ACTION 13 Manage sediment on a regional scale and advance beneficial reuse

Manage sediment on a watershed and regional scale to enhance Estuary habitats and shoreline flood protection efforts. Assess and harness natural processes and human activities that move sediment (such as dredging, erosion control, and construction) to optimize opportunities for restoration and adaptation to sea level rise.

TASK 13-1 Strengthen Long Term Management Strategy (LTMS) policies on the beneficial reuse of dredged material by expanding programs such as "SediMatch." Resolve logistical issues in matching sediment supply from dredging projects and upland construction sites with habitat restoration and shoreline adaptation projects.

BY 2017 Expand and improve SediMatch.

TASK 13-2 Identify funding to pay for the additional costs of dredged material disposal beyond 'least-cost' options, including costs for offloaders to pump sediment for beneficial reuse projects on Estuary shorelines.

BY 2018 Identify and secure funding.

TASK 13-3 Identify funds and conduct research and monitoring to quantify all potential sediment sources to the Estuary. Determine sediment needs for maintaining current habitats under various sea level rise projections.

BY 2018 Complete study and share results.

TASK 13-4 Advance understanding of how the creation of sandy beaches and their replenishment provides multiple benefits in terms of ecosystem health, shoreline erosion control, and sea level rise adaptation. Create (or enhance an existing) monitoring tool to identify potential sites for sandy beach creation or replenishment projects, choose pilot project sites, and track progress. Provide information about the benefits of sandy beaches to regulators and the restoration community.

BY 2017 Release the monitoring and tracking tool.

BY 2021 Identify pilot project location, coarse grain sediment source(s), and funds for implementation, and begin implementation.

BACKGROUND

Sediment, both fine and coarse, provides a critical building material for estuarine ecosystems, habitat restoration, and shoreline protection, especially in light of projected sea level rise. The elevation of many Estuary shorelines now needs to be increased so that marshes and parklands don't drown; likewise many shorelines may require materials to strengthen levees and provide natural vegetated buffers from storm surges.

Watersheds naturally convey sediment with stream and river flows from uplands to Bay shores, but human activities designed to store water, control erosion, and increase capacity of flood control channels trap this sediment behind dams or move it out of the water. Likewise, much material dredged from Bay shipping channels is barged outside the Golden Gate for disposal offshore. Meanwhile, recent Estuary research suggests that the Bay's sediment supply has declined significantly. This decline not only affects natural replenishment of shorelines, beaches, and marshes, but may also increase light penetration into the water column, sometimes with problematic results for Bay water quality.

This CCMP action provides for a reconsideration of current sediment management practices and changes that may benefit the ecosystem and human investments in the shoreline. It supports long-time efforts on the part of Estuary partners to address these issues, and seeks to close remaining knowledge, planning, regulatory, and funding gaps. More specifically, this action targets remaining challenges for beneficial reuse including the identification of sediment sources, the costs of beneficial reuse and the expense of delivering the sediment to reuse sites, and the need for pilot projects. In addition, it supports better coordination between projects clearing and excavating sediment and projects that need sediment. One current tool, SediMatch, needs more support and funding. SediMatch includes a website to match projects, as well as a forum to work through challenges of beneficial reuse.

In general, more research on sediment dynamics is also needed, as well as pilot projects to better understand beneficial reuse and dispersal of sediment.

OWNERS

SF Bay Conservation and Development Commission (Task 13-1)
SF Bay Joint Venture (Tasks 13-1, 13-2, 13-3, 13-4)
SF Estuary Institute (Task 13-1, 13-3)

COLLABORATING PARTNERS

LTMS participants, SF Bay Regional Water Quality Control Board, US Army Corps of Engineers, US Environmental Protection Agency, various dredgers, restoration practitioners, flood protection agencies

NEXUS

Actions 1, 3, 14, 18, 23
Goals 1, 2, 4
Objectives a, c, d, e, f, l