



NWP, Site Selection Framework: Placement of Dredged Material for Estuary Habitat Restoration, Jarod Norton, Rod Moritz, James McMillan

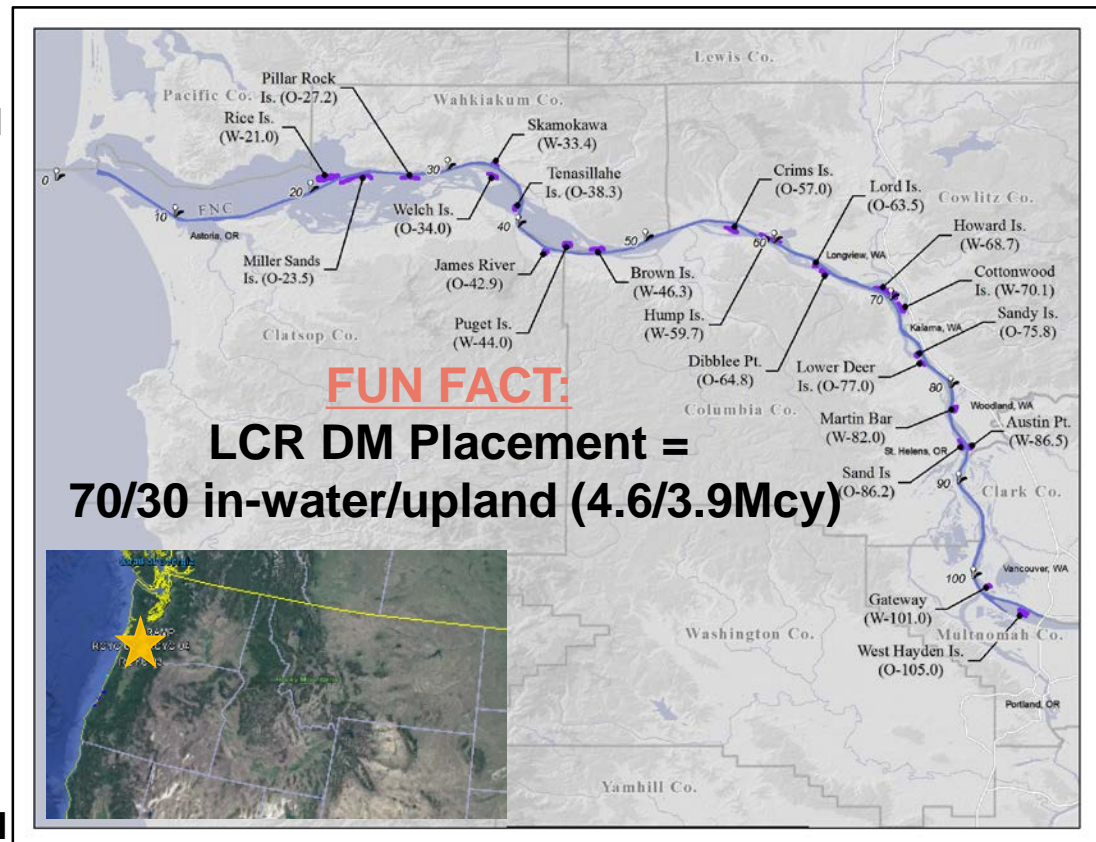
BLUF: BUDM emulates natural sediment transport dynamics and can be used to create floodplain habitat mosaics that benefit both native fish and wildlife species. This habitat creation supports NWP's navigation and ecosystem restoration missions in the Lower Columbia River (LCR).

Challenges/Objectives

- ~6.5Mcy/yr dredged from LCR FNC
- Traditionally used upland placement sites are filling-up or full
- Aquatic/terrestrial habitat creation in the LCR estuary needed
- Synching timing of dredging with restoration

