

# Strategic Endangered Species Protection for Dredging Projects

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WEDA Pacific Chapter Meeting  
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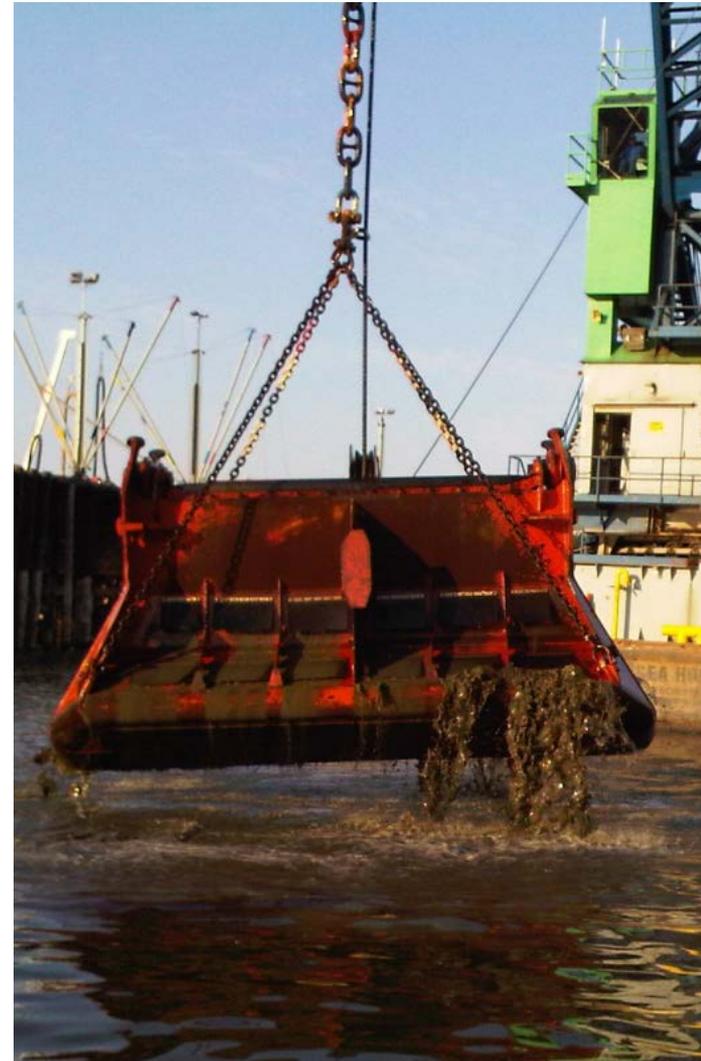
# Discussion Outline



