Northwest **Power** and **Conservation** Council

May 31, 2017

MEMORANDUM

TO: **Council members**

FROM: **Karl Weist**

SUBJECT: **Presentation on Willamette Biological Opinion, Habitat and Floodplain Restoration**

BACKGROUND:

Presenters: Dan Bell, Director of the Willamette Strategic Partnerships for the Bonneville Environmental Foundation and Andrew Dutterer, Partnerships Coordinator for the Oregon Watershed Enhancement Board

Summary: In 2008, the US Fish and Wildlife Service and the National Marine Fisheries Service issued Biological Opinions to address ESA-listed populations of Oregon chub, bull trout, salmon and steelhead. The BiOps assigned downstream habitat actions as a responsibility to the Action Agencies. BPA teamed with the Willamette Strategic Investment Partnership, and now the Focused Investment Partnership, to leverage funding and work toward restoring floodplain function to anchor habitats in the mainstem Willamette River.

Relevance: Actions taken under the Willamette Biological Opinions address Council strategies articulated in the 2014 Fish and Wildlife Program regarding anadromous fish mitigation in blocked areas. Specific habitat actions in the Willamette implement the Program's emerging priority 7 – "Continue efforts to improve floodplain habitats."

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Background: The Willamette Valley Project consists of 13 federal dams developed to provided flood control, hydropower generation (power share purposes run from 23% at Cougar to 100% at Big Cliff), recreation, water quality, and irrigation benefits. Declines in populations of Willamette spring chinook and steelhead, along with resident bull trout and Oregon chub led to Endangered Species Act listings in 1993, 1998 and 1999. The 2008 Biological Opinion for the Willamette Basin Flood Control Project set forth a series of proposed actions and a Reasonable and Prudent Alternative (RPA) to mitigate for the effects of the Willamette Valley Project upon those listed fish populations. Based upon many of the proposed actions taken under the BiOp, the US Fish and Wildlife Service delisted Oregon chub on February 17, 2015. Oregon chub became the first delisted fish species due to recovery.

RPA 7.1.3 directed the Action Agencies (Bonneville and the Corps) to "complete at least two of the highest priority projects that should result in significant habitat improvement for listed fish species" by 2010. From 2011 until 2023,the final term of the BiOps, the agencies need to perform additional habitat actions. The RPA notes that some complex project might take several years to implement.

Bonneville, taking the lead role for the Action Agencies, created the Habitat Technical Team (HTT) to oversee the implementation of BiOp habitat actions. To help leverage funding, the HTT teamed with the existing Willamette Strategic Investment Partnership (SIP) between the Oregon Watershed Enhancement Board and the Meyer Memorial Trust. The SIP work concentrated on identified anchor habitats of the mainstem Willamette, sites deemed important for the restoration of floodplain function. The three funding partners have been able to work together to divide the monies between their various responsibilities for habitat restoration, monitoring and evaluation and planning. The funders shared and continue to share review processes and technical evaluations to determine funding priorities.

In 2016, OWEB switched from the Strategic Investment Partnership to a Focused Investment Partnership (FIP). The Willamette FIP maintained the same habitat priorities as its previous SIP incarnation, with the same funding partners, but with the FIP partners directing the state-funded actions.

Bonneville committed $500,000 for the first two years of the HTT (FYs 2011 and 2012) and $800,000 in subsequent fiscal years through the term of the Biological Opinion. Of that total commitment, $50,000 funds OWEB administration of the HTT and $50,000 helps monitoring and evaluation of habitat actions.

Since 2008, Meyer Memorial Trust has awarded more than $13 million in funding for its 10-year Willamette Restoration Initiative. OWEB has agreed to commit over $9 million for the next six years to fund the Willamette FIP.

More Info: Please see attached excerpt from the Umbrella Project Summary Report for 2017.

https://www.salmonrecovery.gov/BiologicalOpinions/WillametteBiOp.aspx

http://www.westcoast.fisheries.noaa.gov/fish_passage/willamette_opinion/

http://www.oregon.gov/OWEB/docs/FIP/FI_definition_solicitation_criteria.pdf

Oregon

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NEWS – FOR IMMEDIATE RELEASE
January 28, 2016

Oregon Watershed Enhancement Board Awards Nearly $13 Million for Partnership Investments

Focused Investment Program to Achieve Landscape-Scale Conservation through Local Partnerships

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(McMinnville) – At its January 26-27, 2016, Board meeting in McMinnville, the Oregon Watershed Enhancement Board (OWEB) awarded grants totaling $12,770,790 to six high-performing partnerships to support landscape-scale habitat improvements for native fish and wildlife.

The six selected partnerships cover geographies that include the Malheur Wildlife Refuge and associated wetlands, habitat for Greater Sage-Grouse in eastern Oregon, forestlands around Ashland, and habitats in the Willamette, Deschutes and Grande Ronde river basins.

"Our new Focused Investment Partnership program will help local partnerships scale their work strategically with multi-year, multi-million dollar investments in natural resource conservation and restoration work," says Meta Loftsgaarden, OWEB's executive director.

Funding for these projects comes from two primary sources – the Oregon Lottery and Federal Pacific Coastal Salmon Recovery funds. Partnerships include:

- **Harney Basin Wetland Initiative** ($1,655,400) – *(Partners: High Desert Partnership, Malheur National Wildlife Refuge, Natural Resources Conservation Service, Ducks Unlimited, Intermountain West Joint Venture, Audubon Society of Portland, Harney County Court);* seeks to improve aquatic health in the areas around Malheur Lake for wetland habitat for water birds and other native fish and wildlife by controlling common carp, and to conserve or restore 6,500 acres of wet meadow habitat for spring migratory water birds.

- **The Oregon Model to Protect Sage-Grouse, All Counties** ($2,019,030) – *(Partners: Oregon Association of Conservation Districts, Harney, Lake and Malheur Soil and Water Conservation Districts, Natural Resources Conservation Service, US Fish and Wildlife Service);* will achieve landscape-level conservation of the sagebrush ecosystem and sage-steppe habitat by providing sustainability for multiple wildlife species while specifically addressing threats to the Greater Sage-Grouse in Eastern Oregon.

-more-

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- **Ashland Forest All-Lands Restoration** ($1,543,800) – *(Partners: City of Ashland, Natural Resources Conservation Service, US Forest Service, Lomakatsi Restoration Project, The Nature Conservancy);* will accomplish dry-type forest habitat restoration on critical private lands to return fire resilience and the potential for naturally beneficial outcomes from fires on an over 50,000 acre landscape.

- **Willamette Mainstem Anchor Habitats** ($2,351,100) – *(Partners: Benton and Clackamas Soil and Water Conservation Districts; Long Tom, Luckiamute, Calapooia, and Coast Fork Watershed Councils; City of Eugene; Friends of Buford Park; Greenbelt and McKenzie River Land Trusts; Trust for Public Land; The Nature Conservancy; Willamette Riverkeeper, and the Oregon Departments of Fish and Wildlife and Parks and Recreation);* The program will focus on the mainstem Willamette River from south of Eugene-Springfield to Newburg. Ecological outcomes will include, rehabilitated floodplain and riparian forests; increased side-channel complexity; and a reconnection of the river to its historic floodplain. Restoration actions will support the recovery of Chinook Salmon, steelhead, Pacific Lamprey and Oregon Chub, as well as numerous avian and wildlife species.

- **Upper Grande Ronde Initiative** ($1,601,460) – *(Partners: Grande Ronde Model Watershed, Oregon Department of Fish and Wildlife, Confederated Tribes of the Umatilla Indian Reservation, Union Soil and Water Conservation District, US Forest Service);* will improve habitat quantity, quality and diversity for all life stages of Spring Chinook Salmon, Steelhead and other native species by protecting and restoring watershed process and function, cold-water refugia, and diverse, complex instream and floodplain habitats.

- **Habitat Restoration for Anadromous Fish Reintroduction in the Upper Deschutes** ($3,600,000) – *(Partners: Upper Deschutes Watershed Council, Crooked River Watershed Council, Deschutes Land Trust and Deschutes River Conservancy);* will restore the physical and biological conditions necessary for successful reintroduction of Salmon and Steelhead into 226 miles of historic habitat in Whychus Creek, the Metolius River and the Crooked River to support land conservation, stream habitat restoration, stream flow, fish passage, fish screening, monitoring and outreach.

Since 1999, the Oregon Lottery has provided over $500 million to OWEB's grant program that helps restore, maintain and enhance Oregon's watershed along with additional investments from Salmon License Plate revenues. Combined, the Lottery has earned over $9 billion for watershed enhancements, public education, state parks and economic development. For more information about the Oregon Lottery visit www.oregonlottery.org

For additional information about OWEB's grant programs, contact Eric Hartstein at eric.hartstein@oweb.state.or.us.

