

SF Bay sand mining alarms conservationists

Environmentalists point to leases allowing more dredging in S.F. Bay

Nate Seltnerich, San Francisco Chronicle, 12-15-12

Dredge mining of shoals near Angel and Alcatraz islands and throughout Suisun Bay is robbing the bay of sand that keeps San Francisco's Ocean Beach from eroding, according to new research by the U.S. Geological Survey.

Partly as a result of sand mining, the 10-mile stretch between southern Ocean Beach and Point San Pedro near Pacifica is eroding faster than any other section of coastline in California, the geological survey says.

The findings are based on models of tidal currents and sediment flow showing that some of the sand that erodes from the Sierra and eventually passes through the Golden Gate is deposited on coastal beaches, said Patrick Barnard, a scientist at the geological survey and lead author of a number of studies on the topic, including one published this month in the journal *Marine Geology*.

Using suction dredges mounted on 200-foot barges, sand miners intercept much of this material before it can leave the bay, reducing the sediment available to buffer and restore coastal beaches, the geological survey found. The mined sand is used in ready-mix concrete and asphalt destined for roadways, bridges, parking lots and buildings.

In October, the California State Lands Commission granted a dozen 10-year sand-dredging leases - nine in the central bay and three in Suisun Bay - to two companies, Hanson Marine Operations of Pleasanton and Jerico Products of Petaluma. A nonprofit environmental group, San Francisco Baykeeper, countered with a lawsuit in November, claiming that the project's environmental impact report didn't properly assess the effects of mining activity on coastal erosion.

"We were just kind of exasperated by the lack of analysis and the lack of interest in figuring out what are the causes of erosion out there and what role does mining have to play," said Ian Wren, a scientist with Baykeeper.

Pressure on beach

According to Barnard, Ocean Beach is facing significant erosion pressures even without sand mining in the bay. A sewage outfall pipe contributes to scouring on the sea floor, and erosion of a large sandbar outside the Golden Gate is shifting wave dynamics, he said.

Also, the beach's contours aren't natural to begin with - it was modified during the construction of the Great Highway in the 1920s. Sea-level rise and climate change are expected to exacerbate the erosion.

Sand mining is another cause for concern, Barnard said.

"It's really hard to quantify the impact of the mining, but it's safe to say it is a factor," he said. "We're just trying to highlight some of the impacts that sediment removal has on the open coast."

The new leases allow the two companies to extract a total of 2 million tons of sand from the bay floor annually, a 43 percent increase over the 2002-07 average of 1.4 million tons.

Volumes for 2008 through 2011 were even smaller because of lower demand for construction materials, said Hanson spokesman Jeff Sieg. The new leases will allow the company to intensify sand-mining activity in the bay as demand picks up, he said.

Many of the lease areas have been mined for nearly a century, and for much of that time it was assumed that sediment was being replenished at the same rate that it was being extracted.

Not replenished

However, a 2010 study by Barnard found that from 1997 to 2008, only 15 percent of the volume extracted from five lease areas was naturally replenished. In recent decades, the addition of dams, wetland development and flood-control projects upstream has significantly restricted the flow of sediment to the bay.

Before the new leases are considered final, a handful of local, state and federal agencies will review them, including the state Department of Fish and Game and the National Oceanic and Atmospheric Administration. Locally, the Bay Conservation and Development Commission will have to issue its own permits.

In written comments on the project's environmental impact report, Brenda Goeden, the bay commission's sediment program manager, expressed concern that coastal erosion had not been adequately evaluated.

State Lands Commission executive officer Curtis Fossum defended the report in light of the lawsuit. "There's a lot of moving parts to any operation like this, and we think that the analysis conducted was thorough," he said. The agency is preparing a response to the suit, Fossum said, to be issued in late December or early January.