

BLACK RIVER CLUSTER

October 14, 2026

ASRP Progress & Planning Workshop

Office of Chehalis Basin

STUDY GOALS & OBJECTIVES

STATUS AND TRENDS



Office of Chehalis Basin

Oregon Spotted Frogs (OSF):

- ASRP focal and indicator species
- State & Federally listed

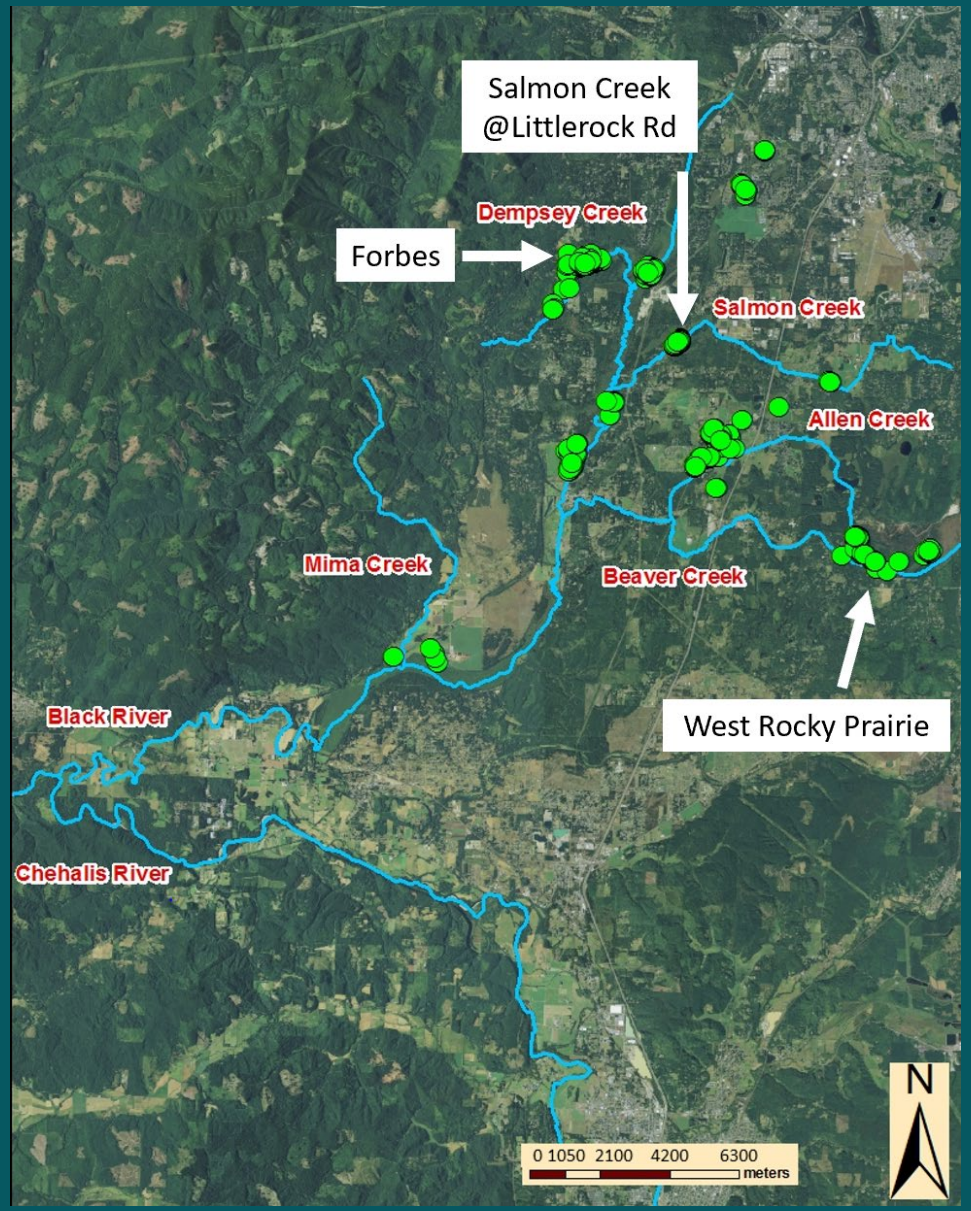
Status & Trends egg mass surveys:

- West Rocky Prairie: Beaver/Allen Cr
- Salmon Cr: Littlerock Rd *
- Forbes: Dempsey Cr *

Two additional active restoration sites monitored yearly:

- Rogers CE: Allen Cr *
- Mima Cr: WDFW *

METHODS / STUDY DESIGN



Forbes: Dempsey Cr

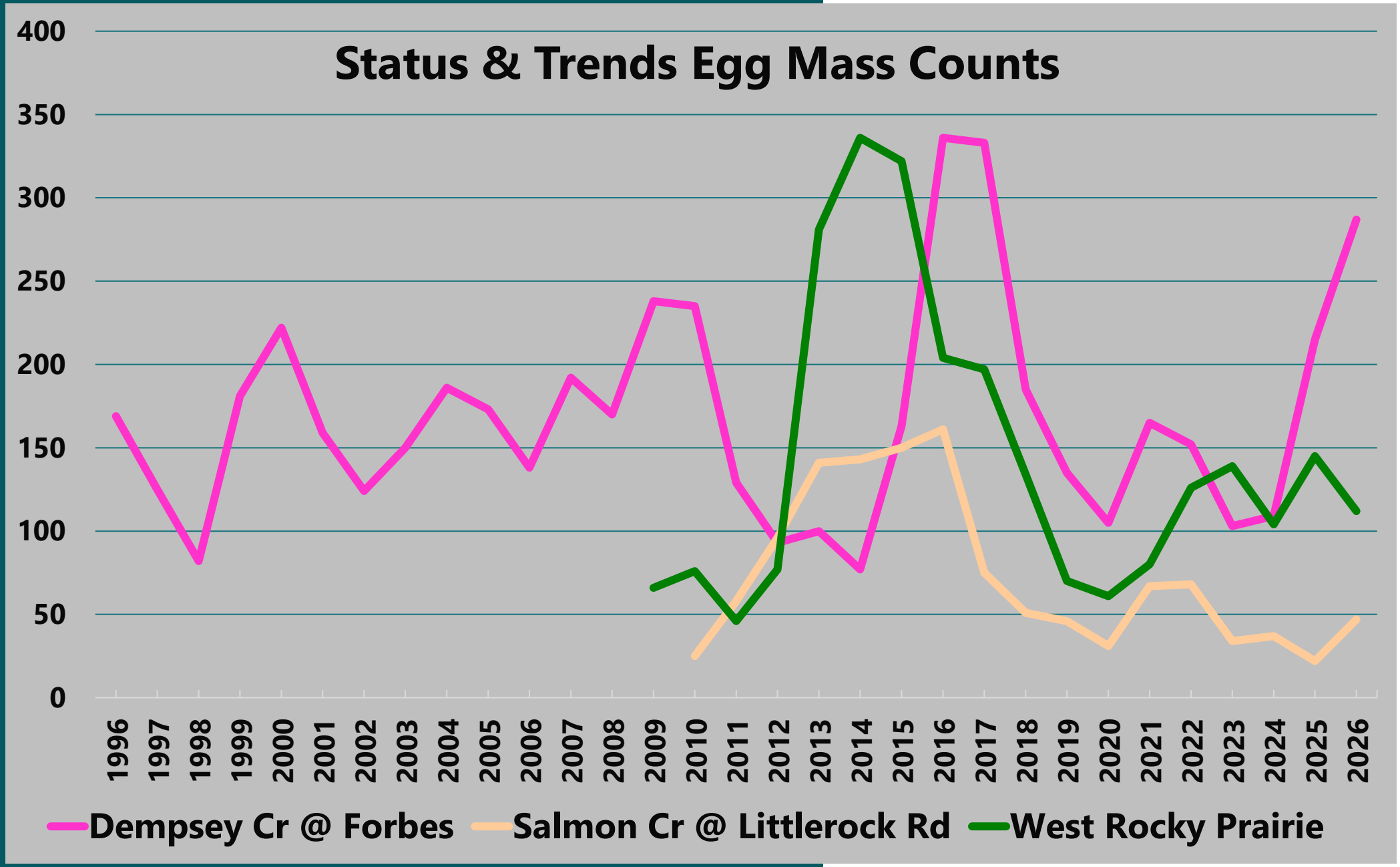
- USFWS
- Active grazing since 2008
- Annual egg mass monitoring since 1995 (31 yrs)

