

**Figure 1. Proposed Bank Location**

Wapato Valley  
Mitigation and Conservation Bank

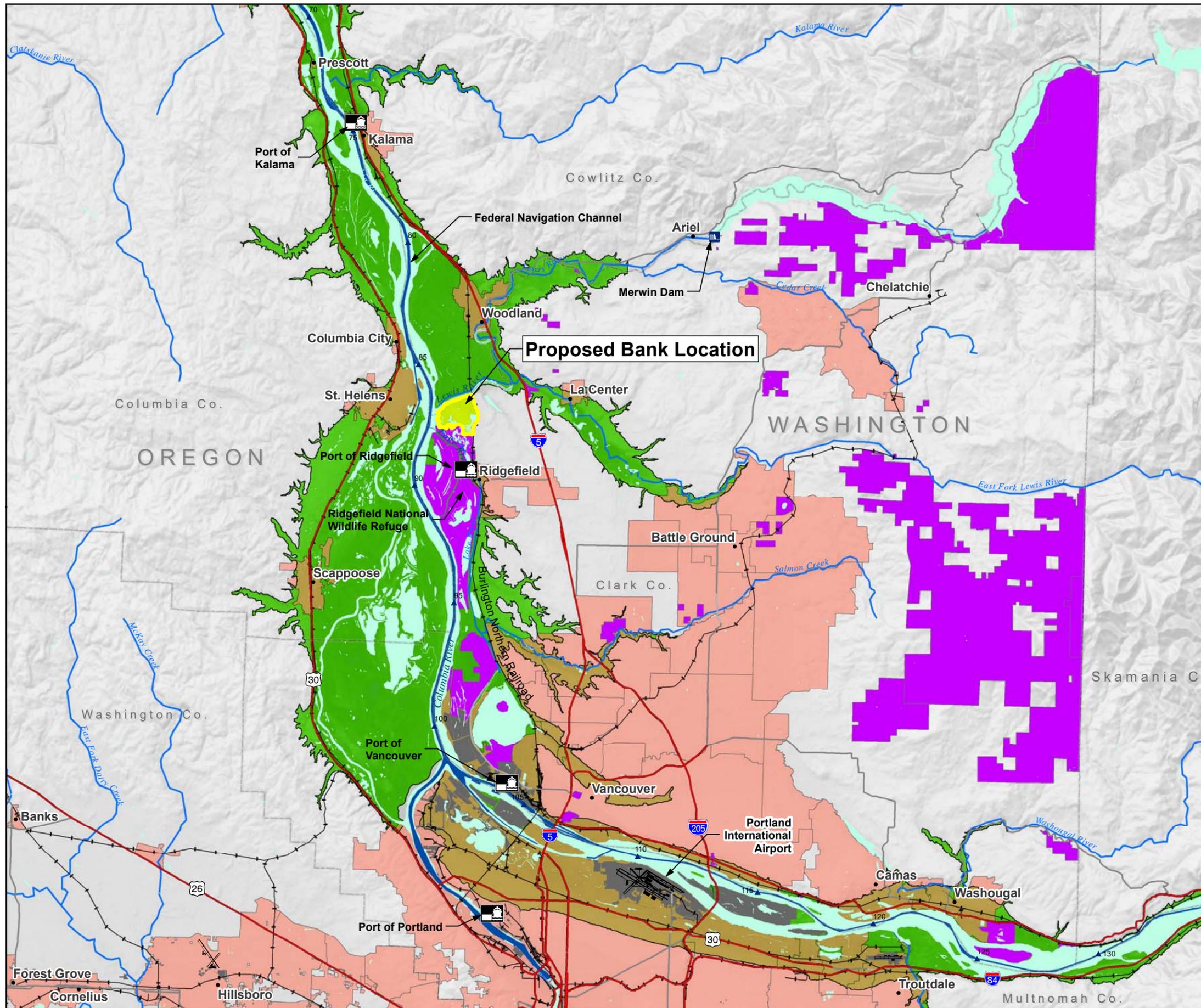


-  Proposed Bank Location
  -  Watershed Resource Inventory Area (WRIA)
  -  Hydrogeomorphic Reach (Mapped extent of tidal influence)
  -  River Mile Marker
- 0 10 20  
Miles
- 0 15 30  
Kilometers



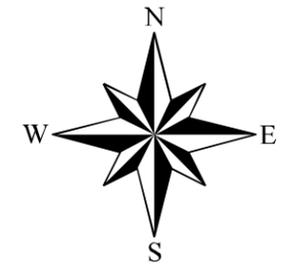
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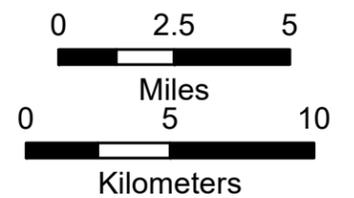


**Figure 2. Regional Land Use**

Wapato Valley  
Mitigation and Conservation Bank

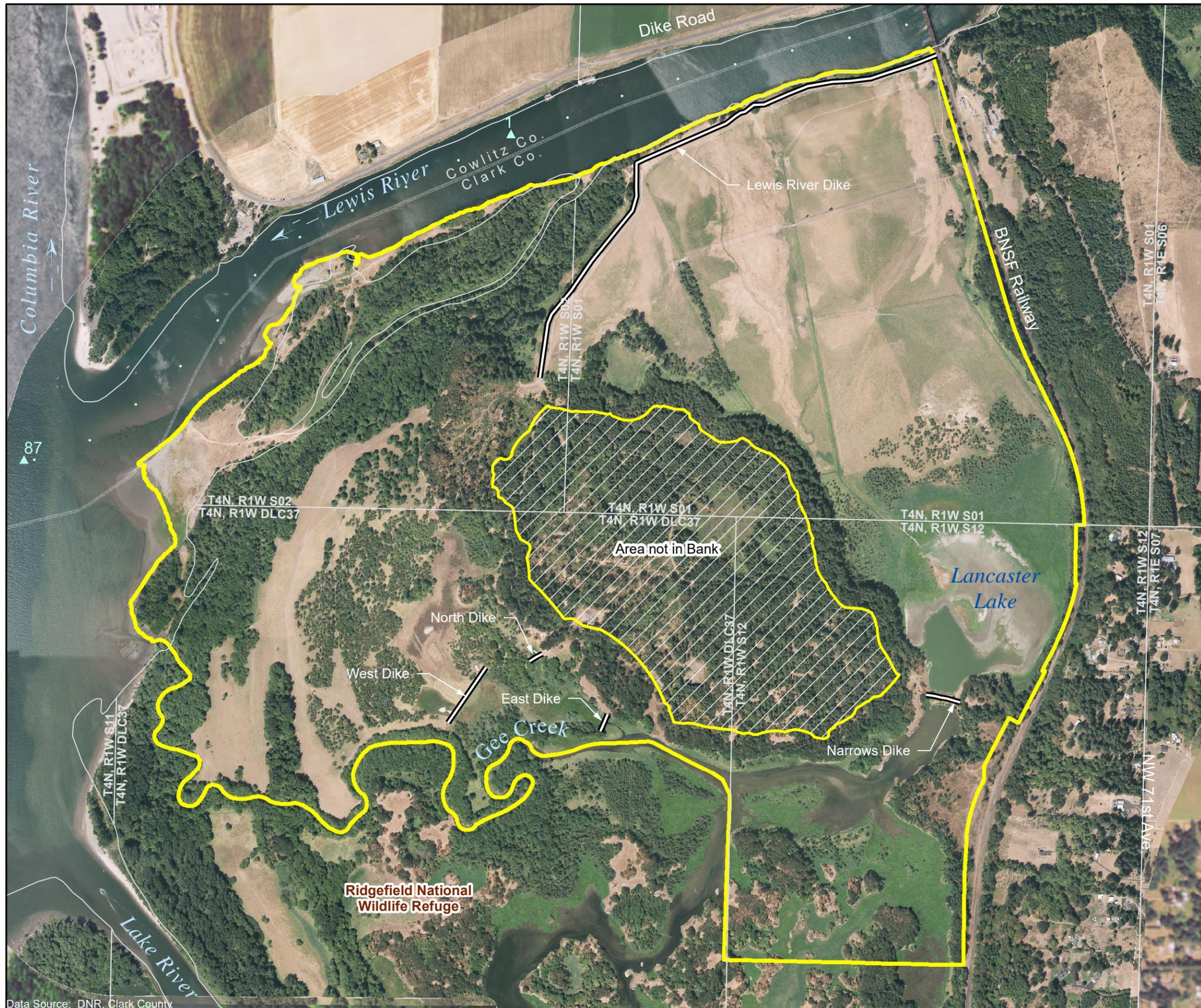


- Proposed Bank Location
- Port Properties
- Public Lands
- City Limits
- Municipal Floodplain Development
- Lower Columbia River Valley and Floodplain
- Federal Columbia River and Lower Willamette Navigation Channel
- River Mile Marker
- Highway / Freeway
- Railway



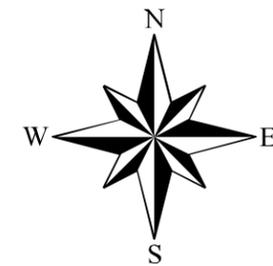
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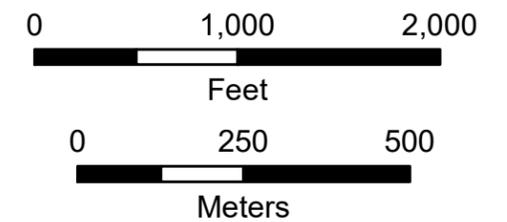


