi River Ship Channel is deepened to 50 feet. However, there is no doubting that because of the additional acreage that the critical shipping channel is better protected from storm surge than it was prior to 2009.



Editor's Note:

Separately, the Port of Cleveland's (Ohio) beneficial sediment initiative has recently earned its first major customer. Great Lakes Construction Co. has purchased 6,890 cubic yards of sediment for use in the Ohio Department of Transportation's (ODOT) Lakeland Boulevard / I-90 Replacement Project in Euclid. The Great Lakes' purchase—enough to fill 300 standard dump trucks—represents a big step forward in the Port's overarching plan to creatively and efficiently manage river sediment, demonstrating that a private market does indeed exist. The Port developed a multi-tiered approach to beneficially reuse as much sediment as possible, processing and marketing the material through its partnership with Kurtz Bros., a leader in serving the waste-to-resource and soil-related industries. Just a few months into the relationship, the Great Lakes' deal has helped make the vision a reality.