West Rocky Prairie: Beaver & Allen Cr

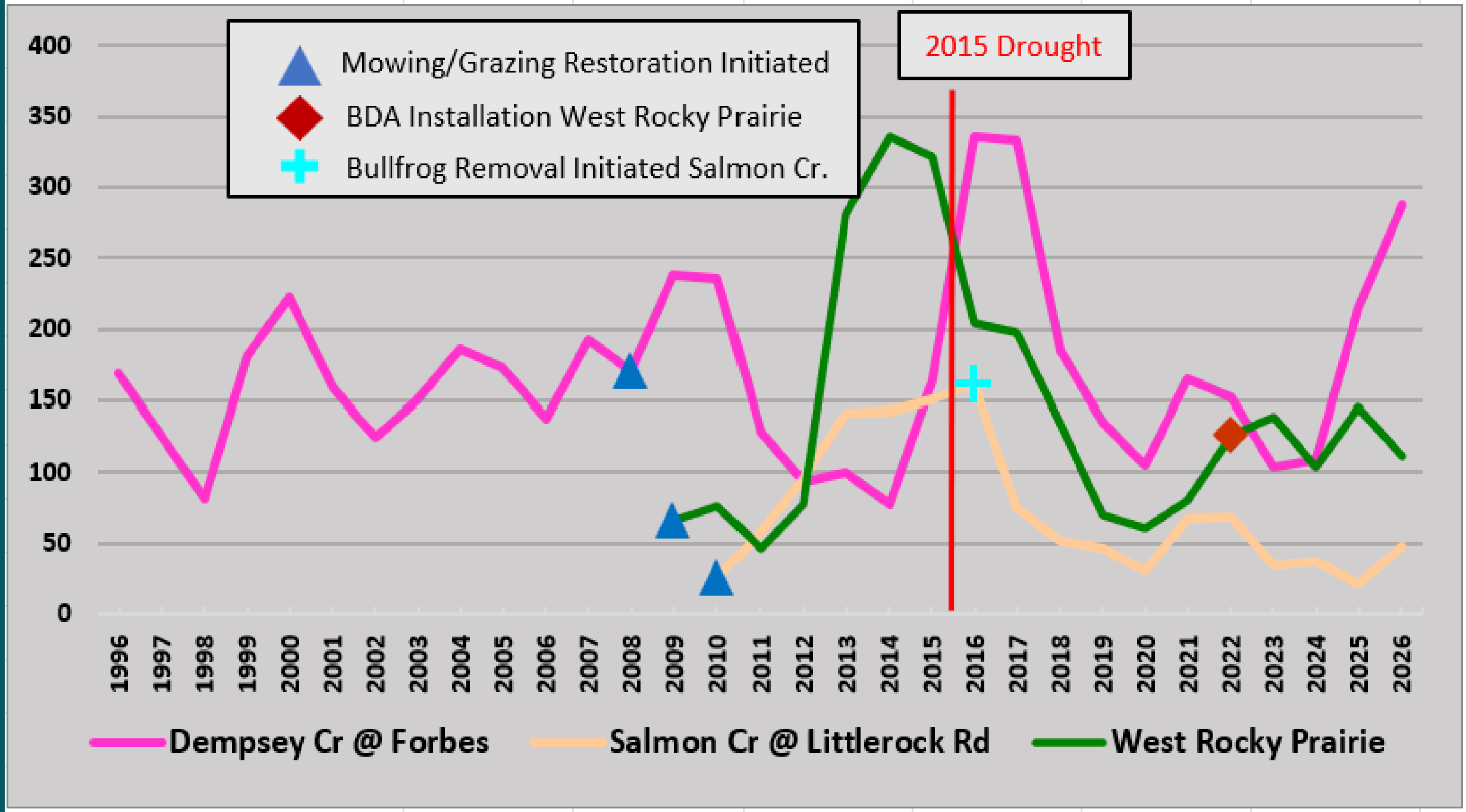
- WDFW
- Active Veg Management since 2009
- Annual egg mass monitoring since 2009 (18 yrs)

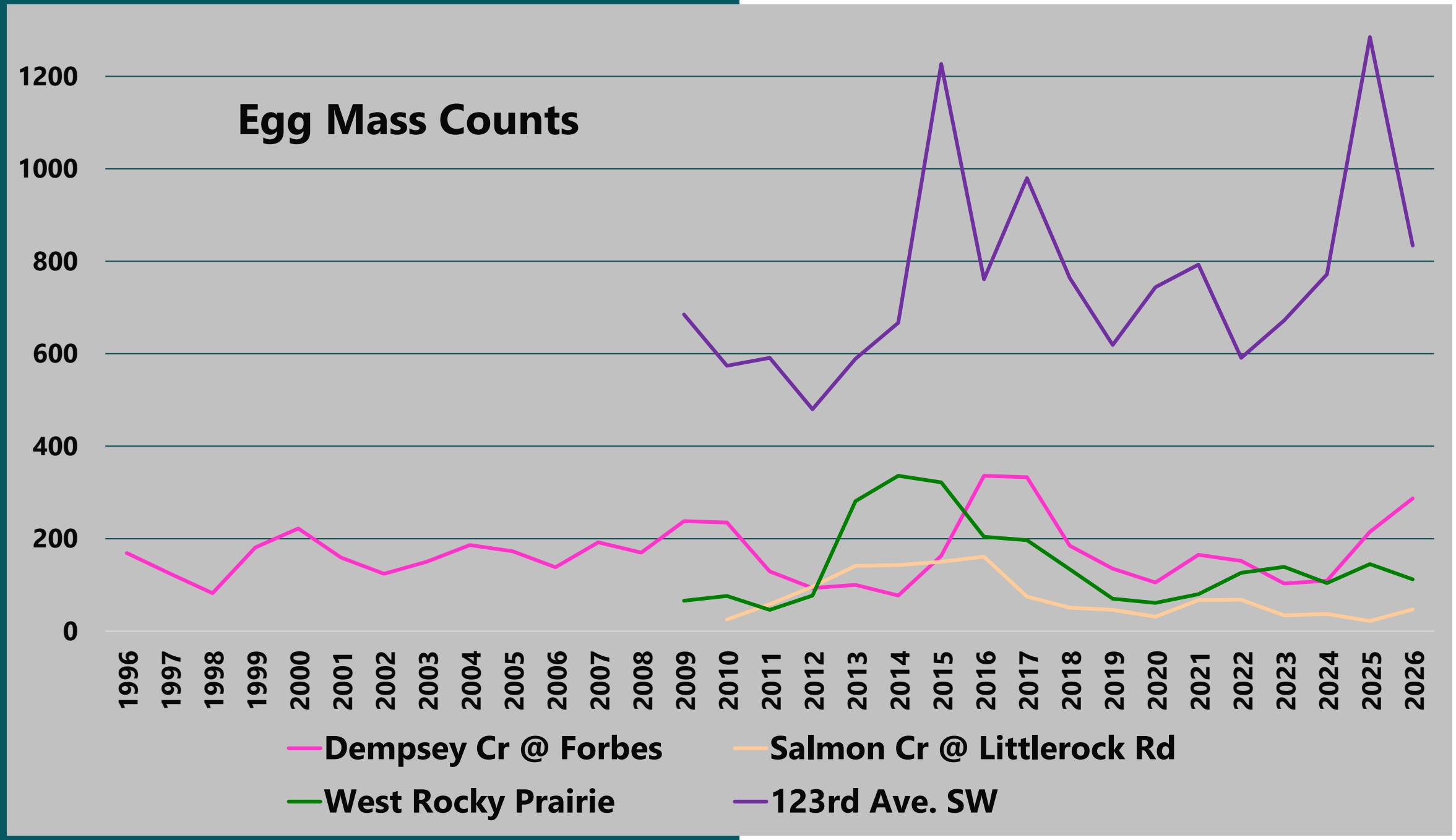
Salmon Creek: Littlerock Rd

- Privately-owned
- Active mowing since 2010
- Annual egg mass monitoring since 2010 (17 yrs)

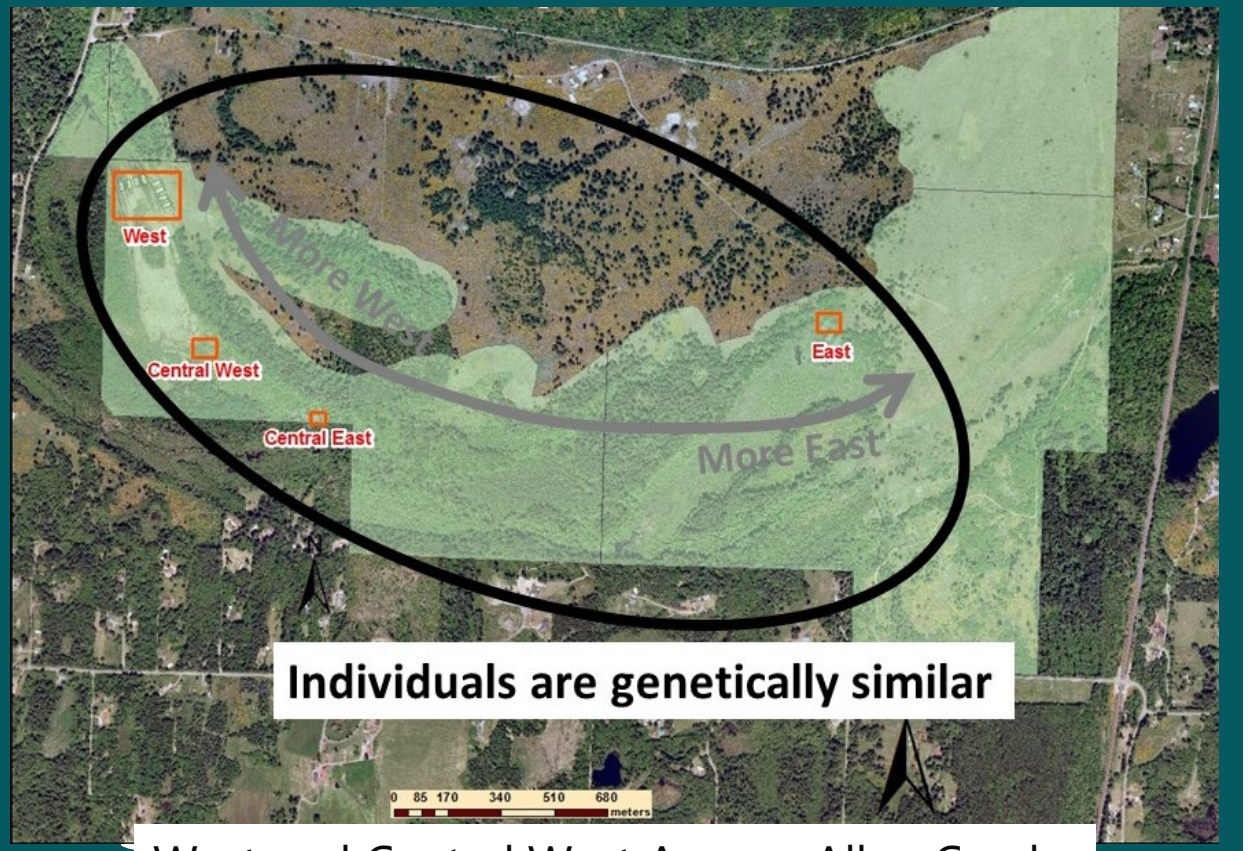


- Population oscillations every few years
- Similar thou offset
- WRP decline in 2026

