

Albany Area Floodplain Habitat
and Stream Assessment -
Restoration Plan

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Presentation Outline

- ◉ Planning process
- ◉ Systems overview
- ◉ Restoration prioritization scheme
- ◉ Potential restoration projects

Planning Process

Complete field work and remote sensing



Characterize historical and existing conditions



Define limiting factors



Determine restoration goals



Identify and prioritize projects



Project phase

Systems Overview

- Lower Calapooia River
- Willamette River
- Periwinkle Creek
- Thornton Lake
- Albany Oxbow Lakes



Calapooia - Albany Assessment
Project Area

Legend

- ⊕ USGS Gage
- Highways
- Roads
- Waterbodies
- Rivers and Streams



0 0.25 0.5 1
Miles



Lower Calapooia River

Conditions Summary

- Migration corridor
- Intact riparian zone
- Transient large wood
- Floodplain habitats
- 2 primary eroding banks



Willamette River

Conditions Summary

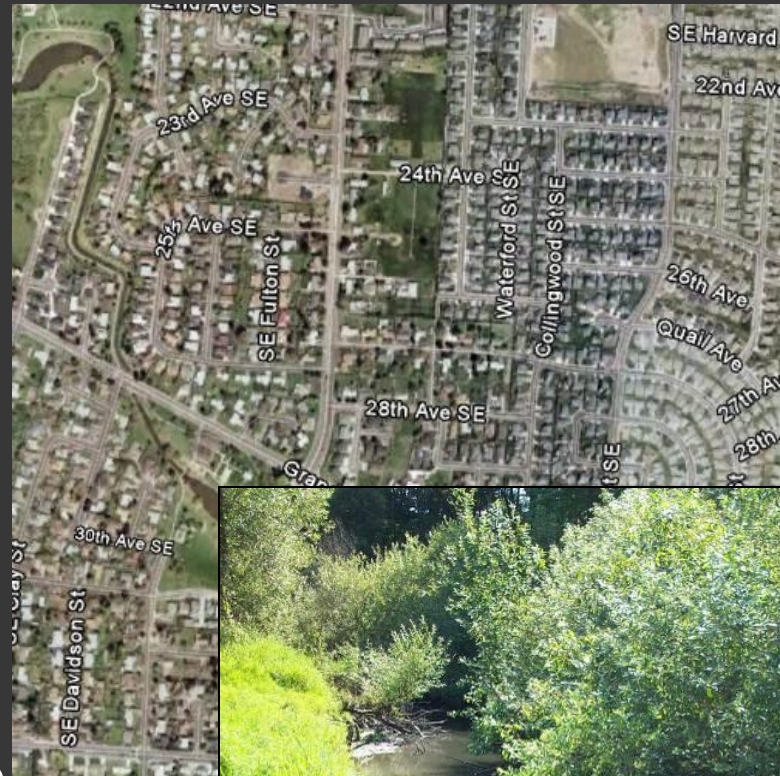
- Simplified channel, floodplain fringe
- Narrowed riparian zone
- Off-channel habitats
- River has responded to regulated flows



Periwinkle Creek

Conditions Summary

- Natural channel and stormwater system
- Urban stream
- Water quality degradation
- Diverse fish community at mouth



Thornton Lake

Conditions Summary

- Turtle habitat
- Introduced fish
- Seasonal connection
- Residential development
- Stormwater
- Conservation opportunities



Albany Oxbow Lakes

Conditions Summary

- Long history of use for mills and industrials
- Maintains connection with Willamette
- Tributary streams



Willamette Project Documents

- Willamette River Project Biological Opinion (NMFS 2008)

https://pcts.nmfs.noaa.gov/pls/pcts-pub/pcts_upload.summary_list_biop?p_id=26588

- Willamette River Habitat Protection and Restoration Program 2010-2015 (OWEB 2010)

