

Dredging Navigation Channels: Environmental Challenges and Opportunities

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US Army Corps of Engineers
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PURPOSE / AGENDA

Update on Environmental Compliance Challenges and Opportunities for Maintenance Dredging and Channel Deepening.

- Regional Orientation
- Historical Context
- Issues and Answers
 - *Endangered Species*
 - *Essential Fish Habitat*
 - *Sediment Analysis*
 - *Invasive Species*
- Opportunities
 - Beneficial Uses
 - Restoration



USACE Navigation History

- **USACE Navigation projects as early as 1815 in New England.**
- **General Survey Act of 1824**
 - ✓ Authorized road and canal route surveys
 - ✓ Set stage for navigation improvements
- **Rivers and Harbor Act of 1899**
 - ✓ **First environmental legislation**



Legislative Base: National Environmental Policy Act 1969

PURPOSE

“...to declare a national policy which will encourage productive and enjoyable harmony between man and his environment...”



Key Environmental Legislation

- **Swamp Land Acts of 1850s**
- **FWCA - equal consideration for wildlife 1934-58**
- **Magnuson-Stevenson Fishery Management and Conservation Act 1956**
- **Marine Protection, Research & Sanctuaries Act 1972**
- **Coastal Zone Management Act 1972**
- **Endangered Species Act 1973**
- **Clean Air Act 1977 – 90**
- **Coastal Wetlands Planning, Protection and Restoration Act of 1990**



Environmental Challenges

- **Endangered Species**
- **Essential Fish Habitat**
- **Contaminated Sediments**
- **Water Quality**
- **Invasive Species**
- **NEPA Compliance**
 - **Multi-year Environmental Assessments**



Endangered Species Act

- Documenting May Not Effect and No Effect...
- Impacts to fish, benthos, and birds
- Proving No Effect



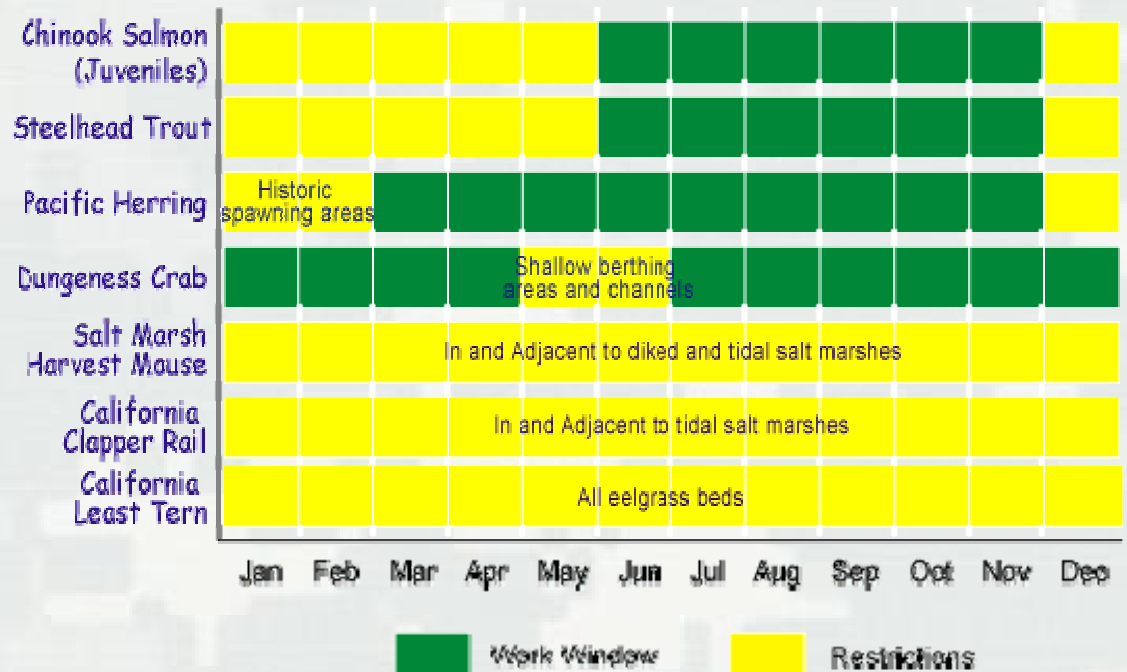
Key Species in California

Federal and State listed

- **Green Sturgeon**
- **Salmonids (Chinook, steelhead, Coho)**
- **Longfin Smelt**
- **Goby**
- **Groundfish**
- **Delta Smelt**
- **California Least terns**
- **Caspian Tern**
- **Clapper Rail**
- **Sea Otter**
- **Ground Squirrel**



Central San Francisco Bay Dredging Work Windows



Marine Mammal Protection Act of 1972 (Amended 2007)

- NOAA Fisheries Service
Seals, Sea Lions, Whales,
and Dolphins.