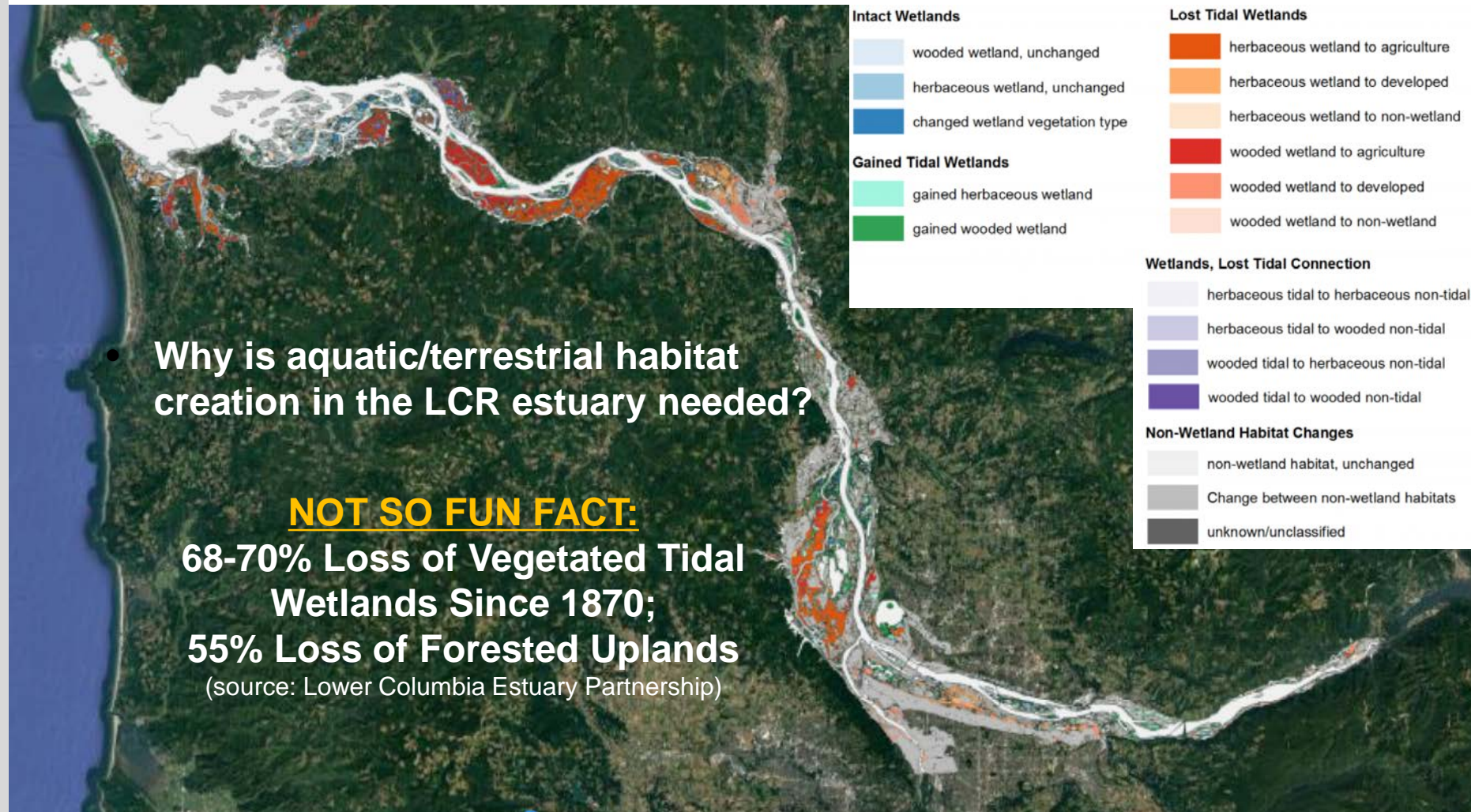
Approach

- Review existing literature & ID existing site selection factors
 - FCRPS BiOp dictates habitat projects (= salmon-centric)
 - Augment salmon habitat with habitat for other species
- Model runs to validate new framework criteria & align sites with availability of dredged material





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FY18 RSM IPR



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DOTS request to evaluate habitat creation options in the LCR
(Altman/Swannack/ Nifong)

**PARTNERS,
TOOLS, & TEAM**

Stakeholders/Partners

- Nicole Czarnomski, WDFW
- Allen Lebowitz, WA Dept of Natural Resources
- Brian Lynn, WA Dept of Ecology
- Bobbak Talebi, WA Dept of Ecology
- Tom Murtagh, ODFW
- Madeline Ishikawa, CREST

Leveraging/Collaborative Opportunities

- Col. R. Dredged Material Management Plan
- Col. & Lower Willamette RSM Plan
- Using existing framework for site selection developed under CAP 204 project
- Framework should be applicable to all groups, not just USACE

