US Army Corps of Engineers®
Engineer Research and Development Center

Regional Sediment Management Program

Description of Research

Regional sediment management (RSM) is what the U.S. Army Corps of Engineers calls an approach to managing sediment as a resource in the context of the Nation's river and coastal systems. This approach is so logical that it has taken less than three years to bring Corps engineers, policy makers, and managers to one table along with state representatives, conservationists, harbor, coastal, and port stakeholders, as well as the general public.

Corps professionals have met, discussed, implemented, and demonstrated RSM and its benefits throughout the United States. Regional and national stakeholders, other interested individuals from outside the Corps, as well as international audiences at professional meetings have listened to Corps RSM presentations and accepted the concept. Themes at recent international conferences and workshops suggest a worldwide movement to watershed and regional management of sediment as well as other resources.

RSM will provide balanced solutions for effective ecological and economic sediment management

In some ways, RSM may seem to be a concept long practiced within Corps communities; however, new business processes have expanded its scope. Regional sediment management also supports the Corps' *Environmental Operating Principles* that bring a holistic perspective to all projects.

The Corps research approach is two tiered: For one, there is an applied research approach, the National Regional Sediment Management Demonstration Program: Authorized by WRDA 96 Section 516, started in Fiscal Year 2000; funded at $7 million, cumulative to date. Second, for innovative tools development, there is the Regional Sediment Management Research Program: Started in Fiscal Year 2002; funded at $7.8 million, cumulative to date. This program is to become a pillar within an expanded, "system-wide" program for future Corps of Engineers research and development and business practices.

Expected Products

RSM strives for balanced, sustainable solutions: USACE activities are impacted by sediment management actions that affect the transport, removal, and deposition of sediment. Examples include dredging and placement; building structures that divert or trap sediment; erosion protection for riverbanks, shorelines, lake and seabeds, and channel bottoms; and sand and gravel mining for construction or other purposes. Along the Nation's coastlines, the following examples of RSM activities can be cited:

- Implementing the RSM philosophy at Michigan City Harbor shows benefits of coordination between Corps districts and better communication with local stakeholders. The results will be economic, maintenance, and recreation benefits for that region.

- Linking projects in the vicinity of St Augustine Inlet, FL, resulted in savings of approximately $1 million.

- Relocating sediment to form East Moriches Bird Island, NY, created habitat for two endangered species.

- Establishing the California Coastal Sediment Management Workgroup has helped improve scheduling, leveraged funding, and improved the regulatory process.

- The RSM demonstration project in the Northeastern Gulf of Mexico won a third place Gulf Guardian Award from the Environmental Protection Agency. An RSM Geographic Information System (GIS) was developed in this project and is now in use by RSM practitioners around the country.

Potential Users

The Corps' National RSM Demonstration and RSM Research Programs have been instrumental in bringing the concept of regional sediment management to practitioners and stakeholders nationwide. With outstanding support Corps-wide, these programs are creating an environment for successful infusion of RSM through field demonstrations, GIS database development, and how-to publications. Practitioners work together, sharing experiences, tools, and information during periodic Corps workshops, technology transfer during professional meetings, and Web-based availability of information on research results, field applications, and nation-wide RSM news.

Projected Benefits

RSM practitioners have identified significant cost savings among other benefits. These cost savings and benefits are related to navigation maintenance, beach nourishment, ecosystem restoration, as well as other needs and opportunities raised by sediment stakeholders in a region. Benefits associated with RSM are evaluated across regions larger than individual projects and thus are unique to this approach. Following are examples of benefits to be realized from coastal RSM actions:

- Cost savings result from reduced rehandling of material; extended dredging cycles; sharing equipment in linked projects; shared information; and avoided duplication of data collection.

- Improved environmental conditions based on reintroduction of sediment into "sand starved" littoral systems reduce the requirement for beach nourishment and sustain habitat for threatened and endangered species.

- Shared regional-scale data management systems, models, and other tools improve project-level decisions and help achieve greater consistency in analytical results among studies and projects within a region.

- Improved interagency and stakeholder relationships produce opportunities for collaboratively leveraging financial and manpower resources in data collection and analysis, tool development, and project implementation. Additionally, intergovernmental collaboration and coordination streamlines regulatory processes.

Program Manager(s)

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Additional Information can be found at *http://www.wes.army.mil/rsm/*

Participating ERDC Laboratories

Coastal and Hydraulics Laboratory (CHL); Construction Engineering Research Laboratory (CERL); Cold Regions Research and Engineering Laboratory (CRREL); Environmental Laboratory (EL); Geotechnical and Structures Laboratory (GSL); Information Technology Laboratory (ITL)