Endangered Whale Shipstrike Avoidance



- Ships 300 gross tons and above asked to avoid an area in the Great South Channel from April through July, when whales face highest chance of being struck by ships.
- The channel is a feeding area for the endangered North Atlantic Right Whale



Marine Protection, Research & Sanctuaries Act 1972

- **Chemical and contaminant testing detection limits**
- **Risk levels driven so low cannot detect under current methods. – e.g. perchlorates**
- **Basis for toxicity testing requirements**
- **Trying to find new dependable methods at national level.**



Magnuson-Stevenson Fishery Management and Conservation Act - 1956

- **Requirement to consider Essential Fish Habitat (EFH) – which is everything**
- **Everything below MHHW is EFH**
- **Programmatic Agreement San Francisco**
 - **Baseline Conditions Issue**
- **Eelgrass**
- **Benthos / invertebrates /sediments**



Invasive Species



Caulerpa taxifolia



Invasive Species Management

Executive Order 13112

- **Directs Federal agencies to prevent introduction of invasive species and provides for their control and to minimize the economic, ecological, and human health impacts that invasive species cause.**
- **The **National Invasive Species Management Plan** (the Plan) to serve as blueprint for Corps action on both aquatic and terrestrial invasive species.**
- **Information at www.invasivespeciesinfo.gov**



Invasive Species Policy

- **June 2009 Memo established national policy for all Corps activities, including Regulatory**
- **Engineer Research & Development Center is research lead (ERDC)**
- **Invasive Species Leadership Team oversight to meet EO goals**



Good News for California – thus far...



Opportunities

- **Collaboration / Partnering**
- **Dredged Material Management Plans**
 - **Watershed based**
- **Programmatic Documents**
- **Multi-year Environmental Assessment**
- **Restoration**



Collaboration

- **Working with Resource Agencies and NGOs early and continuously**
 - **USFWS, NOAA, EPA, CDFG, RWQBs, NMFS**
 - **Regional meetings**
 - ✓ **Bring in ERDC expertise and agency counterparts**
- **Corps Counterparts**
 - **Senior Biologists and Ecologists**



Collaborative Efforts for Ecosystem Restoration

- **Partnership Value.**
 - **Essential for successful projects.**
 - **All projects are partnerships!**
 - **Basis of Coastal America and NGO MOUs such as Nature Conservancy and Ducks Unlimited**





Mission - To preserve the plants, animals, and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive.



THE NATURE CONSERVANCY AND US ARMY CORPS OF ENGINEERS PARTNERSHIP SITES



US Army Corps
of Engineers



Corps Restoration Initiatives

- **Based in mitigation experience**
- **Substitute beneficial uses and restoration for mitigation**
- **Altered mindset:**
 - **Focus not on compliance and mitigation**
 - **Move to restoration**



Evolution of Ecosystem Mission Authority

- **WRDA 86**

- **First legislation targeting ecosystem restoration**

- **Section 1135 – Project Modifications for Improvement of Environment**

- ✓ **Authorized review of operation of water resources projects to determine need for modifications for improving quality of environment**

- ✓ **Two year demonstration program**



Evolution of Ecosystem Mission Authority

- **WRDA 96**

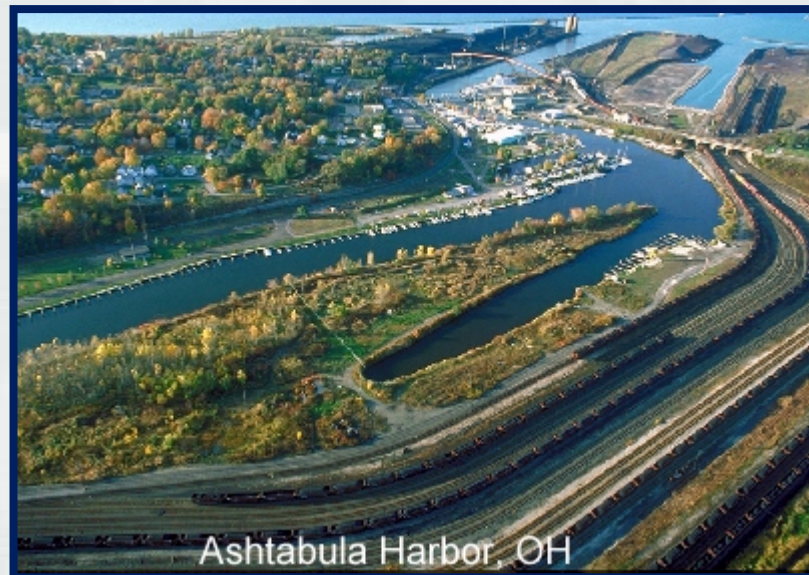
- **Authorized Anacostia River and Tribs, DC and Maryland as first project planned solely for ecosystem restoration**
- **Established **Section 206** Aquatic Ecosystem Restoration**
- **Authorized Poplar Island, Maryland as 1st major use of dredged material (\$307 million)**