NWP PDT Members

- Jim Crain, Hydraulic Engineer
- Rod Moritz, Hydraulic Engineer
- Mike Turaski, Project Manager
- John Hayes, Geographer/GIS
- Kate Wells, Biologist
- Cindy Studebaker, Biologist
- Jarod Norton, RSM PM/Biologist
- James Holm; James McMillan, Sediment Quality



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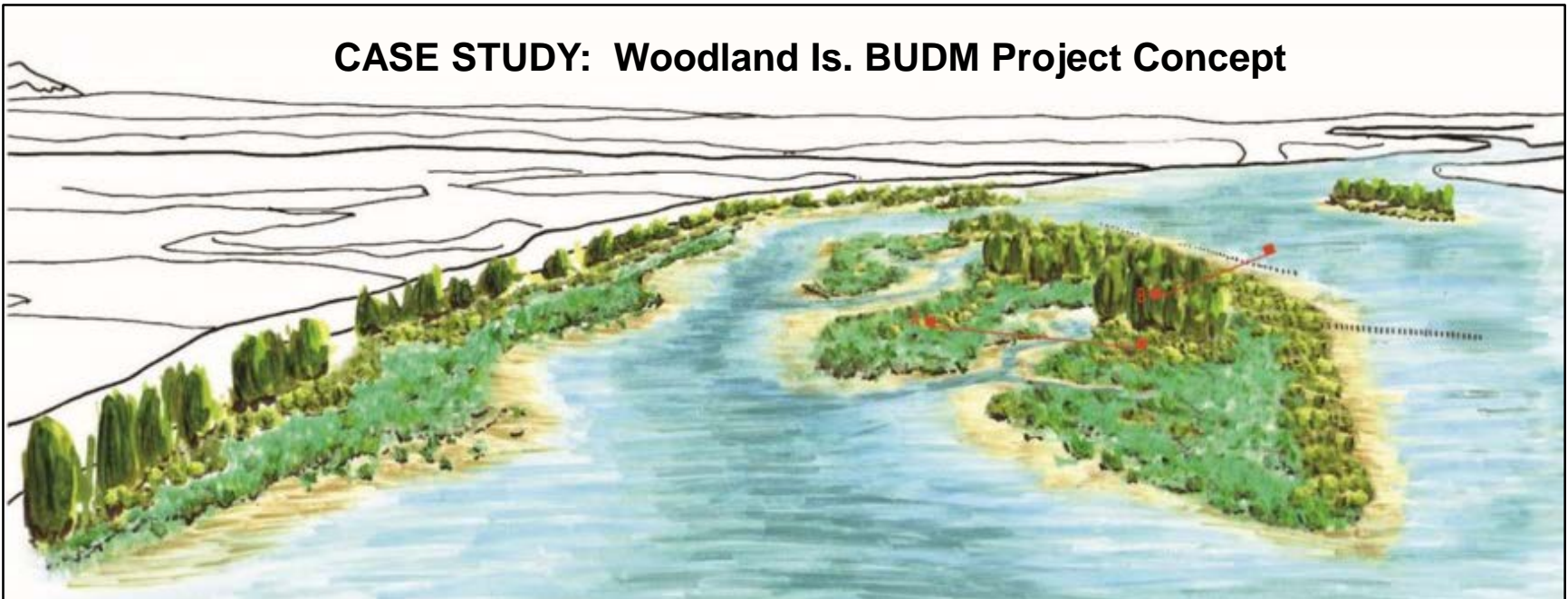
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Accomplishments/Deliverables/Lessons Learned

- **Collaboration with state resource agencies re: potential habitat creation sites/types not typically done in the LCR**
 - **Beneficial use for salmon AND Yellow Warbler habitat**
 - **AND Pacific lamprey ammocoete habitat creation**
 - **AND other species**