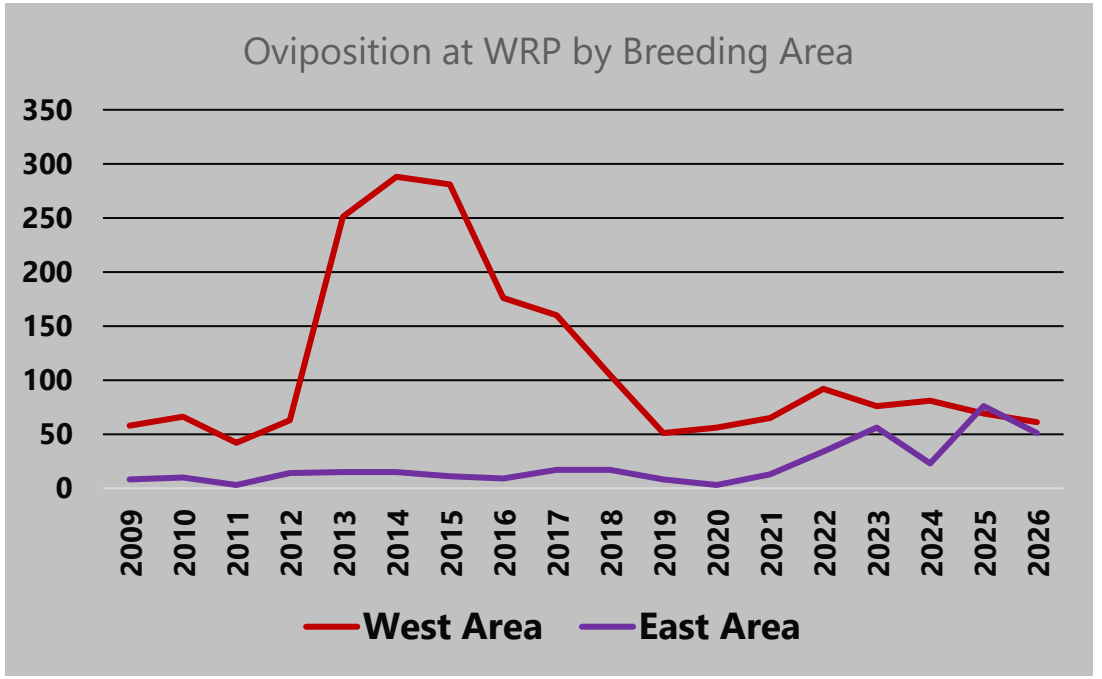

Mowing/Grazing Restoration Initiated
BDA Installation West Rocky Prairie
Bullfrog Removal Initiated Salmon Cr.
2015 Drought
400
350
300
250
200
150
100
50
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
Dempsey Cr @ Forbes
Salmon Cr @ Littlerock Rd
West Rocky Prairie

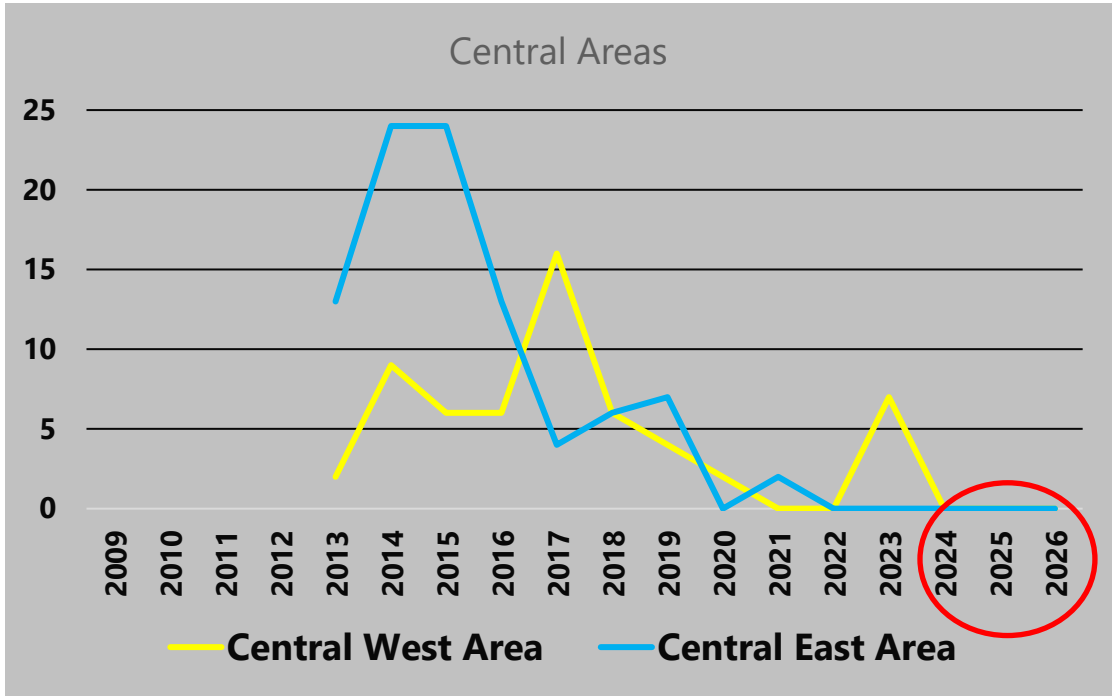

Egg Mass Counts
1200
1000
800
600
400
200
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
Dempsey Cr @ Forbes
Salmon Cr @ Littlerock Rd
West Rocky Prairie
123rd Ave. SW

WEST ROCKY PRAIRIE BREEDING AREAS

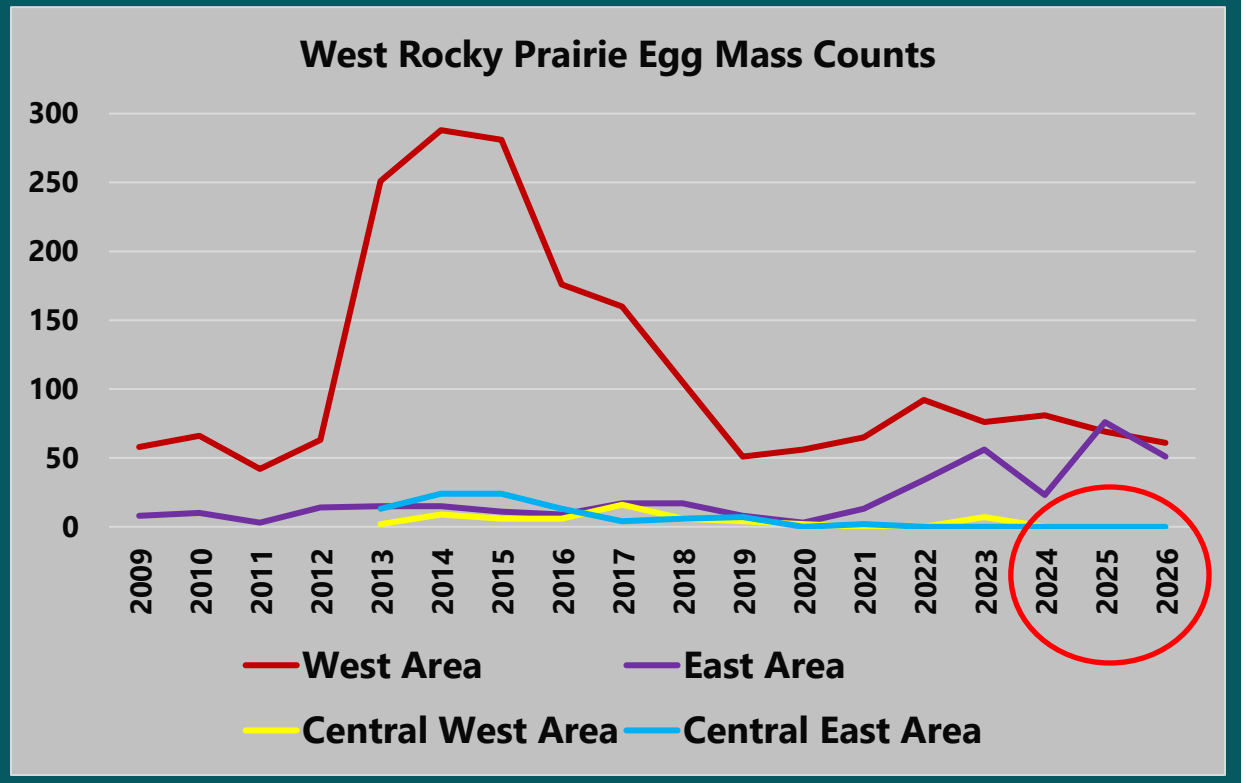


West and Central West Areas – Allen Creek
East and Central East Areas – Beaver Creek