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APPENDIX J

Willamette Mainstem Funded Restoration Projects, 2008-2016

Year	Reach	Project	Applicant	Description	OWEB	MMT	BPA	Total
2008	Mid	Luckiamute Landing Restoration	Luckiamute WC	Reduce invasive species from the Willamette floodplain at Luckiamute Landing State Park.	$136,287			$136,287
2008	Upper	Buford Park Restoration Monitoring	FOBP/ Mt. Pisgah			$69,500		$69,500
2008	Upper	S. Meadow Floodplain Enhancement, Phase 3	FOBP/ Mt. Pisgah	Third phase of floodplain restoration and channel re-connection. Lane Co/RM 176+	$204,823	$15,000		$219,823
2008	Upper	Case study of Harkens Lake Restoration Process	OSU Institute for Natural Resources	Case study to help landowners and agencies understand the scope and nature of challenges and opportunities during the process of developing restoration projects along the mainstem.		$37,893		$37,893
				2008 SUBTOTAL	**$341,110**	**$122,393**	**$0**	**$463,503**
2009	Lower	Stephen's Creek	City of Portland	Restore the outlet and floodplain of Stephens Creek, at RM 16 between the Sellwood and Ross Island bridges in Portland.	$199,060			$199,060
2009	Mid	Luckiamute SNA Restoration	CPRC&D	Support for the Luckiamute WC to restore the LSNA		$35,398		$35,398
2009	Upper	Acquisition planning and outreach	McKenzie River Trust			$50,000		$50,000
2009	Upper	Middle and Coast Fork Willamette Floodplain Restoration	The Nature Conservancy	Planning grant only. Objectives were to develop initial restoration concepts; conduct a cost/benefit analysis; develop preliminary engineering designs; complete a real estate evaluation and plan; and complete preliminary environmental compliance.		$86,100		$86,100
2009	Upper	Willamette Floodplain Restoration Project Design	The Nature Conservancy	Develop feasibility-level engineering designs for 10-15 channel and floodplain restoration projects along the lower Coast and Middle forks of the Willamette River.	$44,373			$44,373
2009	Science	Fish research	OSU	Research and development of fish data layers for SLICES		$56,555		$56,555
2009	Science	Rivers to Ridges	LCOG	For Rivers to Ridges Willamette River visioning process.		$35,870		$35,870
				SUBTOTAL 2009	**$243,433**	**$263,923**	**$0**	**$507,356**

Year	Reach	Project	Applicant	Description	OWEB	MMT	BPA	Total
2010	Lower	Tryon Creek Confluence	City of Portland	Enhance off-channel habitat for ESA-listed salmonids and other native fish species at the Tryon Creek confluence at RM 27 near the jurisdictional boundary between the Cities of Lake Oswego and Portland.	$100,000			$100,000
2010	Mid	Luckiamute Landing	CPRC&D	Outreach to inform future restoration Polk Co/ RM 109-110.		$124,600		$124,600
2010	Upper	Albany Reach Assessment	Calapooia WC	Assessment and prioritization of potential restoration sites in the Albany Reach.		$34,000		$34,000
2010	Upper	Little Willamette, Phase 1	Greenbelt Land Trust	Conversion of floodplain agriculture to floodplain forest and native prairie. Linn Co/RM 124	$25,050	$75,000		$100,050
2010	Upper	Middle Willamette Landowner Outreach/Appraisal Support	Greenbelt Land Trust	$65,670 awarded in April 2010; 74,500 in October		$140,170		$140,170
2010	Upper	Landowner Outreach	McKenzie River Trust	For outreach on the upper Willamette mainstem and lower McKenzie rivers		$132,000		$132,000
2010	Upper	Green Island Restoration	McKenzie River Trust	REST on 3 ac/Lane Co/ RM 174			$82,928	$82,928
2010	Science	Fish research	OSU	Identification of cold water refugia for SLICES and fish monitoring at Willamette Mission SP		$52,597		$52,597
2010	Science	Willamette River gravel pit research and restoration	Willamette Riverkeeper	Research the gravel mining industry and permitting process to identify potential restoration opportunities at abandoned gravel pits.		$93,300		$93,300
2010	Science	'Willamette Futures' film	Freshwaters Illustrated	Documentary film		$40,000		$40,000
				2010 SUBTOTAL	**$125,050**	**$691,667**	**$82,928**	**$899,645**
2011	Mid	Cox Creek/Oxbow Lakes Planning	Calapooia WC	Planning to remove barriers to fish passage, improve riparian cover, etc.		$48,427		$48,427
2012	Upper	Little Willamette, Phase 2	Greenbelt Land Trust	Restoration planning			$75,000	$75,000
2011	Upper	Long Tom Capacity	Long Tom WC	Landowner outreach between Green Is. and Harken's Lake.		$25,637		$25,637
2011	Upper	Appraisal and Transaction Costs	McKenzie River Trust	Support for appraisal and transaction costs for three properties on the L. McKenzie ($47,100) and for one property on the Willamette ($16,000)		$63,100		$63,100

Year	Reach	Project	Applicant	Description	OWEB	MMT	BPA	Total
2011	Upper	Wildlife Habitat Conservation Model Development	CPRC&D	To develop a model for conserving wildlife habitat on Valley vegetable farms		$14,949		$14,949
2011	Upper	Harkens (and Horseshoe) Lakes Restoration, Phase 1	Greenbelt Land Trust	Restore floodplain forest on up to 100 ac at Harkens Lake. Benton Co/RM 153-155. REST: $52,304; PE: $140,450.	$192,754			$192,754
2011	Upper	Coast Fork Confluence Floodplain Restoration Design	FOBP/Mt. Pisgah	Fish sampling on Confluence Is. of ponds; hydrologic analysis of the potential effects of flows on inundation and on habitat availability for target aquatic species.	$48,485			$48,485
2011	Science	SLICES Framework	OSU	Expand a framework for research, monitoring and evaluation in the Willamette floodplain.		$120,000		$120,000
2011	Science	2-Year Inundation Mapping	River Design Group			$73,745		$73,745
2011	Science	SLICES Framework	U of O	Addition of new data layers.		$75,000		$75,000
				2011 SUBTOTAL	**$241,239**	**$420,858**	**$75,000**	**$737,097**
2012	Mid	Luckiamute SNA Restoration	Luckiamute WC	Control of invasives on 217 acres of the 925-acre LSNA. Polk Co/RM 109-110. Both MMT awards for 2012 ad 2013 went to CPRC&D.	$198,445	$50,000	$100,000	$348,445
2012	Mid	Cox Creek Confluence	Calapooia WC	Removal of a small dam at the mouth of Cox Creek and re-veg on 11 ac of the surrounding floodplain. REST: $186,107; PE: $13,483.	$199,590			$199,590
2011	Upper	Little Willamette, Phase 2	Greenbelt Land Trust	REST on the 198-ac acquisition/ Linn Co/RM 124 REST: $164,711; PE: $202,997. Subsequently amended with an additional $168,000 for PE.	$535,708			$535,708
2012	Upper	Albany-Corvallis Floodplain	Benton SWCD	Technical Assistance		$188,613		$188,613
2012	Upper	Outreach	McKenzie WS Alliance	To develop outreach and restoration projects on the L. McKenzie River		$50,380		$50,380
2012	Upper	Landowner Outreach	Long Tom WC	Mainstem outreach between Eugene and Monroe		$25,637		$25,637
2012	Upper	Willamette River Program	Greenbelt Land Trust	General program support		$141,655		$141,655
2012	Upper	Aerial Photography/ Conservation Planning Consultant	Greenbelt Land Trust			$14,345		$14,345

Year	Reach	Project	Applicant	Description	OWEB	MMT	BPA	Total
2012	Upper	Willamette Confluence restoration planning	The Nature Conservancy	Design restoration plans for 14 gravel ponds and complete plans for the easternmost portion of the floodplain. Lane Co/RM 176+	$200,000	$90,200		$290,200
2012	Upper	Harkens and Horseshoe Lakes	Greenbelt Land Trust	REST planning for 2008/2012 367-ac acquisition Benton Co/RM 153-155.			$87,495	$87,495
2012	Upper	Mid-Willamette Floodplain Restoration (Harkens and Horseshoe Lakes)	Greenbelt Land Trust	Restoration of bottomland hardwood forest, open wetlands, wet prairie, and upland prairie on 75 acres (out of a total 600) at Harkens and Horseshoe lakes		$100,000		$100,000
2012	Upper	CARP Restoration Planning	McKenzie River Trust	REST planning for 58-ac acquisition. Lane Co/RM 173-174		$34,730	$95,000	$129,730
2012	Upper	Green Island Restoration	McKenzie River Trust	Restore 195 acres of ag land to floodplain forest. Lane Co/ RM 174. OWEB - REST: $163,646; PE: $200,934.	$364,580	$150,000		$514,580
2012	Upper	Restoration planning for Glassbar Is./Turtle Flats	FOBP/ Mt. Pisgah			$17,000		$17,000
2012	Upper	Willamette River Program	McKenzie River Trust	General program support		$133,000		$133,000
2012	Upper	Half Moon Bend Riparian Restoration	Benton SWCD	Re-establish 27 acres of riparian forest.		$82,024		$82,024
2012	Upper	Bowers Rock-Little Willamette Habitat Connectivity Restoration	Calapooia WC	Planning/Technical Assistance to design replacing two failing culverts with a railcar bridge. Linn Co/RM 123. $30k in planning from MMT. Restoration portion of project was canceled		$30,000		$30,000
2012	Science	SLICES Framework	U of O	Addition of new data layers.		$141,000	$25,000	$166,000
2012	Science	Willamette Floodplain geomorphological study	Benton SWCD	Geomorphic mapping of the floodplain from McKenzie River confluence to Corvallis by USGS with the objective of identifying areas most amenable to restoration ($60,500 USGS match).	$37,950	$28,600		$66,550
2012	Science	Willamette River Fish Community Monitoring	OSU Office of Sponsored Programs	Monitoring for the effectiveness of aquatic restoration. Data integrated with SLICES framework. Water quality measured in legacy gravel pits	$126,246			$126,246
2012	Science	Agricultural Research	Agricultural Research Foundation	Develop vegetation management strategies to rehabilitate riparian sites in the Willamette Valley.		$38,664		$38,664
				2012 SUBTOTAL	**$1,662,519**	**$1,315,848**	**$307,495**	**$3,285,862**