Environmental Dredging

Section 312, WRDA 1990

- Purpose removal and remediation of contaminated sediments from navigable waters
- Applies to non-CERCLA sites



Beneficial Use of Dredged Material

Section 204, WRDA 1992, Amended

- Purpose habitat restoration using dredged material to create aquatic habitats



Sonoma Baylands, CA – *before*

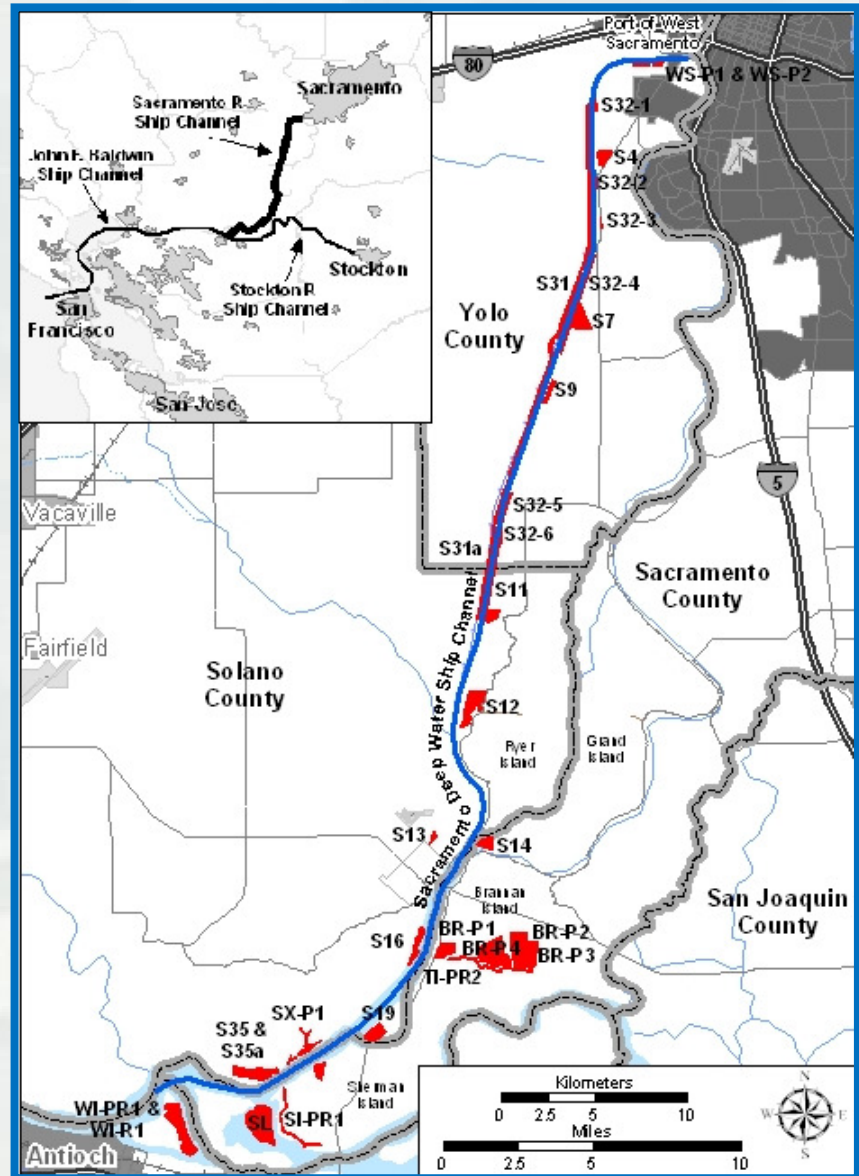


---- *after*

Sacramento Deep Water Ship Channel and Dredge Material Placement Sites

Prospect Island

(S 12) proposed for Mitigation



Corps Civil Works Program and Restoration

- **ER 1105-2-100 added concept of a national ecosystem restoration (NER) objective in 2000**
- **Contributions to NER to be made by seeking increases in the quantity and/or quality of desired ecosystem outputs.**



Policy Considerations

- Projects should restore ecosystem structure, functions and values.
- Projects should result in improved environmental quality.
- Improvements should be of great enough ***national significance*** to justify federal expenditure.



Dredging and the Environment

- **Multi-year Environmental Documents**
- **Overdredging to Reduce Impacts**
 - **Encapsulated benthic materials – longer between cycles, potentially less impacts...**
- **Regional Collaboration and Partnering**
- **Restoration / Beneficial Uses**
- **Advanced Planning with Watershed Emphasis vs. permitting compliance**



Way Ahead

- **Win-Win Negotiation**
- **Recognize and leverage different agency missions to enable partnering**
- **Inform by expertise**
- **Focus on opportunities not problems**
 - **Sponsor Restoration Project**