SUMMARY OF RESULTS



West and Central West Areas – Allen Creek
East and Central East Areas – Beaver Creek

West Rocky Prairie Unit

- Breeding areas behave independently
- Value of assessing breeding areas independently ***and*** as aggregated population
- West Area (Allen) – most OSF (*prior to 2025*)
- East Area (Beaver) – increases since 2022, and last 2 years roughly equal to West
- West has not recovered since 2015 drought
- Loss of breeding at Central Sites despite active RCG mowing suggests additional work needed to maintain genetic steppingstones

DISCUSSION

- Consistent **S & T monitoring** essential for understanding and managing OSF
- Determining background rates of population changes (including interannual variation) and the influence of restoration actions and ongoing environmental change is critical
- Relatively **high degree of synchrony** in population fluctuations between sites could suggest a strong shared response to climatic conditions across the basin
- Additional restoration actions might be needed for Central Areas at WRP where hydrology has altered the available breeding habitat – **Hydrology Model will assist with this**
- **Active invasive vegetation management** in breeding areas is one component of an **integrated restoration plan**
- **Continued research and management** for hydrologic, climatic, and invasive species impacts is paramount to successfully restoring local populations


Digital Thermometer
-50~+200°C/-58~+392°F
MAX
MIN

LESSONS LEARNED/ REMAINING QUESTIONS

- Established a **transparent**, **science-based framework** for strategic conservation
- Approach can **enhance restoration effectiveness** for anadromous fish
- BCG and MTTI serve as benchmarks to **assess biological improvement** after restoration
- Working with ASRP to refine and adapt the framework for the Chehalis Basin

STUDY GOALS & OBJECTIVES

OSF MOVEMENT AND HABITAT USE – WEST ROCKY PRAIRIE



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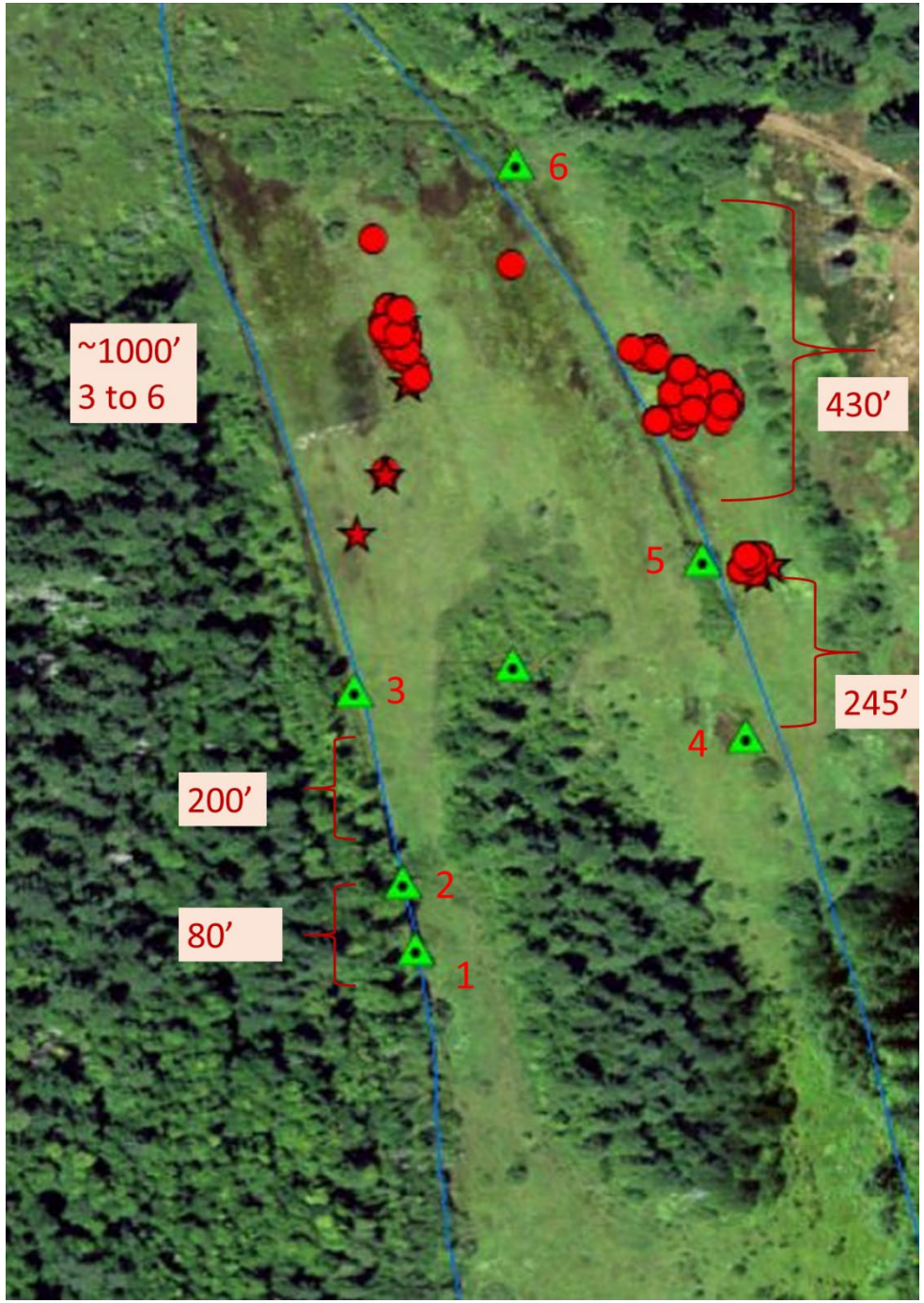
- Habitat usage across West Rocky Prairie for all life stages across all seasons
- Movement corridors to highlight areas of heavy usage
- Data will help to inform future restoration actions
- Learn more about demographics, life spans etc.

METHODS / STUDY DESIGN

OSF MOVEMENT AND HABITAT USE – WEST ROCKY PRAIRIE



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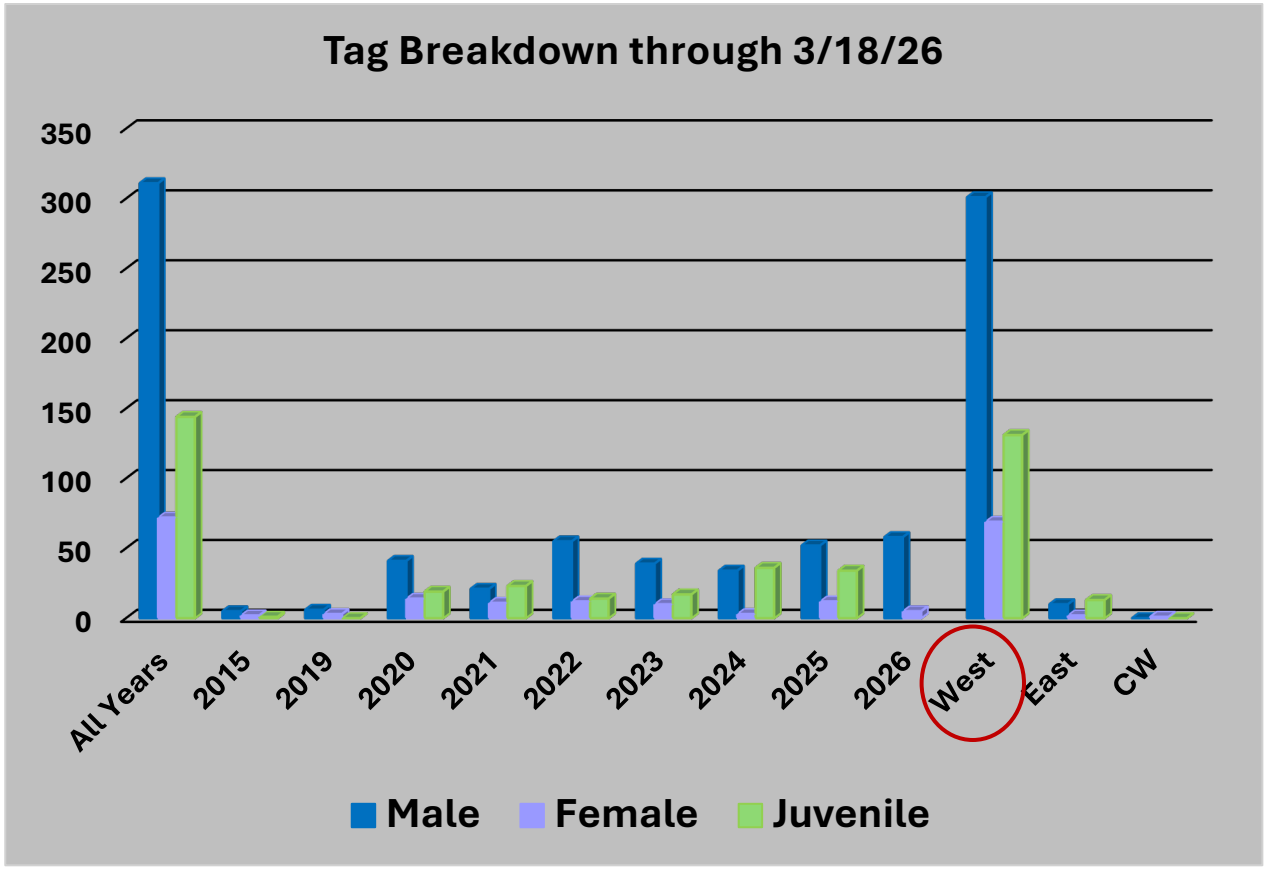
METHODS / STUDY DESIGN