Year	Reach	Project	Applicant	Description	OWEB	MMT	BPA	Total
2013	Mid	Luckiamute SNA Restoration	Luckiamute WC	Control of invasives on 217 acres of the 925-acre LSNA. Polk Co/RM 109-110. Both MMT awards for 2012 ad 2013 went to CPRC&D.		$50,000		$50,000
2013	Mid	Luckiamute SNA Restoration	Luckiamute WC	Control of invasives. REST: $29,585; PE: $75,000	$104,585			$104,585
2013	Mid	Willamette Mission Floodplain Reforestation, Phase 1	Willamette Riverkeeper	Site prep and native shrub and tree planting on 200 acres. RM 72-74	$215,643			$215,643
2013	Mid	Luckiamute SNA Floodplain Enhancement, Phase 3	Luckiamute WC	Site preparation, planting, and plant establishment on the final 117 acres of the 925-acre LSNA.		$75,000		$75,000
2013	Upper	Bowers Rock-Little Willamette Habitat Connectivity Restoration	Calapooia WC	Planning/Technical Assistance to design replacing two failing culverts with a railcar bridge. Linn Co/RM 123. $30k in planning from MMT. Restoration portion of project was canceled	$29,487			$29,487
2013	Upper	(Harkens) and Horseshoe Lakes Rest, Phase 1	Greenbelt Land Trust	Restore floodplain forest on 50 ac of Horseshoe Lake. Linn Co/RM 125. REST: $20,922; PE: $56,180.	$77,102			$77,102
2013	Upper	Green Island Channel Reconnection	McKenzie River Trust	Improve 4.5 mi. of off-channel and floodplain habitat. Lane Co/ RM 174.			$309,089	$309,089
2013	Upper	Willamette Confluence Design & Restoration	The Nature Conservancy	Modeling and engineering design at Willamette Confluence to improve floodplain connection and restoration of Pudding Ponds for side channel complexity and improved floodplain connection of three ponds.	$149,741	$246,287		$396,028
2013	Upper	Snagboat Bend-Sam Daws	Long Tom WC	TA for design support for the removal of nine fish passage barriers at two publicly owned properties. Goal is to connect wetlands to adjacent side channels.	$69,879			$69,879
2013	Upper	Green Island Channel Rest, Phase 2	McKenzie River Trust	Grade 3 former gravel ponds, and construct a side channel to provide connection to the ponds.	$336,762		$534,723	$871,485
2013	Upper	Harkens Lake Rest, Phase2	Greenbelt Land Trust	TA/REST to implement removal of crossings and 1 water control structure, and to grade part of the FP; install 3 head gates and revegetate 130 ac. 2.6 miles of remnant side channel opened, 5,800 feet of swales created for benefit of U. Willamette River ESU Chinook salmon.	$227,975		$165,277	$393,252
2013	Science	Willamette Floodplain Revegetation Effectiveness Monitoring	Stillwater Sciences	Validation monitoring of 6 FP sites (Cox Creek, Luckiamute Landing, Green Island, Half Moon Bend State Park, Harkens Lake, and Horseshoe Lake).	$25,000	$25,000		$50,000

Year	Reach	Project	Applicant	Description	OWEB	MMT	BPA	Total
2013	Science	Gravel pit research	The Nature Conservancy	Develop Decision Support Tool to assess restoration potential at former aggregate mining sites.		$93,300		$93,300
2013	Science	Willamette Floodplain Geomorphic Mapping	Benton SWCD	TA to develop maps of mainstem corridor from confluence with the Coast and Middle forks to W. Falls. Maps to be added to Slices.		$94,000		$94,000
				2013 SUBTOTAL	**$1,236,174**	**$583,587**	**$1,009,089**	**$2,828,850**
2014	Lower	Clackamas River Confluence Restoration	Clackamas River Basin Council	Located on 9.3 acres of Dahl Beach Park at confluence of Clackamas and Willamette rivers at RM 24-25. Engineering designs, excavate and regrade two interior basins and a side channel. Place large wood, remove invasives and plant natives.			$85,383	$85,383
2014	Mid	Luckiamute SNA Floodplain Enhancement, Phase 3	Luckiamute WC	Continued from 2013; MMT spread payments out over two fiscal years.		$196,585		$196,585
2014	Mid	Minto Is. Rest. Strategy and Habitat Management Plan	City of Salem	TA to support development of a Rest Strategy and Mgmt. Plan for the recently acquired, 307-acre Minto Is.		$56,000		$56,000
2014	Mid	Luckiamute SNA Phase 3/PE	Luckiamute WC	Completion of Phase 3 REST and start of PE on 118 acres.		$110,172		$110,172
2014	Mid	Willamette Mission floodplain Reforestation, Phases 1 & 2	Willamette Riverkeeper	PE on Phase 1 plantings on 200 acres and restoration and PE on 195 new acres. State park located btw RM 72-74.	$223,601	$105,000		$328,601
2014	Upper	Snag Boat/Sam Daws side channel/floodplain restoration, Phase 1	Long Tom WC	Removal or alteration of 14 barriers at two public sites and one private site between RM 144-147. Barriers have disconnected 61 acres (3.3 linear miles) of floodplain and side channels from the mainstem.		$91,861	$287,810	$379,671
2014	Upper	Harkens Lake Restoration, Phase 3	Greenbelt Land Trust	Establish 70 acres of riparian forest and establish 60 acres of prairie and oak savanna on the Harkens Lake acquisition btw RM 153-154	$171,481		$187,966	$359,447
2014	Upper	Willamette Confluence planning/restoration, Phase 2	The Nature Conservancy	Complete final designs for Coast Fork, Middle Fork, and Turtle Flats. Reconnect surface water flows btw CF channel and floodplain; grade and shape former aggregate ponds; create and enhance side channels.	$278,275	$169,075		$447,350
2014	Upper	Willamette Mainstem Cooperative Restoration Phase 1	Benton SWCD	Located on public and private lands between Albany and Corvallis, covering about 400 acres over 20 river miles. Focus on aquatic and terrestrial invasive plant control.	$221,643		$38,841	$260,484

Year	Reach	Project	Applicant	Description	OWEB	MMT	BPA	Total
2014	Science	Tracking progress toward restoration goals	U of O/OSU	SLICES Framework. Updating: incorporating 2010 baseline info on land use/land cover, forest connectivity; info on cold-water refugia; info on high-quality rearing habitat for juvenile Spring Chinook; and results from 2011-13 fish community sampling. Expanding: Part-way up the lower Middle Fork and Santiam rivers.		$200,000		$200,000
				2014 SUBTOTAL	**$895,000**	**$928,693**	**$600,000**	**$2,423,693**
2015	Mid	LSNA Floodplain Reconnection Design	Luckiamute WC	Located on public land between RM 108-110. TA will produce designs for re-connecting or enhancing existing floodplain areas with the Willamette and Luckiamute rivers.			$51,996	$51,996
2015	Mid	Willamette Mission Floodplain Reforestation, Phase 3	Willamette Riverkeeper	Continuing project at the state park to remove invasives and restore habitat complexity on 417 acres with benefits to numerous at-risk species, including Chinook and steelhead.		$199,525	$100,475	$300,000
2015	Mid	Minto Island Floodplain Revegetation	City of Salem	Located on a City of Salem park at RM 85, the project will enhance 103.5 acres through invasive weed control and native plant establishment.	$114,066	$149,937		$264,003
2015	Mid	Bowers Rock State Park Revegetation	Calapooia WC	Located at a State Park btw RM 122-123, will restore 20 acres of former pastureland to native habitat.		$38,828		$38,828
2015	Upper	Green Island - Channel/Floodplain Rest., Ph. 3	McKenzie River Trust	Located on conservation land at the confluence of the Willamette and McKenzie rivers at RM 174. Project will enhance swales by removing barriers and planting native vegetation on 50 acres.		$130,811	$107,000	$237,811
2015	Upper	Harkens Lake Restoration, Ph. 5	Greenbelt Land Trust	Located on conservation land btw RM 153-154. Project will establish 55 acres of new floodplain forest.	$120,248	$134,752		$255,000
2015	Upper	Turtle Flats/W. Confluence Reforestation	FOBP/Mt. Pisgah	Located at the confluence of the Coast and Middle forks of the Willamette R. at RM 187. Project will restore diverse native habitats on 64 ac.	$19,184		$280,816	$300,000
2015	Upper	Snag Boat Bend/Sam Daws Landing Reforestation, Phase 2	Long Tom WC	Located on two, separate publicly owned properties at RM 144-147. Project will replant 55 ac of historic floodplain forest and improve habitat for numerous at-risk species, including Chinook, Pacific lamprey, and w. pond turtle.	$140,252		$159,713	$299,965
				2015 SUBTOTAL	**$393,750**	**$ 653,853**	**$700,000**	**$1,747,603**

