

A Rising Tide: Conserving Shorebirds and Shorebird Habitat within the Columbia River Estuary

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Programs, Portland, Oregon**

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Outline of Talk

- STATUS
- SIGNIFICANCE
- CLIMATE CHANGE
- RESTORATION OPPORTUNITIES
- CURRENT SURVEYS
- RECAP NEEDS



What are shorebirds?



Painting by James Coe

- 57 North American species of:
 - Sandpipers
 - Plovers
 - Oystercatchers
 - Avocets
 - Stilts

Western Sandpiper



Sanderling



Black-bellied Plover



Black Oystercatcher

Dunlin



Whimbrel



Red Knot

Least Sandpiper



Semi-palmated Plover



Short-billed Dowitcher



Marbled Godwit



Ruddy Turnstone

First Challenge

Shorebirds are among the most migratory animals on the planet



The Second Challenge

Many concentrate in very high densities at key stopover sites (such as the CRE) while on migration



The Third Challenge “Declines”

- 28 of North America’s 57 shorebirds had populations classified as **highly imperiled** or **of high concern**.
- **48%** of shorebirds in the world are **in decline**, and only **16%** **increasing**.
- Maritimes Shorebird Survey & ISS data show **9 sp declining** in e NA & **none increasing**
- **33%** of pacific flyway shorebirds species have unknown population trends



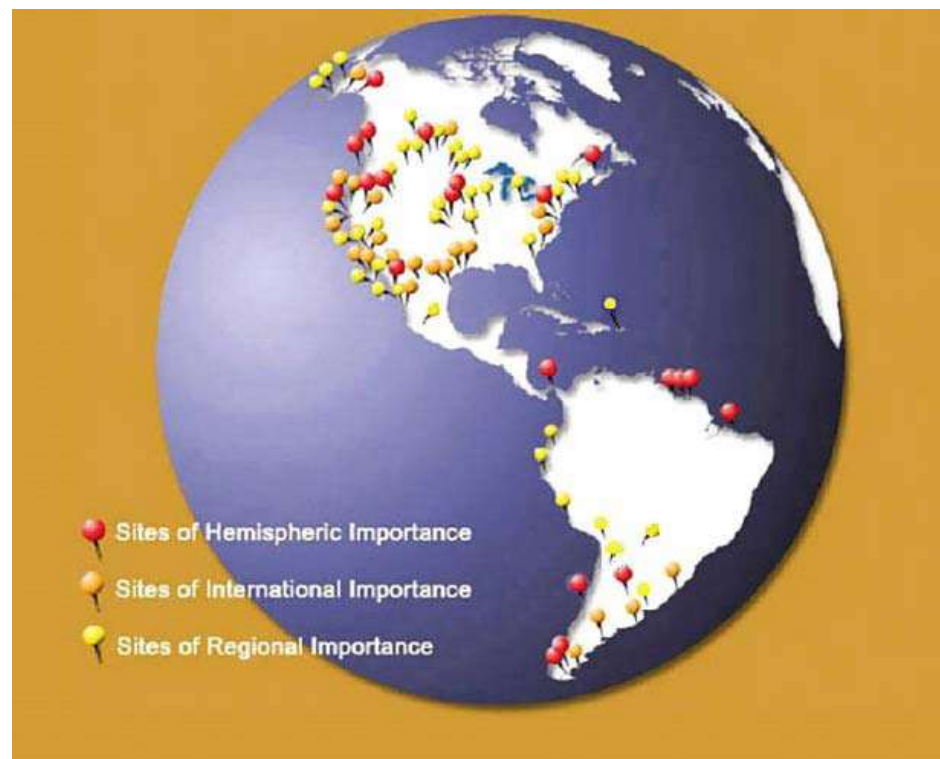
Significance of the Columbia River Estuary for shorebirds



Western Hemisphere Shorebird Reserve Network

Columbia River Estuary
Designated in 2008
Site of Regional Importance:

