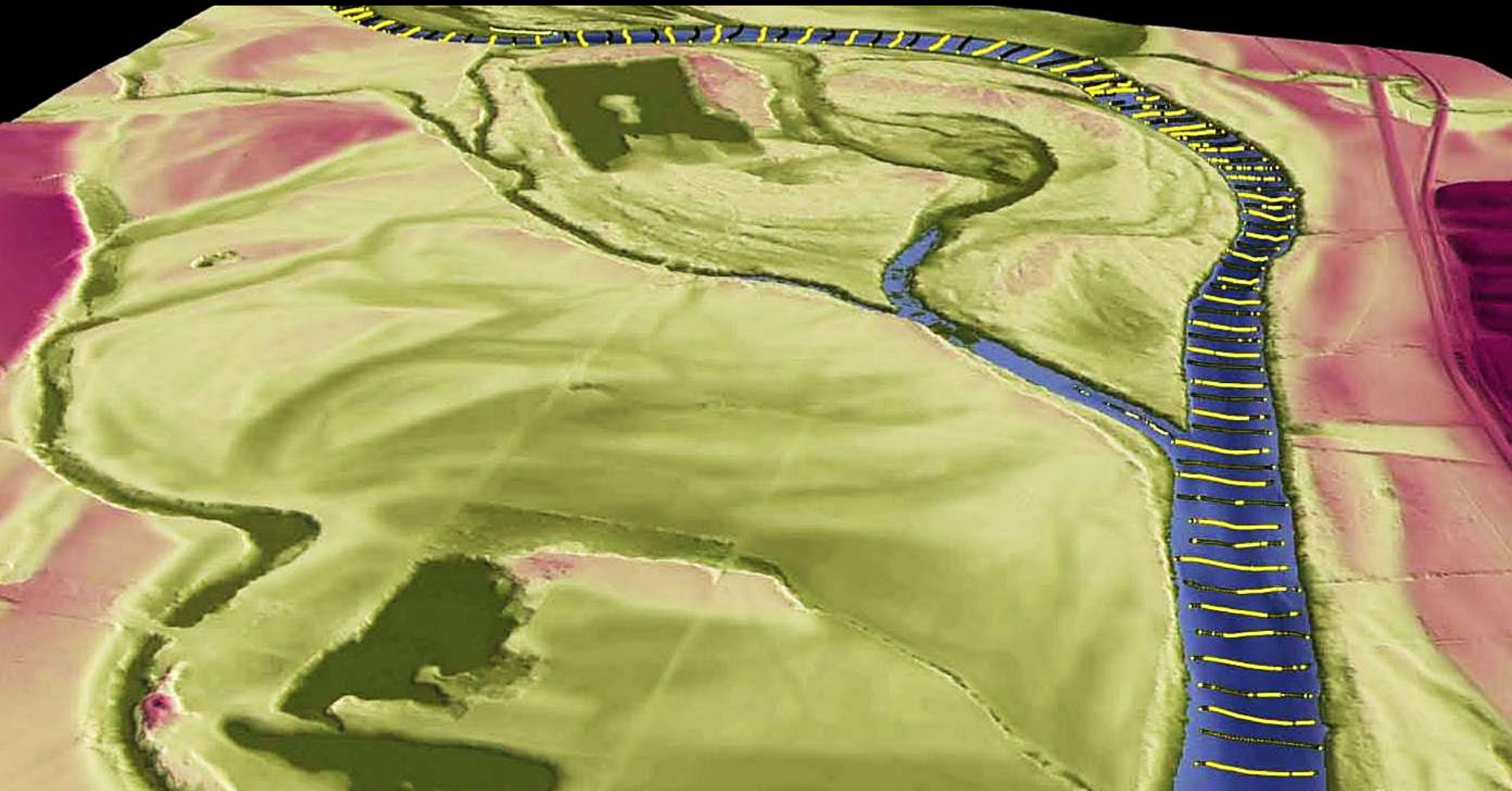
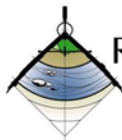


Bowers Rock State Park



Scott Wright, P.E.



RIVER
DESIGN
GROUP, INC.