<http://www.nwcouncil.org/fw/projectselection/BiOp/200901200.pdf>

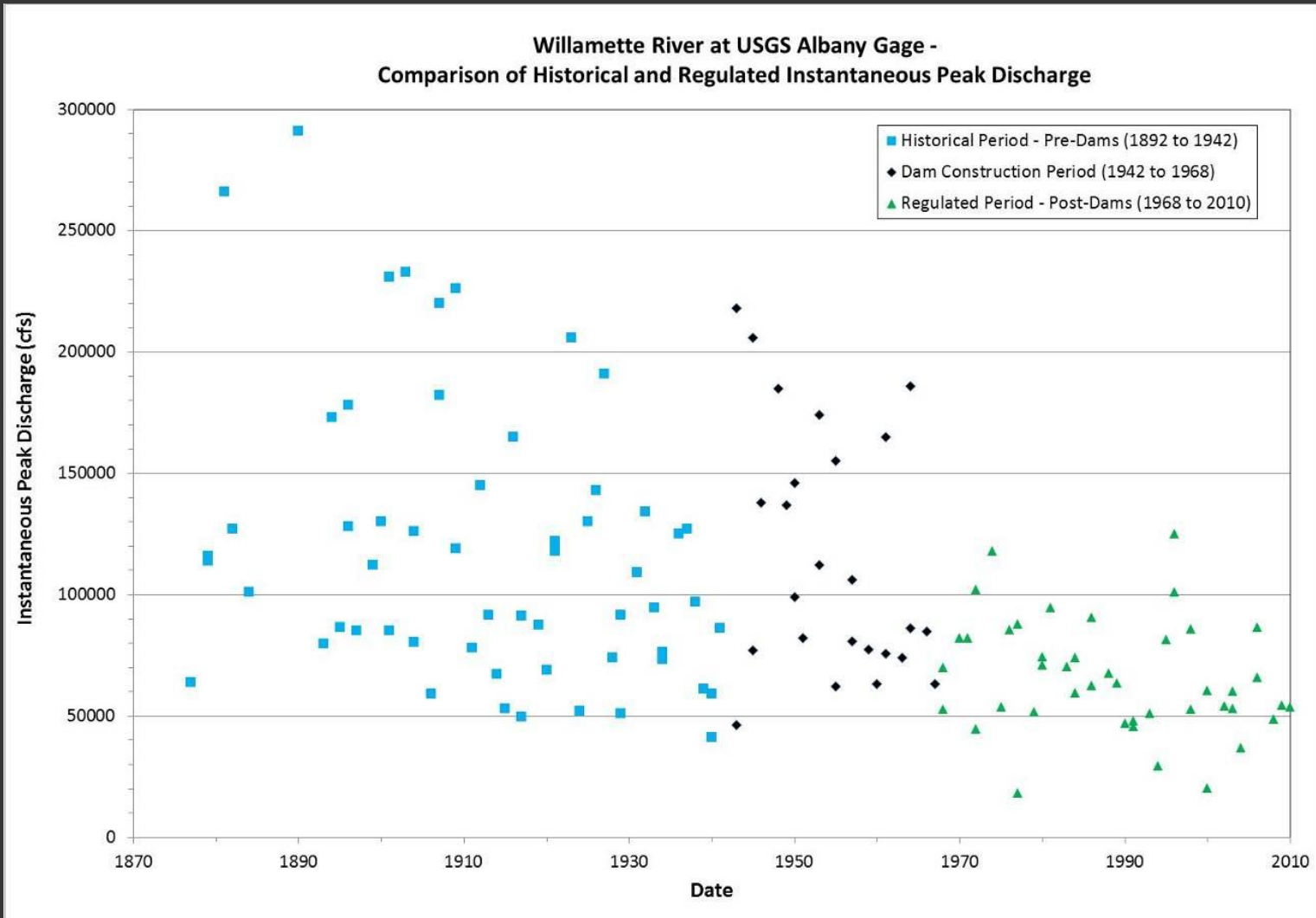
Limiting Factors

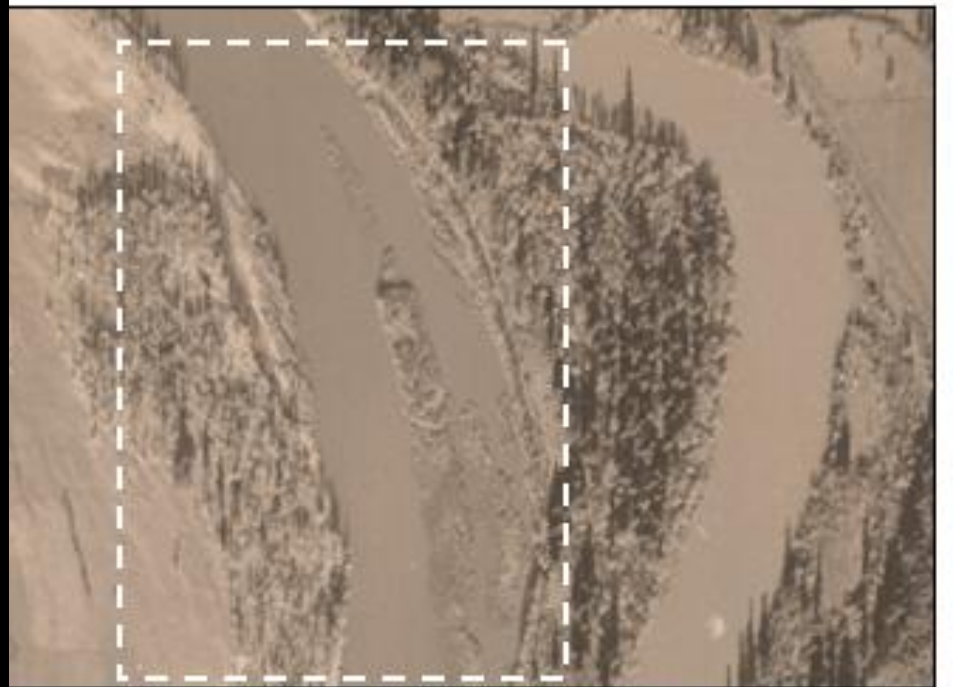
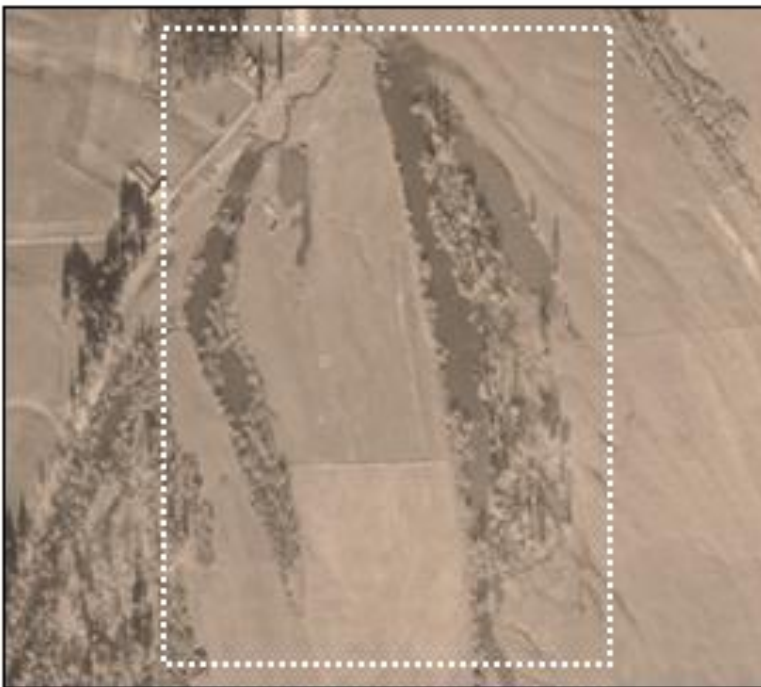
- Factors that have caused a population decline and limit population recovery
- Willamette Project effects
- Local effects

Willamette Project – Limiting Factors

- Lack of gravel recruitment,
- Altered water temperatures,
- Reduced peak flows/channel complexity and habitat diversity, and
- Altered flows that affect habitat in the tributaries below the dams and in the mainstem Willamette River
- Loss of riparian vegetation and bank armoring

Limiting Factors – WP Effects





Limiting Factors – Local Effects

- Riparian conversion
- Large wood removal
- Direct and indirect river corridor changes



Addressing Limiting Factors

- Restore substrate recruitment
- Restore Willamette habitats where desirable
- Protect the highest quality rearing and migration habitats through conservation measures, acquisition, and/or regulation
- Protect and restore aquatic habitat function at the mouths of tributaries; increase non-structural capacity of floodwater, restore natural riparian communities and their function; increase channel complexity; and increase native floodplain forest.