**Figure 3. Property Overview**

Wapato Valley  
Mitigation and Conservation Bank

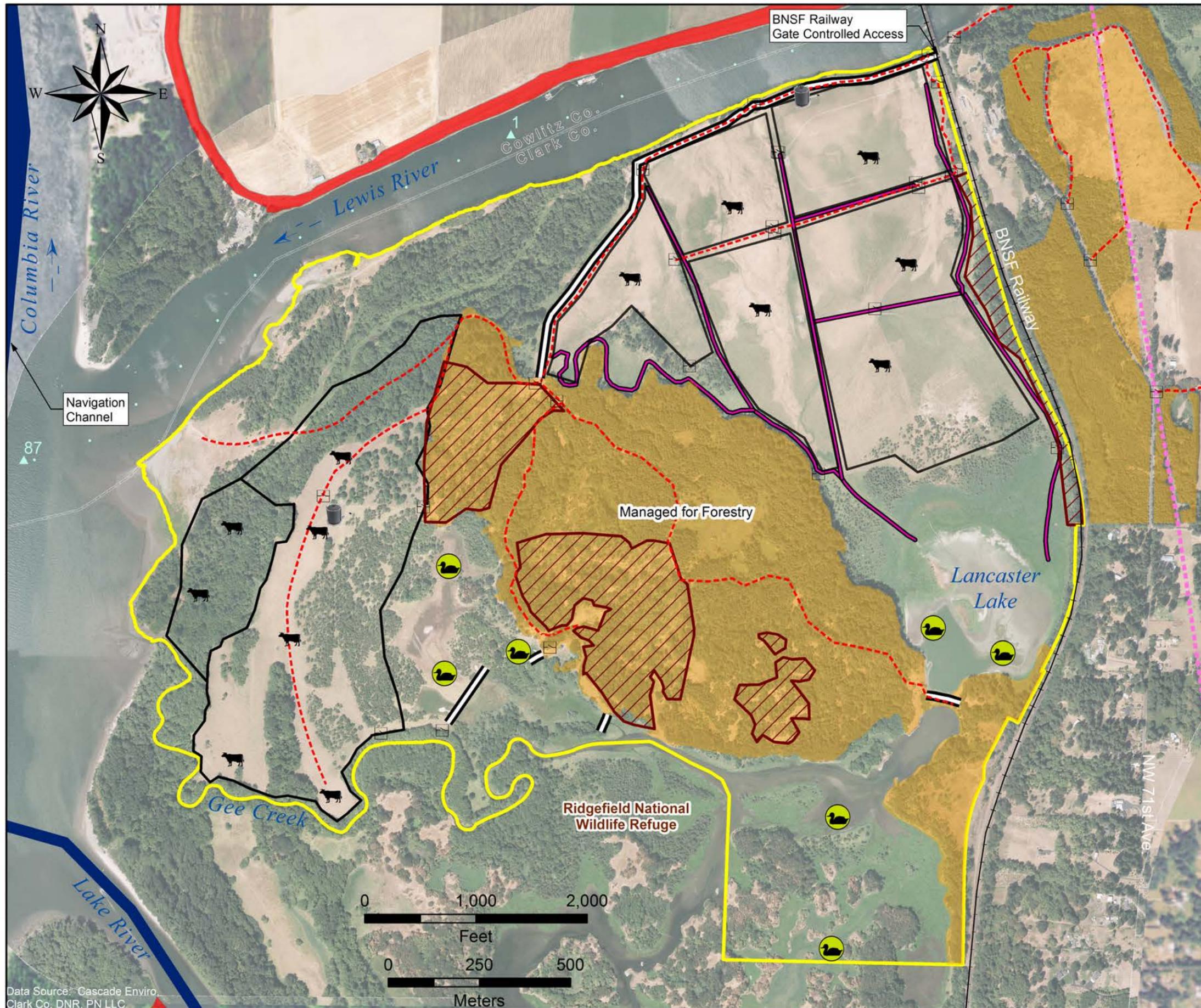


	Proposed Bank Location Approx. 876 Acres
	River Mile Marker
	Dike or Levee



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**Figure 4. Current Land Use and Management Actions**

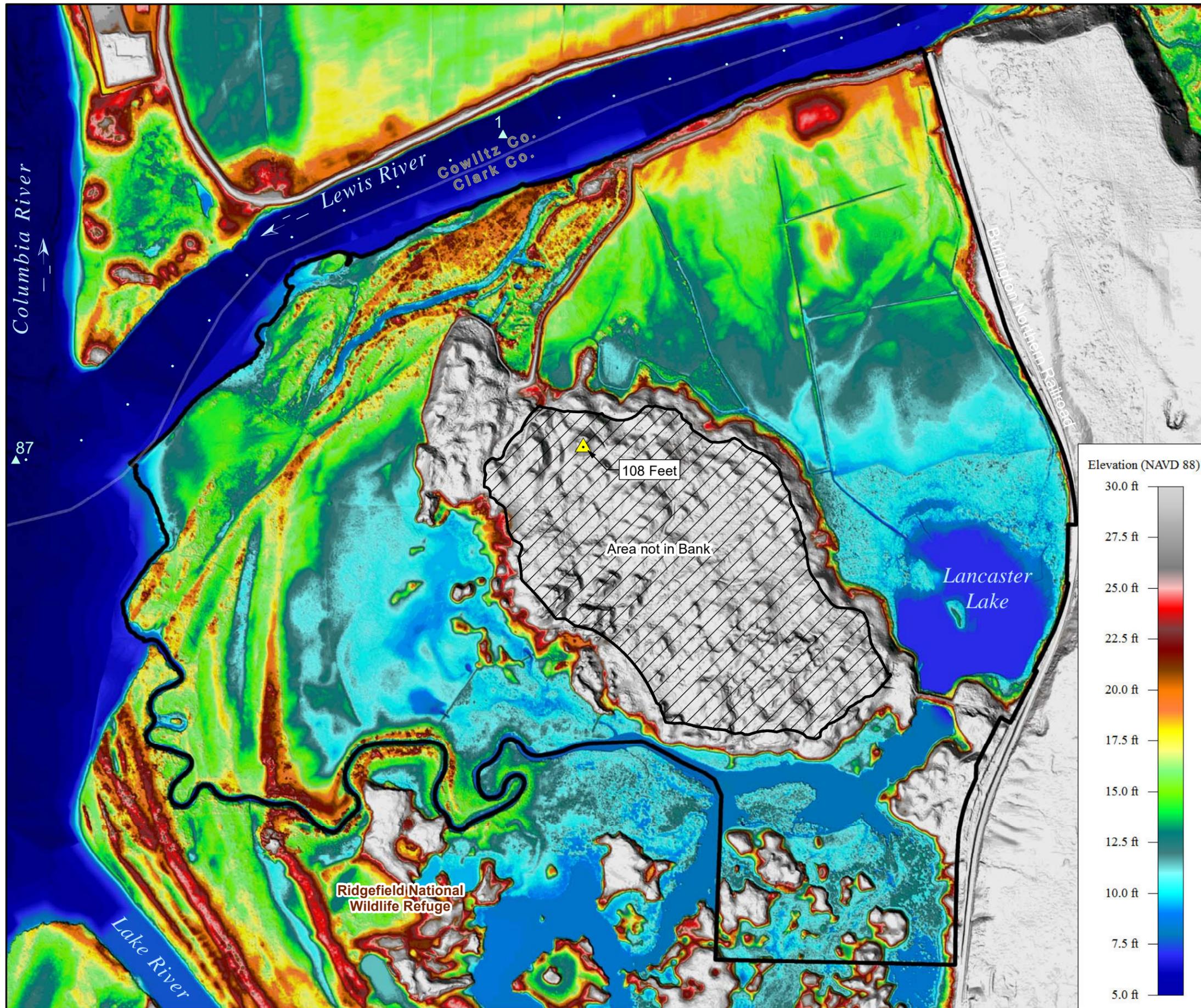
Wapato Valley  
Mitigation and Conservation Bank

- Proposed Bank Location (Approx. 876 Acres)
- River Mile Marker
- Duck Hunting
- Cattle Grazing
- Off-Channel Watering System
- NRCS Oregon White Oak Habitat Enhancements
- Active Pasture / Fenced
- Managed For Forestry
- Federal Navigation
- Cowlitz County - Woodland Consolidated Diking Improvement District No. 2
- Ditches
- Gates
- Access Roads
- Dike or Levee
- Olympic Pipeline
- BNSF Railway



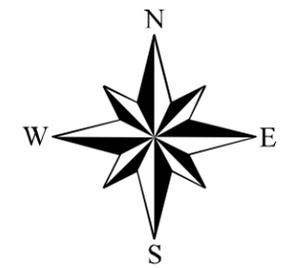
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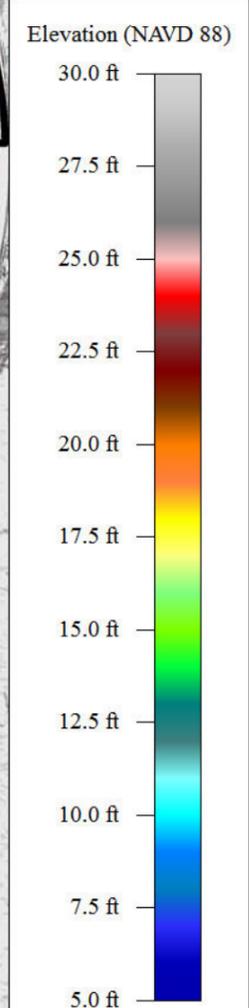
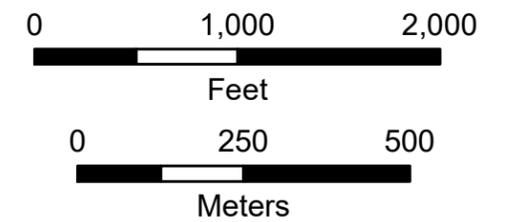