OSF MOVEMENT AND HABITAT USE – WEST ROCKY PRAIRIE



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Total to Date	527
Male	311
Female	72
Juvenile	144



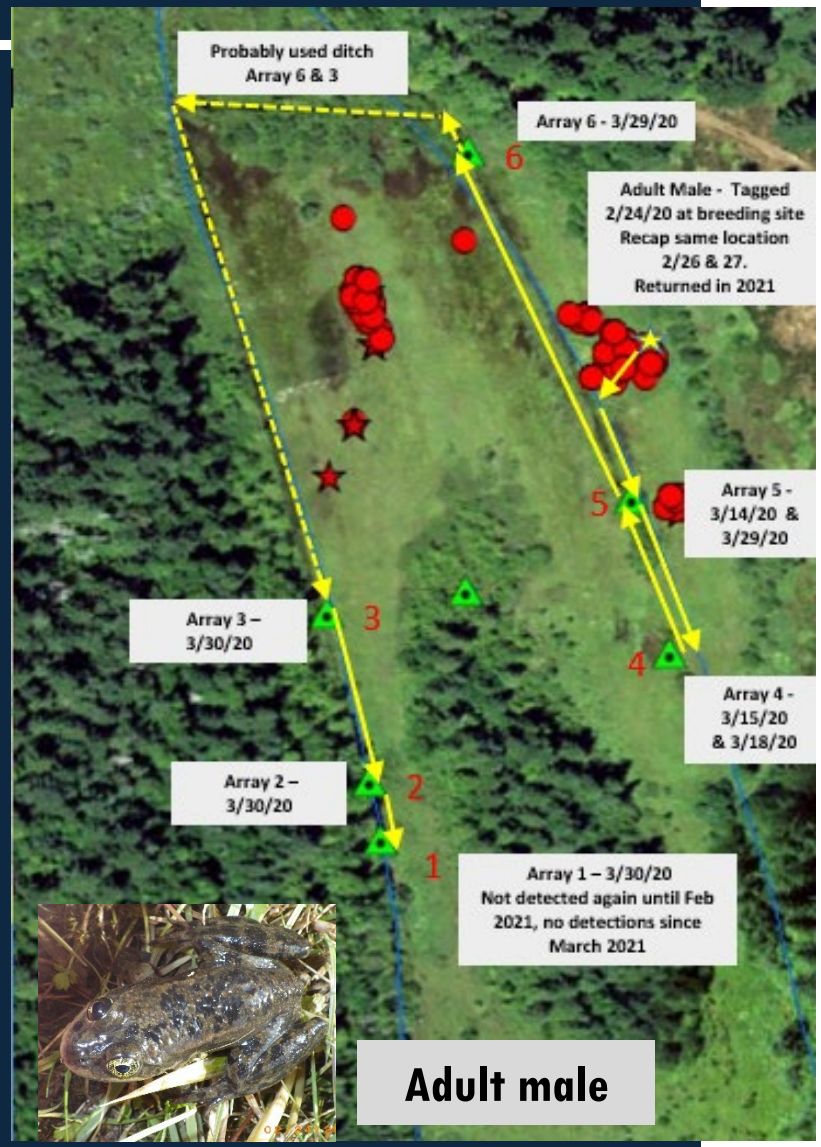
SUMMARY OF RESULTS

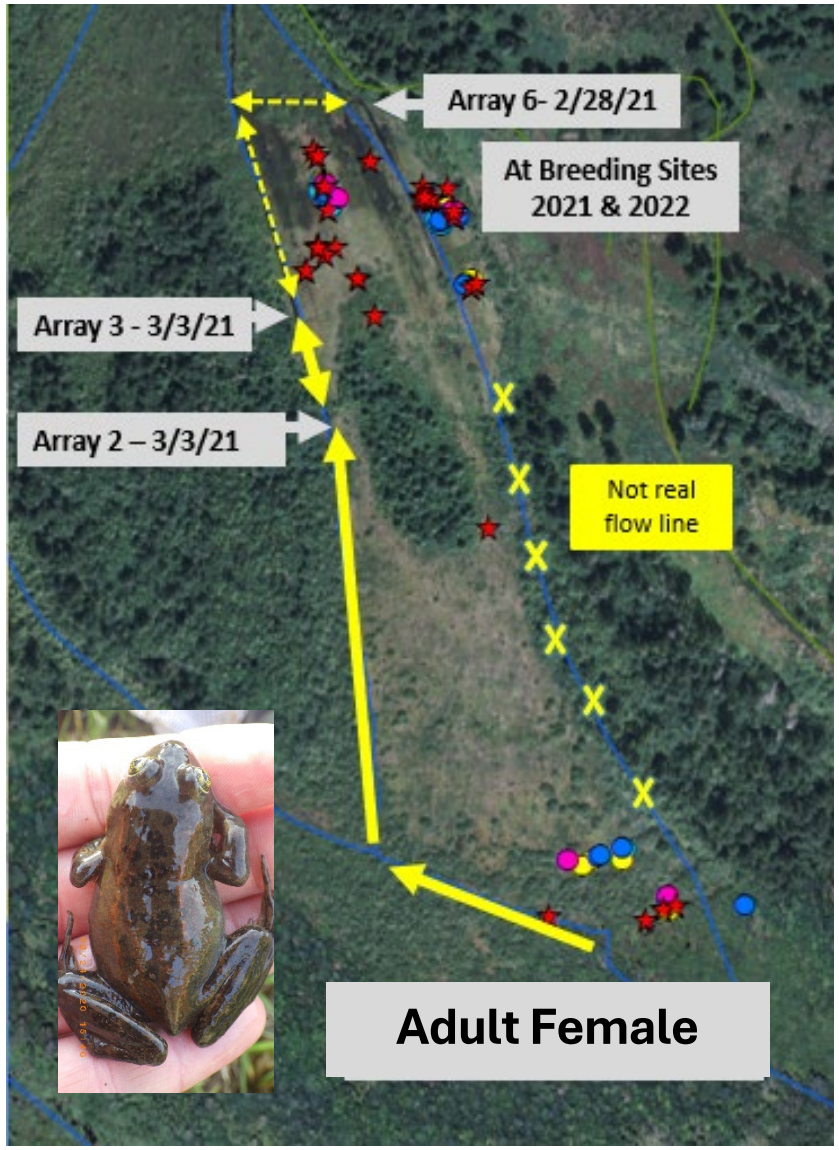
OSF MOVEMENT AND HABITAT USE

SEASONAL MOVEMENTS

>1500 ft within season movement

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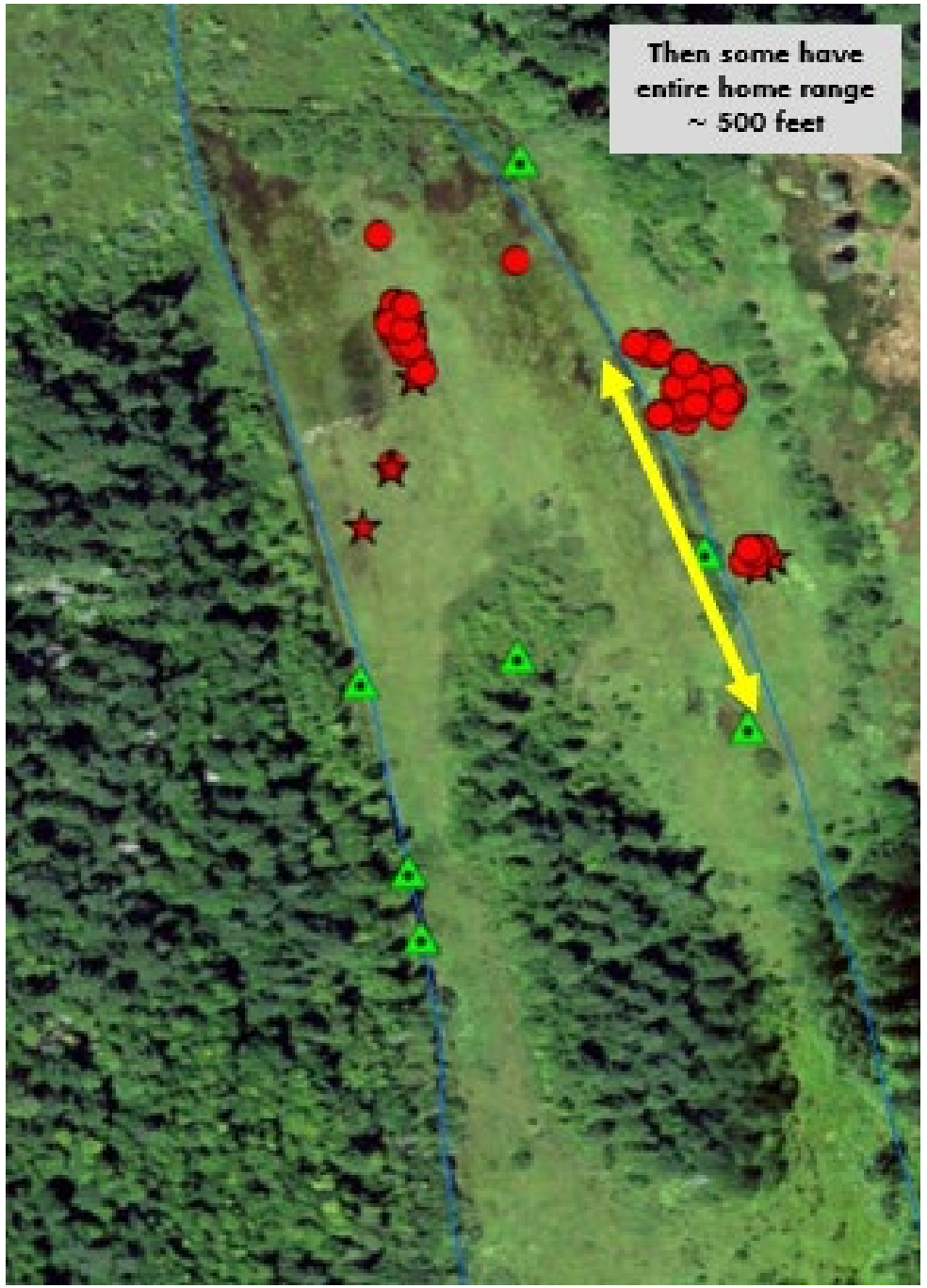


