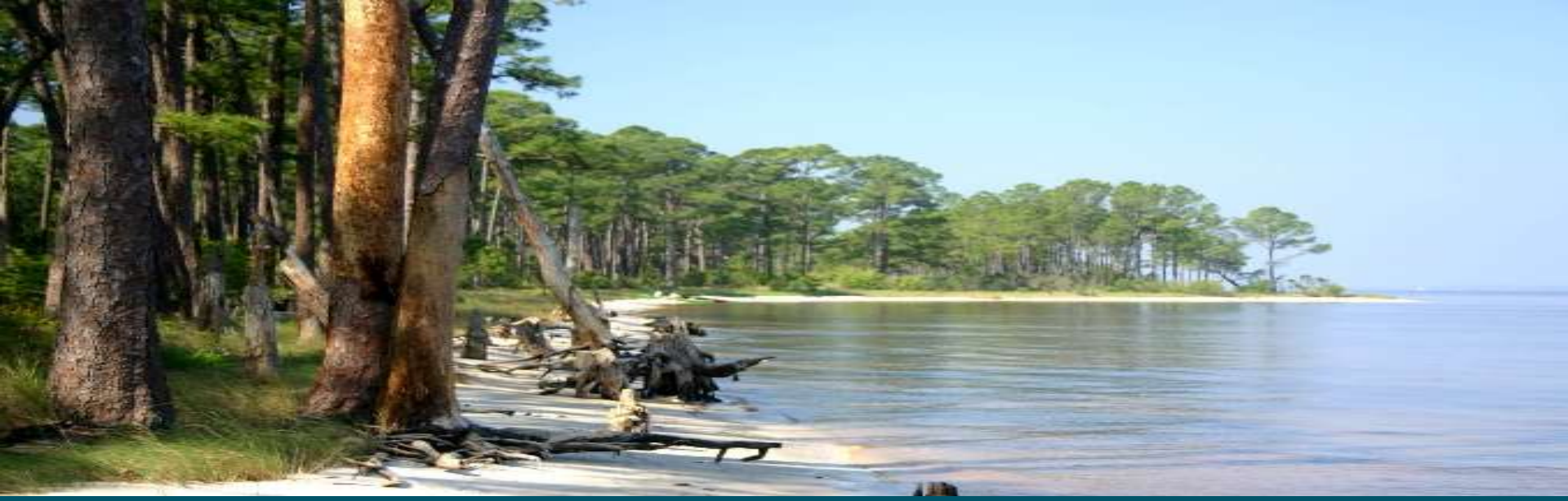


Dredging Practices Applied to Reservoir Sediment

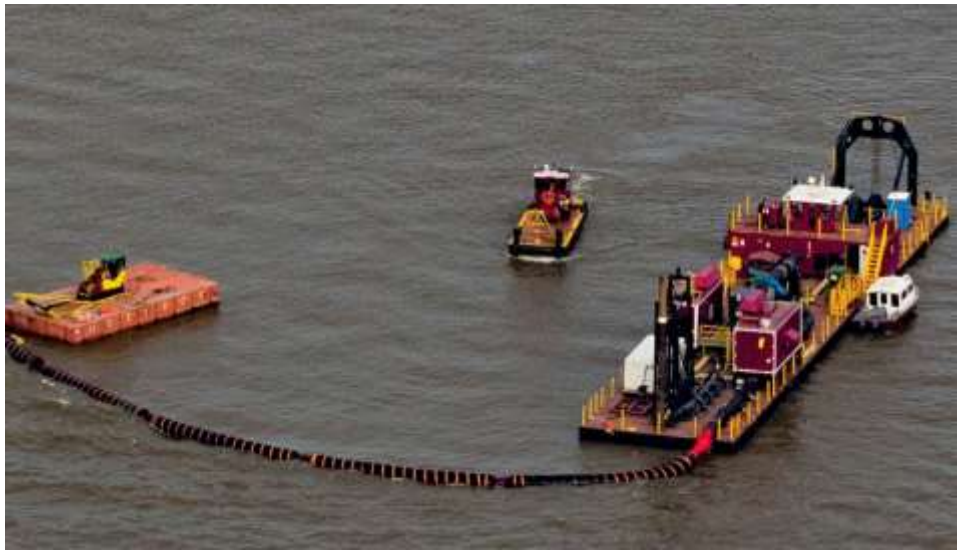
Presented by

Michael Whelan, PE

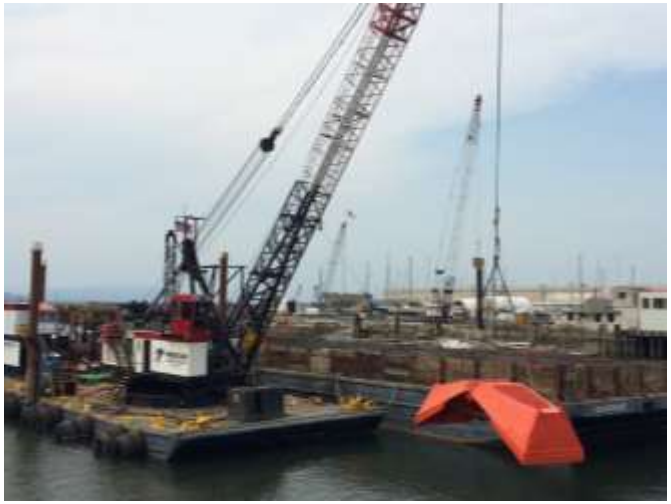
August 2020

Purpose of This Section

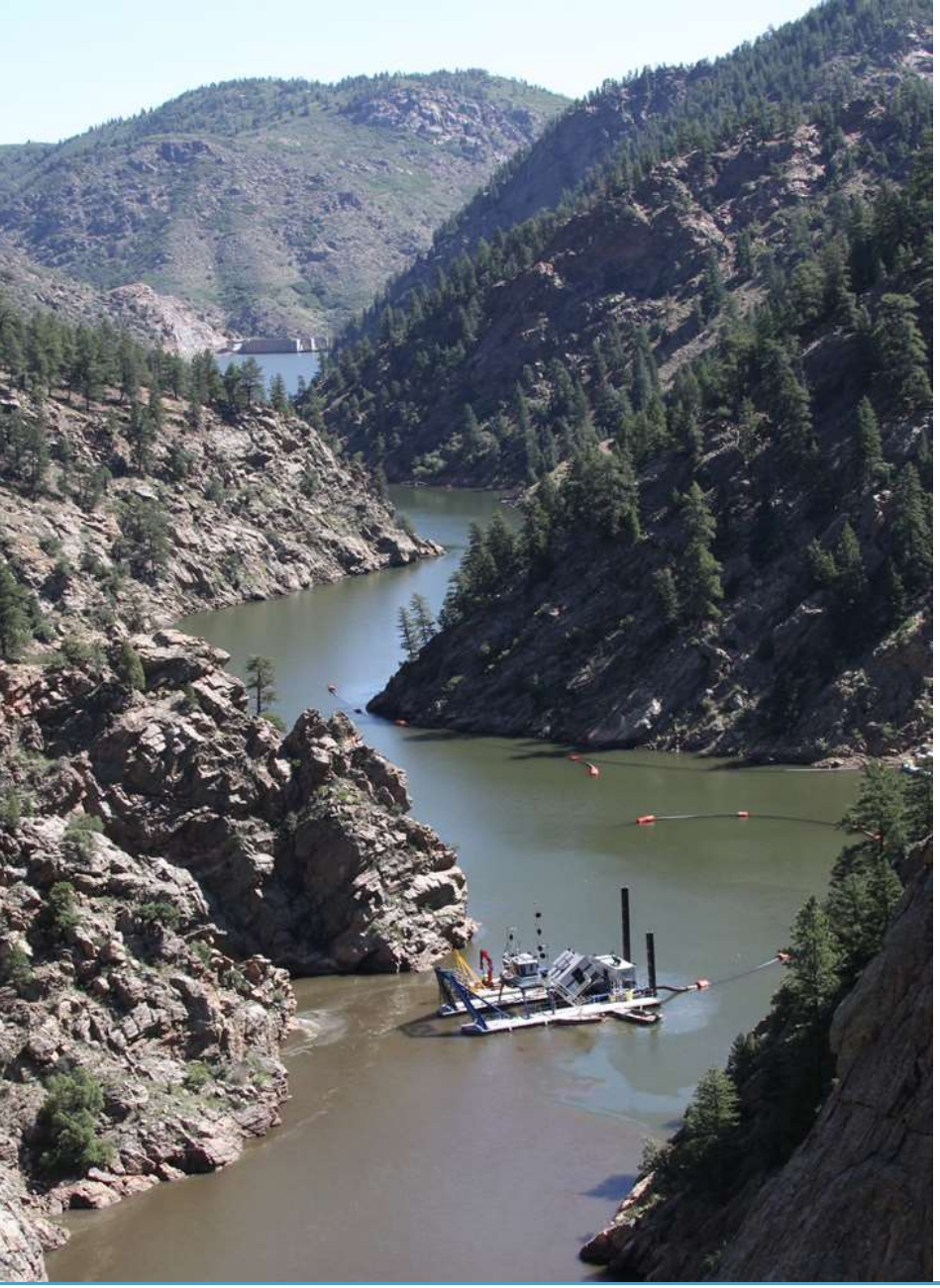
- Unique aspects of dredging sediment from reservoirs, as compared to coastal, river, or industrial settings
  - Standard dredging operations: mechanical and hydraulic
  - Unique conditions of reservoir settings
  - Sediment placement alternatives
  - Environmental issues