RESTORING

A River of



Edited by David Hulse, Stan Gregory, and Joan Baker
for the Pacific Northwest Ecosystem Research Consortium

RESTORATION STRATEGY A VISION AND FRAMEWORK FOR THE WILLAMETTE BASIN.

Board of Directors believes must be taken to
Basin. Pressures against the environment are
significant, assertive, and unwavering action **now**.

It are already underway. Building on the
developed to date, the *Strategy* sets a strong,

development, support, and coordinate current and
logical points of connection among
Strategy guides and promotes decisions that

Strategy balances the values for a healthy
strong economy.

collaborative process involving many
is strongly endorsed by the WRI board.

and determine if the actions are working.

restoring the Willamette today. Many more
future. The *Strategy* recommends ways to

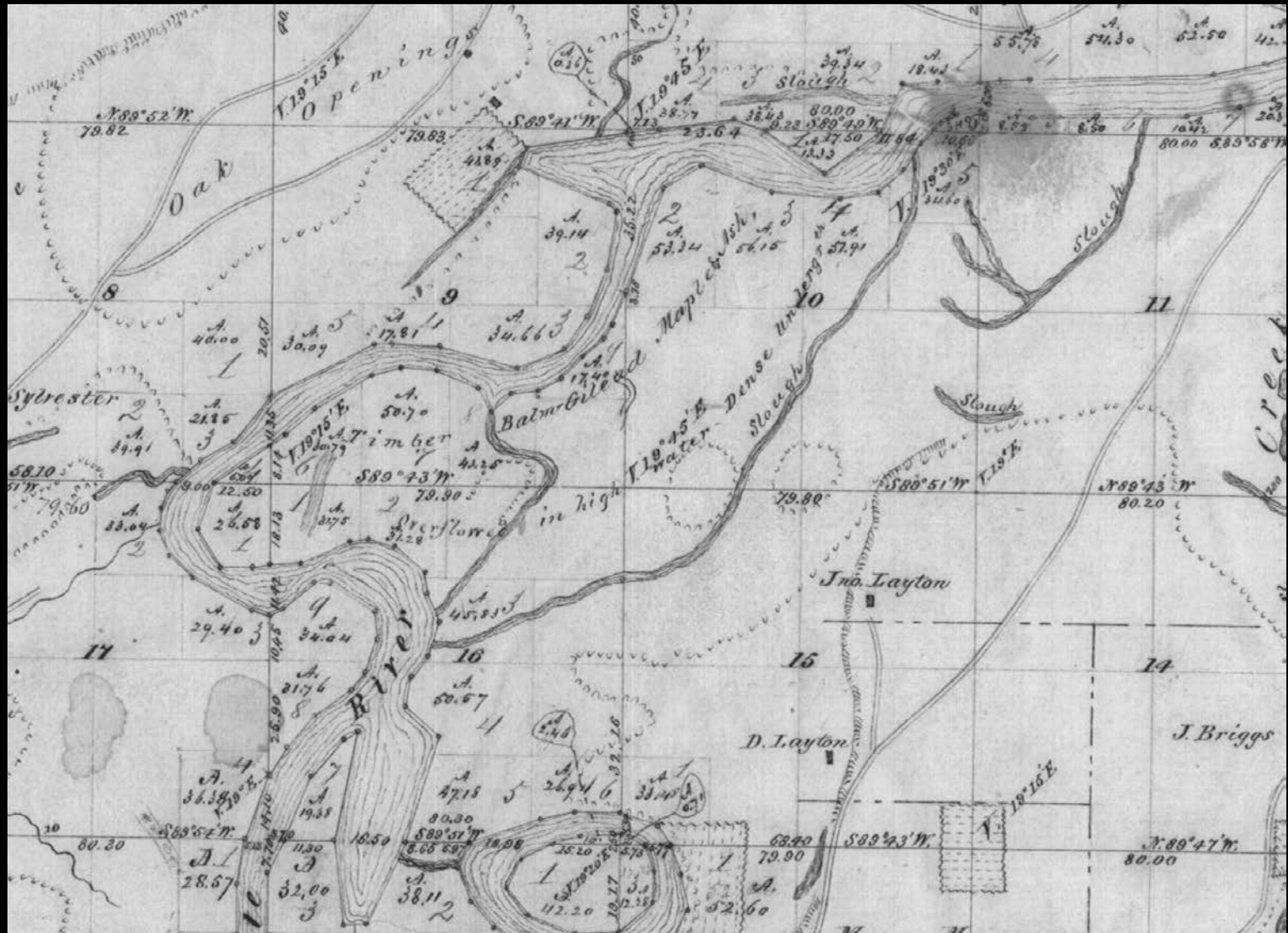
on, but must also remain flexible and
continuous assessment and updating to

