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Grays Harbor Navigation Project O&M Biological Studies

Public Information Meeting

Aberdeen, Washington

August 17, 2004

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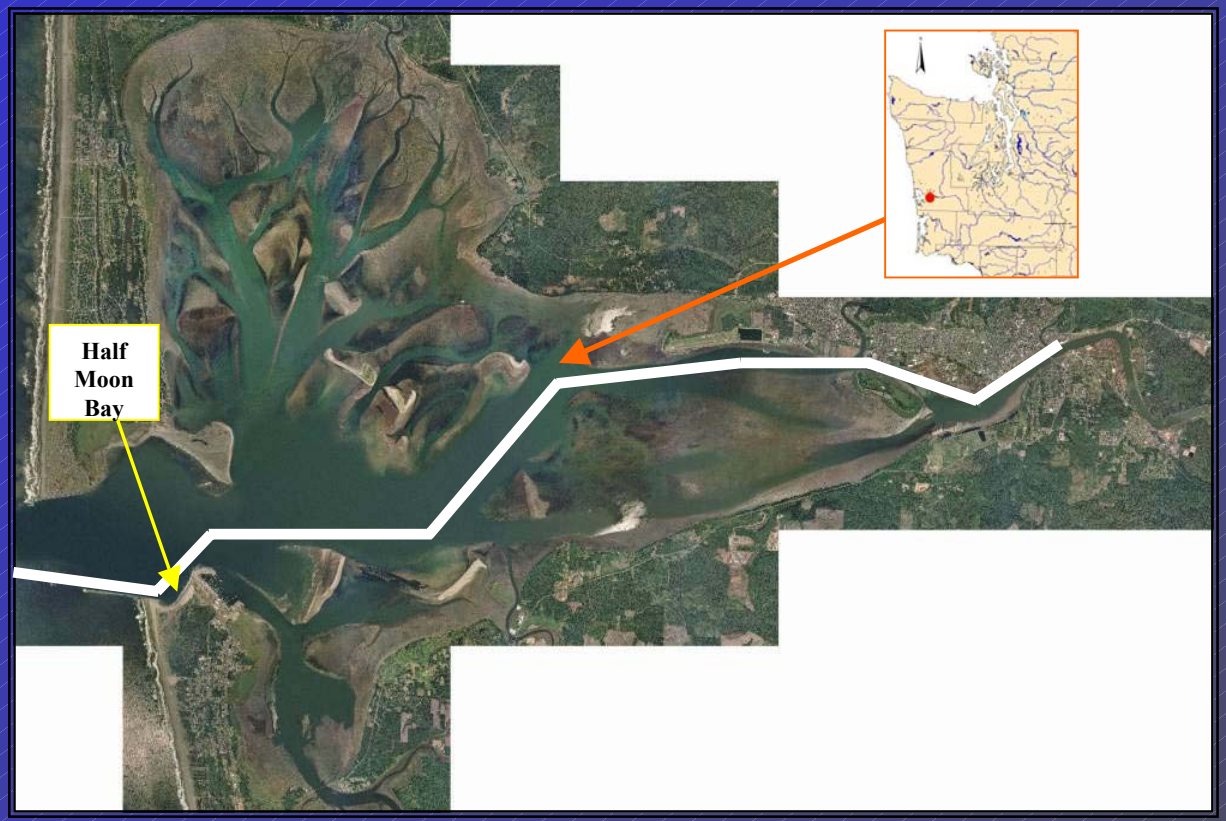
Background



- Recent events at Half Moon Bay (HMB) have led to the necessity of collecting additional biological information to be used in development of a collaborative long-term management strategy, including NEPA documentation.