Year	Reach	Project	Applicant	Description	OWEB	MMT	BPA	Total
2016	Mid	Willamette Mission Reforestation Phase 4	Willamette Riverkeeper	Continued floodplain reforestation actions and PE at North and South Forests, totaling 227 acres.	$295,420	$154,205	$216,424	$666,049
2016	Upper	Green Island Floodplain Phase 4	McKenzie River Trust	Located on conservation land at the confluence of the Willamette and McKenzie rivers at RM 174. Project will enhance swales by removing barriers and planting native vegetation and conducting PE on roughly 200 acres.	$62,631		$281,750	$344,381
2016	Upper	Snag Boat Bend Floodplain Reforestation Phase 3	Long Tom WC	Removal of existing constructed berms and water control structures, as well as continued floodplain reforestation on 48 acres.	$200,000		$201,826	$401,826
2016	Upper	Bowers Rock Phase 1 Restoration	Calapooia WC	Restoration design development for alternatives to gravel pit pond reconnection to mainstem Willamette and addressing several culvert and low water crossing through two different sloughs on the property. Also includes invasives plant species restoration treatment.	$94,000	$19,102		$113,102
2016	Upper	Sam Daws Landing Phase 3 Restoration Design	Long Tom WC	Design work to explore alternatives for gravel pit pond reconnection to the mainstem Willamette and development of associated side channels.	$60,000			$60,000
2016	Upper	Willamette Confluence Middle Fork Restoration	The Nature Conservancy	Floodplain reconnection through grading and shaping existing gravel ponds and create side channel habitat, followed by revegetation planting.	$675,001	$303,327		$978,328
2016	Science	Willamette Mission Channel Monitoring	Willamette Riverkeeper	Baseline monitoring to precede invasive Ludwigia treatment on two side channel sloughs on the property.	$55,219			$55,219
2016	Science	SLICES Framework	U of O	Addition of new data layers.		$50,000		$50,000
2016	Science	Cold Water Refuge Research	USGS	Research throughout the mainstem corridor focused on cold water alcoves and other cold water features that might provide thermal refuge during summer temperatures. This work is intended to inform future restoration actions in the basin.		$198,366		$198,366
				2016 SUBTOTAL	**$1,442,271**	**$725,000**	**$700,000**	**$2,867,271**
				TOTAL	**$6,580,546**	**$5,705,822**	**$3,474,512**	**$15,760,880**

Briefing on Willamette Bi-Op Habitat & Floodplain Restoration (*2009-012-00*)

NWPCC Meeting
Corvallis, OR

June 14, 2017

Dan Bell, BEF
Matt Blakeley-Smith, GLT
Andrew Dutterer, OWEB

Willamette Project Bi-Op & Habitat Restoration

RPA 7.1.2

1. Develop project selection criteria to address factors limiting recovery of ESA-listed fish populations.
2. Identify proposals for habitat restoration projects.
3. Forward proposals to NMFS for review.
4. Fund priority projects.

RPA 7.1.3

Fund at least two habitat restoration projects each year.

NOAA National Oceanic and Atmospheric Administration U.S. Department of Commerce

U.S. Fish & Wildlife Service Department of the Interior

US Army Corps of Engineers®

Bonneville Power Administration

NWPCC Program Guidance

Columbia Basin Fish and Wildlife Program:

- Build from strength
- Focus on restoring ecosystems, not single species
- Continue efforts to improve floodplain habitats

Willamette Restoration Program

Goals

- Bi-Op
- Recovery Plans

Objectives

- Anchor Habitat
- Re-establish channel complexity & length
- Floodplain reconnectivity
- Floodplain reforestation

Innovative Public-Private Funding Partnership

Year	Reach	Project	Applicant	Description	OWEB	MMT	BPA	Total
2016	Mid	Willamette Mission Reforestation Phase 4	Willamette Riverkeeper	Continued floodplain reforestation actions and PE at North and South Forests, totaling 227 acres.	$295,420	$154,205	$216,424	$666,049
2016	Upper	Green Island Floodplain Phase 4	McKenzie River Trust	Located on conservation land at the confluence of the Willamette and McKenzie rivers at RM 174. Project will enhance swales by removing barriers and planting native vegetation and conducting PE on roughly 200 acres.	$62,631		$281,750	$344,381
2016	Upper	Snag Boat Bend Floodplain Reforestation Phase 3	Long Tom WC	Removal of existing constructed berms and water control structures, as well as continued floodplain reforestation on 48 acres.	$200,000		$201,826	$401,826
2016	Upper	Bowers Rock Phase 1 Restoration	Calapooia WC	Restoration design development for alternatives to gravel pit pond reconnection to mainstem Willamette and addressing several culvert and low water crossing through two different sloughs on the property. Also includes invasives plant species restoration treatment.	$94,000	$19,102		$113,102
2016	Upper	Sam Daws Landing Phase 3 Restoration Design	Long Tom WC	Design work to explore alternatives for gravel pit pond reconnection to the mainstem Willamette and development of associated side channels.	$60,000			$60,000
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Bonneville POWER ADMINISTRATION

meyer MEMORIAL TRUST

OREGON WATERSHED ENHANCEMENT BOARD OWEB

Accomplishments

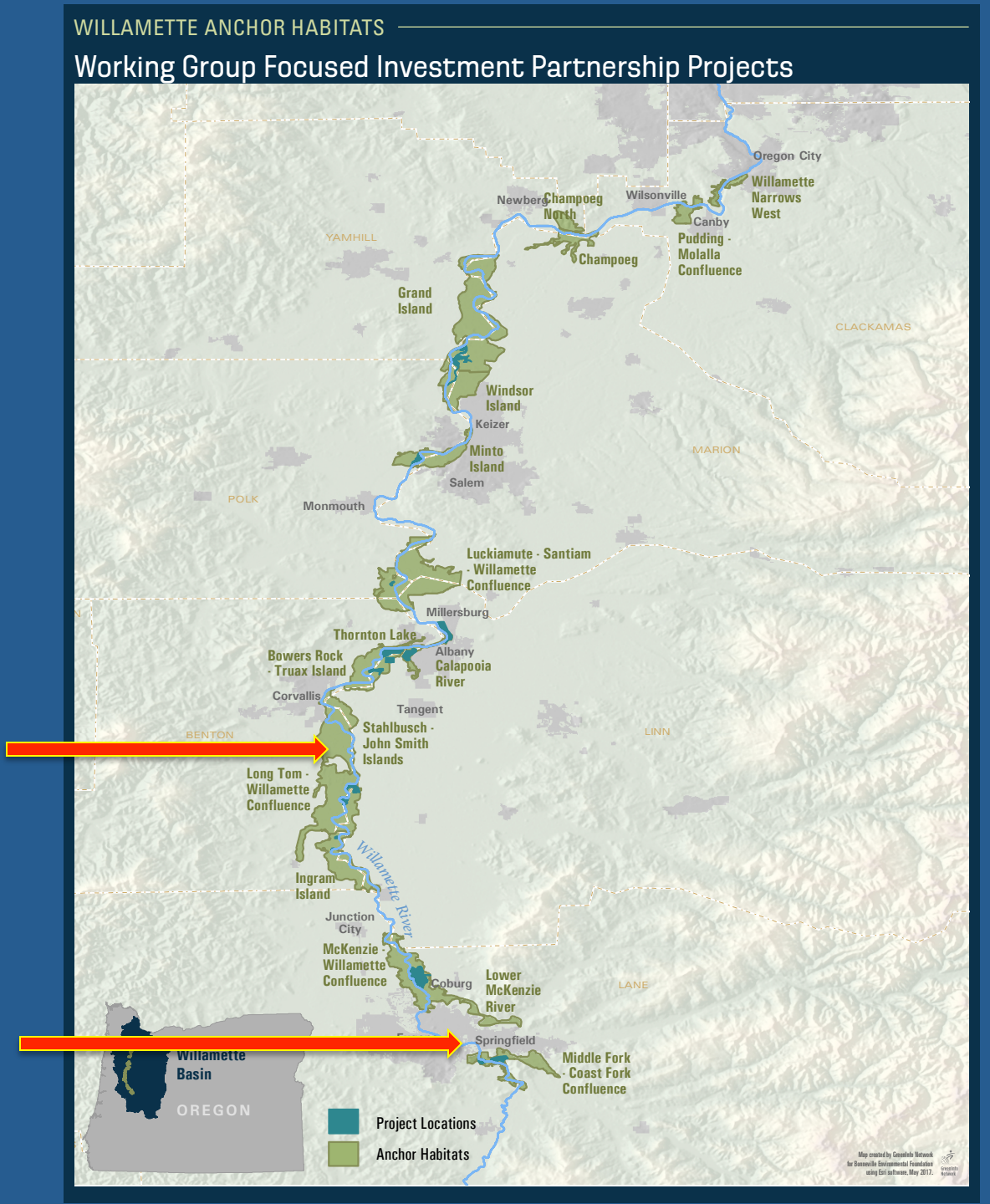
~25	Active projects on mainstem Willamette
3,906.50 acres	Floodplain and riparian forest restoration
15.54 miles	Side channels reconnected to floodplain
23	Fish passage barriers improved and/or removed
18 miles	Instream habitat restoration
46 acres	Wetlands enhanced or treated
.33 miles	Revetments removed or treated

