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Corps tracing river 'fluff' in sediment test

NEW ORLEANS—The U.S. Army Corps of Engineers is injecting sediment tracers into Atchafalaya River sediment to analyze the movement of channel-clogging flocculent, commonly called "fluff."

This is the latest of numerous investigations aimed at the nature of flocculation, which each year causes the Corps of Engineers to perform extensive dredging in the area.

It is also the first time that sediment tracers have been used in the Atchafalaya River Bar Channel to evaluate dredge effectiveness and to measure fluff movement patterns during dredging. The Corps expects the results of the study to expand its understanding of how flocculants behave during channel dredging operations.

When the Atchafalaya River enters the Gulf of Mexico through the navigation channel called the Atchafalaya River Bar Channel, the fresh water of the Atchafalaya mixes with salt water of the Gulf and The fine sediments carried by the river begin to flocculate, settle to the bottom and reduce channel depth.

The steady accumulation of material in the shipping channel is a chronic problem to the local maritime industry and a costly maintenance issue for the Corps.

Previous studies of fluff have provided insight to area ecosystem processes, but officials say there are still many questions. According to Corps assistant operations manager Don Schneider, one area of special interest is the dynamics of flocculants during dredging operations. "We are trying to understand flocculent drift patterns and how these movements can be used to measure dredge-type effectiveness," he said.

To study flocculent movements, a Corps contractor is introducing sediment tracers in the area where the dustpan dredge Beachbuilder is currently dredging the bar channel.

The tracers are inert, environmentally safe polymers specifically designed to mimic the transport characteristics of existing area sediments, according to Schneider. "They are color-coded which allows us to measure their presence in samples taken in the study area. They'll be introduced in the channel areas before and during dredging operations and in the designated open water disposal site," Schneider explained.

The Corps will deploy an array of sediment traps to capture tracers that settle in the channel. Water column samplers will also be used to collect those in suspension.

Schneider said the samples collected will be carefully analyzed, and the results will help develop a detailed map of flocculent movements in the dredging area. The data will also describe the effectiveness of the dustpan dredge in removing flocculate from the navigation channel.

Environmental Tracer Systems and Evans-Hamilton Inc. are conducting the work under a Corps contract for $400,000. A preliminary report should be completed by mid-February 2006.