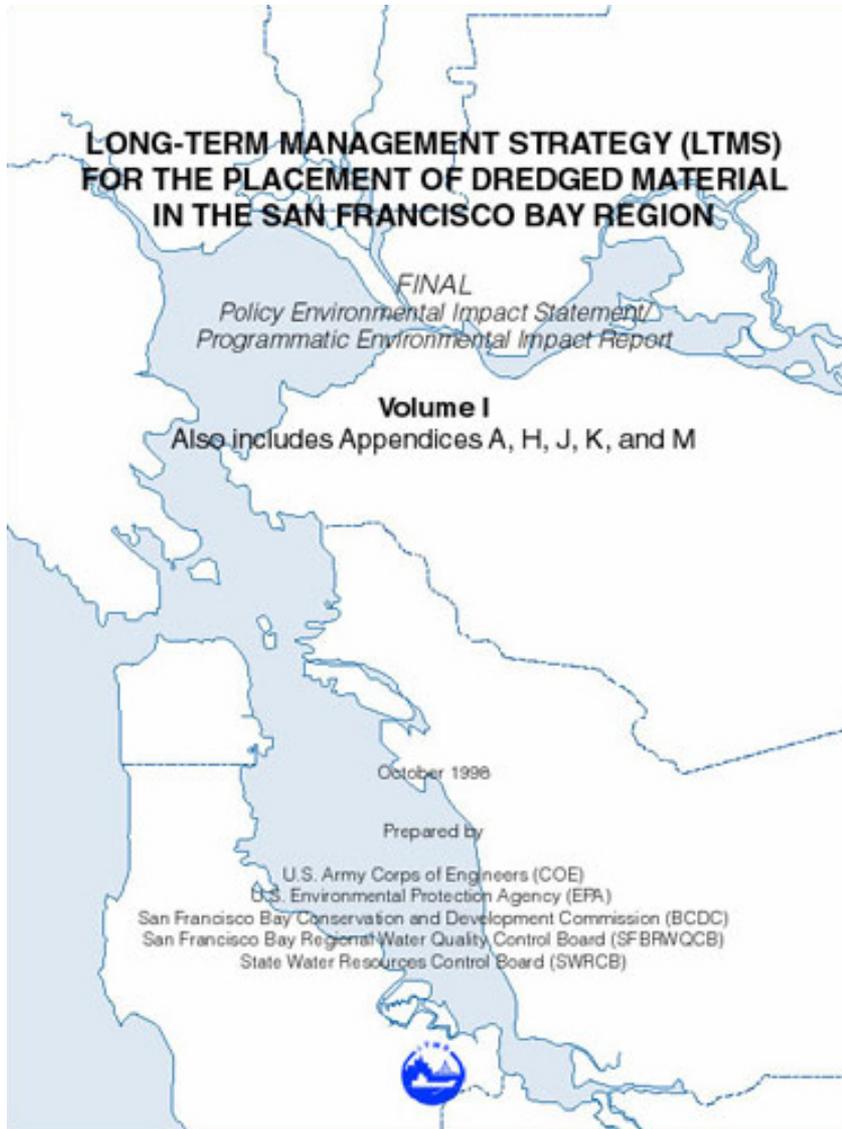
- Presentation Overview
- Regulatory Background
- Endangered Species Protection Approach
- Endangered Species Protection Considerations
- Results
- Conclusions

# Presentation Overview

- Presence of threatened and endangered species can result in project delays, technical limitations, and costly mitigation measures for dredging projects
- Solutions based on biological and behavioral data can facilitate endangered species protection and provide project flexibility that still meet the Client's Drivers
- Development of integrated solutions saves time and money