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Biological Studies

- 1. Benthic Invertebrate Baseline (*January 2004*)
- 2. Benthic Invertebrate Follow-up (*July 2004*)
- 3. Juvenile Chinook Salmon and Forage Fish (*Summer 2004*)
- 4. Juvenile Chum Salmon and Char (*Winter 2005*)
- 5. Shorebirds (*Summer 2004-Spring 2005*)
- 6. Sandlance Egg Presence (*Fall 2004-Spring 2005*)

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1. Benthic Invertebrate Baseline Study (January, 2004)

- Samples obtained from Half Moon Bay and South Beach prior to Feb sand placement
- Used sieves of 1.0 mm, 0.5 mm, and 0.25 mm mesh sizes
- Sampled @ 4 intertidal elevations and 3 subtidal elevations
- Final report: June, 2004

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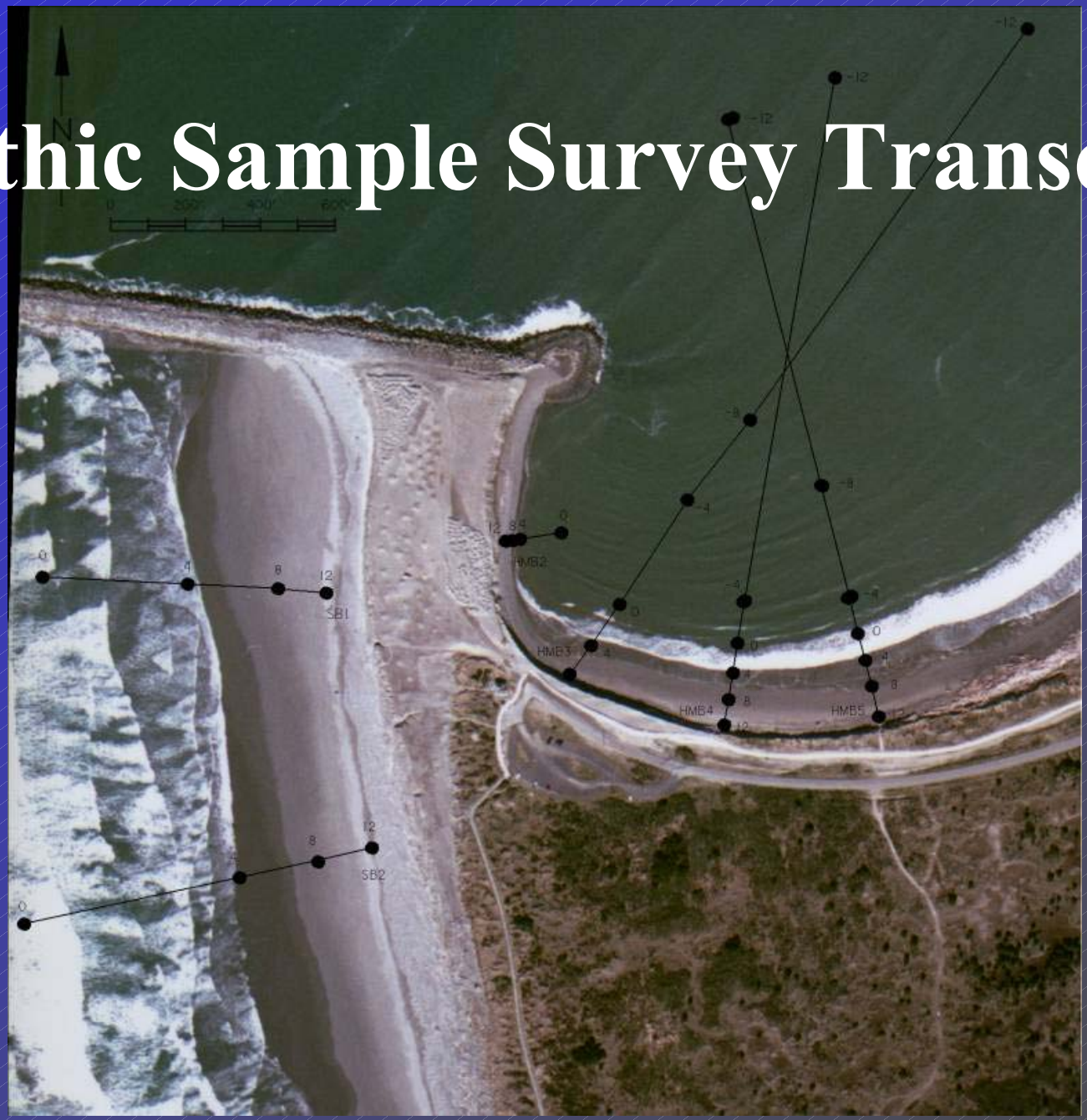
Benthic Sample Survey Transects



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Benthic Invertebrate Results

- Juvenile benthos most abundant in 0.25 mm size class. Few adults were found, primarily in 1.0 mm and 0.5 mm size classes.
- Highest abundance, biomass and number of species were at subtidal stations, dominated by polychaetes (marine worms)
- Transects in inner HMB (protected by the jetty) highest in abundance
- Ribbon worm (*Nemertea* indet.) was most abundant organism observed.