SUMMARY OF RESULTS

OSF MOVEMENT AND HABITAT USE

SEASONAL MOVEMENTS

500 ft within year movement total



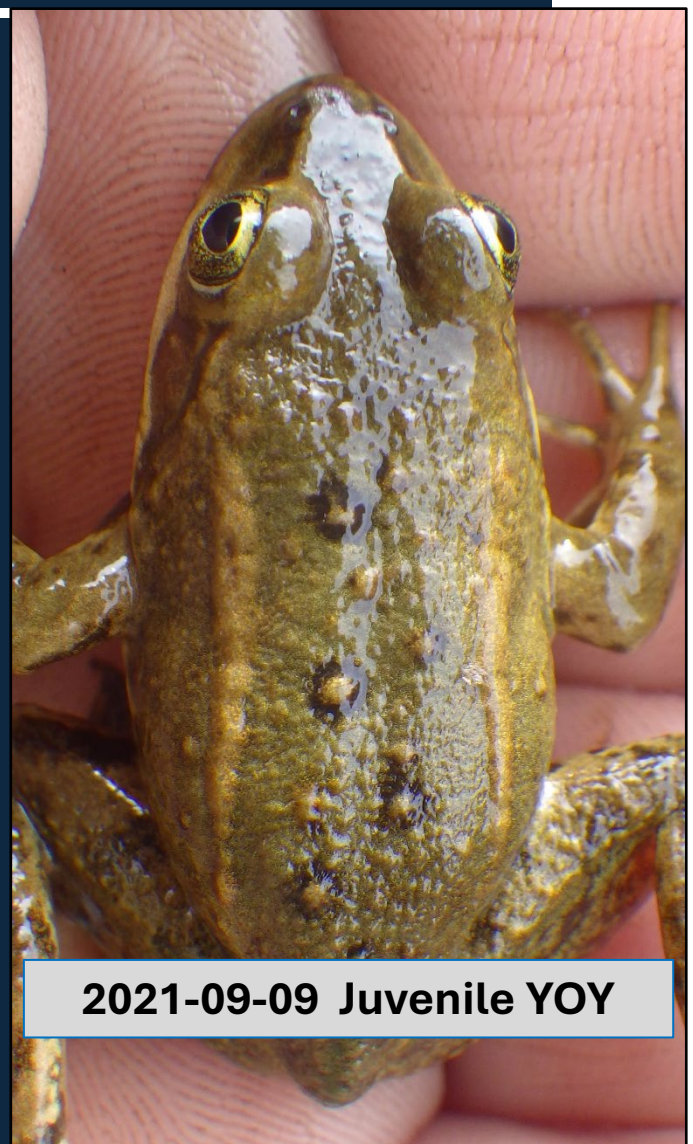
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SUMMARY OF RESULTS

OSF MOVEMENT AND HABITAT USE

AGING & GROWTH

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2021-09-09 Juvenile YOY

2021-09-09 - YOY Juvenile
2022-09-26 - Adult male with nuptials
2023 – Anticipate breeding at 2 years



2022-09-26 Adult Male 1.5 yrs
nuptials visible

SUMMARY OF RESULTS

OSF MOVEMENT AND HABITAT USE

AGING & GROWTH



2020-09-03 Juvenile YOY



2021-03-16 Juvenile



2021-08-30 Adult Female 1.5 yrs
Gravid

2020-09-03 - YOY Juvenile
2021-03-16 – 1 year Juvenile
2021-08-26 - Adult Female Gravid
2022-03-22 Array 5 (probably bred at 2 years)

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SUMMARY OF RESULTS

OSF MOVEMENT AND HABITAT USE

ADULT LONGEVITY

2 Adult Males tagged in 2015 (≥1 yrs)
Detected when arrays went active in 2019



3D9.1c2dca6595 **2015-2021 (≥8yrs)**



3D9.1c2dcaa2ae
2015-2020 (≥7yrs)

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SUMMARY OF RESULTS

OSF MOVEMENT AND HABITAT USE

ADULT LONGEVITY

Assumptions:

* Adult minimum age:

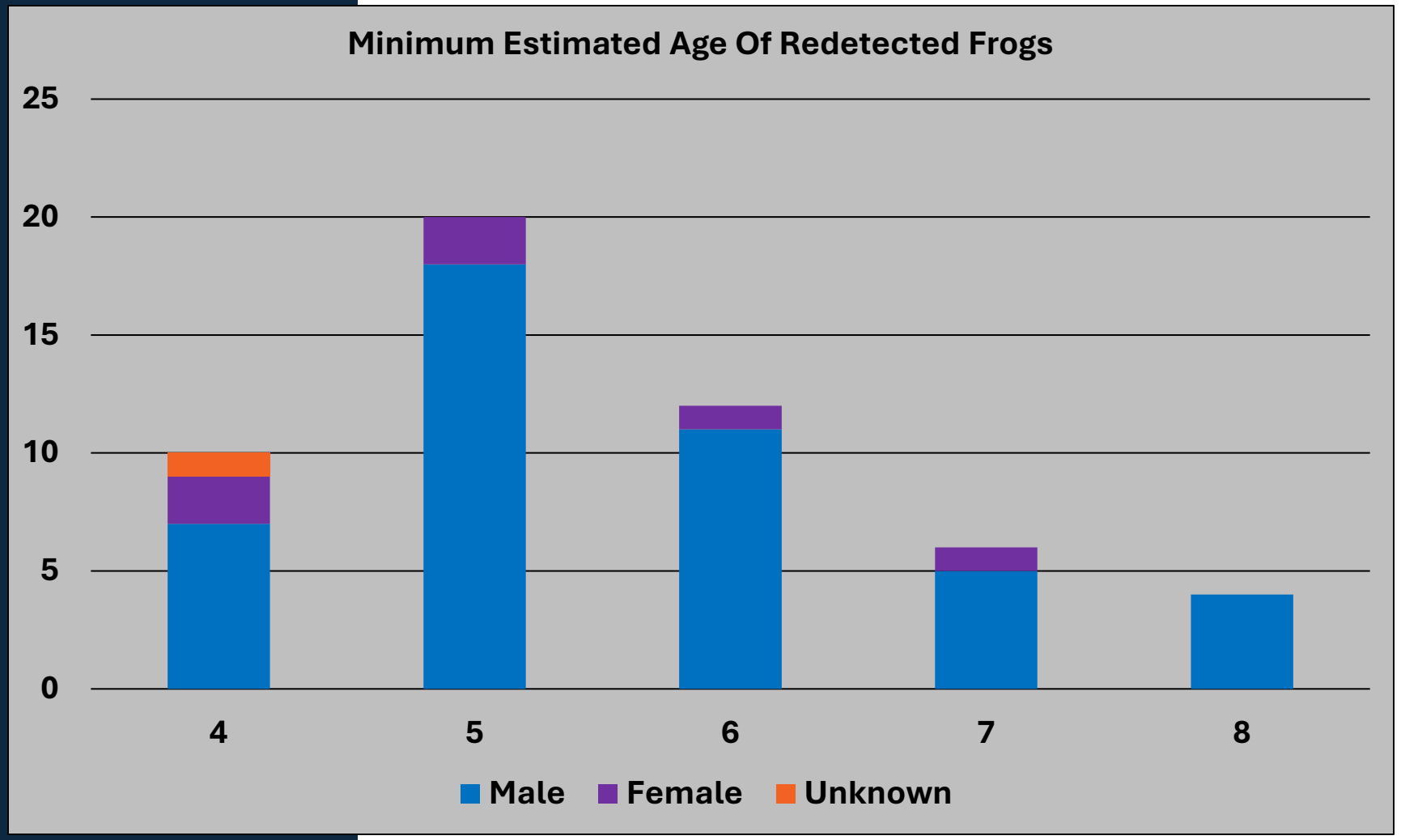
  M - 1 yr, F – 2 yr

* Tagging 2015, 2019-2026

Ages:

- 2 of 8 frogs tagged in 2015 lived to be ≥ 7 years old
- 52 redetected frogs ≥4 years

