

Corps Routine Maintenance Dredging Keeps Federal Channels Navigable

The Savannah River has undergone continuous changes since the U. S. Army Corps of Engineers, Savannah District was first directed by Congress to preserve navigation and secure flood protection along its 381-mile path. Dredges came to deepen, widen and redirect the river. There have been islands removed and even dams constructed.

However, each of those alterations to the Savannah's natural flow were man-made and required a congressionally-mandated Rivers and Harbors Act, plus comprehensive forethought to implement. But, what about changes taking place without consideration of the outcome—those induced by nature?

The answer lies in yet another Rivers and Harbors Act; the 1899 decree which mandated the Corps keep all federal channels navigable. That edict continues for the Savannah district today by way of routine maintenance dredging to combat shoaling in both the Brunswick and Savannah harbors.

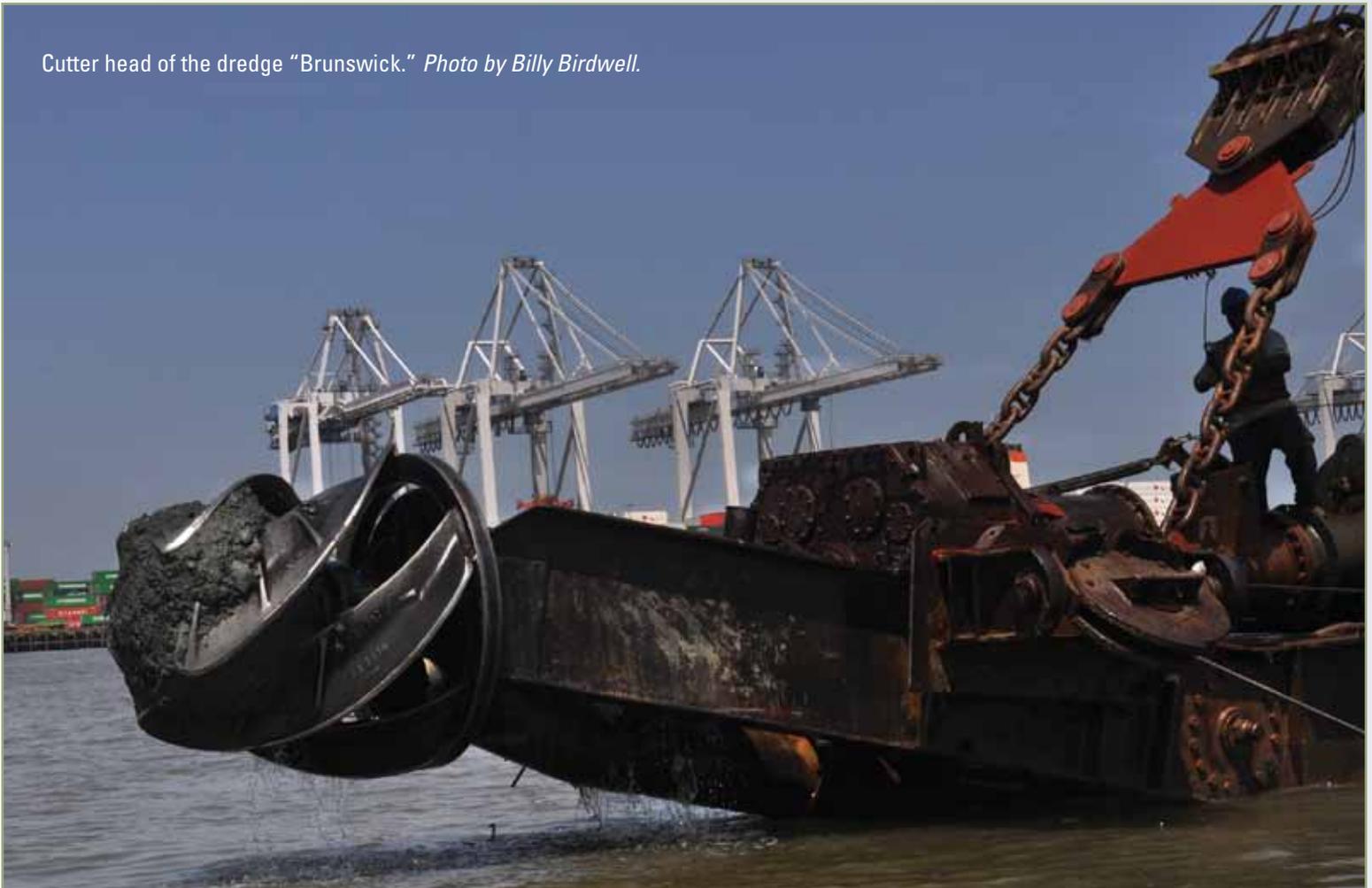
“Ships import and export billions of dollars of goods annually. If they can't get in and out of the harbor, we haven't done our job.”