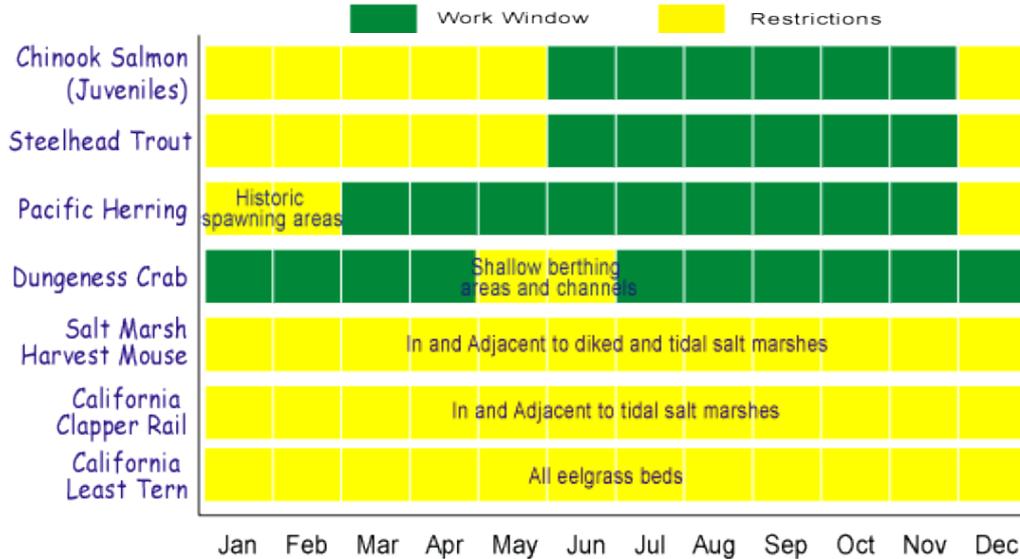
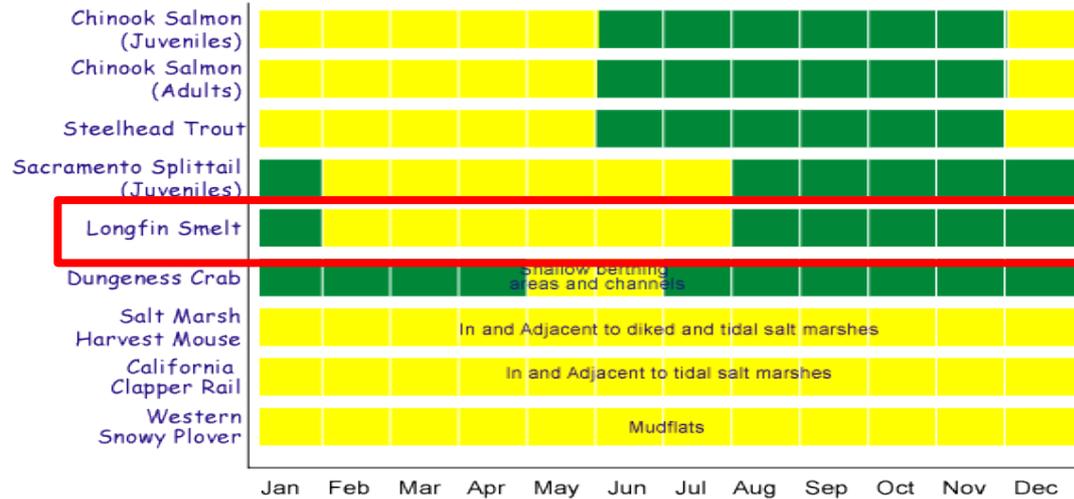


# Regulatory Background



- Approved in 2001
- Manage dredging in an economically and environmentally sound manner
  - Environmental Work Windows
  - Reduced In-Bay Disposal Volume
- Maximize beneficial reuse
- Establish one stop permit shop (DMMO)

# Regulatory Background



Work Window
  Restrictions

# Regulatory Background

Things change...

- Endangered Species Act compliance in San Francisco Bay now also includes for two recently listed species
- No approved environmental work window
- A take assessment is required for all dredging projects (for even the potential of one take)



Green Sturgeon



Long Fin Smelt

# Regulatory Background

- Take Assessment
  - The project approach and the proposed dredging activities are evaluated relative to the species biology, behavior, and known location data (best available)
  - Assessment of potential impacts
  - Regulatory concurrence

“No Take” determination with regulatory concurrence will avoid time consuming permitting process and mitigation measures



# Endangered Species Protection Approach

We considered and assessed:

- Species biology
- Species behavior
- Anticipated/expected locations/habitat
- Project schedule needs
- Project equipment options
- Exclusionary measures