* Majority are male, however male captures > female



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SUMMARY OF RESULTS

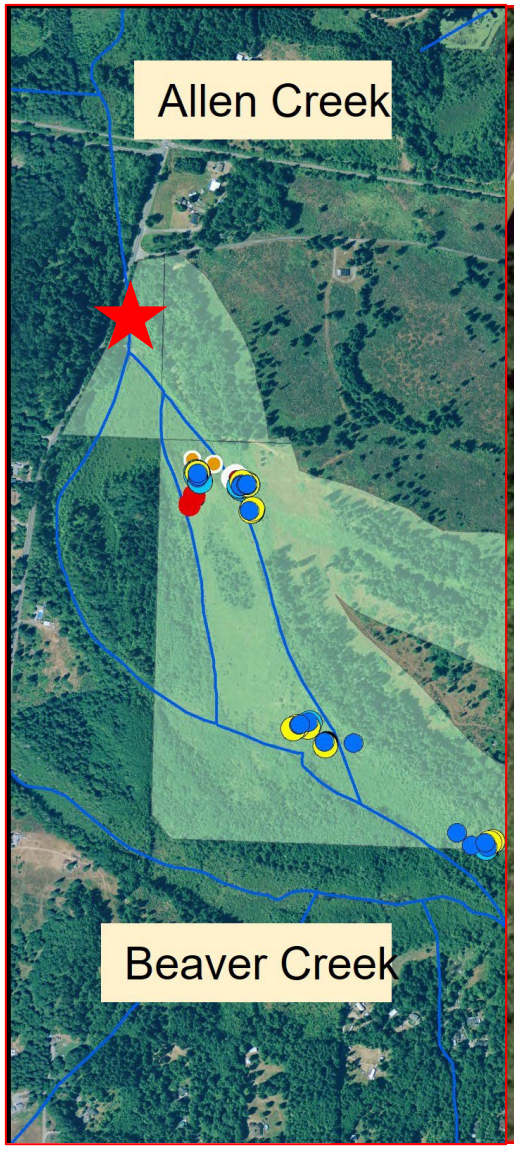
OSF MOVEMENT AND HABITAT USE – SUMMARY

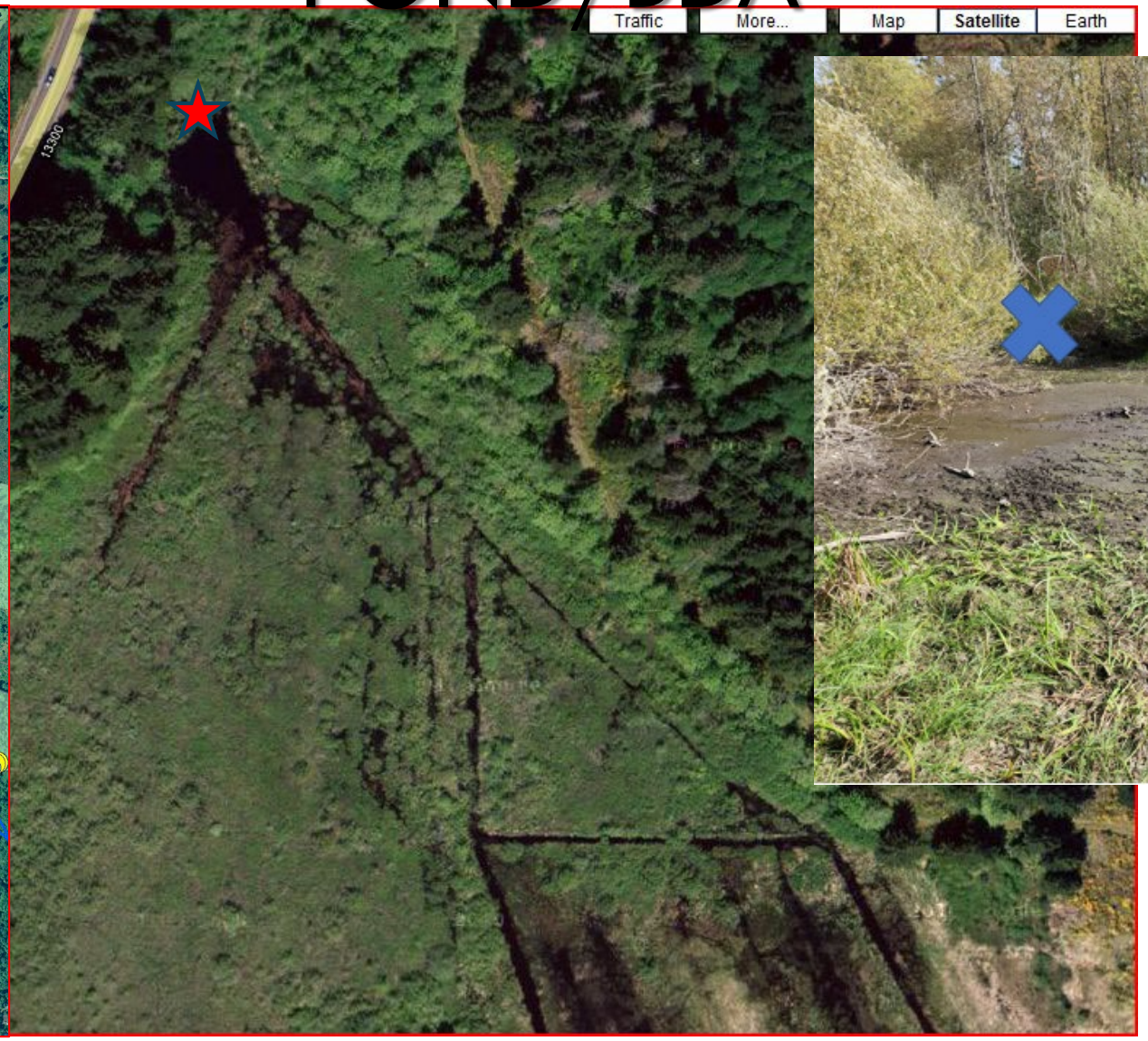
- **527** total tagged frogs thru 4/2026: 311 M, 72 F, 144 Juv
- Only **30** females detected/caught on Westside from Sept 2025-July 2026, thou we had **61** EM.
- OSF can live up to 8+ years, reaching adult breeding ages as young as 1-2
- Frogs heavily use ditches and follow water
- Many females seem to stage in ditches near breeding areas Oct/Nov
- Many males stage in ditches near breeding areas Nov/Dec
- Both stay in general area until May/June when they move to summer areas as water retreats

DISCUSSION

- Understanding habitat usage and migration corridors by age/sex/season helps to dial in priority areas for restoration
- Provide adequate habitat connections for movement of tadpoles to permanent water
- Provide adequate permanent habitat/resources for YOY to reach adulthood (~2yrs) will increase breeding population size
- Maintaining adequate summer/winter habitat and resources for adult survival can lead to many breeding frogs on the landscape for many years (up to 8) to help increase populations
- Maintaining movement corridors between summer/winter/breeding seasons to ensure ability to get to needed seasonal habitat
- Larger seasonal movements require more resources which could affect survivability