- Oregon chub delisted
- Strong project technical review
- Partnership building

Willamette Restoration Project Examples

Harken's Lake

Willamette Confluence

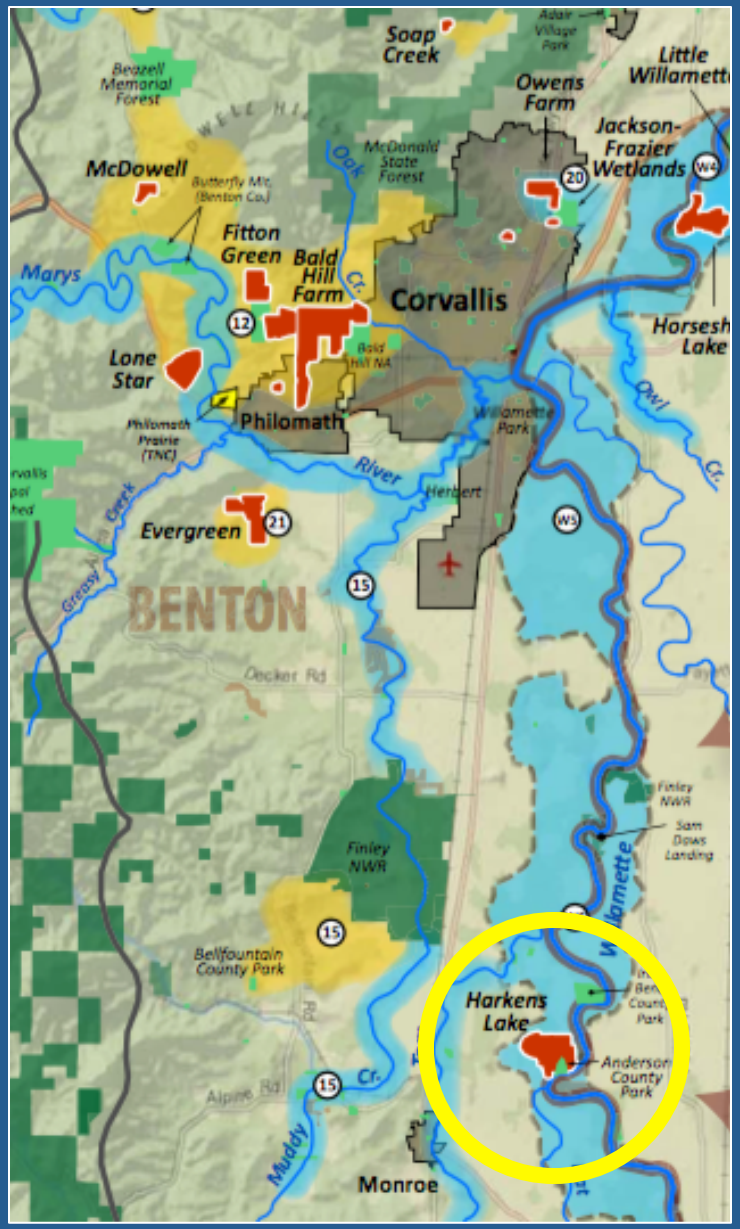


Harkens Lake – Greenbelt Land Trust

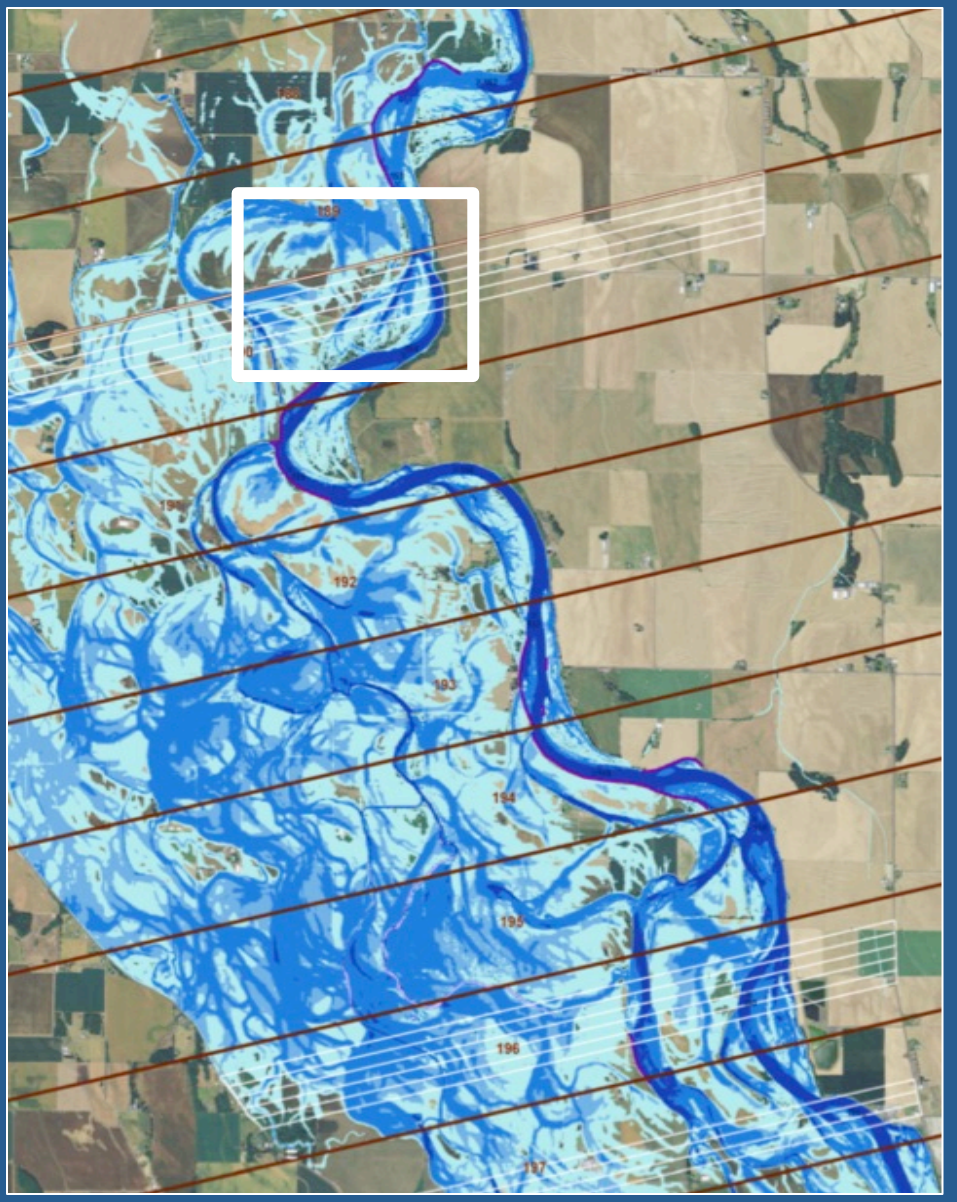
- Acquired by WWMP 2011 (371 acres)
- Phase 1-4 Restoration 2011-2016
- Technical Assistance 2012

- Total Costs: $3,203,498
- BPA Investment: $961,238

- Floodplain reforestation: ~350 acres
- Increased side channels: ~2.5 miles



Harkens Lake – Greenbelt Land Trust

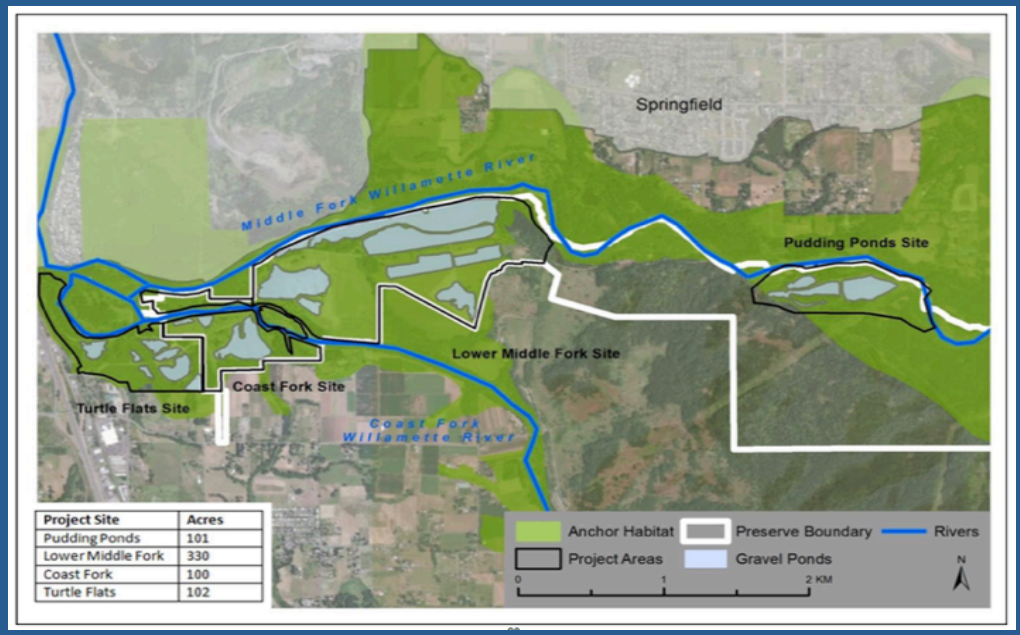


Willamette Confluence – The Nature Conservancy

- Acquired by WWMP in 2010 and 2015
- Restoration (3 phases): 2012-2018
- Technical Assistance: 2011-2016

