

Sediment as a Resource

National Dredging Team Conference



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Managing Sediments in the Watershed

Bringing Dredged Material and

Watershed Managers Together

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Sediment as a Resource

- Sediment, often considered:
 - A “by-product” to be disposed of
 - A “pollutant”, “nuisance substance”, or “spoil” to be controlled
- But it is increasingly being acknowledged as a “**resource**” and important component in the natural watershed *in need of management*.
 - ...much like WATER!!



Sediment, Much Like Water:

- Experiences a variety of uses and competing demands
- Shortages or over abundance of sediments at certain times or locations can result from both natural processes and human activities
- Its movement is:
 - along gradients from upstream to downstream in channels or over landflow,
 - through the surface into underground streams or aquifers
 - via currents and waves along the shore, on and off shore in coastal zones
 - across the shore by wind and waves
- Quantity, quality and timing of movement are fundamental management challenges
- Degraded habitat or restricted resource uses can result from changes in sediment quantity and quality
- Is managed, regulated or otherwise affected by many agencies and stakeholders.



Too Much Sediment:	Too Little Sediment:	Sediment as a Resource:
<ul style="list-style-type: none">▪ Obstruction of channels▪ Rivers fill and flood▪ Reefs get smothered▪ Turbidity	<ul style="list-style-type: none">▪ Beaches erode▪ Riverbanks erode▪ Wetlands are lost▪ River profile degradation	<ul style="list-style-type: none">▪ Construction material▪ Sand for beaches▪ Wetland nourishment▪ Agriculture soil enrichment



Becoming a Scarce Commodity?

- Some states recognize sand as a valuable resource, and they now require beach-quality sediment removed from navigation channels to be deposited on beaches or in the littoral zone.
- While some sediment may be viewed as a pollutant (e.g. causing turbidity), this limited view of the resource can preclude:
 - Consideration of innovative management approaches and options,
 - which maybe be best addressed through watershed and other system approaches
 - that include consideration and examination of trade-offs,
 - and implementation by multiple partners.



Concept of “sand rights”

- Considers sand as a “resource”, noting that:
 - Stretches of coastlines or littoral cells, when unimpeded, received sediment naturally.
 - Works of civilization that reduce or modify the supply of sand alter the sediment budget, often resulting in beach loss, erosion or potentially accretion.
 - The major activities include urbanization, dams, navigation projects, shore protection projects, sand extraction and mining.
- Argues for adopting a doctrine requiring decision-makers within greater littoral cells to consider the effects of all development projects on the supply of sand to or along the coast.



Beneficial Uses

- Sediment as a by-product of various activities

- e.g. channel maintenance or other dredging

- May be valued by others for:

- Construction materials - e.g. building roads, making concrete,
- Substrate for habitat - e.g. wetland creation, beach nesting habitat, or
- soil amendments to enhance agriculture

- A session on Beneficial Use of Dredged Material will follow later today.

- Summary information on beneficial uses of dredged material is available at:

<http://www.wes.army.mil/el/dots/budm/budm.html>



Beneficial Uses of Dredged Material

Keeping the Material “In the System”

INLAND
Port St. Joe, FL



COASTAL
Deer Island, MS



Regional Management of Sediment Resources

- **The concept of RSM** attempts to foster a regional, multi-objective, multi-agency, multi-stakeholder approach to sediment management

- Much like the “watershed management concept” does with water.

RSM approaches will be discussed more in later sessions



Summary

- Sediment is a positive and important component of the watershed
- Managing Surplus and Deficits
- Legal Issues
- Beneficial Uses – Program to manage sediments
- RSM – Science Based Management