— Stan Clark, chief of the district's Navigation branch.

“Shoaling occurs when silt from the rivers flows southward and gets deposited on the bottom,” said Stan Clark, chief of the district's Navigation branch. “In turn, weather systems and deep ocean currents tend to bring material into the river channels.”

Congress appropriates money to the Corps, which is distributed across all divisions on a priority basis, Clark said. “So, we would never get an appropriation large

Cutter head of the dredge “Brunswick.” Photo by Billy Birdwell.





Tugboats reposition a cutter dredge at the King's Island turning basin. *Photo by Billy Birdwell.*

enough to remove this naturally-occurring phenomenon entirely each year.”

Because of budgetary limitations, selecting the dredge site is a meticulous decision based on which type of vessel is needed, available for work, and the location of the most treacherous shoaling, said Clark.

One method the district uses in the entrance channel is a hopper dredge. Equipped with retractable arms which vacuum up the material and place it in huge bins, or hoppers, it then transports material to an authorized offshore Ocean Dredged Material Disposal Site.

“A hydraulic cutter dredge is the primary one used in the inner harbor,” Clark said. “It houses a grinding mechanism which pulls material into a pipeline and carries it to an onshore dredge disposal area.”

The district relies on data collected from its hydrographic survey vessels to find shoaling, said Burt Moore, dredging section supervisor. Equipped with sonar, they map the harbor and entrance channel. “Think of them as underwater depth meters,” he said.

“This data is critical,” said Clark. “Ships import and export billions of dollars of goods annually. If they can’t get in and out of the harbor, we haven’t done our job.”

Aside from availability, type of vessel, and shoaling location, there’s yet another factor to consider in this dance of the dredges—indigenous marine life.

“The National Marine Fisheries Service (NMFS) certifies people to serve as independent, endangered species observers during entrance channel operations,” said Mary Richards, Savannah district biologist.

Observers use binoculars to scan the ocean for calving right whales and alert pilots if spotted, said Moore. They

also document turtle takes. This generally happens when turtles hover in the valleys formed by the dredge head and get ingested as it sweeps over the waterway’s floor, he said.

“This year’s mild winter posed some unusually precarious circumstances for Kemp’s ridleys, greens and loggerhead turtles,” said Clark. “Warm waters kept them close to shore and unfortunately, in the areas we needed to work.”

An agreement between the Corps’ South Atlantic Division, the district, and NMFS requires specific actions after each take, said Richards, so all agencies can coordinate a go or no-go decision.

In one instance this season, a dredge in the Brunswick area had to cease operations less than 24 hours after arriving, Clark said. “It wasn’t easy for me to tell the pilots we had to stop. It’s their livelihood, but they understand the variables—both man-made and natural—the Corps has to balance.”

“We do what we can,” said Moore, “but Mother Nature always takes the material back to its natural repose.” For now, the survey vessels continue to monitor the waterway and the district is researching alternative methods to remove critical shoaling in Brunswick, he said.

“We have an obligation to provide operations and maintenance dredging for the federal channel,” said Clark. “We have no choice but to find the right method and get the job done.”

By Sandra Hudson, Corporate Communications Office