THE WILLAMETTE RESTORATION OVERVIEW

2001

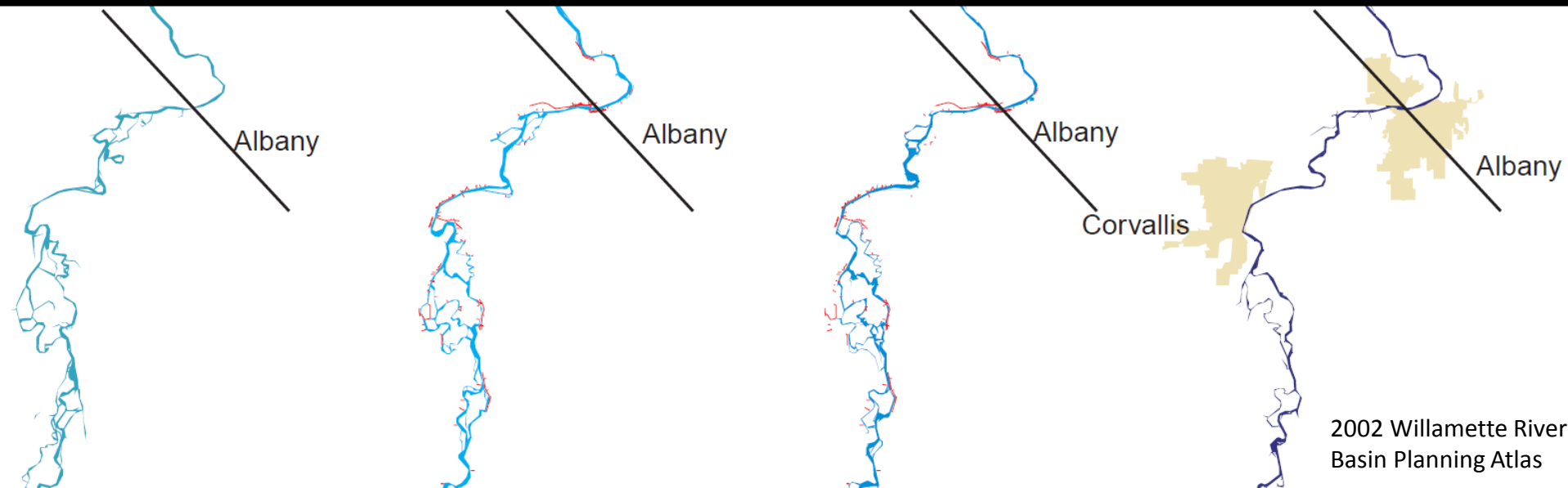
