

Dredging Navigation Channels: USACE Environmental Improvement Process

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Key Topics

1. SPD Approaches to Environmental Planning for Dredging

2. Environmental Issue Areas

- **Disposal Sites, T&E Species Compliance**

3. CE Invasive Species Management

- **Need to support**



1. SPD Regional Approaches

- **BLUF:** *Must Collaborate on Solutions within and beyond SPD*
- **Meetings & Forums to include:**
 - **Corps**
 - Project Management Navigation and Civil Works Leads
 - Planning Division Coastal Study Managers, NEPA specialists and Marine Ecologists* **(Monthly)**
 - Asset Management / Operations Staff Navigation specialists
 - Regulatory Permit specialists and biologists
 - **ERDC** dredging, aquatic plant, fish ecology experts
 - **Resource Agency Counterparts and NGOs**
 - USFWS, USEPA, NOAA/NMFS, CDFG, and RWQCB



Proposed Activities

- **Regional Partnering Meeting**
 - **Marine Biologists/Ecologists**
 - **Environmental Planners**
 - **Resource Agency Counterparts (e.g. NMFS, FWS, California Fish and Game, CCC)**
- **Topics Including:**
 - **Monitoring, Adaptive Management**
 - **Mitigation (species specific – eelgrass/seagrass)**
 - **Invasive Species**
 - **Environmental Windows**



2. Environmental Dredging Issue Areas

- **BLUF: To support dredging and timely compliance must identify issues as soon as they emerge and strive for feasible remedies.**



Dredging News

- 2011 Oakland Dredging episode will place in-Bay and at Montezuma
- Not expected, due to cost, and completed required additional work with resource agencies
- Unique split: 30% in-Bay; 70% to Montezuma without significant impact on project cost
- Prior years went for beneficial use to Hamilton, but airfield parcel is full



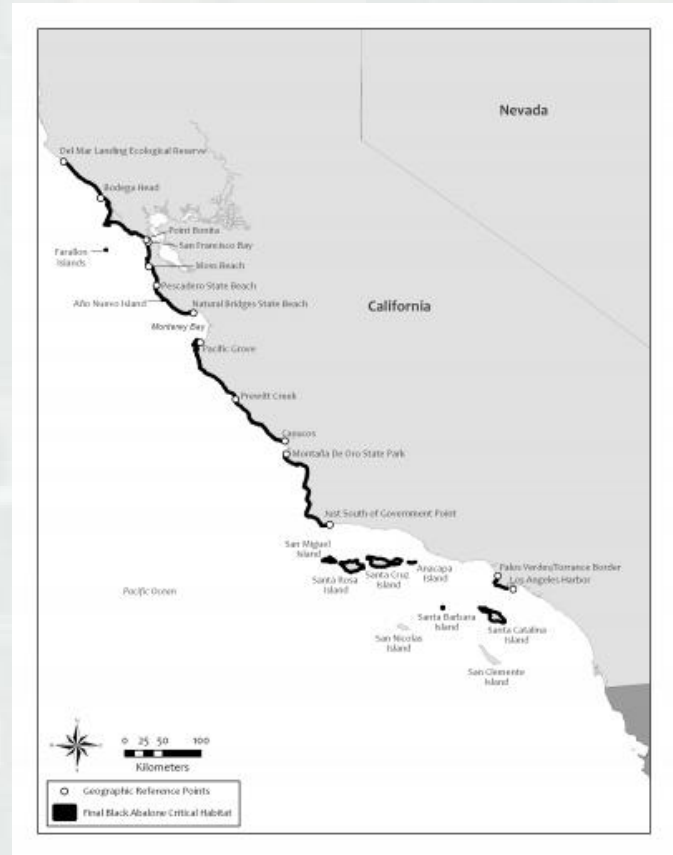
California Least Tern Foraging Studies

- Endangered CLT protection focus on nesting sites
- Relative importance of foraging areas and habitats near nests requires documentation
- Los Angeles and San Francisco Districts conducting studies to:
 - Examine foraging near areas subject to maintenance dredging
 - Verify if current seasonal limits appropriate and necessary
 - Provide recommendations for Corps Civil Works facilities and Regulatory permits



New Critical Habitat Designations

- **Black Abalone (October 27, 2011 in FR)**
 - 140 square miles of California shoreline
 - Listed as Endangered in 2009
 - Federal projects/permits must ensure actions don't adversely modify animal's habitat
 - Cause acidification, withering disease syndrome, warming
 - Habitat includes rocky habitats and coastal marine waters



Eulachon (Columbia River Smelt)