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Phylum Nemertea - Ribbon worm

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Winter Benthic Study Conclusions

- Winter benthos more suited as food for shorebirds and bottom fish, not salmonids
- HMB benthic productivity is likely “good” but summer data needed for better assessment
- Summer survey will yield higher numbers
- More salmon food organisms expected
- Comparisons with fish stomach data will determine importance of HMB as salmon feeding area

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2. Benthic Invertebrate Follow-up Study (July, 2004)

- Identical sampling scheme as in February 2004
- Added analyses of fish stomach contents collected by beach seine in July
- Comparison of stomach contents with benthos will help evaluate importance of HMB as fish feeding habitat.
- Data will be compared with January data to assess the production potential of Half Moon Bay
- Draft Report: Due in September 2004.

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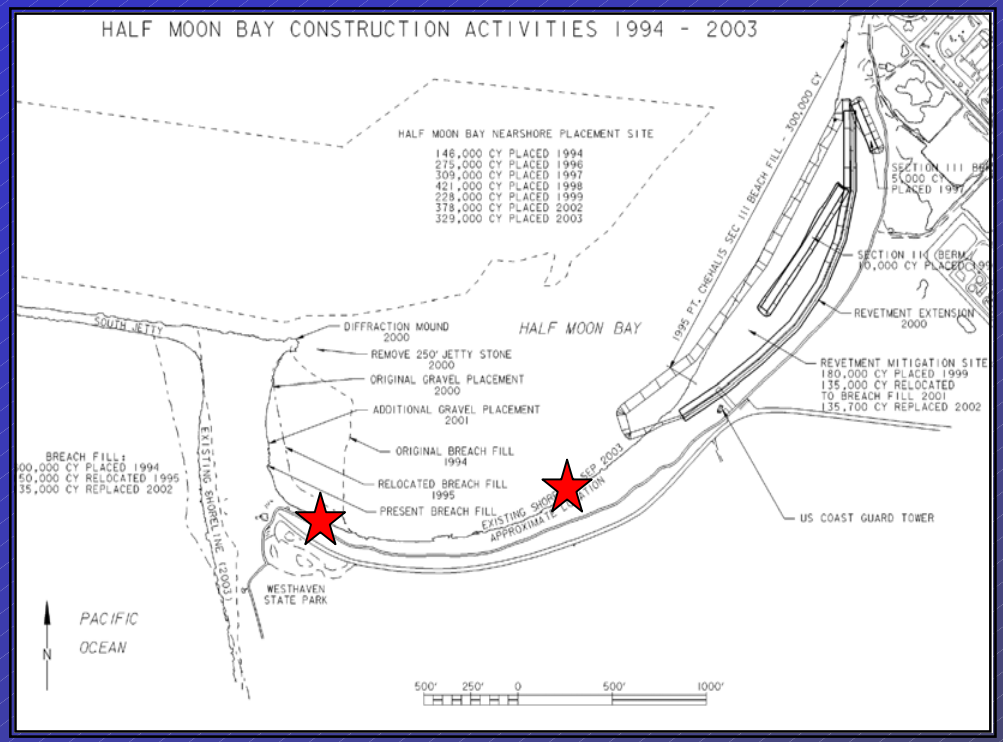
3. Juvenile Chinook Salmon and Forage Fish Study (Summer 2004)



- Weekly beach seining June 15 - August 30, at both low and high tides
- Report due: September 2004

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Preliminary Beach Seine Data (Total catch)

Table 1. Total number of fish captured at two beach seine survey sites located within Half Moon Bay, Grays Harbor, Washington

