Closing the Last Coastal Sand Mine

S. Monterey Bay - Highest average erosion rate in CA

Sand Budget
Sand Budget

Shoreline 1910-2016

River

Salinas River

Sand Mine

Beach & Dune

Erosion

Moss Landing

Stillwell Hall, Fort Ord

Monterey

Sand City

Marina
Dragline Mining in the Ocean
Marina & Sand City ~1940-1989
CEMEX at Marina 

since ~1965
only captures beach size sand >0.25mm
Dredge Pond Filled
~200K m$^3$/yr of beach sand lost
Dune Recession

Sand City
Recession rate = 1.9 m/yr

Marina
1.8 m/yr

0.4 m/yr

Recession (m)

Years

1940 1960 1980 2000 2020
Salinas River Sand Input (>0.25mm)
1910-56 ~374K m³/yr
Today ~126K m³/yr
River sand mining -26K m$^3$/yr

mean accretion = 0.9 ± 0.4m

Net =+78K m$^3$/yr

1910-1945

3K m$^3$/yr

littoral cell

Sand City

Salinas River

101K m$^3$/yr

27% south
Input from dune and beach

Dune height (10-40m)
D = 0.35mm

Beach height (6-7m)
D = 0.65mm

\( h_b \)

\( \frac{1}{4} \) beach sand > 0.25mm

\( \frac{3}{4} \) fine sand
High erosion rate is due to the Cemex sand mine.

- Dune and Beach: +166K m$^3$/yr
- River: +34K m$^3$/yr
- Cemex mine: -202K m$^3$/yr
- Net: 1K m$^3$/yr
Activism

2006 NOAA Sanctuary Task Force

2008 PWA Report- Cemex is primary cause of erosion

2009 Letter to CA Coastal Commission requesting they require Cemex permit

2015 CSBPA and Surfrider’s sponsored “Sand Wars” documentary

2015-2017 joined by Save our Shores & many others. Newspaper (local and national), radio and TV

2016 Marine Geology paper concluding Cemex cause of erosion

2016-2017 CCC and SLC meetings

Lessons: Perseverance and patience,
Required a large community of dedicated groups and individuals along with dedicated public servants- cannot do it alone
Decision- 2017

*State Lands Commission*- Cemex must get a permit or close- sand moved alongshore below MLLW belonging to public is stolen by mine

*City of Marina*- close – 74 acres of beach land lost that harmed city

*California Coastal Commission*- Cemex must get a permit and EIR

Agreement between CCC and Cemex- stop mining by 2020 and close by 2023; land must be sold for conservation
Future without mining

Net = +37K m³/yr

mean accretion = 0.5 ± 0.4m

Sand City

Salinas River