- Protection in rivers, not ocean
- Primary impact on shrimp fishery because of incidental catch/take
- May close some fishery spots “time and area” closures, and cap total smelt bycatch
- Northern California impacts in Turwar Creek, Klamath River, Redwood Creek and Lower Mad River
- Disposal of dredged material in shallow areas with potential to disrupt eulachon spawning in Lower Columbia River
- Disposal of dredged material in shallow areas with potential to disrupt spawning



3. CE Invasive Species Management

- **BLUF:** Recognize urgency and manage from time of entry, or sooner!
- New invasive aquatic plants threaten new locales across the U.S.
- In 3-4 years cost of CE operations could approach \$75-100 million/year (currently \$40M)



Arundo donax (Giant Reed)



ERDC Aquatic Plant Control Research Program

- Nation's only federally authorized research program for aquatic plant management
- Nationally recognized leader in aquatic plant management research and technology development
- Aquatic Nuisance Species (ANS) Task Force – intergovernmental CE member
- CE Invasive Species Leadership Team (ISLT)
- California-Bay Delta
 - Arundo, egeria, hydrilla, waterhyacinth
 - **Quagga/Zebra Mussel**



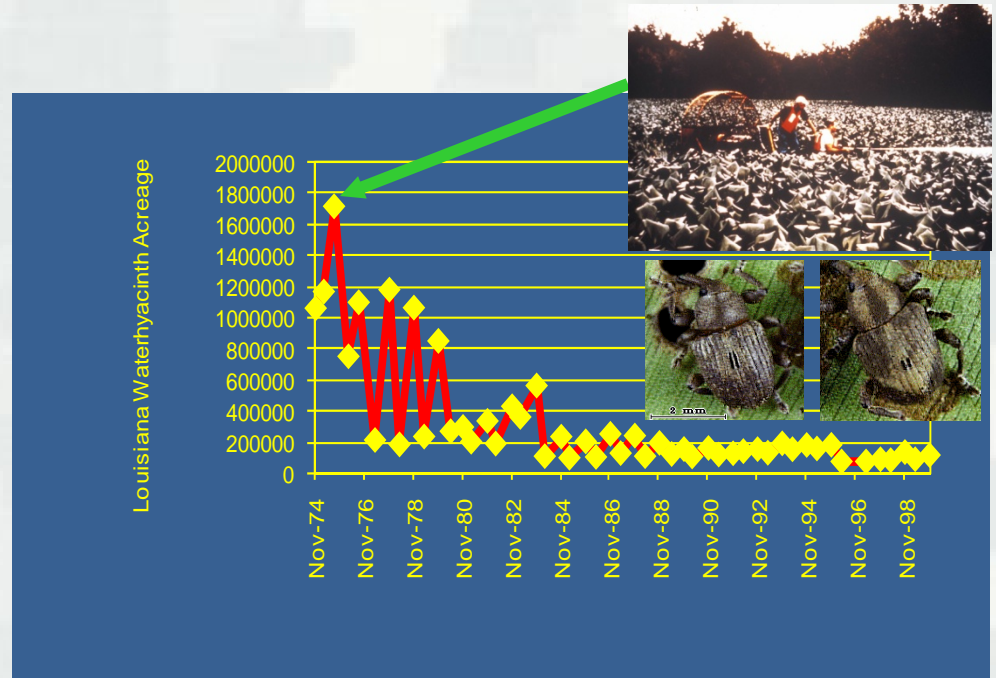
Success Story

Activity: New Orleans and Jacksonville Districts

Problem: Waterhyacinth hindering navigation, water intakes, habitat

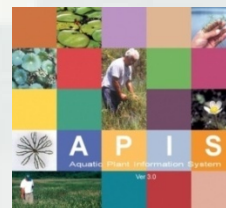
Response: APCRP developed chemical protocols and the use of insect biological control agents

Benefit: Cost effective management procedures developed to address the waterhyacinth problem; Annual reduction of waterhyacinth populations in Louisiana greater than 900,000 acres



APCRP Accomplishments

- Release of 17 biological agents
- 3 Patents
 - mycoherbicidal formulation, SAVEWS, SAVEWS Jr.
- National labels for 7 new aquatic herbicides (2002-2011)
 - triclopyr, imazapyr, carfentrazone, penoxsulam, imazamox, flumioxazin, bispribac
- Over 30,000 APIS CD's distributed and APIS Online
- <http://el.erdc.usace.army.mil/aqua/apis.html>