**Figure 5. Site Topography and Bathymetry**

Wapato Valley  
Mitigation and Conservation Bank



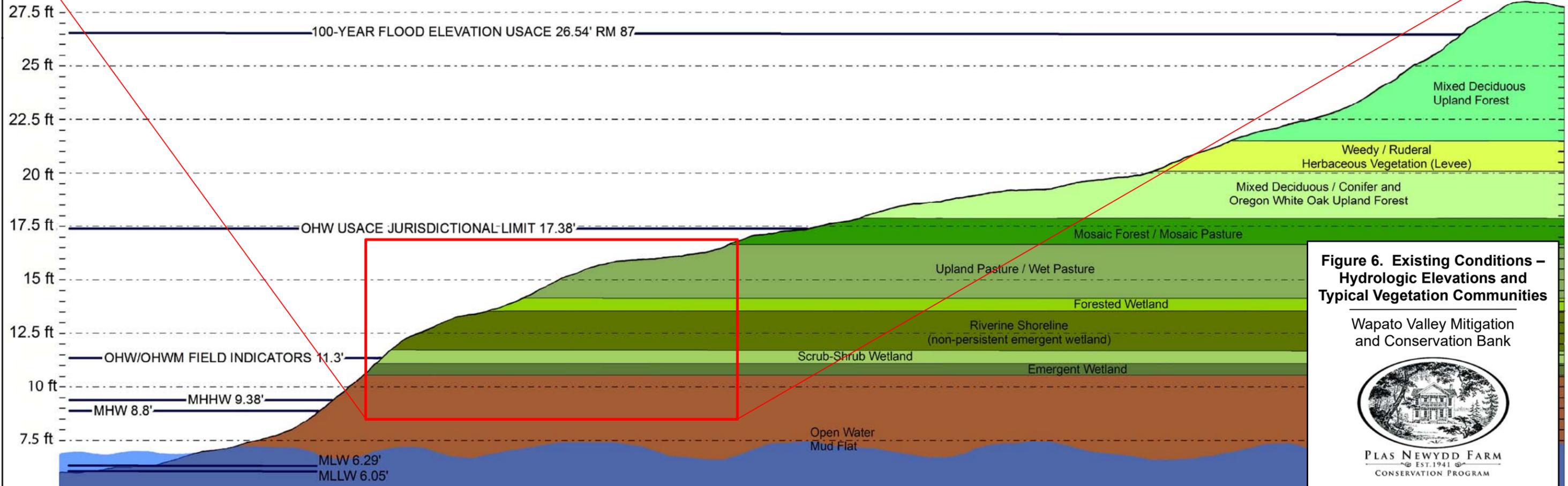
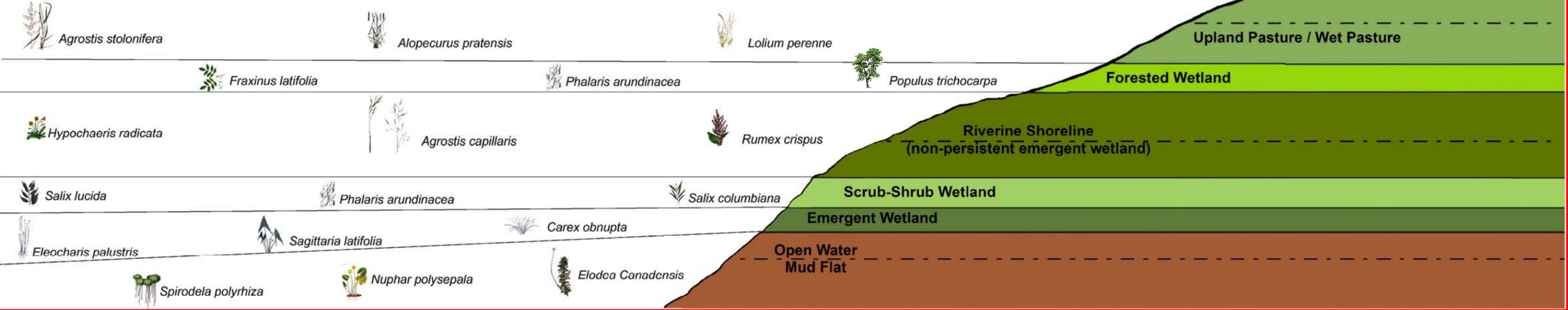
-  Site High Point
-  River Mile Marker
-  Proposed Bank Location  
Approx. 876 Acres



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**Vegetation Communities:** Typical vegetation communities based on elevation range distribution data from the wetland delineation, habitat surveys, and vegetation plots/elevation survey for design. These are representative species for illustration purposes only.



Hydrologic Elevations: Shown in NAVD 88.

**Figure 6. Existing Conditions – Hydrologic Elevations and Typical Vegetation Communities**

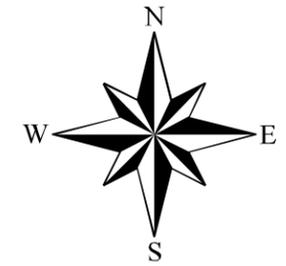
Wapato Valley Mitigation and Conservation Bank



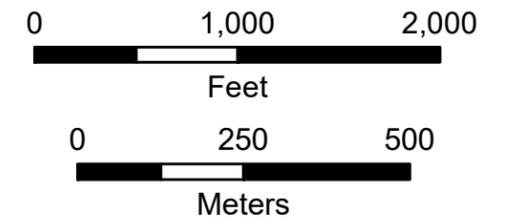
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**Figure 7. Zoning**  
 Wapato Valley  
 Mitigation and Conservation Bank

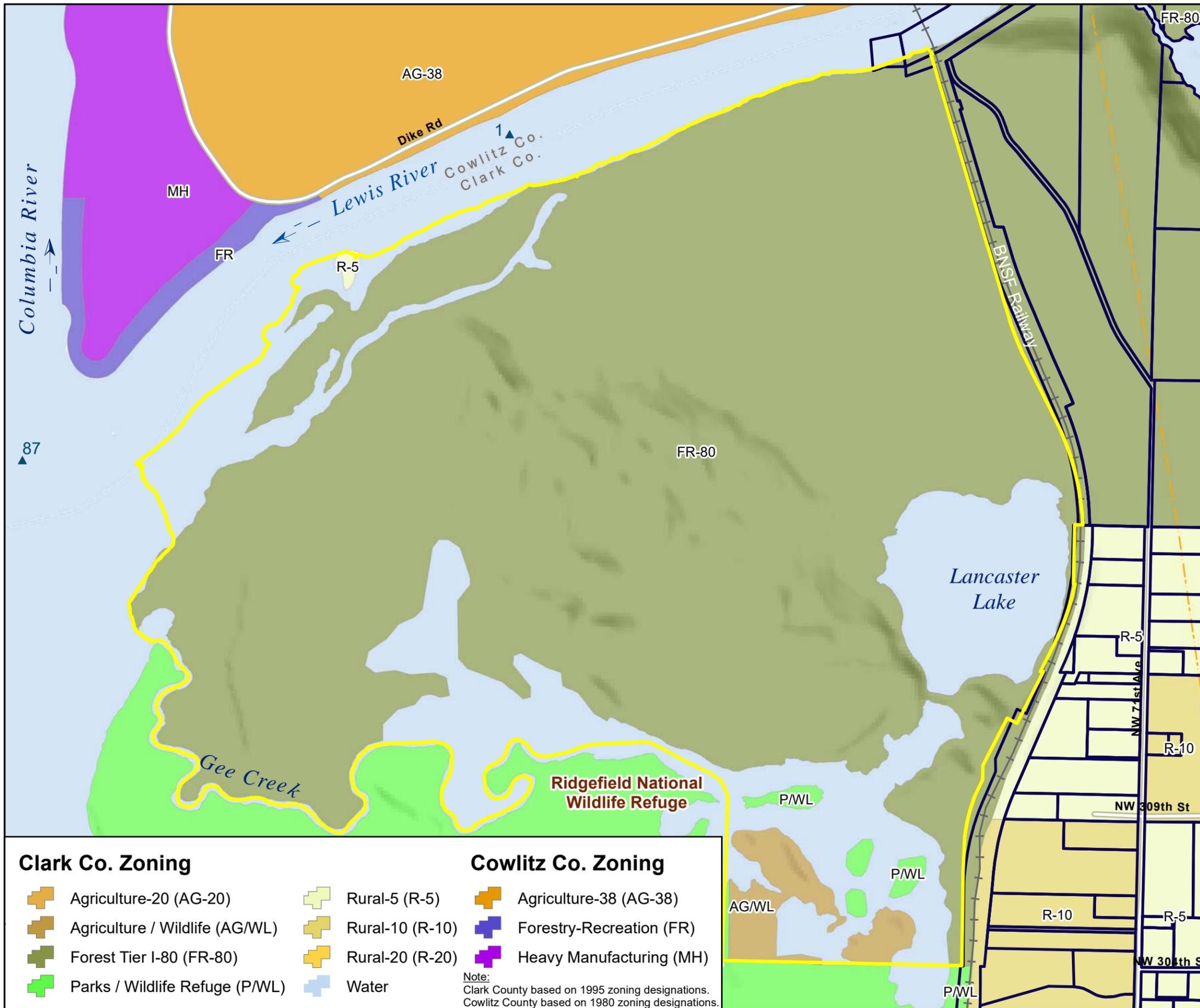


 Proposed Bank Location  
 Adjacent Properties  
 River Mile Marker



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**Clark Co. Zoning**

-  Agriculture-20 (AG-20)
-  Agriculture / Wildlife (AG/WL)
-  Forest Tier I-80 (FR-80)
-  Parks / Wildlife Refuge (P/WL)
-  Rural-5 (R-5)
-  Rural-10 (R-10)
-  Rural-20 (R-20)
-  Water

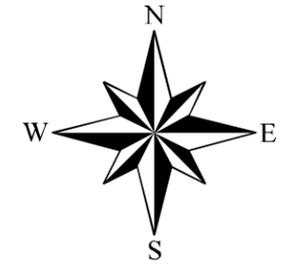
**Cowlitz Co. Zoning**

-  Agriculture-38 (AG-38)
-  Forestry-Recreation (FR)
-  Heavy Manufacturing (MH)

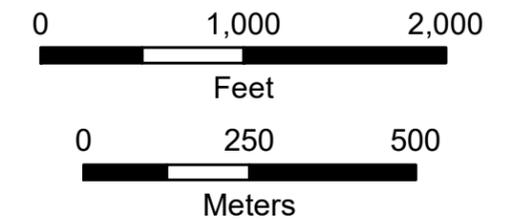
Note:  
 Clark County based on 1995 zoning designations.  
 Cowlitz County based on 1980 zoning designations.