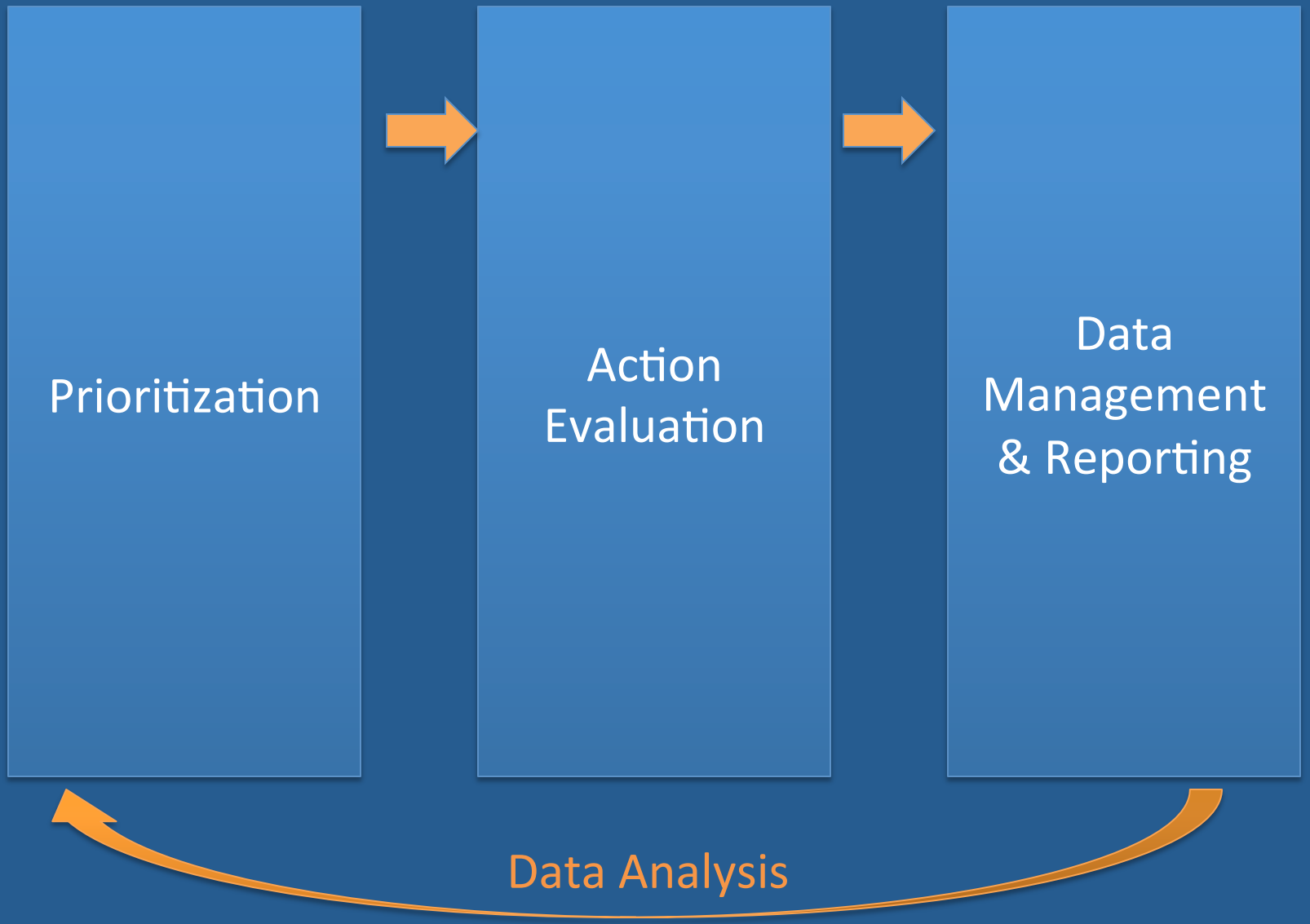
- Restoration Costs: $9M
- Primary Restoration Funders: Meyer Memorial Trust, OWEB, NOAA-NMFS Restoration Center

- Restoration: ~635 acres
- Re-connected floodplains: 400+ acres

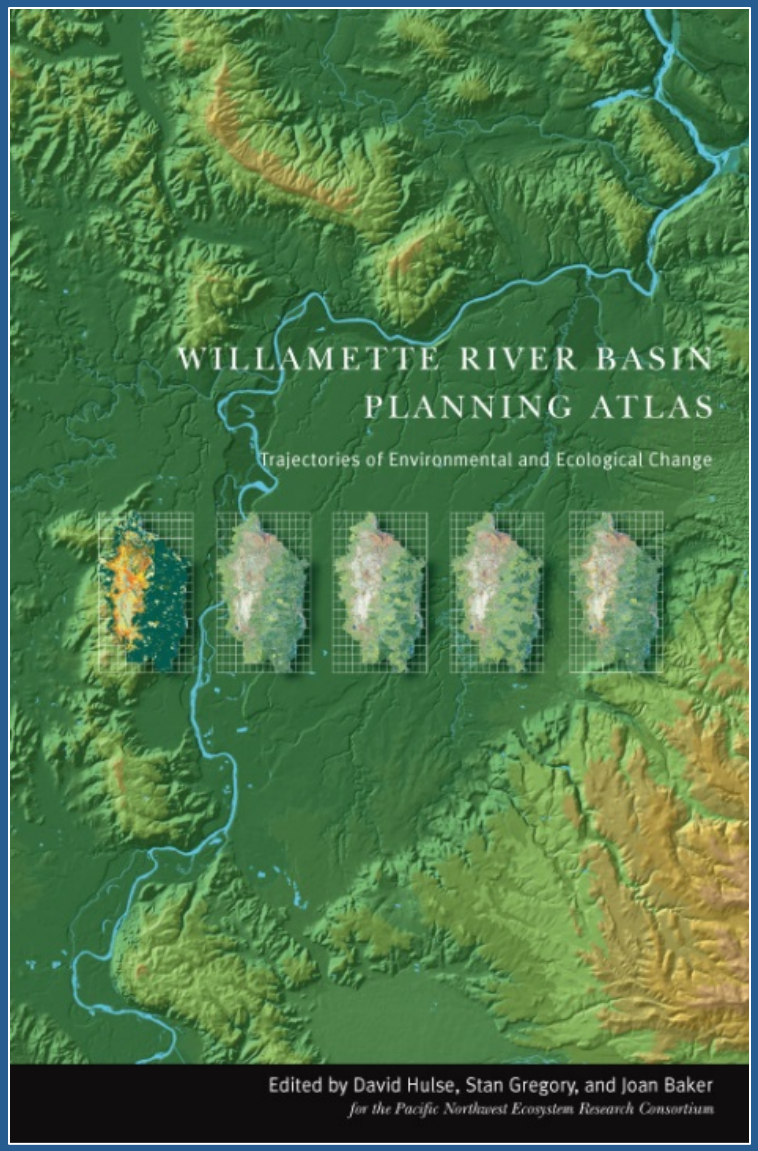


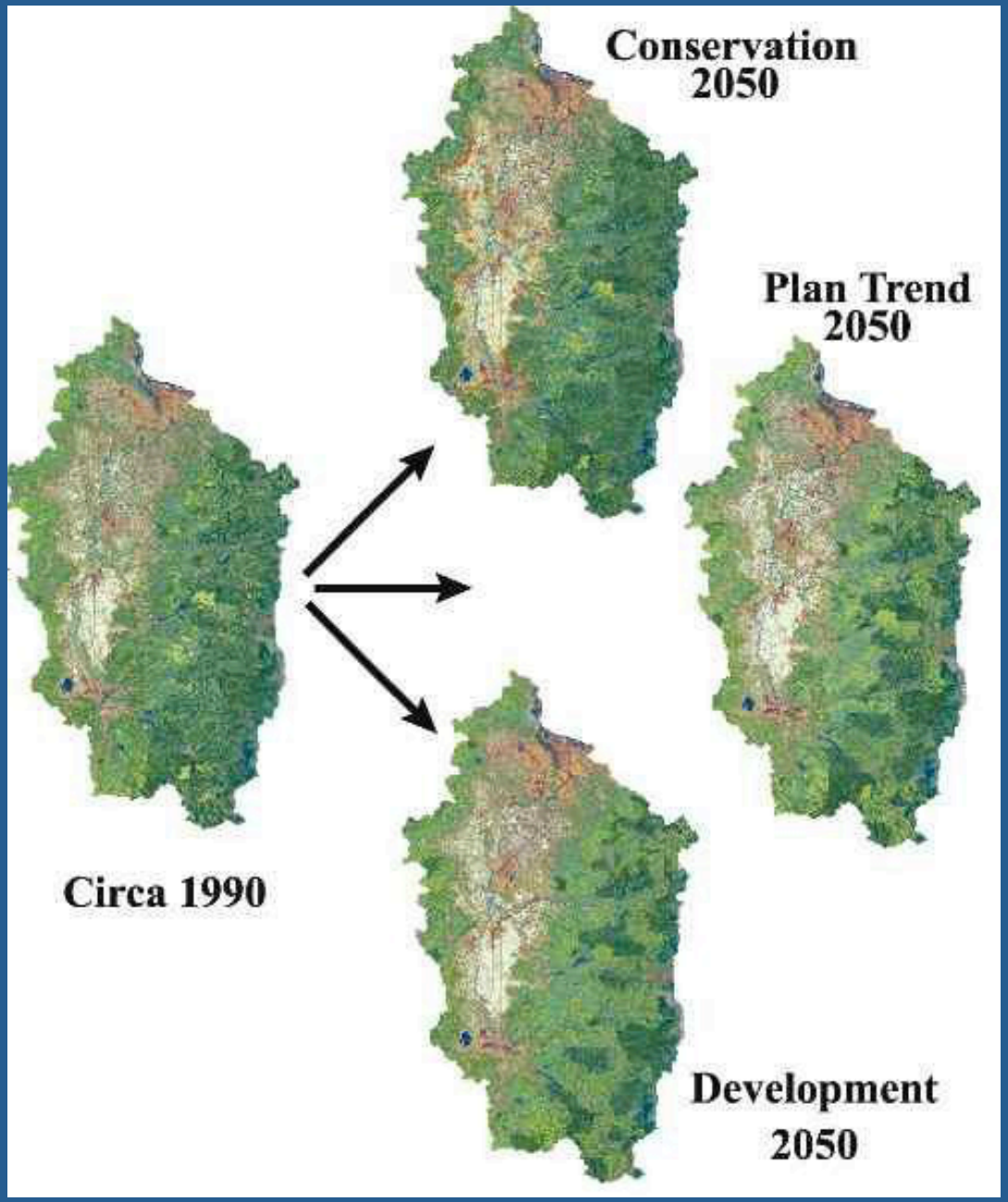
Willamette Confluence – The Nature Conservancy