≥ 20,000 shorebirds
annually, or



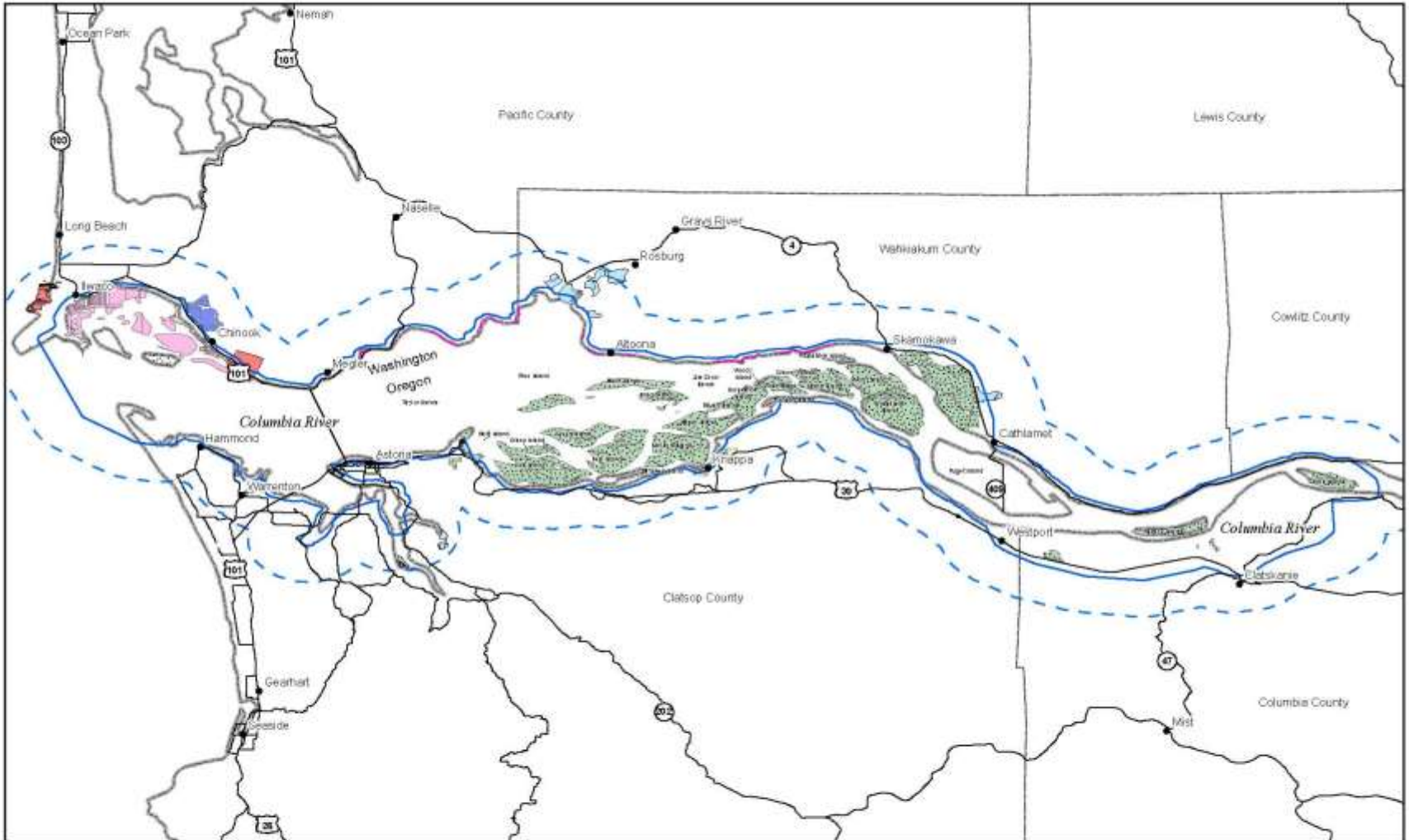
Western Hemisphere Shorebird Reserve Network

“Voluntary Program – Non Regulatory”

CRE landowners committed to:

- ❖ Make shorebirds a conservation priority
- ❖ Protect & manage habitat for shorebirds
- ❖ Keep WHSRN apprised of any changes in site status

Participant Ownership & Other Designations



Legend:

Ownership

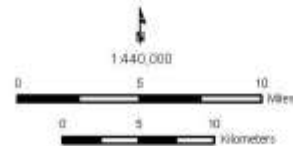
- USFWS
- Wa. Dept. Fish & Wildlife
- Wa. Parks & Rec.
- The Nature Conservancy
- Hancock
- Wa. Dept. of Natural Resources (in negotiation)
- Columbia Land Trust
- I.B.A.
- NAWMP area of continental significance

Boundaries

- Study Area
- State Boundary
- County Boundaries
- Major Roads & Highways

Landmarks

- River Miles
- City/Towns



Project Coordinator: Sue Thomas, 503-231-6184
 Map produced by the Refuge Information Branch
 Kendra_maty@fws.gov, GIS Specialist
 Portland, Oregon
 Map current to: 02/18/2009
 Basemap (Date): N/A
 Meridian: Willamette
 File: 09-147-5.mxd

Shallow Coastal Flooding Areas with the Columbia River Estuary



Note: SLR predictions from NOAA SLR Mapper

Sea Level Rise

Adaptation

- Protecting shorebird habitat requires adaptation
- Measures to reduce vulnerability to impacts of a changing climate.
 - Will we abandon vulnerable areas to rising sea?
 - Enhance existing flood protection infrastructure?
 - Enhance flood protection afforded by enhancing natural ecosystems?