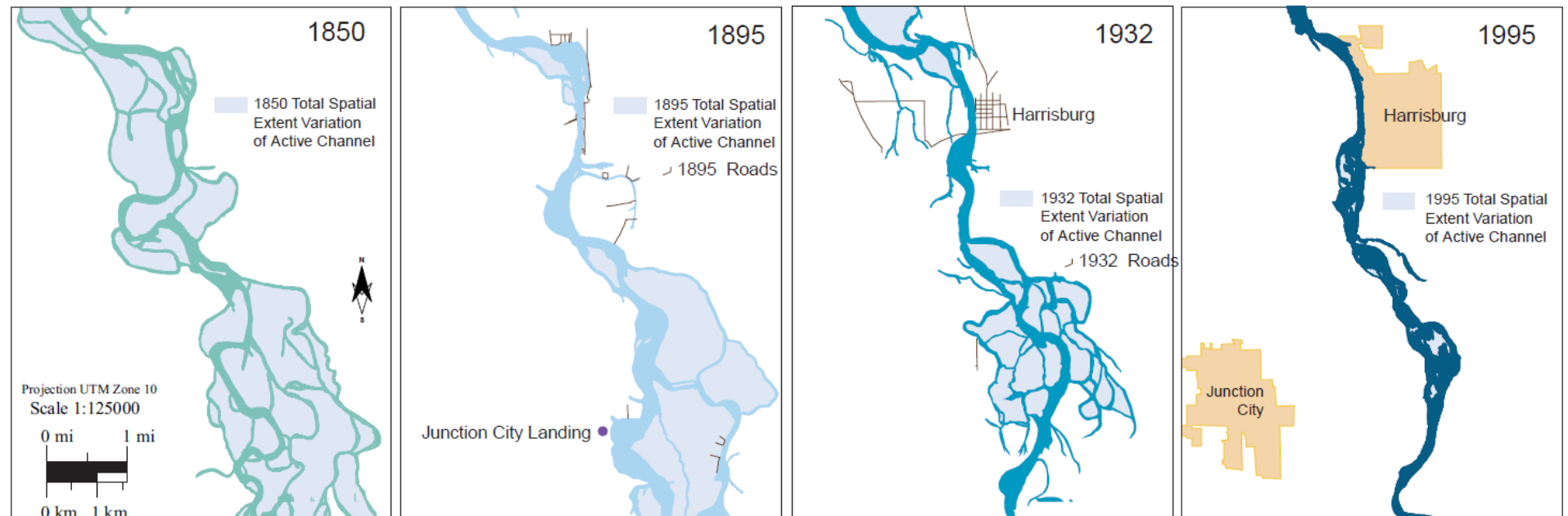
WILLAMETTE RESTORATION INITIATIVE