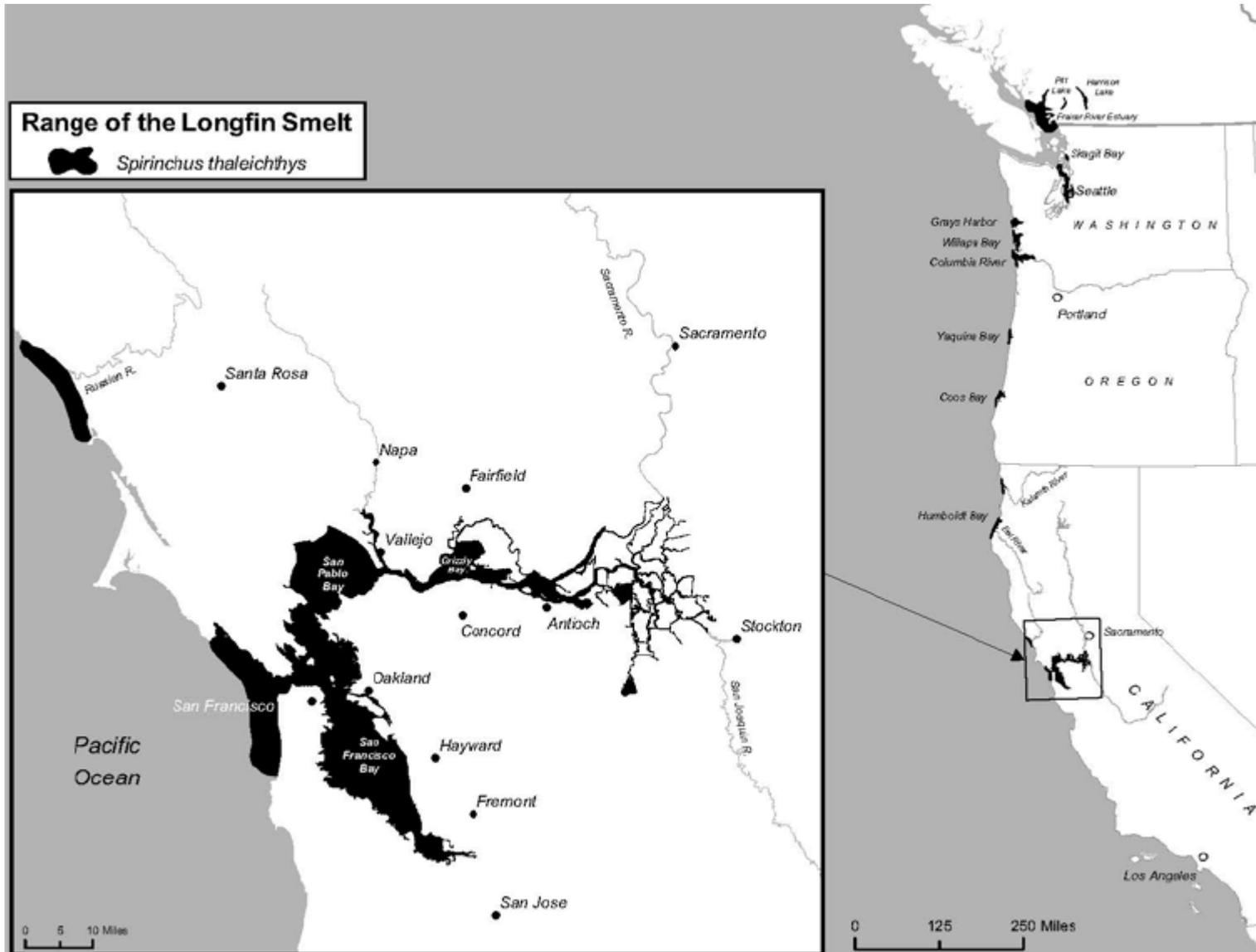
# Endangered Species Protection Approach

Longfin Smelt  
*Spirinchus thaleichthys*



- Declared Threatened 6/2009
- Found everywhere in the S.F. Bay – year-round
- CDFW concerned with entrainment in suction (hydraulic) dredging
- Bucket Dredging OK

# Endangered Species Protection Approach



# Endangered Species Protection Approach

Longfin Smelt  
*Spirinchus thaleichthys*

- Short lifespan
- 124 mm to 140 mm in length
- Adults migrate into low salinity areas to spawn
- Newly hatched larvae are 5 mm to 8 mm long
- Migrate up and down in the water column following prey at night
- Rarely found in  $>22^{\circ}\text{C}$
- 3/16 inch or smaller opening

# Endangered Species Protection Approach

- Distilling complicated issues into a clear and concise document directly correlated to the project activities and schedule
- Scheduling dredging to avoid impacts based on biology and behavioral traits
- For hydraulic dredging:
  - Minimizing in-water dredge size to control hydraulic draw
  - Minimizing and selectively locating priming to avoid entrainment
- Utilizing mechanical dredging instead of hydraulic dredging
- Deploying variable exclusionary fencing/boundaries depending on location and season