CASE STUDY: Woodland Is. BUDM Project Concept



Woodland Is. 15 APR 2016

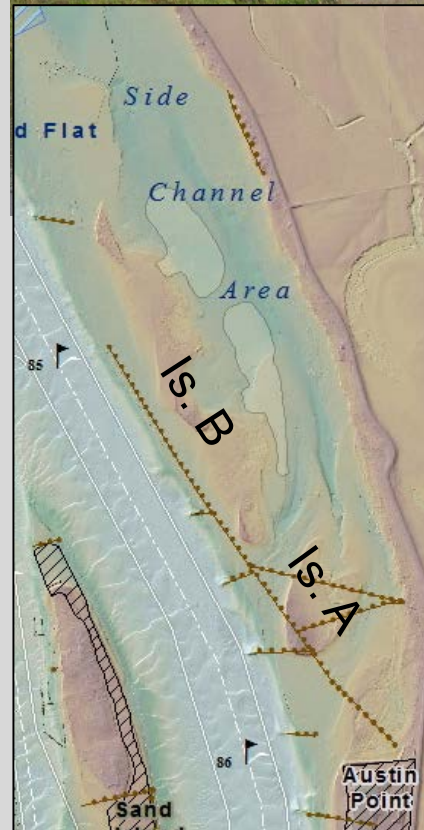
Large
Cottonwood
Core #4

View to North

Woodland Bay

Island A tidal slough

Core #3



Core #4 Near large cottonwood tree. Top 6 inches of core was brown loose river overwash sand. Below 6 inches, material is progressively more gray coarse sand (dredged material).

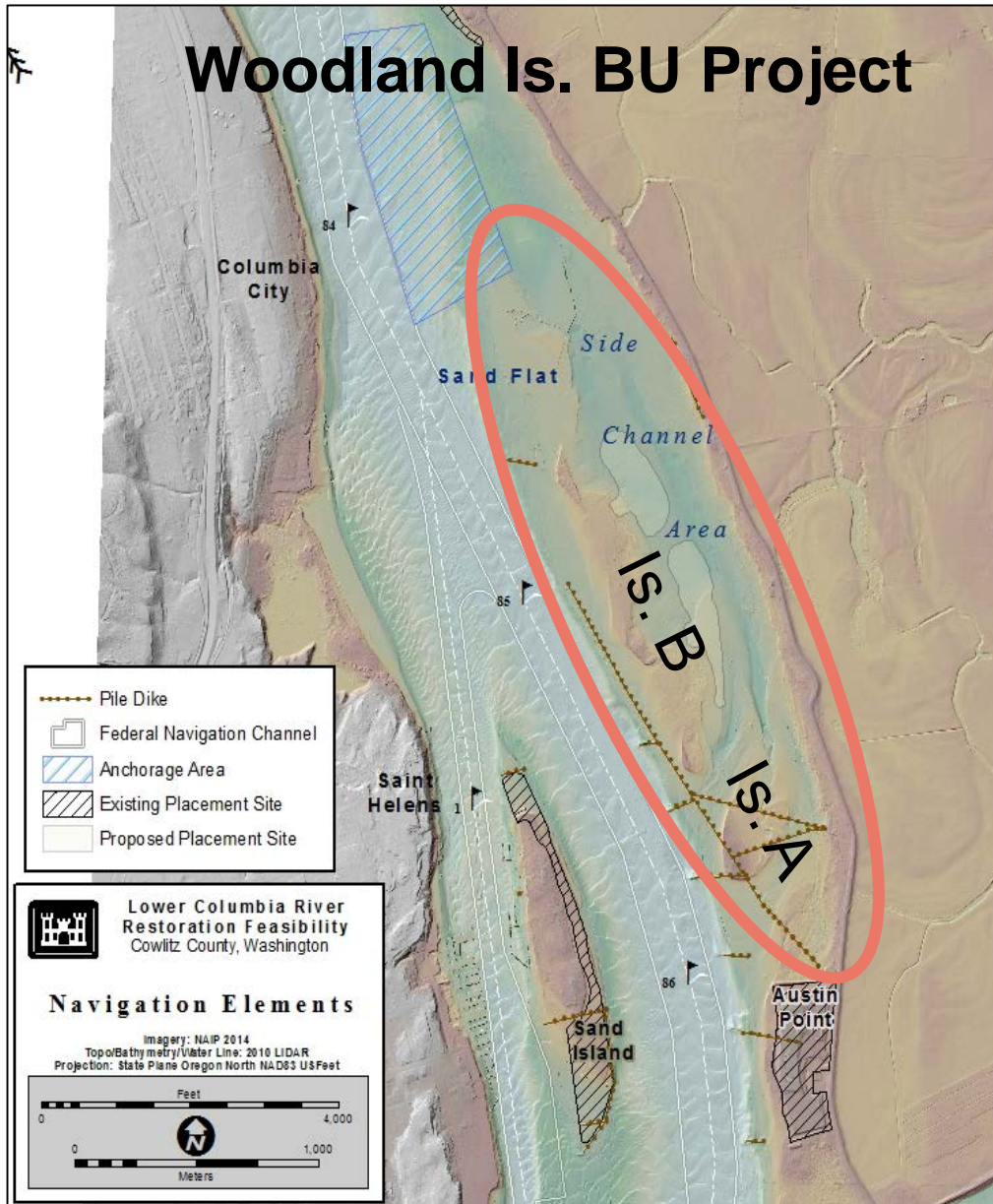
Core #3 Top 1 inch of core was mixed fines and sandy material (overwash). Below, material grades to progressively medium-coarse brown sand. At 24 inches below surface, material is gray coarse sand (dredged material).