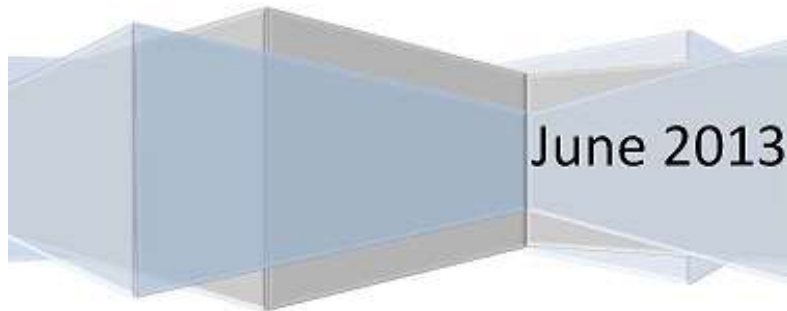
Sea Level Rise

Point Blue Conservation Science and the California Coastal Conservancy

Scenario planning for climate change adaptation

A guidance for resource managers

Sara S. Moore, Nathaniel E. Seavy, and Matt Gerhart



What can we do now?

- Document shorebird use
- look at possibilities for creating new areas for foraging (mudflat) = Restoration

Planners Need Tools

- Need a way to visualize how potential changes will impact entire ecosystems.

Restoration – Mudflat and Shallow Water Management

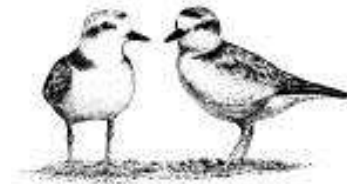




Miller Sands Island in the CRE is important habitat protected by dredge material placement

Management of Migrating Shorebirds

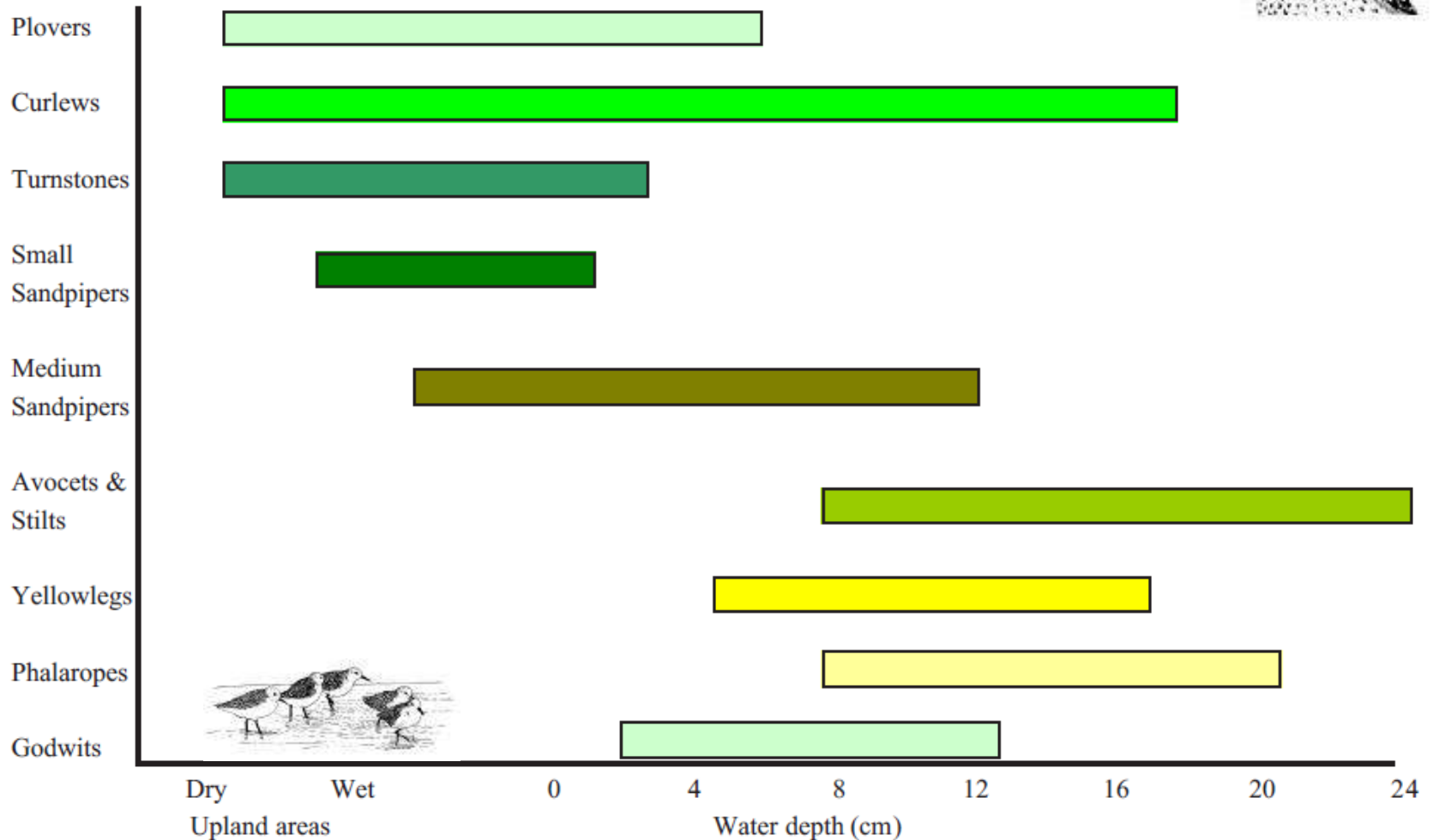
- During migration shorebirds need a specific combination of habitat elements that include:
- A wetland in partial drawdown,
- Invertebrate abundance of at least 100 individuals per square meter,
- A combination of mudflat and shallow water (3-5
- cm), and
- Very little vegetation.