ACCRP



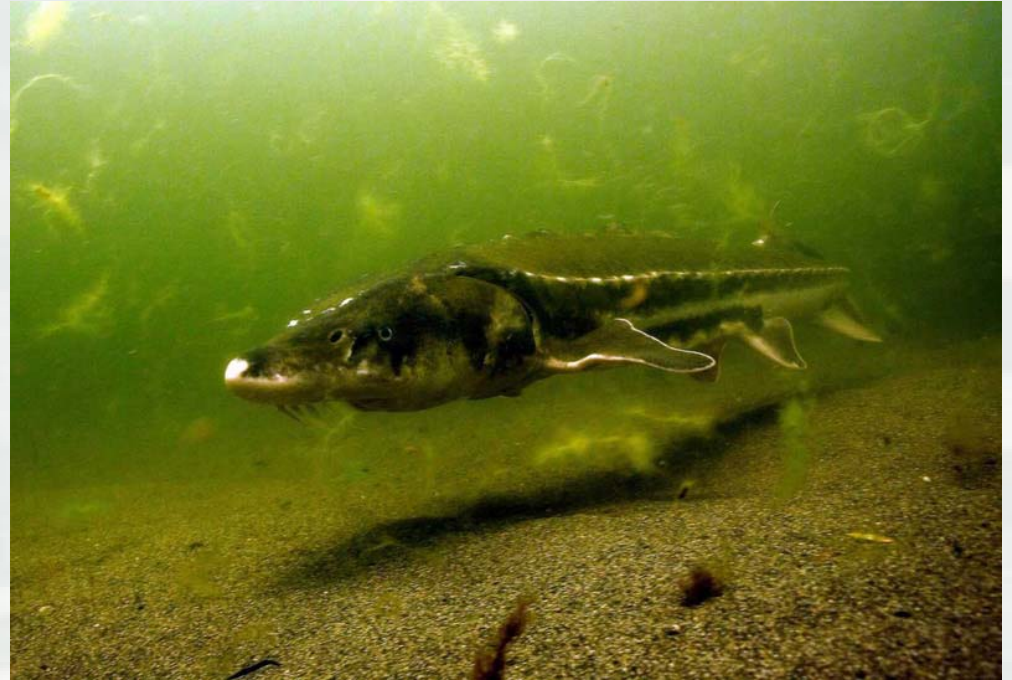
Caulerpa invading Eelgrass

- Aquatic Herbicides
- Insect Biological Control Agents
- Submersed Aquatic Plant Management
- Integrated Herbicide and Insect Control
- Plant Pathogens as Biocontrol Agents
- PMIS, Noxious & Nuisance Plant Management
- Information on > 150 spp



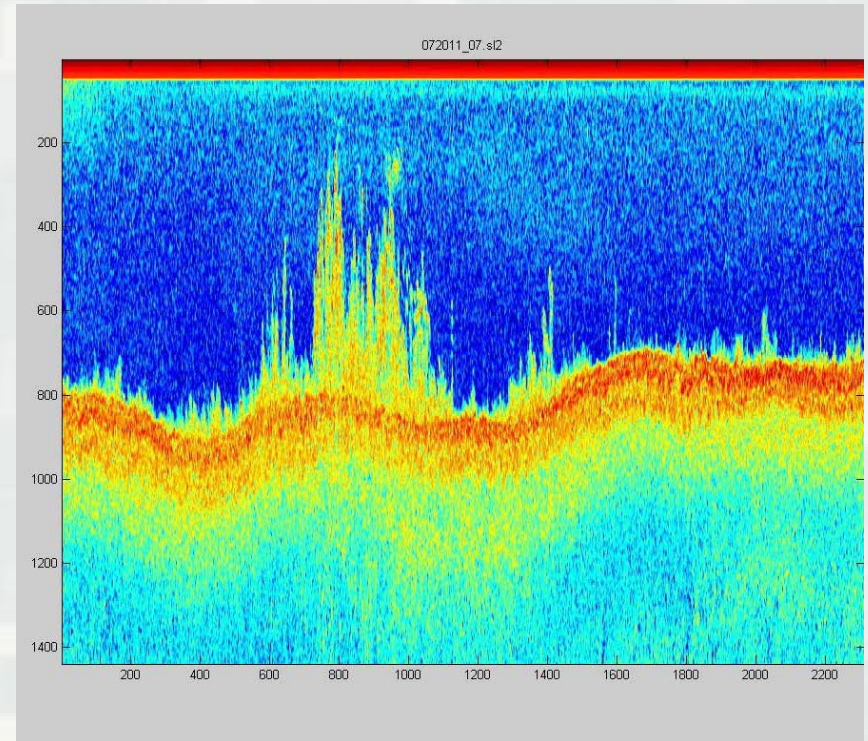
Other ERDC Studies

- **Sturgeon entrainment**
- **Contaminated sediment management / bioaccumulation**
- **BMPs – windows**
- **Beneficial Uses**



SAVEWS Jr. SAV Mapping

- **Acoustic signal processing**
- **Location-referenced bathymetry, plant coverage and height**
- **New low cost < \$2K digital sounder/GPS systems**
- **Validation in Progress**



Questions?