**Figure 8. Soils**

Wapato Valley  
Mitigation and Conservation Bank



- Proposed Bank Location
- River Mile Marker
- NRCS Soils
- Fill - Columbia River Estuary Ecosystem Classification, Anthropogenic Features
- Cowlitz County Consolidated Diking District No. 2 Levee
- Deauthorized PN Farm Levee
- Dredge Material Placed By USACE 1960 - 1970

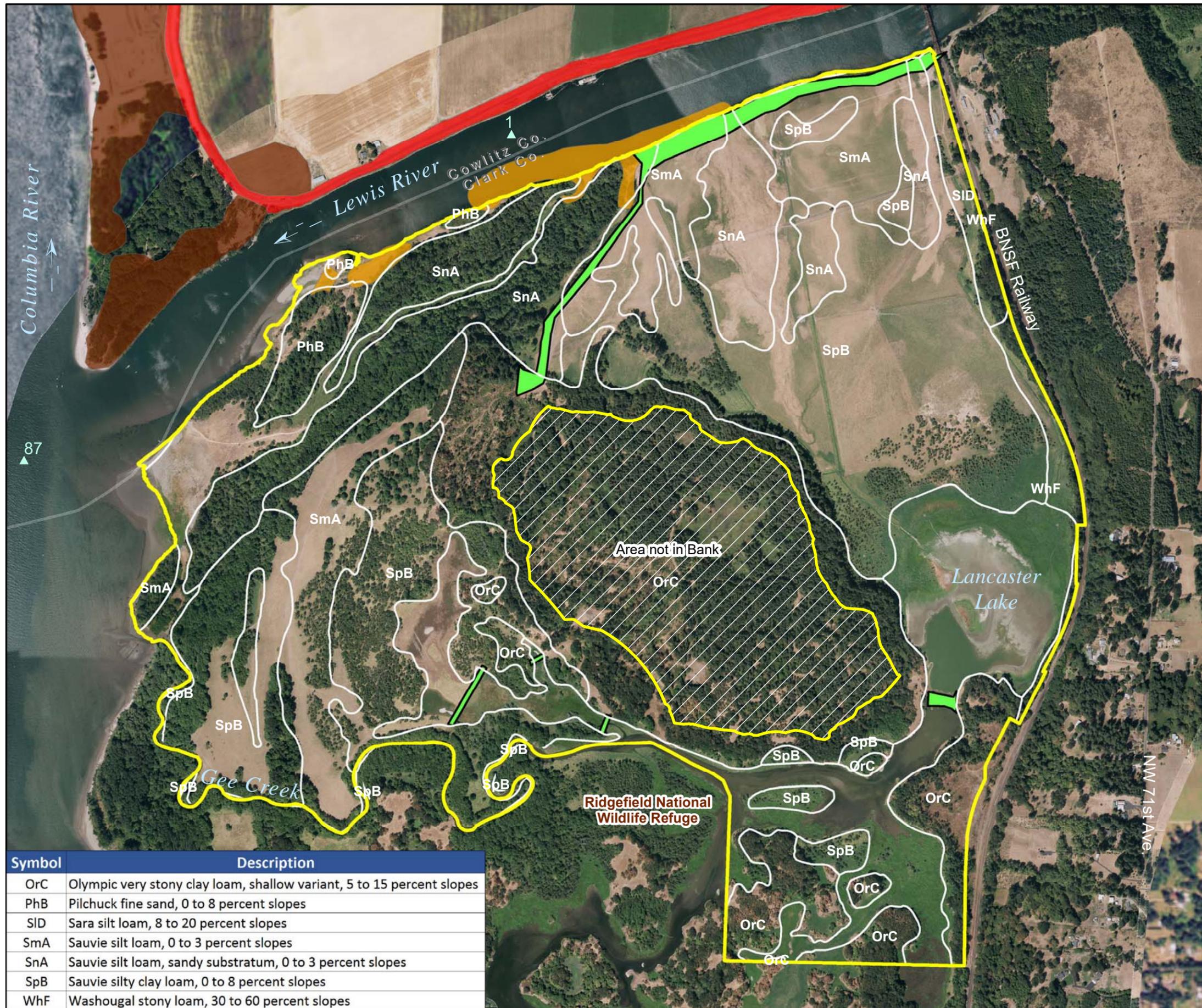


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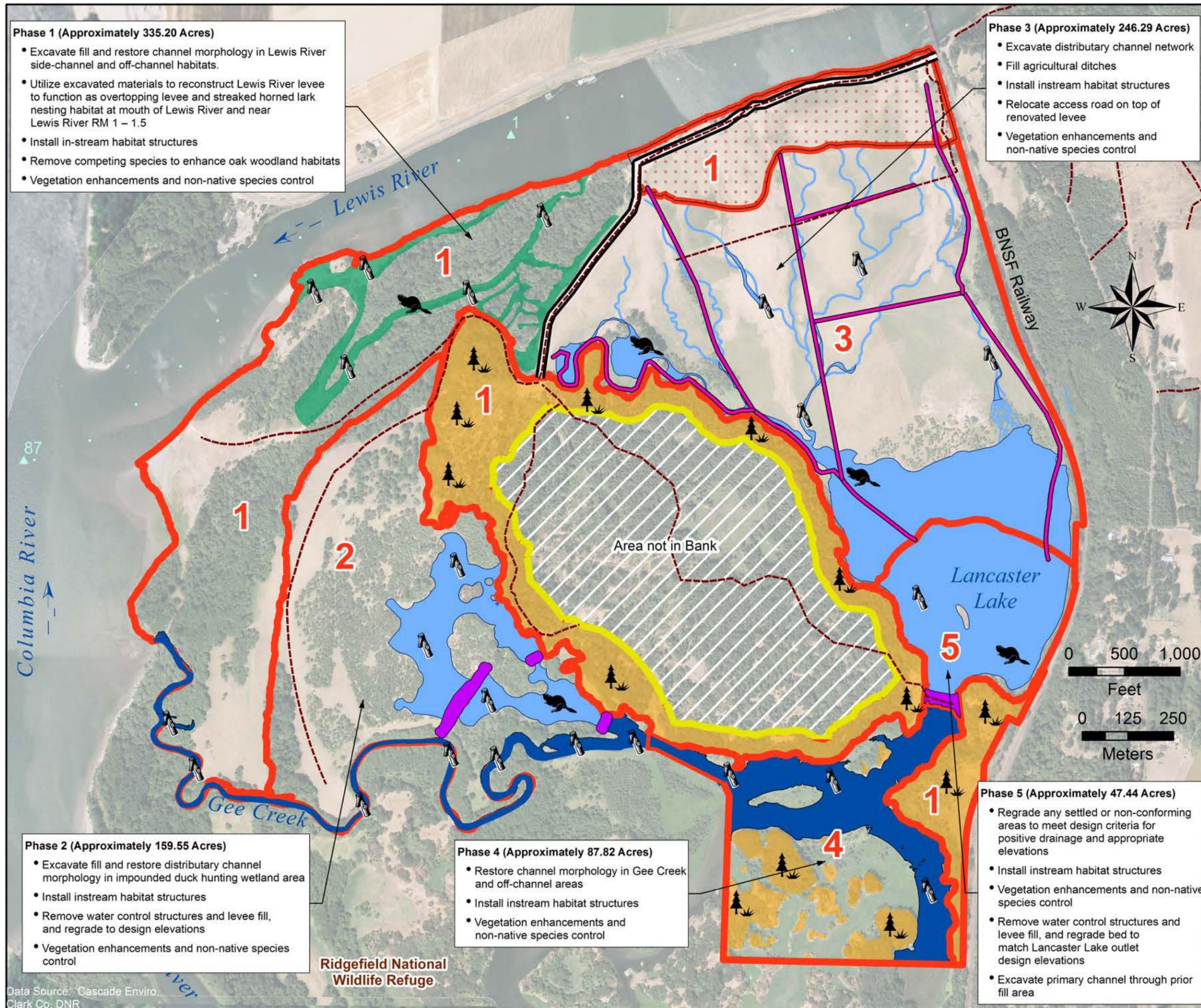
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Data Source: NRCS, DNR,  
LCREP, USACE, Clark County  
Photo: GeoTerra, 8/16/2015  
River Stage: ~7.25' NAVD 88

Date: 10/21/2015



Symbol	Description
OrC	Olympic very stony clay loam, shallow variant, 5 to 15 percent slopes
PhB	Pilchuck fine sand, 0 to 8 percent slopes
SID	Sara silt loam, 8 to 20 percent slopes
SmA	Sauvie silt loam, 0 to 3 percent slopes
SnA	Sauvie silt loam, sandy substratum, 0 to 3 percent slopes
SpB	Sauvie silty clay loam, 0 to 8 percent slopes
WhF	Washougal stony loam, 30 to 60 percent slopes