Shorebird Foraging Depths



Typical foraging depths of various shorebirds (from Helmers 1992).



Using dredge material for shorebird habitat - Case Study

Sonoma Baylands Tidal Marsh Project – SF Bay

- The Sonoma Baylands project recreated tidal wetlands using 2.0 million cubic m of dredged material (336 ha)
- Created for clapper rail, salt marsh harvest mouse and migratory shorebirds.
- Good compromise for reusing dredged material and providing shorebird habitat
- productive partnership between the California State Coastal Conservancy and the U.S. Army Corps of Engineers.



Other Projects and Publications



Sandpipers enjoy eating insects in the dredged material that make up the Sonoma Baylands wetland project. Chronicle Photo by Brant Ward

PROJECTS

- **SF Bay Hamilton Wetland Restoration Project** – USACE and State Coastal Conservancy - 998 acre project (waterfowl fish and shorebirds)
- **SF Bay Cullinan Ranch North Bay Area** – Partnership USFWS San Pablo Bay Refuge Ducks Unlimited proposed action to restore tidal marsh.
- **Florida** - In partnership with State of Maryland, the USACE used dredge material to create 180 acres for wetlands and mudflats for shorebird habitat (USACE Jacksonville Harbor, FL)

PUBLICATIONS

- Benthic Community Response to Use of Dredged Sediment Augmentation of Mudflats and Marshes in San Francisco Bay
- Can we recreate or restore Intertidal habitat for shorebirds? Atkinson, P.W. 2003
- Piping Plover Habitat Selection and Nest Success on Natural, Managed and Engineered Sandbars. Catlin, H, Daniel et al. Journal of Wildlife Management 75(2):305–310; 2011; DOI: 10.1002/jwmg.46

May fit in with restoration goals for fish, streaked-horned lark and waterfowl





Pacific Flyway Shorebird Survey

Project Lead: Point Blue Conservation Science
Increasing capacity in Oregon and Washington

- Winter Survey
- Snapshot
- Coordinated Effort Volunteers
- November 15th - December 15





International Shorebird Survey

Migration Survey in Fall and/or Spring



If you are interested in becoming an ISS volunteer, contact Brad Winn at bwinn@manomet.org.

RECAPE OF NEEDS



Shorebird Gaps in the CRE

- Identify threats
- Identify key sites in CRE
- Map key site (make available)
- ID new sites for SLR (less impacted)
- Explore restoration opportunities with USACE and other partners
- Continue to execute winter and migration surveys to document use patterns

The Take Home

- **Shorebird declines warrant action**
- **Establish a working group to guide actions in the Pacific Flyway**
- **Funders = Implementation to preserve sites, restore and expand foraging and roosting habitat in estuary.**
- **Increase productivity of stopover habitat within the Pacific Flyway.**

Photo Credit: Dan Roby



THE END