Mechanical Dredging



Hydraulic Dredging



Geographic Factors

- Inland, fresh-water locations
- Distance from coastal or industrial areas
- Access challenges
- Distinct conditions at inlet and outlet ends
- Potentially deep water

Reservoir Sediment Properties

- Dependent on contributing watershed(s)
- Mountainous country: course and crystalline granular materials
- Forested areas: natural debris, logs, organics, and rocks
- Agricultural areas: potential chemical impacts
- Wildfire effects

Sediment Placement, Reuse, or Disposal Options

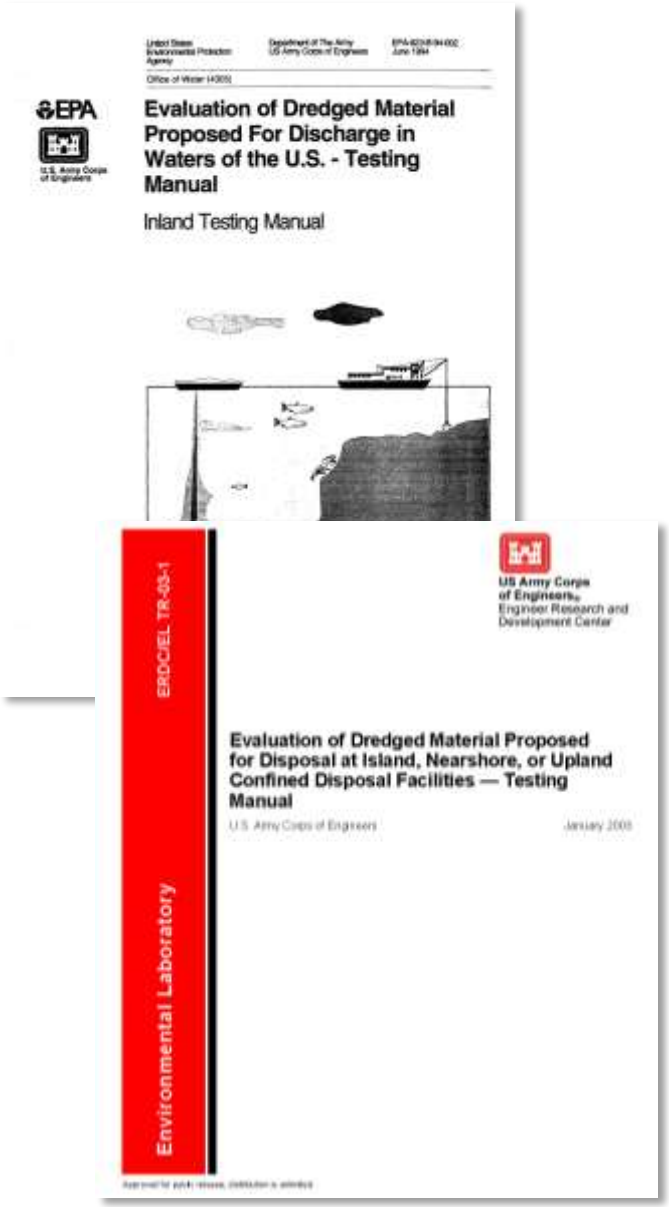
- Return to downstream locations (desirable, as most equivalent to natural processes)
- Creation of on-land permanent disposal facility
- Beneficial reuse (habitat; construction; development)
- Potential processing or screening

Sediment Placement, Reuse, or Disposal (cont.)

- Dredged material has value—it is often a resource, not a "waste" material
- Material is needed for the sediment-starved downstream ecosystem
- Regional recognition of the issue – examples of regional concerns in coastal areas

Environmental Factors

- Regulatory compliance: Clean Water Act applies
- Air, noise, and community influenced on proximity to developed areas
- Biological impacts depend on region
- Sediment suitability for different placement options



Thank you. On to the next panelist