**Figure 9. Construction Actions and Phases**

**Wapato Valley  
Mitigation and Conservation Bank**

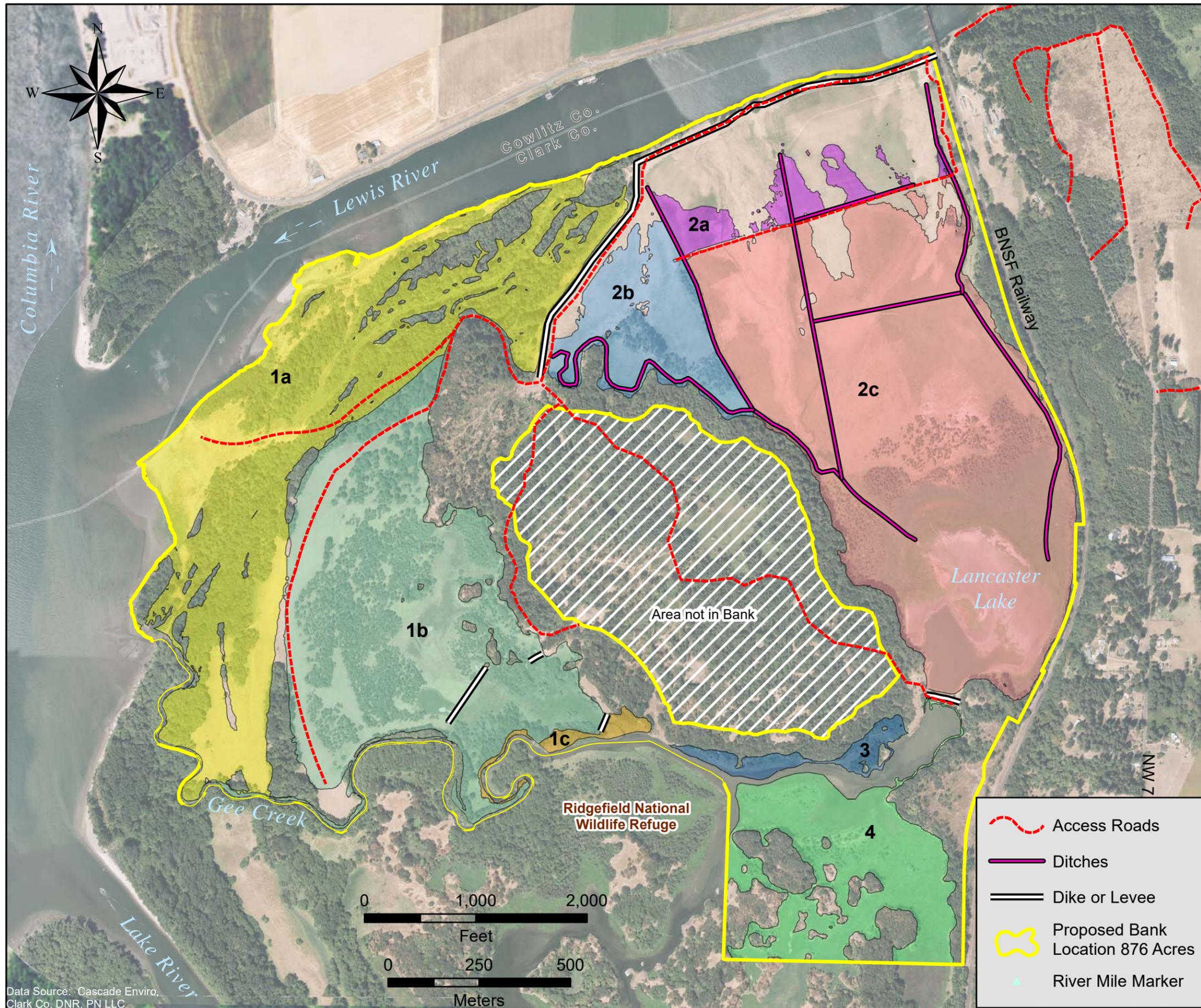
0 500 1,000  
Feet

0 125 250  
Meters

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Photo: GeoTerra, 8/16/2015  
River Stage: ~7.25' NAVD 88  
Design - Illustration in Image  
River Stage: ~10.0 NAVD 88

Date: 10/21/2015



**Figure 10. Existing Conditions - Wetlands**

Wapato Valley  
Mitigation and Conservation Bank

**Wetland Rating Units**

**Wetland 1\***

-  Rating Unit 1a - 139.10 Acres
-  Rating Unit 1b - 132.90 Acres
-  Rating Unit 1c - 3.89 Acres

Wetland 1 Subtotal: 275.89 Acres

**Wetland 2**

-  Rating Unit 2a - 13.67 Acres
-  Rating Unit 2b - 35.72 Acres
-  Rating Unit 2c - 206.47 Acres

Wetland 2 Subtotal: 255.86 Acres

**Wetland 3**

-  Rating Unit 3 - 7.30 Acres

**Wetland 4**

-  Rating Unit 4 - 50.06 Acres

**All Wetlands Total: 589.11 Acres**

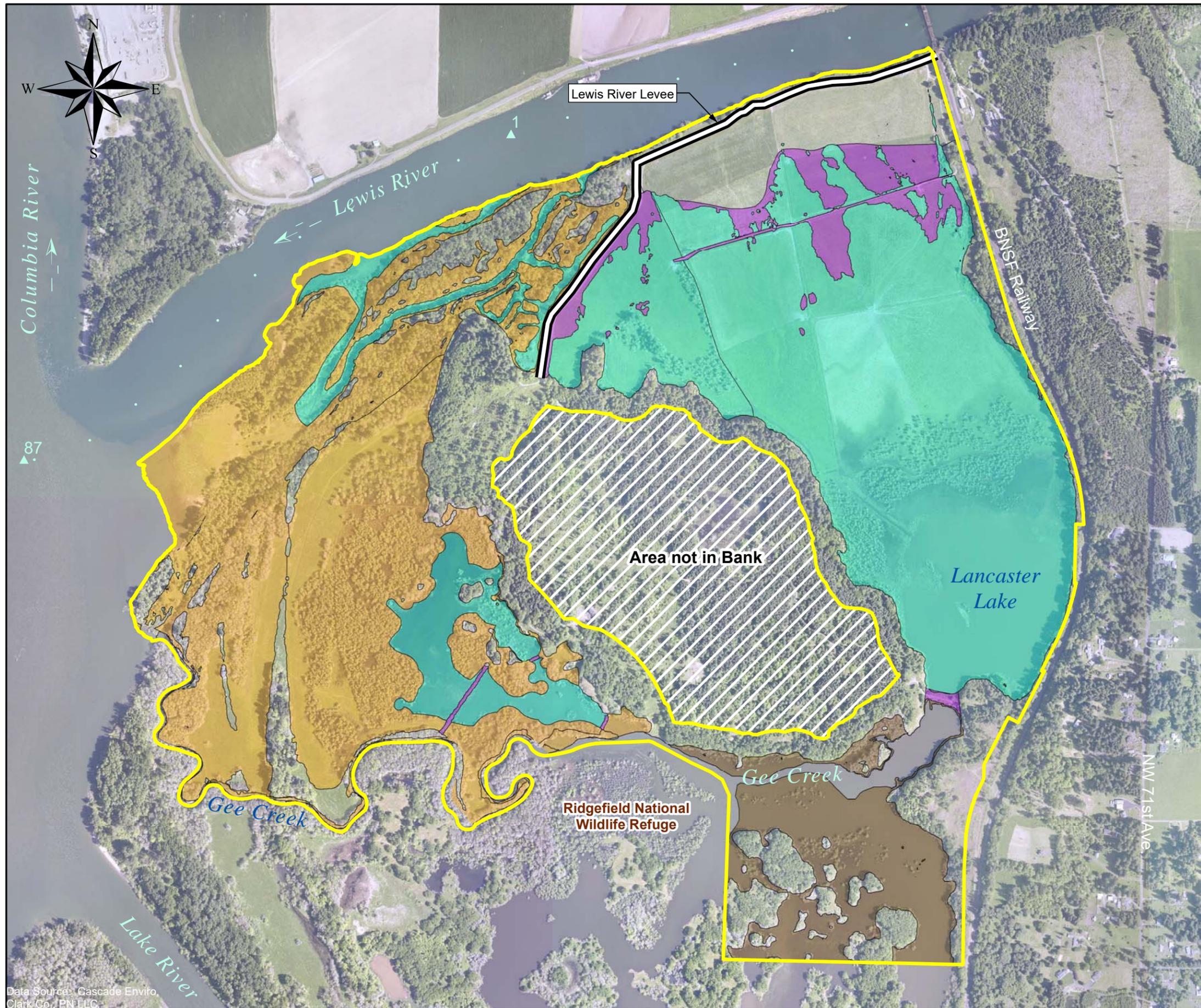
\* Includes area of Wetland/Upland Mosaic; Polygon includes 16.93 acres of upland

-  Access Roads
-  Ditches
-  Dike or Levee
-  Proposed Bank Location 876 Acres
-  River Mile Marker



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**Figure 11. Conceptual Design - Proposed Wetland Conditions**

Wapato Valley  
Mitigation and Conservation Bank

-  **Wetland Re-establishment, Total: 29.70 Acres**
  - Upland levee adjacent to Rating Unit 1b: 0.69 Acres
  - Upland pasture within and adjacent to Rating Units 2a, 2b, 2c: 28.16 Acres
  - Upland levee adjacent to Rating Unit 2c: 0.85 Acres
-  **Wetland Rehabilitation, Total: 303.64 Acres**
  - Rating Unit 1a: 19.48 Acres
  - Rating Unit 1b: 28.30 Acres
  - Rating Unit 2a and 2b: 49.39 Acres
  - Rating Unit 2c: 206.47 Acres
-  **Wetland Enhancement, Total: 228.11 Acres**
  - Rating Unit 1a: 119.62 Acres
  - Rating Unit 1b: 104.60 Acres
  - Rating Unit 1c: 3.89 Acres
-  **Wetland Enhancement and Preservation, Total: 57.36 Acres**
  - Rating Unit 3: 7.30 Acres
  - Rating Unit 4: 50.06 Acres
- Non-Wetland**
  -  Proposed Bank Location Approx. 876 Acres
  -  River Mile Marker

Note: Buffers to be established in coordination with IRT.