Historical Channels



1852 General Land Office Map

Channel Simplification



Overcoming the Willamette Basin dams

Federal officials are beginning a multimillion-dollar effort to get salmon past U.S. Army Corps of Engineers flood control dams that block fish from their best spawning habitat. The work in coming decades will require the invention of new passage systems to get fish upstream and downstream past dams. It also will involve restoring natural water temperatures and habitat below the dams. Some of the major projects include:

Foster Dam

- Construct improved trap below dam by 2014 to collect and truck adult fish above dam.

Dexter Dam

- Construct improved facility below dam by 2015 to collect and truck adult fish above Lookout Point Dam.

Big Cliff Dam

- Construction under way for facility to collect fish and truck above Detroit Dam.

Detroit Dam

- Operations under way to improve downstream temperatures; long-term solution by 2018.
- Install downstream fish passage by 2023.

Cougar Dam

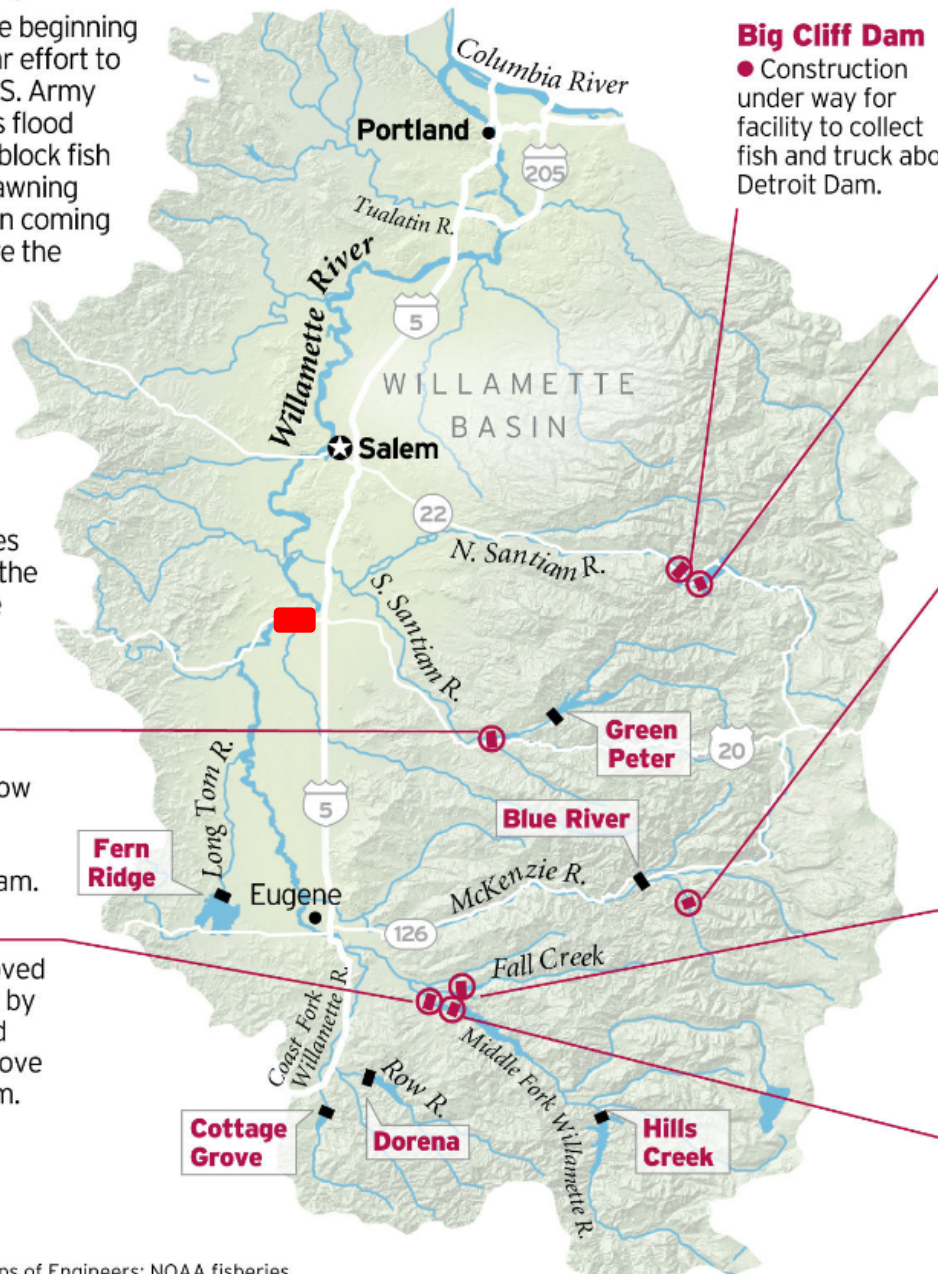
- Water temperature control tower and facility to collect fish and truck upstream already installed.
- Improve downstream fish passage. Deadline under discussion; likely between 2015 and 2017.

Fall Creek Dam

- Operations changes to improve downstream fish passage under way.
- Improve facility below dam by 2016 to collect and truck adult fish above dam.