Lower Calapooia River - Goals

Limiting Factors

- Riparian simplification
- Reduced habitat diversity – fp habitat
- Water temperature & quality
- Tributary connectivity

Restoration Goals

- Expand riparian
- Connect, enhance floodplain channels
- Tributary fish passage
- Address 2 eroding banks

Willamette River - Goals

Limiting Factors

- Riparian simplification
- Reduced habitat diversity – river & fp habitat
- Water temperature & quality
- Trib connectivity

Restoration Goals

- Expand riparian
- Connect, enhance floodplain channels
- Educational opportunities

Periwinkle Creek - Goals

Limiting Factors

- Riparian simplification
- Reduced habitat diversity
- Water temperature & quality

Restoration Goals

- Expand riparian
- Address agriculture and stormwater discharge
- Clear debris
- Educational opportunities

Thornton Lake - Goals

Limiting Factors

- Riparian simplification
- Water temperature & quality
- Connectivity

Restoration Goals

- Expand riparian
- Address stormwater discharge
- Lakeshore vegetation management
- Fish passage
- Educational opportunities

Albany Oxbow Lakes - Goals

Limiting Factors

- Riparian simplification
- Reduced habitat diversity – fp & tributary habitat
- Water temperature & quality
- Tributary connectivity

Restoration Goals

- Expand riparian
- Address stormwater discharge
- Enhance oxbow and tributary habitats
- Coordination with CoA efforts – TWG
- Potential Cox Creek dam removal

Project Prioritization

- Project Prioritization Parameters
 - Willing landowners and stakeholder interests
 - Projects that address limiting factors and achieve restoration goals
 - Low risk/high reward
 - Mix of active and passive approaches
 - Slow-less expensive vs. Rapid-more expensive

Calapooia Example

Limiting Factor	Restoration Goal	General Restoration Action	Importance of Action
Riparian conversion and simplification	Expand the riparian corridor	• Improve long-term stream shading through riparian planting	M
		• Preserve remaining riparian corridor through landowner education	H
		• Conservation easements for willing landowners	H
		• Treat invasive plant species where feasible	M
		• Plant armored banks and promote bioengineering in-place of riprap where stabilization is necessary	L
Reduced habitat diversity	Improve habitat diversity through in-channel and off-channel enhancement	• Reconnect floodplain off-channel habitats	H
		• Install stable log jams for in-stream habitat	H
		• Wetland enhancement	L
Floodplain fish passage	Provide passage to fish-bearing tributaries	• Replace failed culverts	H



Restoration Goal	Specific Project	Location (STA)	Floodplain/Channel Location
Expand the riparian corridor	Riparian Enhancement	160+00 - 170+00	RR FP
	Riparian Enhancement	78+00 - 135+00	RL FP
	Riparian Enhancement	135+00 - 157+00	RR FP
	Riparian Enhancement	70+00 - 75+00	RR FP
	Riparian Enhancement	73+00 - 80+00	RR FP
	Riparian Enhancement	32+00 - 50+00	RL FP
	Riparian Enhancement	2+00 - 27+00	RL FP
	Riparian Enhancement	60+00 - 62+00	RL FP
Improve habitat diversity through in-channel and off-channel enhancement	Engineered Log Jam	108+50	RR
	Engineered Log Jam	107+00	RR
	Engineered Log Jam	106+50	RR
	Engineered Log Jam	106+00	RR
	Engineered Log Jam	105+00	RR
	Engineered Log Jam	75+00	RR
	Engineered Log Jam	75+50	RR
	Engineered Log Jam	73+50	RR
	Engineered Log Jam	70+00	RR
	Engineered Log Jam	68+75	RR
	Engineered Log Jam	68+00	RR
	Engineered Log Jam	72+50	RR
	Engineered Log Jam	144+00	RR
	Engineered Log Jam	143+00	RR
	Engineered Log Jam	143+50	RR
	Engineered Log Jam	144+40	RR
	Engineered Log Jam	144+50	RR
	Wetland Enhancement	148+00	RL FP
	Wetland Enhancement	155+00	RL FP
	Wetland Enhancement	120+00	RL FP
Off Channel Enhancement	144+00	RL	
Off Channel Enhancement	75+00	RR	
Off Channel Enhancement	112+00	RL	
Off Channel Enhancement	70+00	RR	
Bank Stabilization	162+00 - 165+00	RR	
Bank Stabilization	146+00 - 151+00	RR	
Bank Stabilization	82+00 - 96+00	RL	
Bank Stabilization	57+00 - 61+50	RL	



Example Projects

1. Pursue reveg on lower or historical surfaces closer to river
2. Enhance off-channel habitats
3. Tributary connectivity
4. LWD with reveg bank stabilization