0 1,000 2,000



Feet

0 250 500

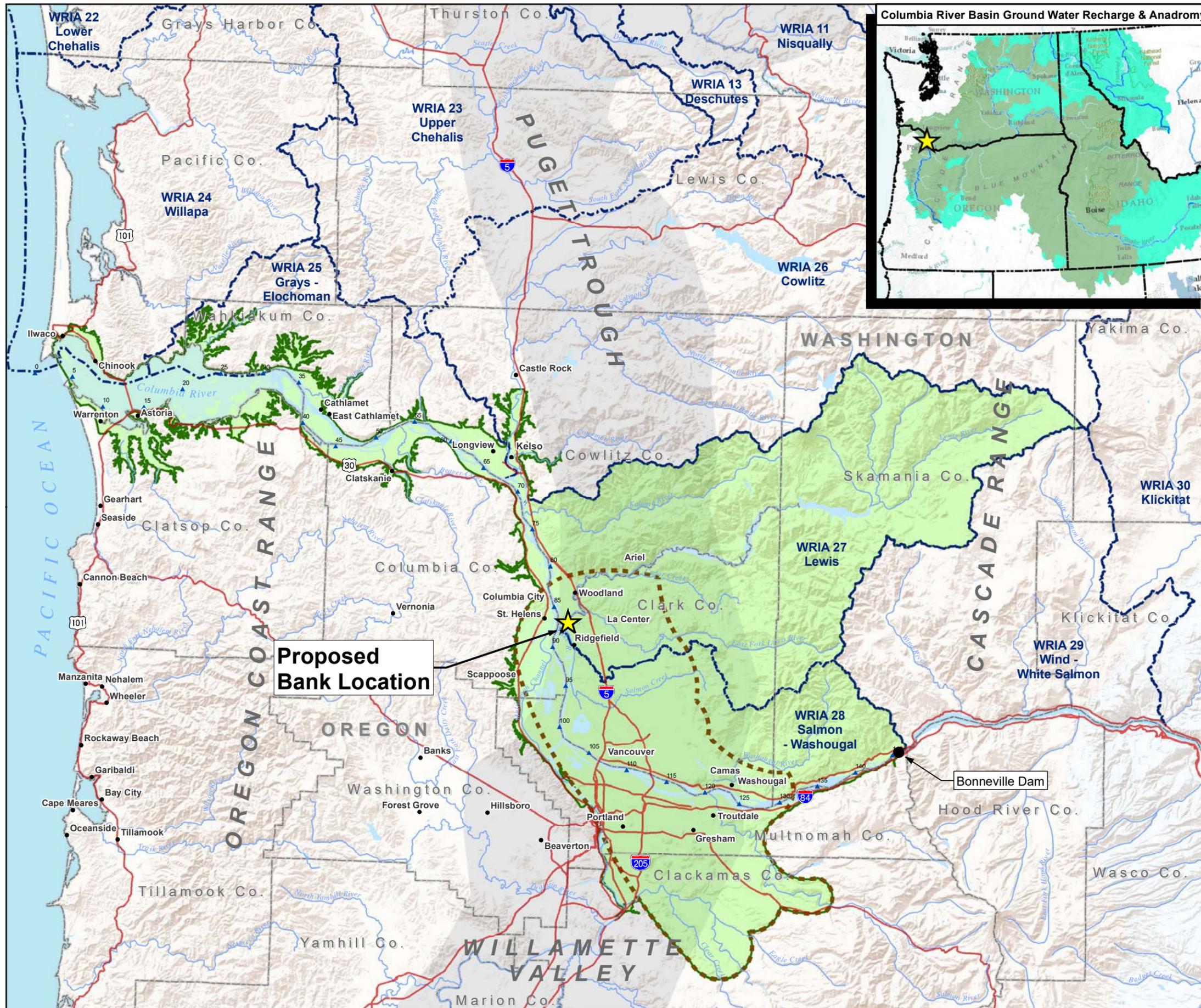


Meters



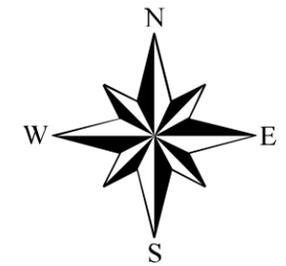
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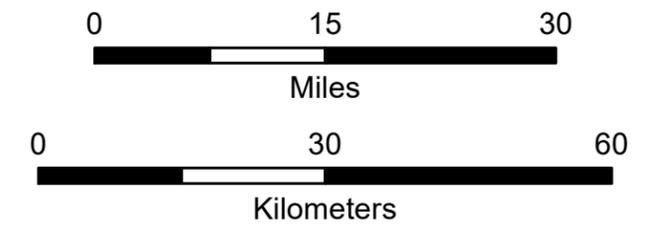
**Figure 12. Proposed Service Area\***

**Wapato Valley  
Mitigation and Conservation Bank**



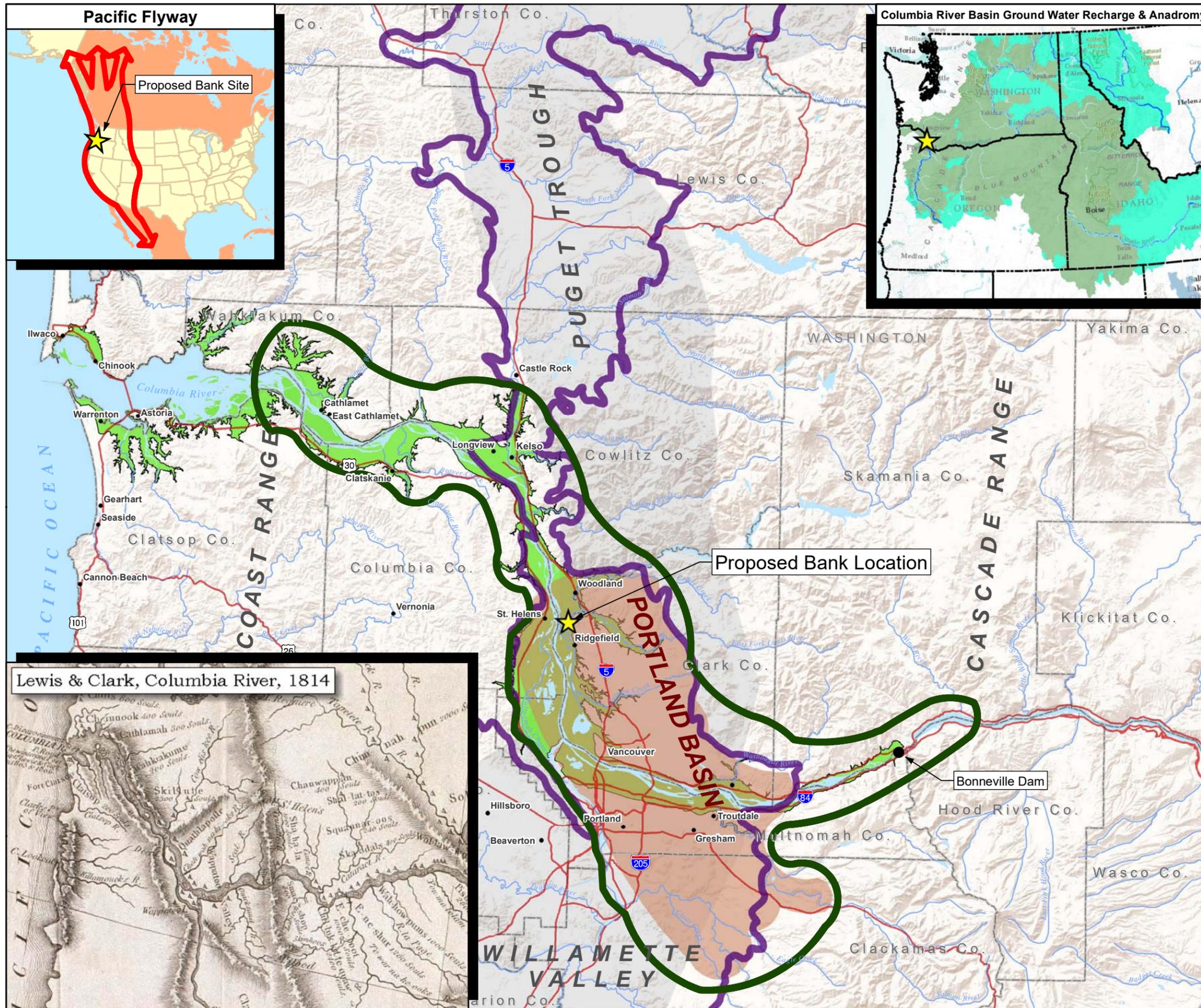
-  Proposed Bank Location
-  Aquatic Resources Service Area
-  Portland Basin
-  WRIA Boundaries
-  River Mile Marker

\* Resource or credit-specific services areas to be determined for each mitigation type in collaboration with the IRT. Potential service area shown is derived using a multi-scale watershed approach, biological and ecological rationale, and recent Columbia River basin ESA-listed species mitigation.



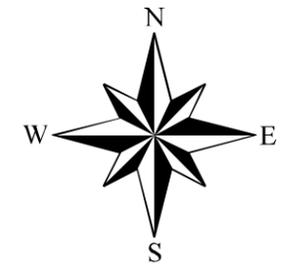
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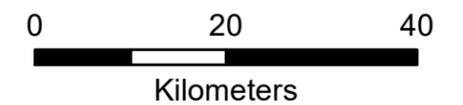