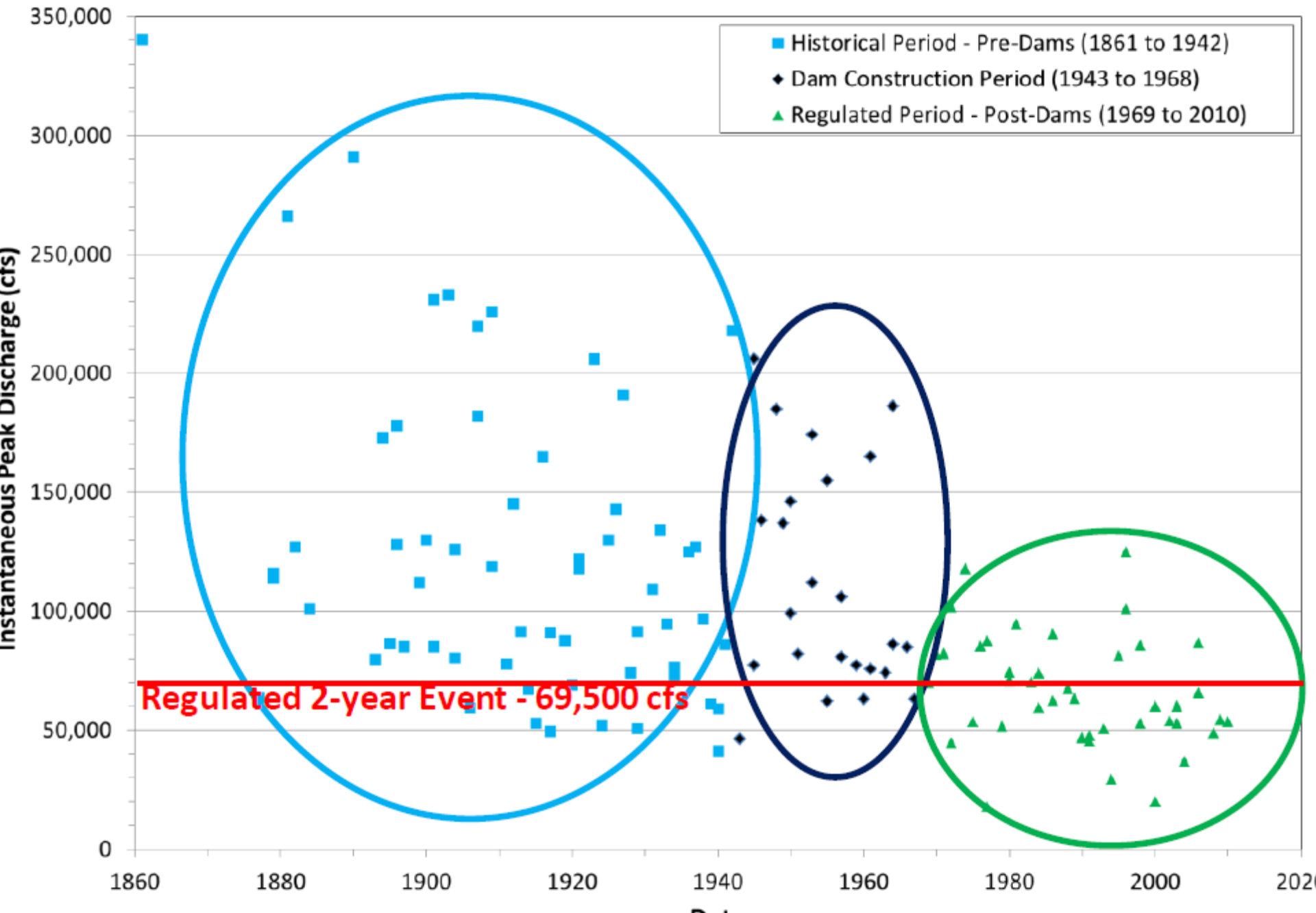
Lookout Point Dam

- Install downstream fish passage by 2021.