Example Projects

1. Pursue reveg on lower or historical surfaces closer to river
2. Enhance off-channel habitats and oxbows
3. Educational opps



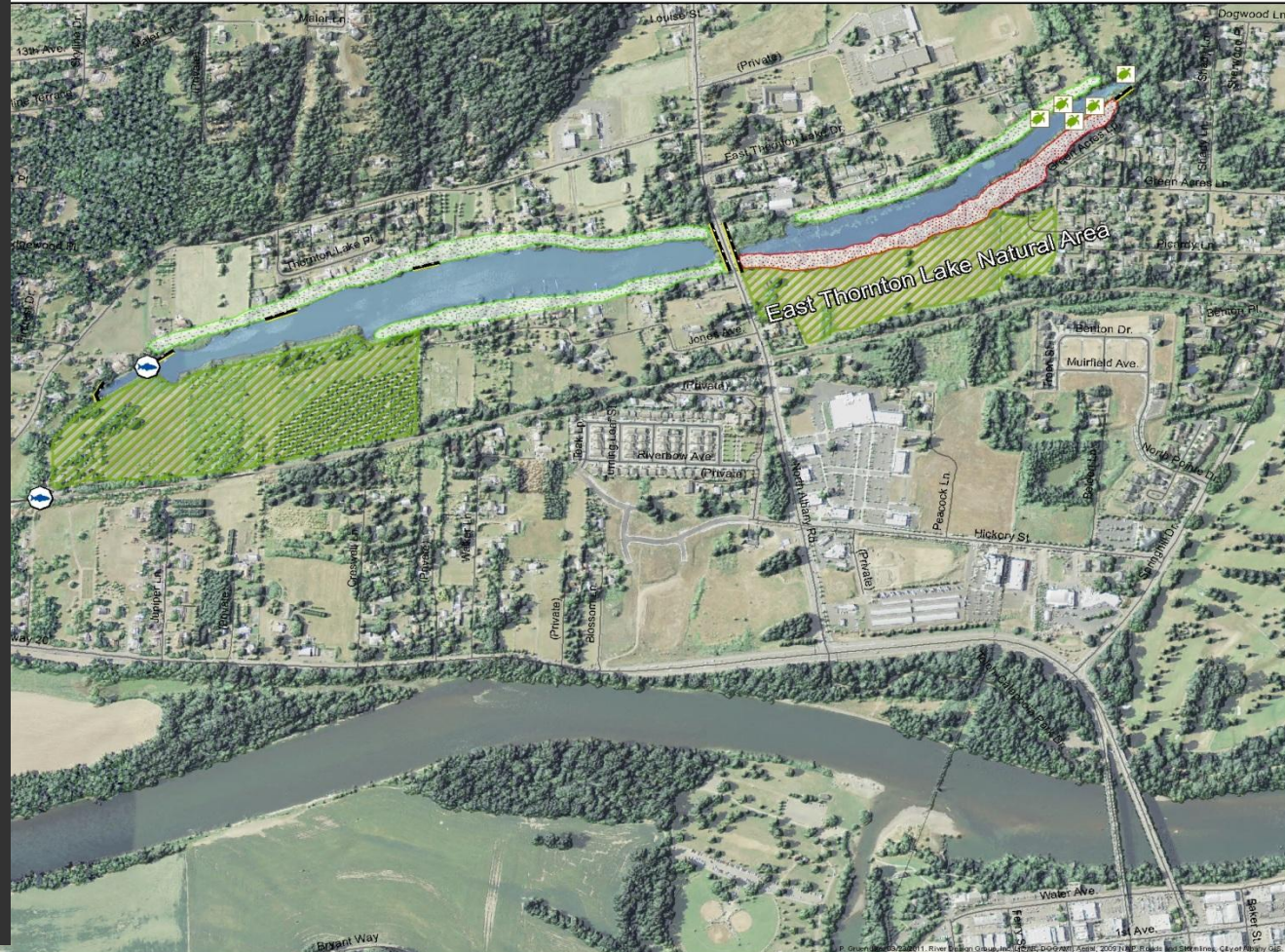
Example Projects

1. Educational opps
2. Debris removal from park areas
3. Consider stormwater management – disconnect low flow ag/stormwater system
4. Reveg for stream shading