Rising river stage (11 to 12 ft NAVD) produced inbound flow to island interior.

View to West



Woodland Is. BU Project



- 300Kcy of dredged material (~5% of LCR annual dredging)
- Woodland Island study area ~265 acres
- 75 acres affected by project
- 32 acres direct habitat creation
- Placed by Port of Portland's *Dredge Oregon* (cutterhead/suction)

Dredge Oregon

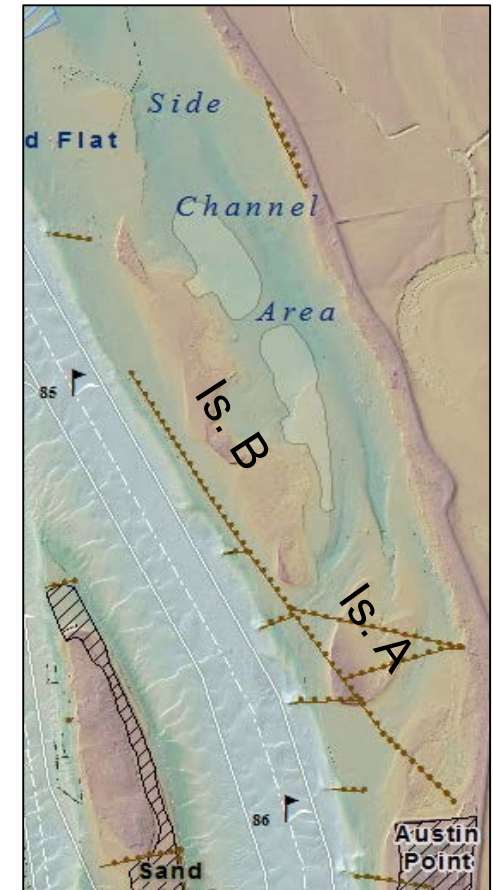




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What challenges did you face to get your project to implementation and how did you move past them? If not yet implemented, what is your path forward to construction? (Give us your lessons learned that you think might benefit other Districts)

- Building TRUST; changing the negative view of the Corps to a positive
- Communication – distinguishing our RSM efforts from others (CMP, CAP 204, Sec 1122)
- NWP challenged the regional focus on salmon-centric projects
 - Shifted from salmon Survival Benefit Units (SBU's) as a metric...
 - to a HOLISTIC approach for habitat creation – aquatic/terrestrial habitat mosaics
- FUTURE CHALLENGE: lining up MORE maintenance dredging with “shovel-ready” restoration projects that benefit salmon AND other species





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How is this project benefiting the USACE and Nation?
(efficiency, monetary, technical, relationship building, outreach, etc.)
(volume of sediment to be managed, acres created, etc.)

- ~6.5Mcy of material available for habitat creation annually (5% to Woodland)
- Stakeholder outreach to align habitat creation needs with plentiful, clean, sandy dredged material
 - BUILD stakeholder relationships and foster regional TRUST in USACE
 - SHOW stakeholders that dredged material is an AMAZING resource for habitat creation
- Shift focus from salmon-centric projects to projects with MULTI-SPECIES benefits by creating habitat mosaics that provide:
 - Salmon rearing and refugia areas
 - AND habitat for other species