Monitoring & Adaptive Management

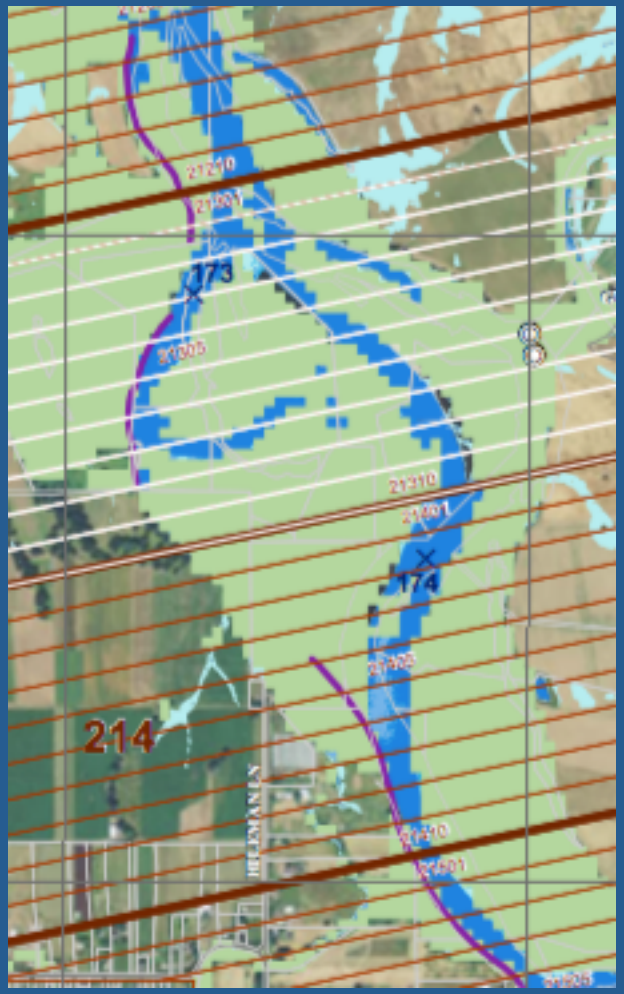


Foundational Science





The "SLICES" Framework



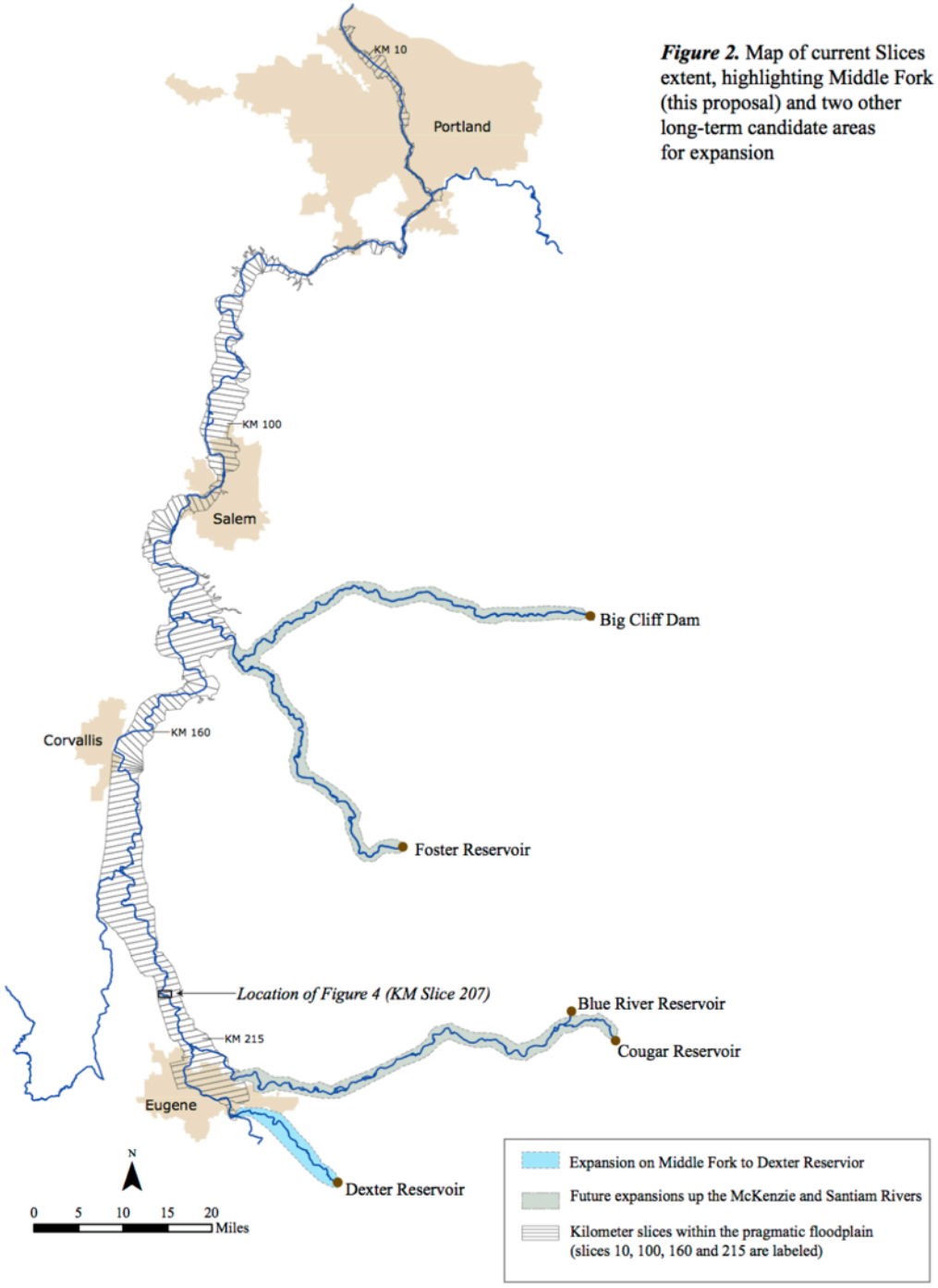
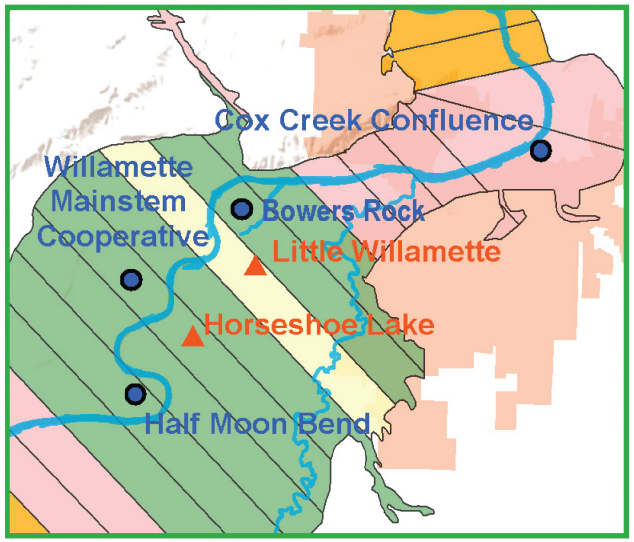
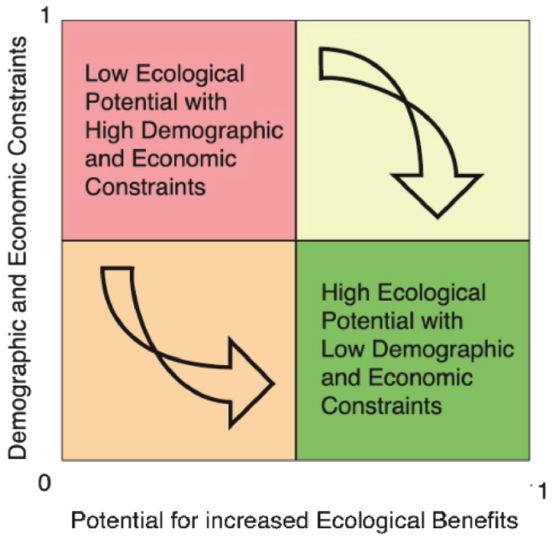


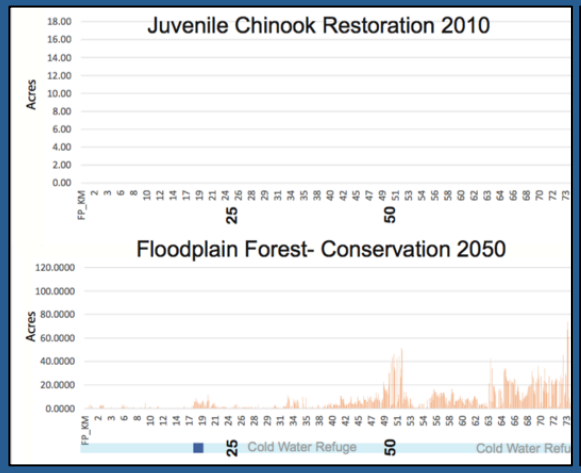
Figure 2. Map of current Slices extent, highlighting Middle Fork (this proposal) and two other long-term candidate areas for expansion