Example Projects

1. Conserve undeveloped properties
2. Lake front vegetation
3. Stormwater management
4. Basking logs
5. Connectivity



Treatment Map

Thornton Lake, near Albany, Oregon

Legend

- Basking Logs
- Vegetation Mgmt
- Roads
- Invasive Mgmt
- Fish Passage
- Riparian Planting
- Stormwater Mgmt

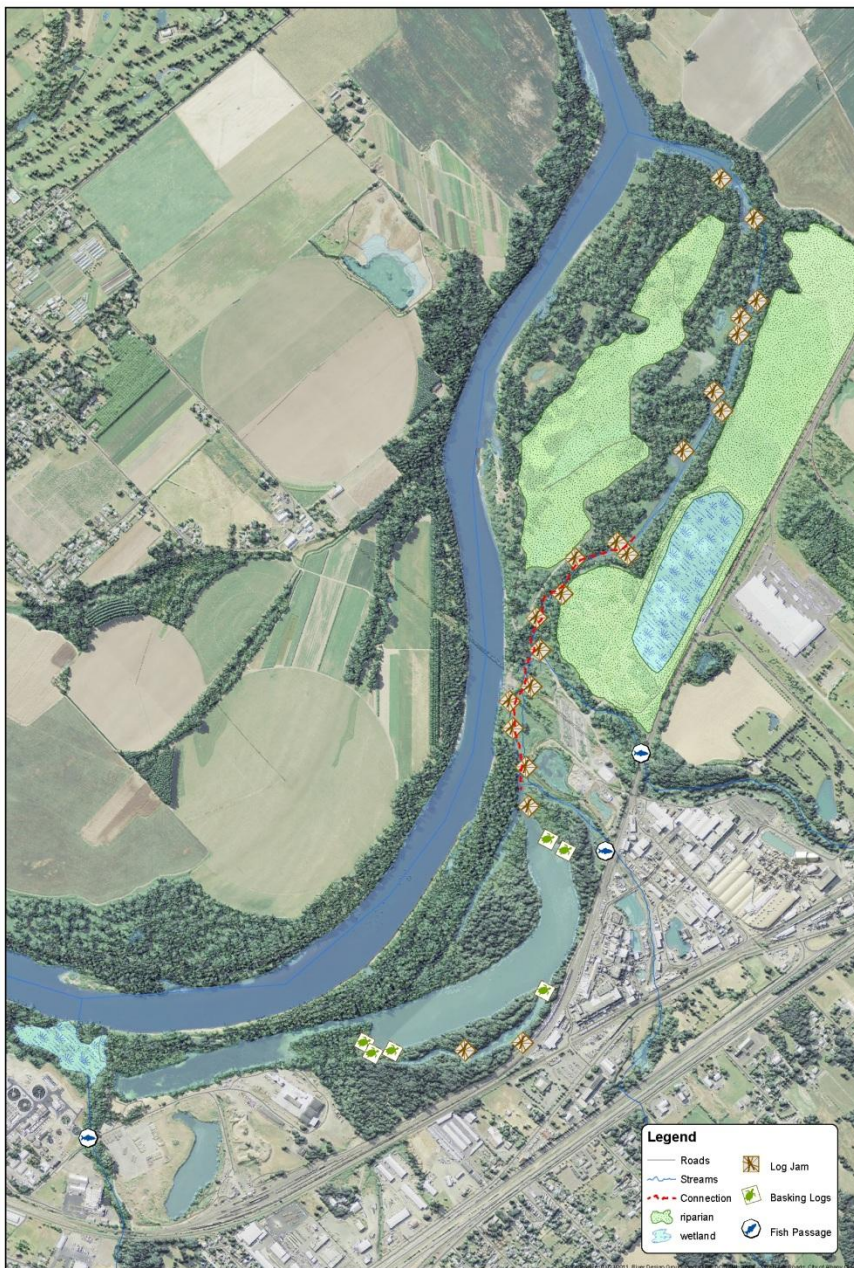


0 375 750 1,500 Feet



Example Projects

1. Pursue reveg on lower or historical surfaces closer to river
2. Enhance off-channel oxbows and lower tribs
3. Cox Creek dam removal



Proposed Treatments Map
Albany Oxbows, Albany, Oregon



0 300 600 1,200
Feet



Moving Forward...

- CWC work with willing landowners and other stakeholders
- Priority projects developed for funding and implementation
- Project implementation