**Figure 13. Biogeographical Context**

Wapato Valley  
Mitigation and Conservation Bank

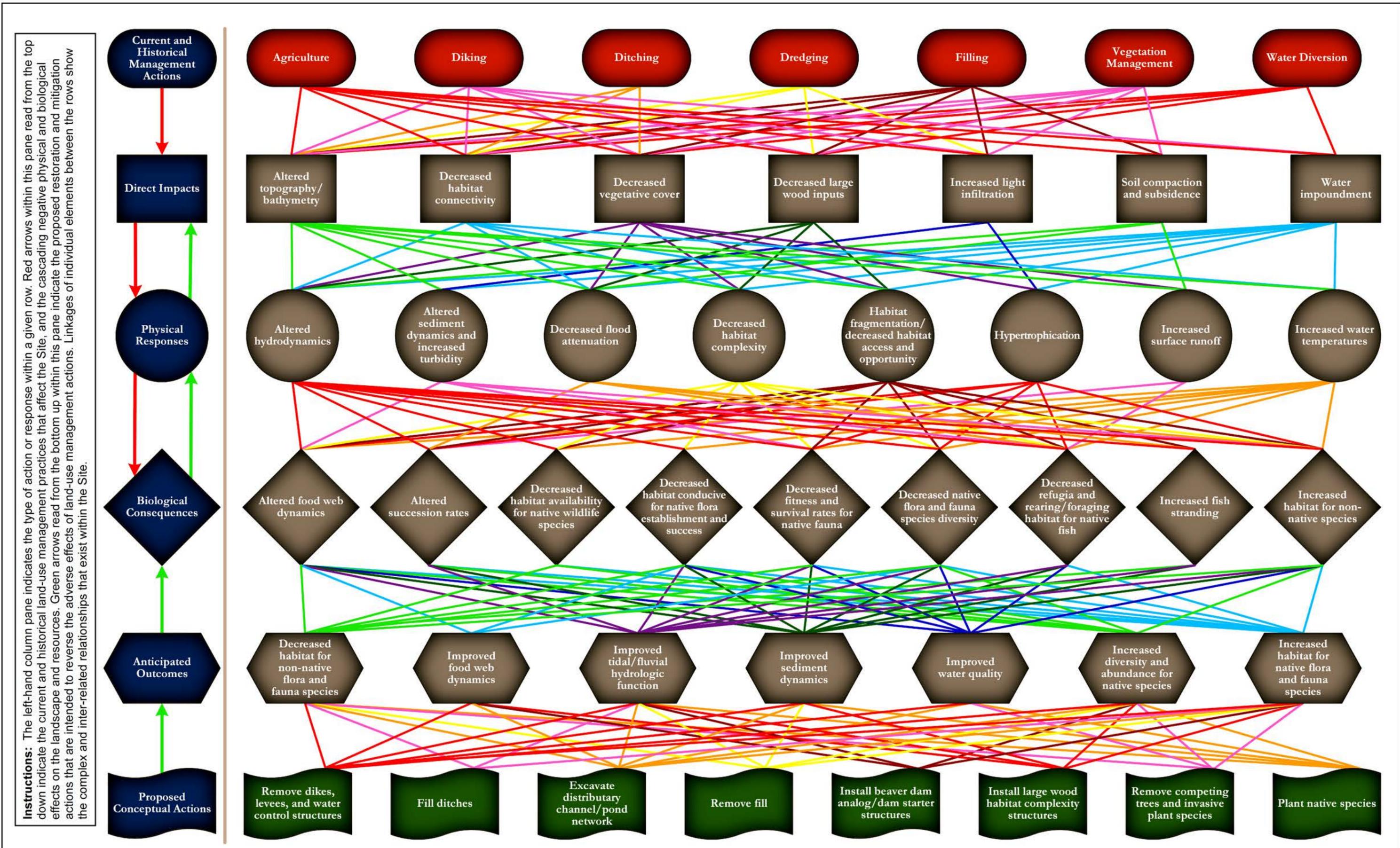


-  Wapato Valley - as mapped during Lewis & Clark Expedition
-  Puget Lowland / Willamette Eco-Region
-  Portland Basin
-  Lower Columbia River Valley and Floodplain

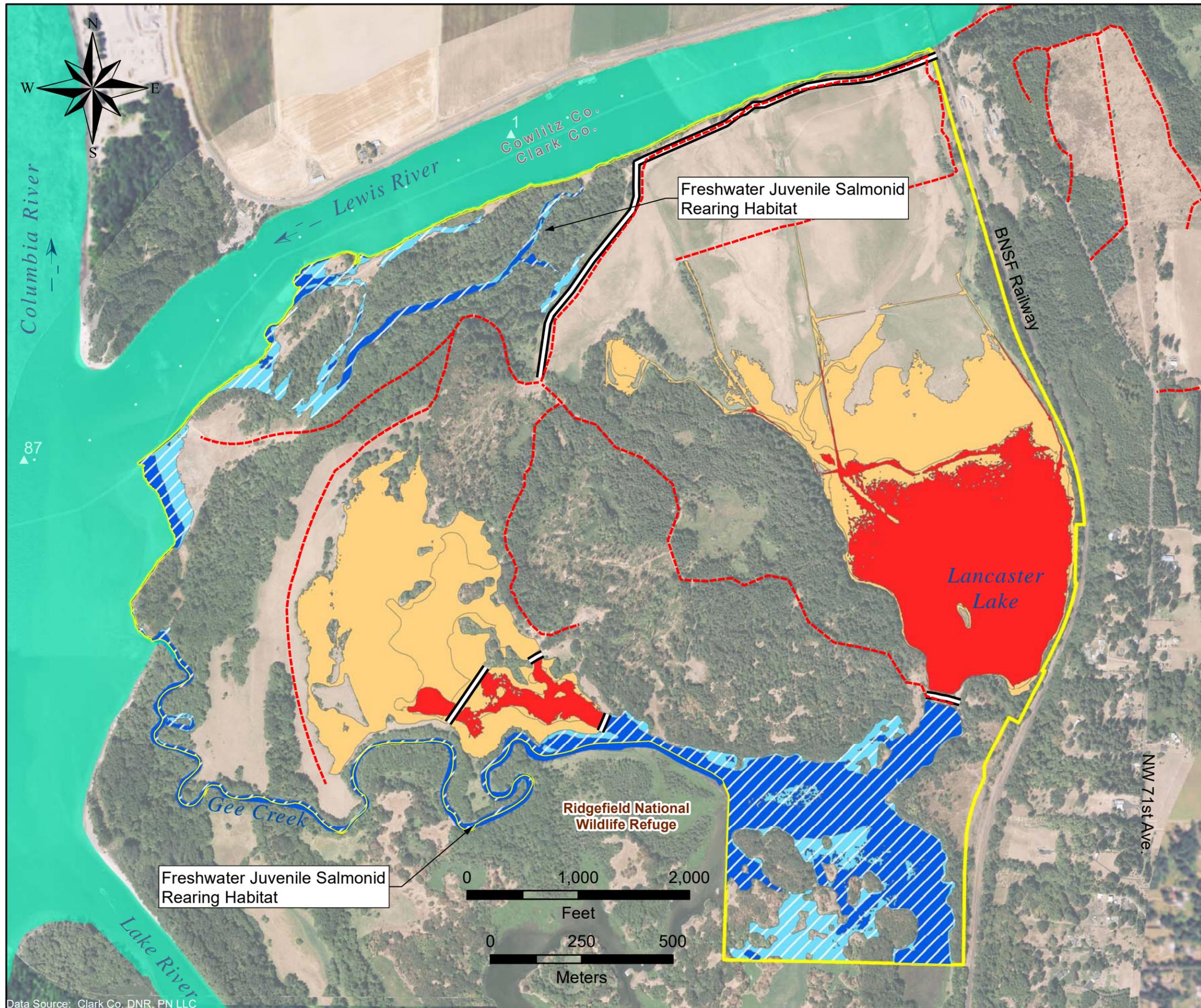


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**Figure 14. Conceptual Model for the Proposed Bank Site - Wapato Valley Mitigation and Conservation Bank**



**Figure 15. Existing Conditions - Fish Habitat**

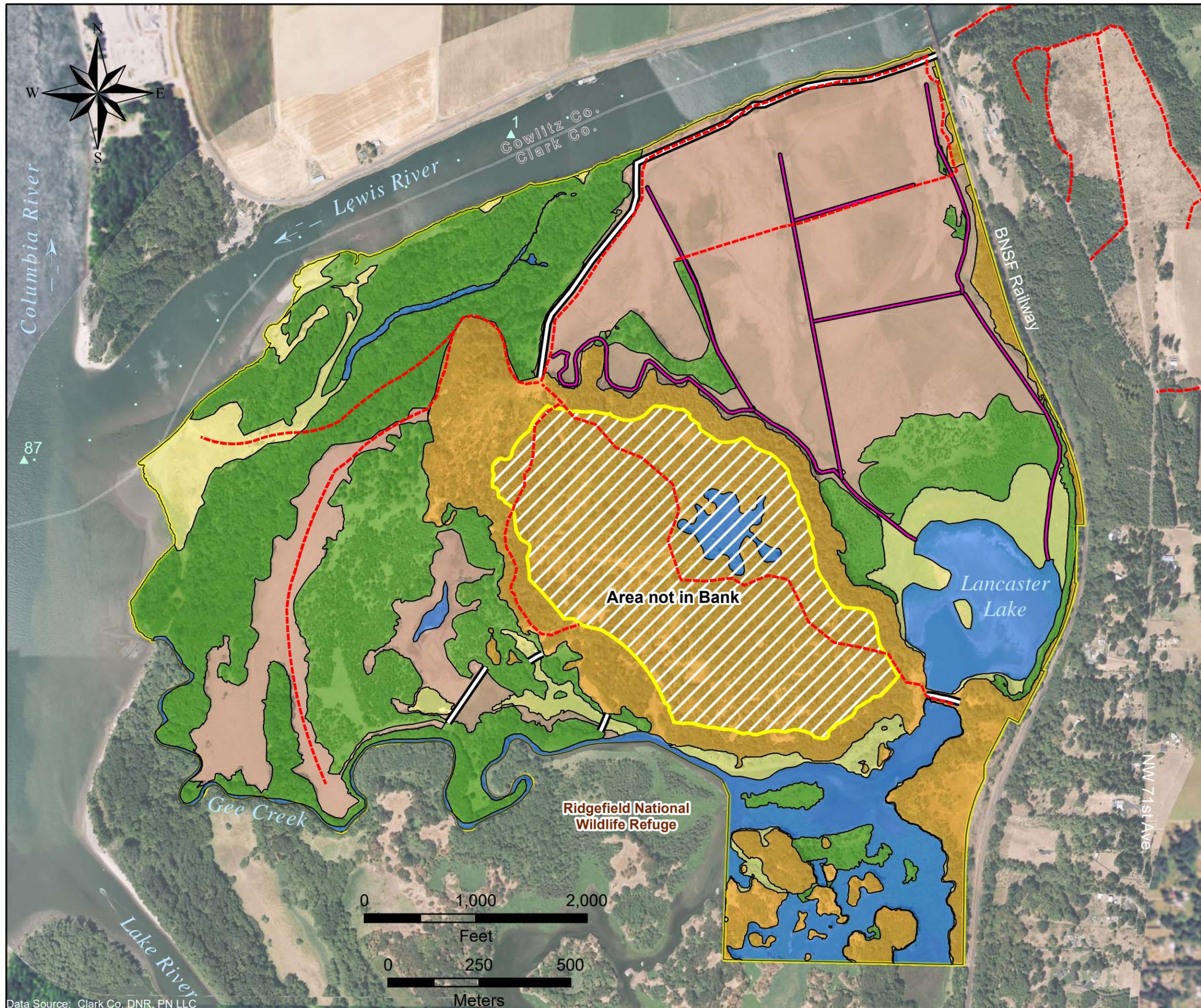
Wapato Valley  
Mitigation and Conservation Bank

- Proposed Bank Location Approx. 876 Acres
- Dike or Levee
- Access Roads
- River Mile Marker
- Fish Access**
- Freshwater Migration Habitat and Juvenile Salmonid Freshwater Rearing Habitat
- Freshwater Juvenile Salmonid Rearing Habitat
- Mean Low Water Feb - July 63.32 Acres
- Mean High Water Feb - July \*100.78 Acres
- Blocked To Fish Access**
- Impounded Low Water 83.44 Acres
- Impounded High Water - \*219.60 Acres
- \*Includes low water areas