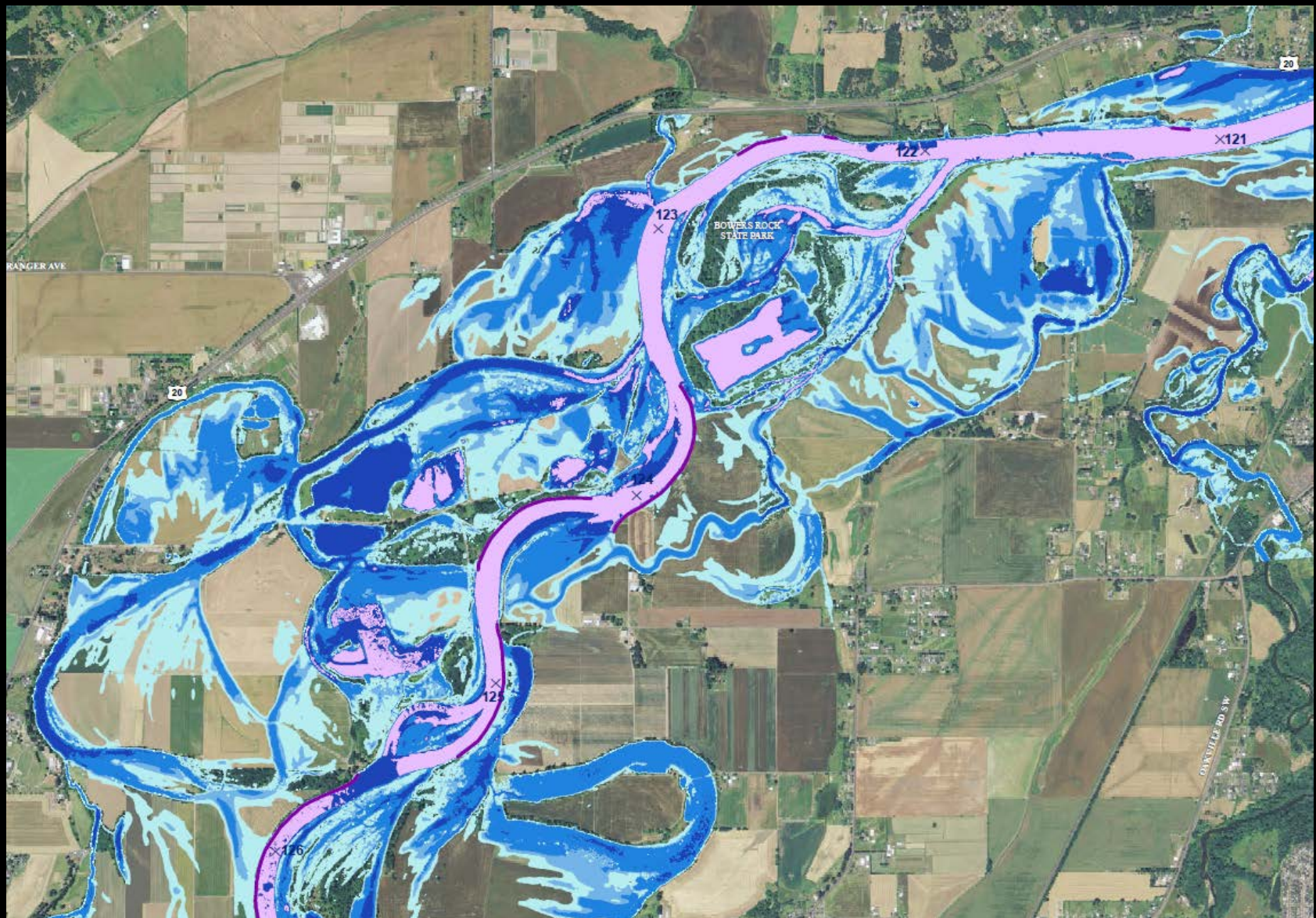


Willamette Basin

Willamette River at USGS Albany Gage (#14174000) - Comparison of Instantaneous Annual Peak Discharge



2-Yr Regulated Flood



ESA Listed Fish

- Spring Chinook



- Winter Steelhead



NMFS listed Upper Willamette River spring Chinook and Upper Willamette River winter steelhead as threatened species in 1999

Photo: Matt Stoecker

Life History Spring Chinook

Life History Stage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Upstream migration	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading	Darker horizontal-line shading	Darker horizontal-line shading	Darker horizontal-line shading	Darker horizontal-line shading	Darker horizontal-line shading	Light vertical-line shading	Light vertical-line shading		
Spawning in tributaries								Light vertical-line shading	Darker horizontal-line shading	Darker horizontal-line shading	Light vertical-line shading	
Intragravel development	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading		Light vertical-line shading	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading
Juvenile rearing	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading	Light vertical-line shading
Juvenile out-migration	Light vertical-line shading	Light vertical-line shading	Darker horizontal-line shading	Darker horizontal-line shading	Light vertical-line shading					Darker horizontal-line shading	Darker horizontal-line shading	Darker horizontal-line shading

Note: Light vertical-line shading represents low-level abundance; darker horizontal-line shading represents high abundance, and white represents rare or absent. After USACE 2000.