	21-Jun-04		29-Jun-04		8-Jul-04		15-Jul-04		22-Jul-04		
	East	West	East	West	East	West	East	West	East	West	Total
American shad	0	0	0	4	64	1	17,083	0	0	190	17,342
Bay pipefish	0	0	0	0	0	0	0	1	0	0	1
Chinook salmon	73	49	83	470	23	102	419	107	154	128	1,608
Cutthroat trout	0	0	0	0	0	1	0	0	0	0	1
Dungeness crab	10	211	3	208	0	518	1	20	11	59	1,041
Greenling spp.	1	10	0	1	0	0	0	0	0	4	16
Gunnel / Prickleback spp.	0	2	0	2	1	9	0	1	0	95	110
Northern anchovy	0	0	0	4	480	16	24,201	1	0	191	24,893
Pacific herring	0	1	1	4	0	1	0	0	0	3	10
Pacific tomcod	0	0	0	1	0	0	0	0	0	0	1
Perch spp.	422	77	808	640	305	525	364	869	815	488	5,313
Rainbow trout	0	0	0	1	0	0	0	0	0	0	1
Red rock crab	2	1	0	1	0	2	0	0	0	9	15
Rockfish spp.	0	24	3	12	0	0	0	0	0	70	109
Pacific sand lance	0	0	0	17	0	0	69	12	5	0	103
Sculpin spp.	12	56	1	50	4	131	4	15	8	36	317
Surf smelt	52	463	374	1,154	1,000	176	4,815	1,712	506	604	10,856
Sole spp.	13	101	0	13	0	34	0	1	8	40	210
Starry flounder	1	6	2	4	0	2	0	0	0	0	15
Threespine stickleback	2	2	1	6	1	0	0	0	7	0	19

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4. Juvenile Chum Salmon and Char Study (Winter 2005)

- **Objective:** To determine presence/ abundance of juv. salmonids and fish in HMB.
  - Same sampling scheme as for summer sampling
  - Abundance data will be compared with April-June 1999 HMB data and 2001-2004 Lower Chehalis Char data.
  - Report due: April 2005

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5. Shorebirds Study (Summer 2004-Spring, 2005)

- **Objective:** Document shorebird usage and habitat in the HMB vicinity.
  - Literature review (August 2004)
  - Conduct field studies of shorebird species utilizing project vicinity and adjacent-like habitats (Fall '04 - Spring '05)

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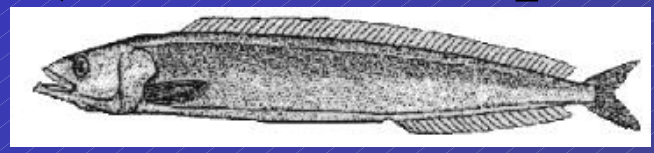
6. **Sand lance** (*Ammodytes hexapterus*) Egg Study (Fall 2004-Spring 2005)



- **Objective:** Document presence, if any, of sand lance eggs along HMB shoreline.
  - Sand lance known to deposit eggs in Grays Harbor soft sandy beaches, e.g. Westport area and between Johns River and O'Leary Creek.
  - Sampling has never been done in HMB vicinity.
  - Sampling will occur at intervals from mid-October to the end of March.
  - Sand samples will be taken to a qualified laboratory and eggs, if found, will be incubated for positive identification.

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Grays Harbor Long Term Management Strategy (LTMS)

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LTMS Project Purpose

Purpose of the study is to assess the threat of a breach to the Navigation Project

and

to evaluate and recommend the most appropriate long-term strategy to maintain and project the Navigation Project Features

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LTMS Study Milestones

- Existing Conditions Report & Independent Technical Review (ITR)
  - Spring 05
- Alternatives Development & Evaluation
  - Summer 05
- Draft Recommendations & (ITR)
  - Summer 05
- Final Report & NEPA Documentation
  - Spring 06

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Long Term Management Strategy Engineering

- Engineering Research & Design Center work on Impacts of a Breach (existing conditions)

- Independent Technical Review of ERDC work

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LTMS Planning Framework

- Development & Evaluation of Alternatives
  - Based on Corps regulations & guidance
  - Risk Based Approach (Based on likelihood of impacts to Navigation Project). Intent to Develop range of alternatives
  - Stakeholder Input
  - Engineering, Environmental & Economic Criteria

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Grays Harbor LTMS

- Develop Draft Recommendations for the Long Term Management of the Grays Harbor Navigation Project
- Independent Technical Review
- Final Report & NEPA Documentation

Questions?