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**Figure 16. Existing Conditions - Wildlife Habitat**

Wapato Valley  
Mitigation and Conservation Bank

- Proposed Bank Location  
Approx. 876 Acres
- River Mile Marker
- Access Roads
- Ditches
- Dike or Levee

**IBIS and PHS Habitat Types\***

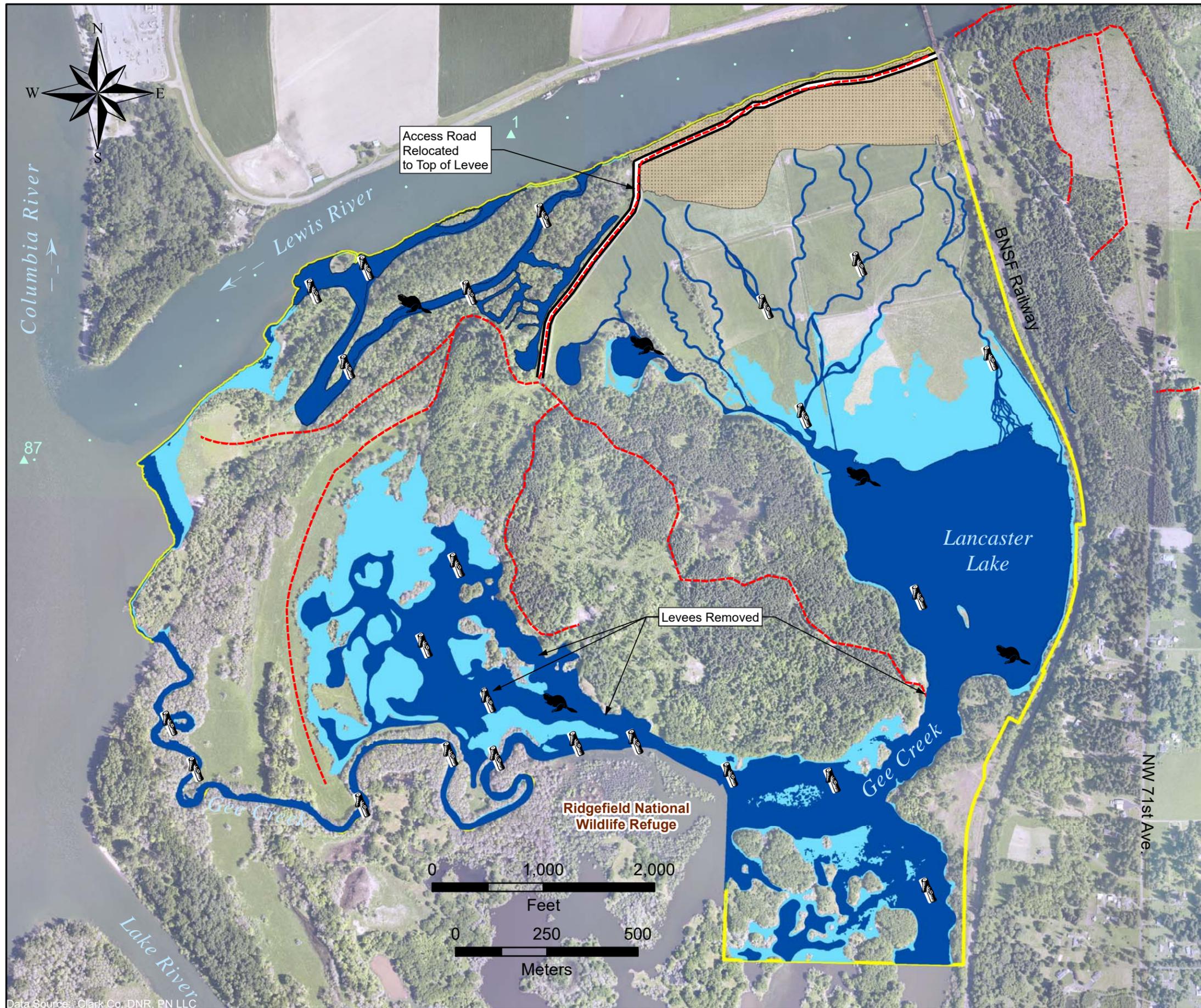
- Agriculture Pasture & Mixed Environs (286.15 Acres)
- Floodplain Forest (292.23 Acres)
- Herbaceous Wetlands (64.41 Acres)
- Upland Forest (282.19 Acres)
- \*\*Open Water (103.59 Acres)

\*These are functional wildlife habitat types, not legally defined wetlands.  
 \*\*Based on River Stage: 9.5' NAVD 88  
 Note: Westside Native Grasslands occur in small patches that are not discernable at this scale.



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**Figure 17. Conceptual Design - Proposed Fish Habitat Conditions**

Wapato Valley  
Mitigation and Conservation Bank

- Proposed Bank Location Approx. 876 Acres
- River Mile Marker
- Install Instream Habitat Structure
- Install Beaver Dam Analog/Dam Starter Structures
- Existing Access Roads
- Levee
- Overtopping Levee

**Estimate of Restored Rearing Habitat\***

- At Mean Low Water - Approx. 190.20 Acres
- At Mean High Water - Approx. 348.44 Acres

\*Modeled during peak juvenile salmonid outmigration and rearing period of 1 February through 15 July, based on literature and site-specific fish presence surveys

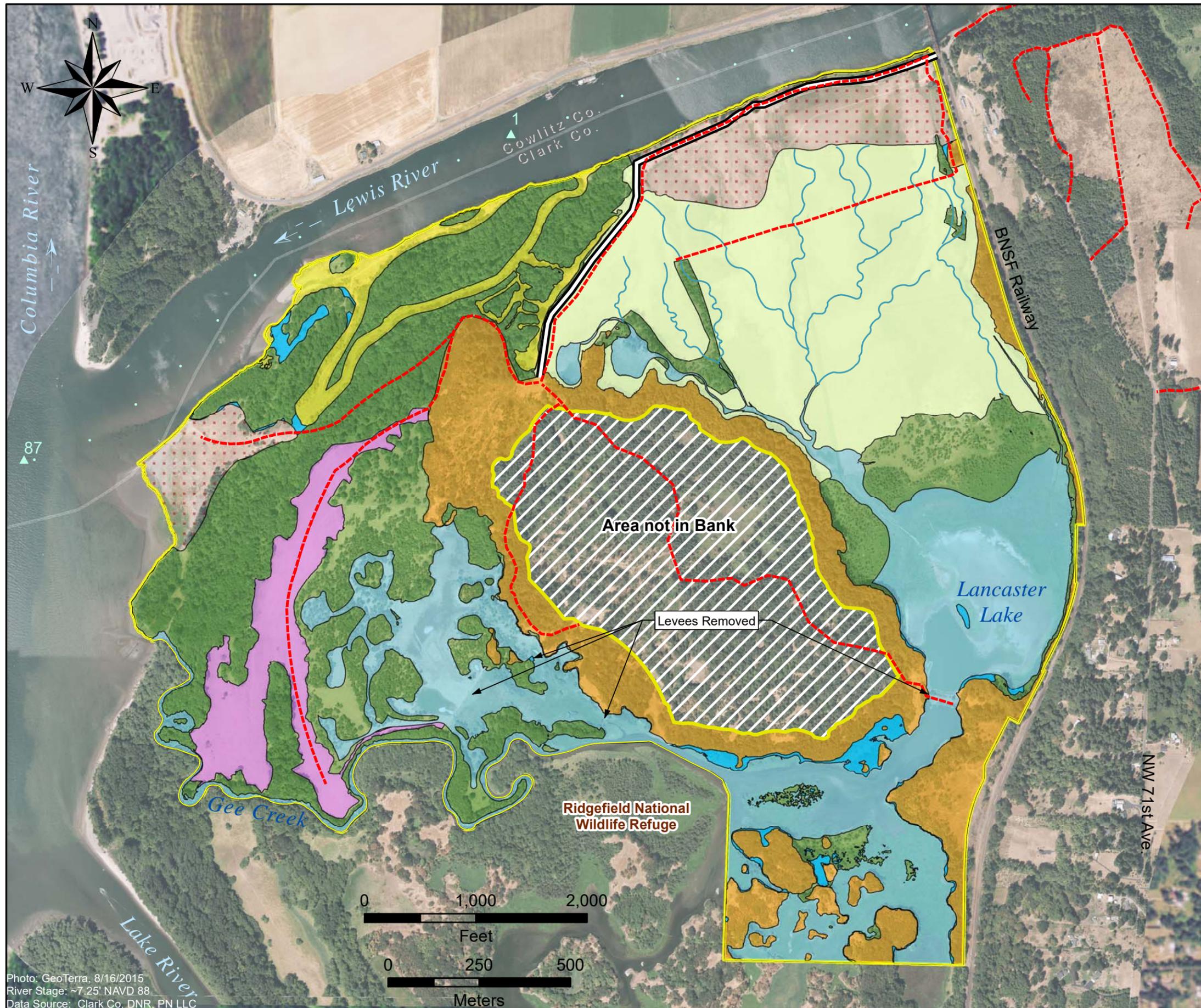
Note: Vegetation enhancements include grading and planting of native plant communities and treatment of non-native species will occur in Riparian Priority Habitat areas, and in upland and wetland floodplain habitats throughout the site.



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**Figure 18. Conceptual Design - Proposed Wildlife Habitat Conditions**



**Wapato Valley  
Mitigation and Conservation Bank**

- Proposed Bank Location  
Approx. 876 Acres
- River Mile Marker
- Access Roads
- Dike or Levee
- Open Water/Marsh/Side-Channel  
(24.56 Acres)
- Mosaic of Open Water/Marsh/Wet Meadow (187.14 Acres)
- Wet Meadow and Native Grassland (41.51 Acres)
- Early Seral Stage Floodplain Habitat for Streaked Horned Lark - (61.38 Acres)
- Mosaic of Native Grassland/Wet Meadow/Herbaceous Wetlands (173.02 Acres)
- Floodplain Forest (241.24 Acres)
- Herbaceous Wetlands (10.76 Acres)
- Upland Forest - Oak Woodland (136.64 Acres)

Note: Vegetation enhancements, restoration of native vegetation communities, and removal of non-native cover will take place on the entire site.



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