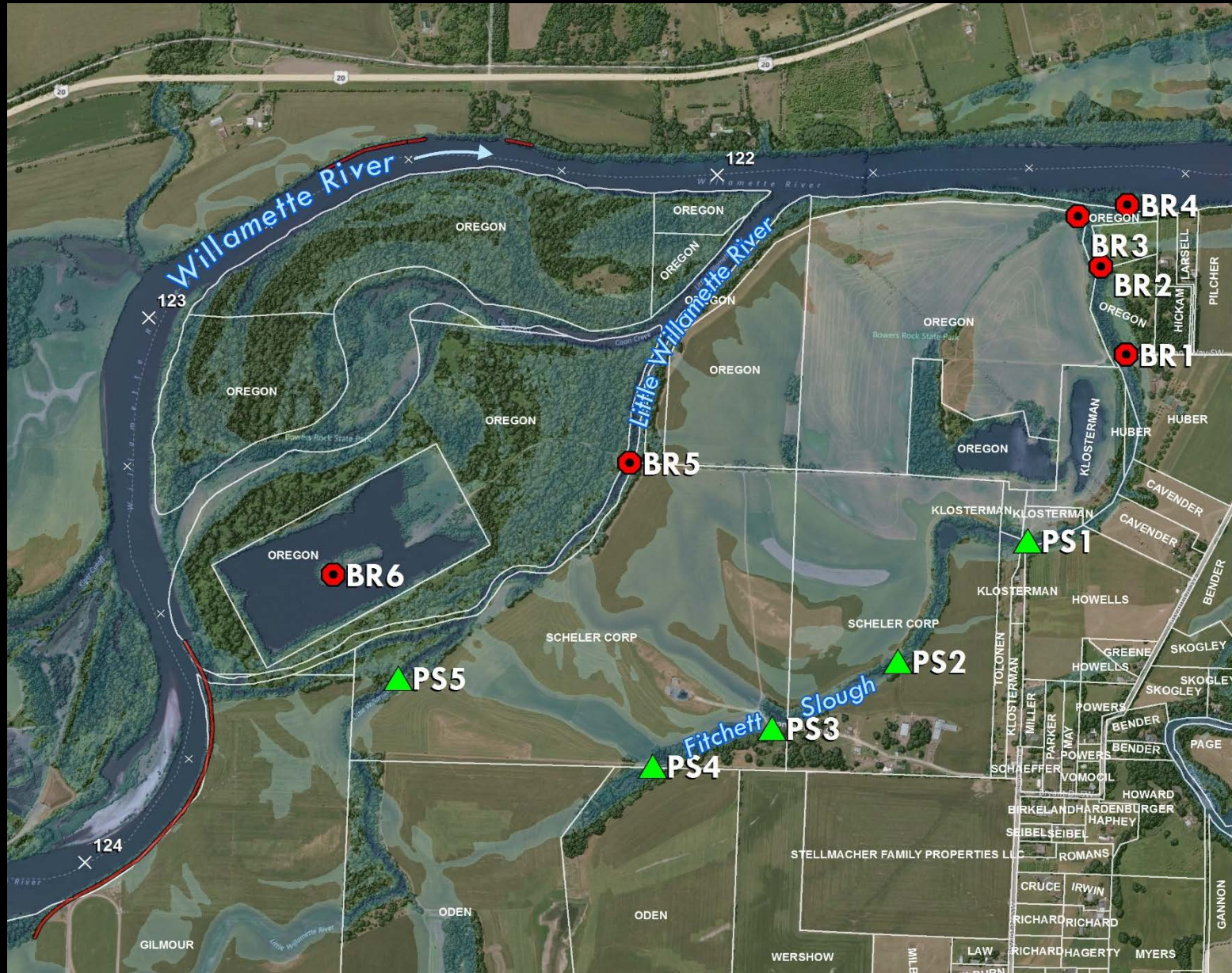
Limiting Factors

(partial list)

- Reduced access to spawning/rearing habitat in tributaries
- Altered water quality and temperature
- Lost and/or degraded floodplain connectivity and lowland stream habitat
- Physical habitat quality (complexity and diversity)



Concept Level Planning Projects



Fish Passage Connectivity



Fish Passage Connectivity



Berm Removal



Bowers Rock