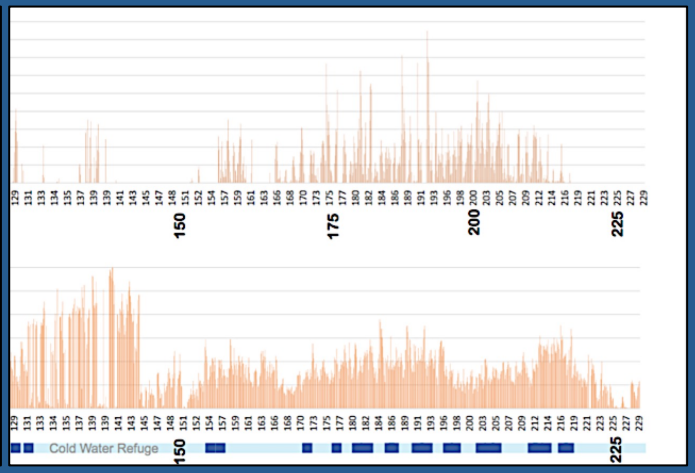
The SLICES Framework: Both a Prioritization and a Measurement Tool





The SLICES framework not only identifies and prioritizes potential areas along the mainstem for restoration,



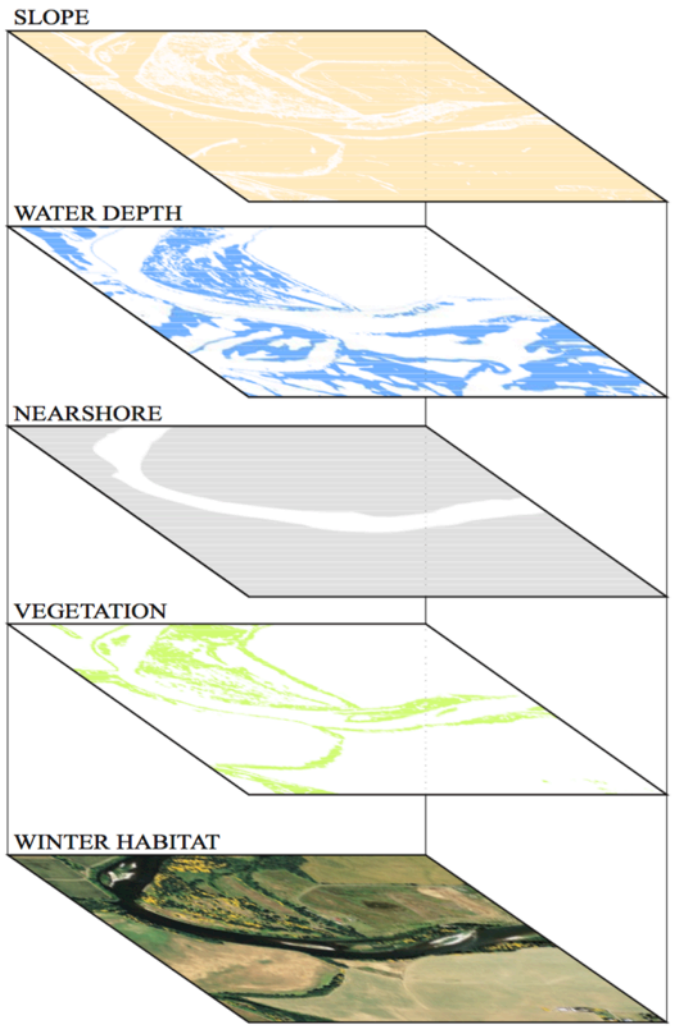


it also tracks progress toward goals and measures change over time of the river and its floodplain.

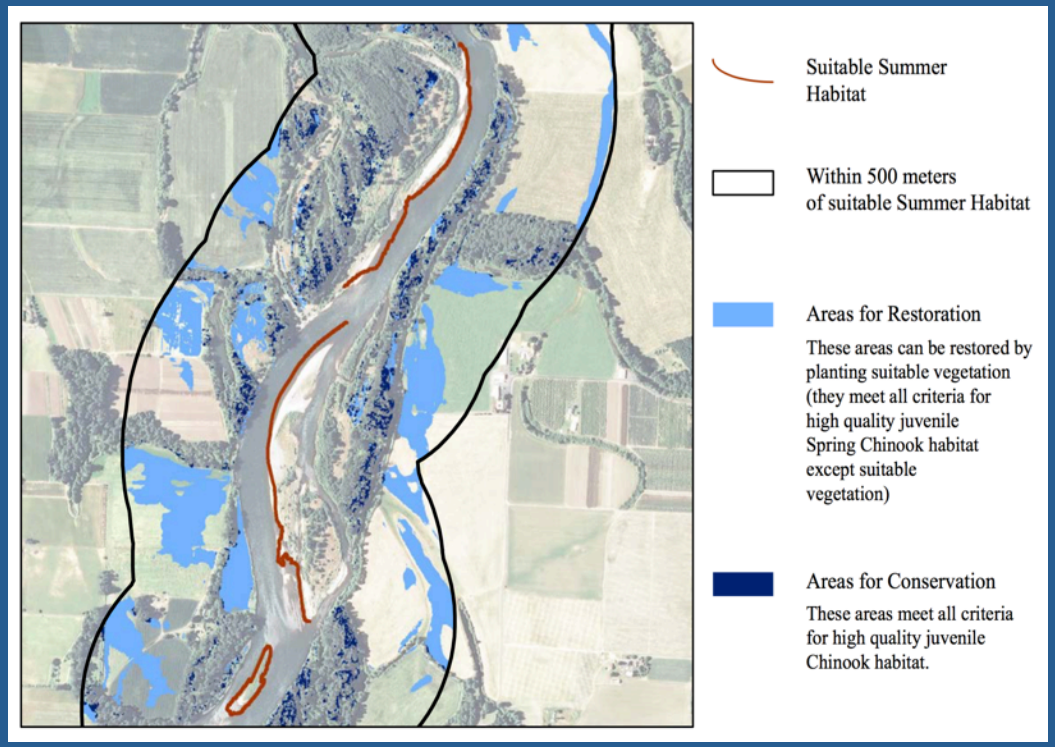
INDEPENDENT SCIENTIFIC REVIEW PANEL

Review of Umbrella Habitat Restoration Projects

ISRP 2017-2 MARCH 10, 2017



Task 1: Improving prioritization and linking restoration actions to habitat improvements for juvenile Chinook



Task 2: Refine objectives to better measure progress and adapt as needed.

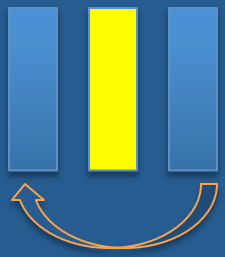
From ISRP Umbrella Review- Qualification 2:

Objectives should be developed in the immediate future to describe quantitatively what desired outcomes are for the project, a projected time frame for accomplishing them, and how these outcomes relate to past accomplishments need to be stated.

H	I	J	K
1990 Floodplain Forest (acres)	2000 Floodplain Forest (acres)	2010 Floodplain Forest (acres)	Cons 2050 Floodplain Forest (acres)
17	15	15	24
13	13	13	22
19	22	13	30

We are intending to move from tracking Decadal Trends…

…to Setting Decadal Objectives.



	SYSTEM EXTENT				REACH EXTENT				SLICE EXTENT			
OBJECTIVE	2020	2030	2040	2050	2020	2030	2040	2050	2020	2030	2040	2050
Floodplain Forest	Target acres by decade											
Channel Complexity	Target low flow channel length (meters) and area (acres) by decade											
Juv Chinook Habitat	Target acre-days high quality juve chin habitat inundated by decade											
Native fish comm	Target - No net loss of % natives captured relative to ca. 2010											

Task 3: Develop and share a cohesive "Monitoring Approach Report" that incorporates stakeholder input.

From ISRP Umbrella Review- Qualification 1:

> Proposed monitoring and evaluation plans should be finalized and implemented. The relationships between, and integration of, effectiveness and other monitoring needs to be described.

> The only major weakness is the lack of assessing Program progress. The progress report also provided no results except a table listing the project titles, locations, and implementation costs. While it appears that some monitoring is occurring (i.e., funded by Bonneville Environmental Foundation and Meyer Memorial Trust), a coherent description of the proposed and existing RM&E efforts, including a plan for rolling out future activities, and how those data will be applied in assessing the Program progress, should be provided. Substantial habitat restoration has occurred due to the partnership's project prioritization and selection processes. The Willamette Program will become even more effective once its compliance, effectiveness, and status and trends monitoring programs have been finalized. A timeline

Benefits of Our Willamette Approach

There are many examples of monitoring approaches that, due to their complexity and large number of metrics, can not be sustained over the timeframes required to track recovery of a system.

We strive to avoid that outcome by narrowing the metrics to be measured to the minimum "backbone" set that we believe is affordable and scientifically defensible. Our proposed approach is streamlined, focused at a landscape scale and would have predictable costs over time.

Questions…

Green Island (near Eugene)- Owned and restored by McKenzie River Trust

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Dan Bell- Bonneville Environmental Foundation dbell@b-e-f.org
Matt Blakely-Smith- Greenbelt Land Trust Matt@greenbeltlandtrust.org