# Endangered Species Protection Considerations

*More Restrictive*

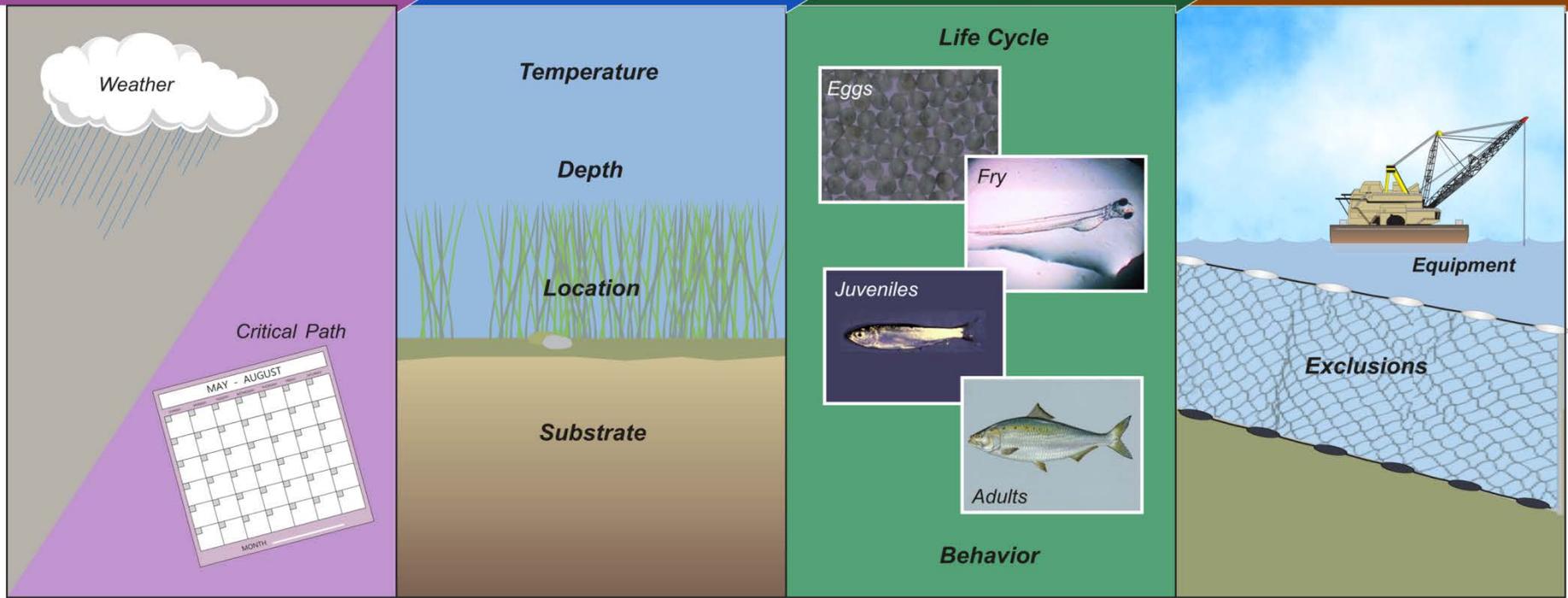
*Less Restrictive in Combination*

**Schedule**

**Habitat**

**Biology**

**Mechanical**



# Results

- Expanded allowable work period
- Streamlined regulatory process
- Attainment of full dredging goals
- Avoidance of impacts to listed species

An integrated approach maximized operational and schedule flexibility while also maximizing ecological resource protection.



# Conclusions

- Understand the Client's Drivers (opportunities and constraints)
- Start with Simple Solutions (e.g., avoidance of impacts)
- Understand the Regulatory Thresholds
- Understand the Project Component Details
- Combine Project and Resource Protection Elements to Maximize Success

- **Look ahead...**

LONG TERM MANAGEMENT STRATEGY

DRAFT April 7, 2014 DRAFT

**LTMS Update**

**Programmatic ESA Consultation with NOAA:  
Proposed Windows Modifications and Additional Measures  
for Salmonids and Green Sturgeon**

Questions?



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