WEST ROCKY PRAIRIE: TILLEY POND/BDA







BEAVER DAM DAMAGE



Office o
Chehali

EMERGENCY BEAVER DAM REPAIR
BDA INSTALLATION 10/18/22








10/18/22


10/31/22 10 days rain


10/18/22


10/31/22 10 days rain







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Sept 2023 BDA Reinforcement



Beaver Notched by Aug 2024



Mudded up on both sides to top of notch 8/25/25

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10/31/22


8/23/23


9/05/24


8/25/25

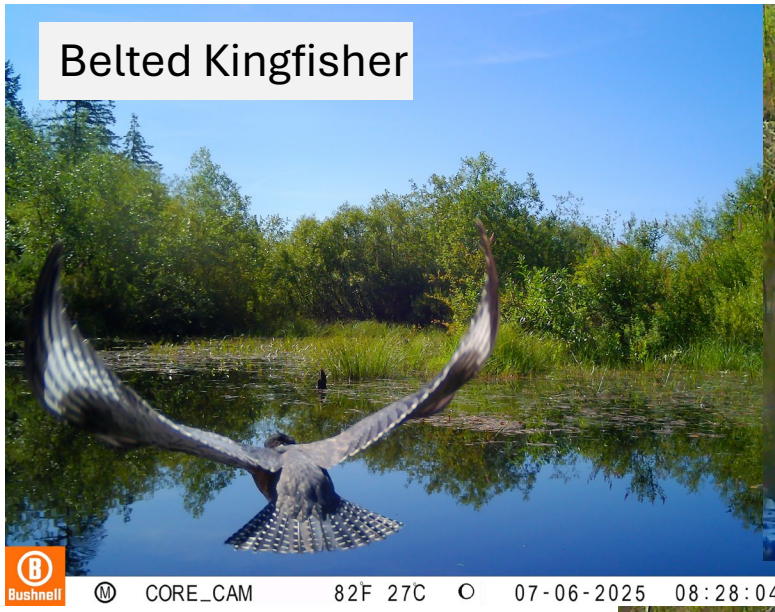
10/31/22

8/24/26

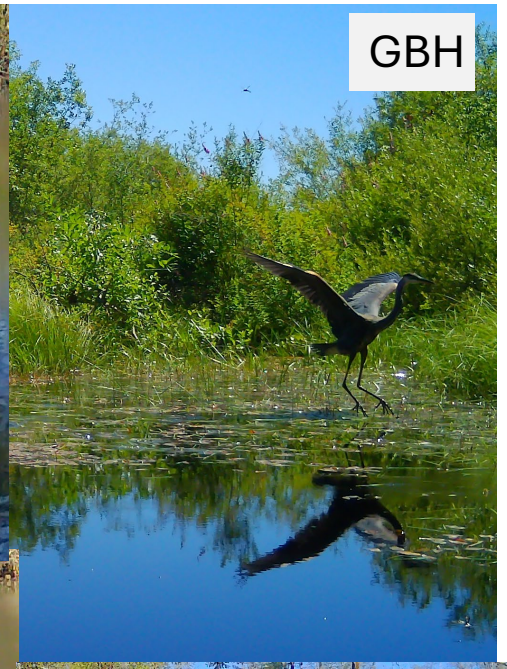

8/24/26


Bushnell
CORE_CAM
56°F 13°C
08-20-2025
23:30:05




Belted Kingfisher
Bushnell
CORE_CAM 82F 27C 07-06-2025 08:28:04


Hooded Merganser


GBH

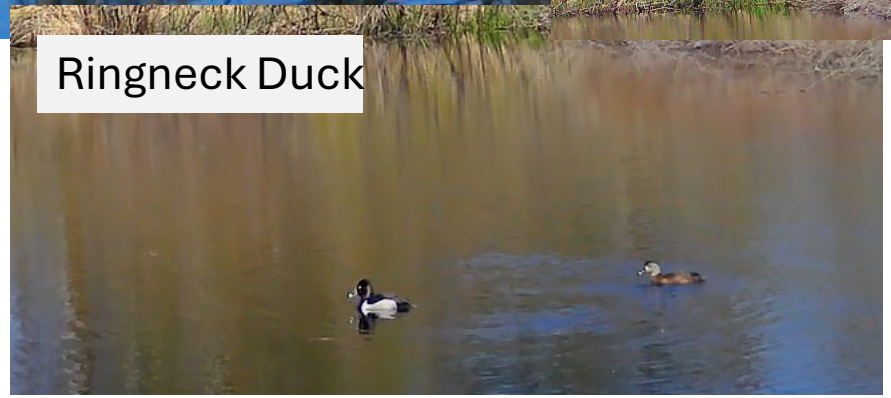

Coopers Hawk
Bushnell
CORE_CAM 84F 28C 08-11-2025 16:39:45

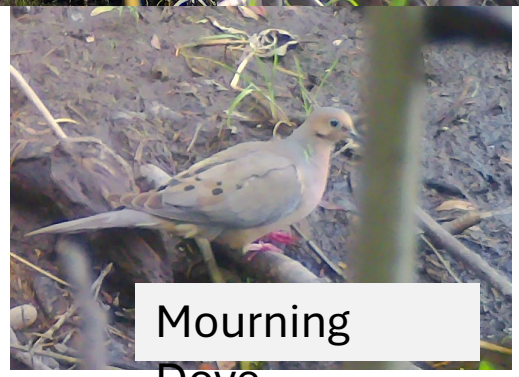

Wood Duck


Canada Goose


Towhee


Northern Flicker


Ringneck Duck


Mourning


Bushnell
CORE_CAM 72F 22C 09-24-2025 12:24:07


CAM 73F 22C 08-23-2025 11:02:10


Bushnell
CORE_CAM 73F 22C 08-14-2025 16:15:36


Bushnell
CORE_CAM 51F 10C


Bushnell
CORE_CAM 71F 21C 09-02-2025 15:56:10


62F 16C 08-13-2025 02:49:00

QUESTIONS OR DISCUSSION





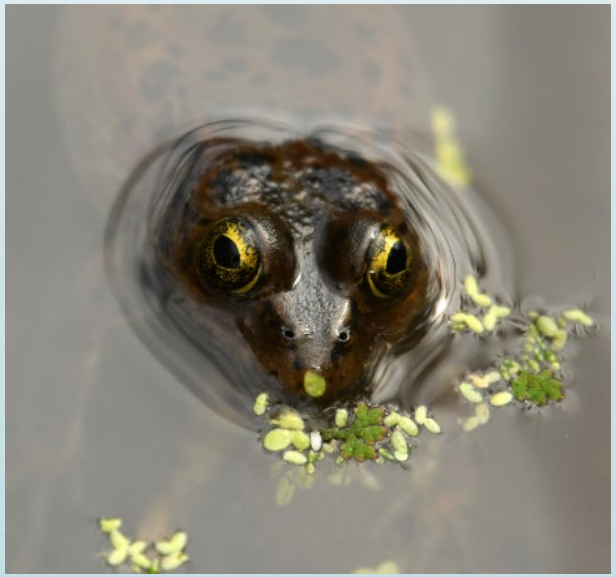


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Julie Tyson
WDFW Habitat Division
Fish and Wildlife Biologist

Mima Creek Unit
Oregon Spotted Frog
Wetland and Creek Enhancement

Washington Department of Fish and Wildlife
Michelle Tirhi
October 2026



Washington Department of FISH and WILDLIFE



Project Partnerships

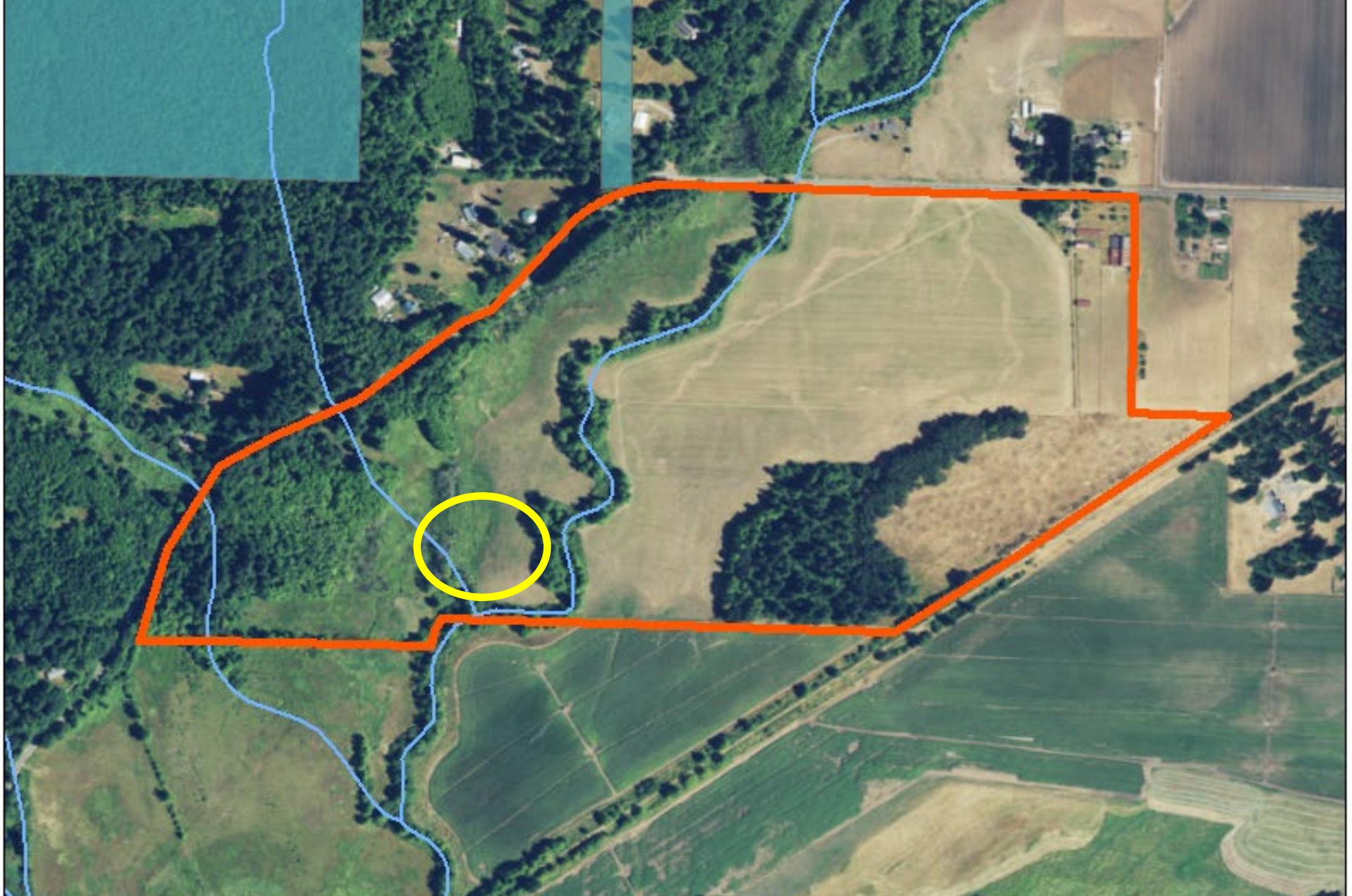
- Property is owned by WDFW
- Mima Creek Unit of the South Puget Sound Wildlife Area
- Partnered with Ducks Unlimited and Wild Fish Conservancy

Project Location



Lower Black Tribs (Mima Creek) GSU
ASRP Focus = Mid-Term Priority Action Area
Focal Species Priority Site = Oregon spotted frog breeding site
project location in red


Mima Creek
Bordeaux
Mima Rd SW
Black River
Littlerock Rd SW
849 ft
Mima
Gate Rd SW
Littlerock Rd SW
Sargent Rd SW
BAKER
PRAIRIE
Peterson
Corner
Highway 12 SW
183rd Ave SW
183rd Ave SW
Sargent Rd SW
Old Highway 99 SW
Helsing
Junction
Scatter Creek
Prairie Creek
Esri, NASA, NGA, USGS, FI
VA State Parks GIS, Esri, TomTom, Garmi





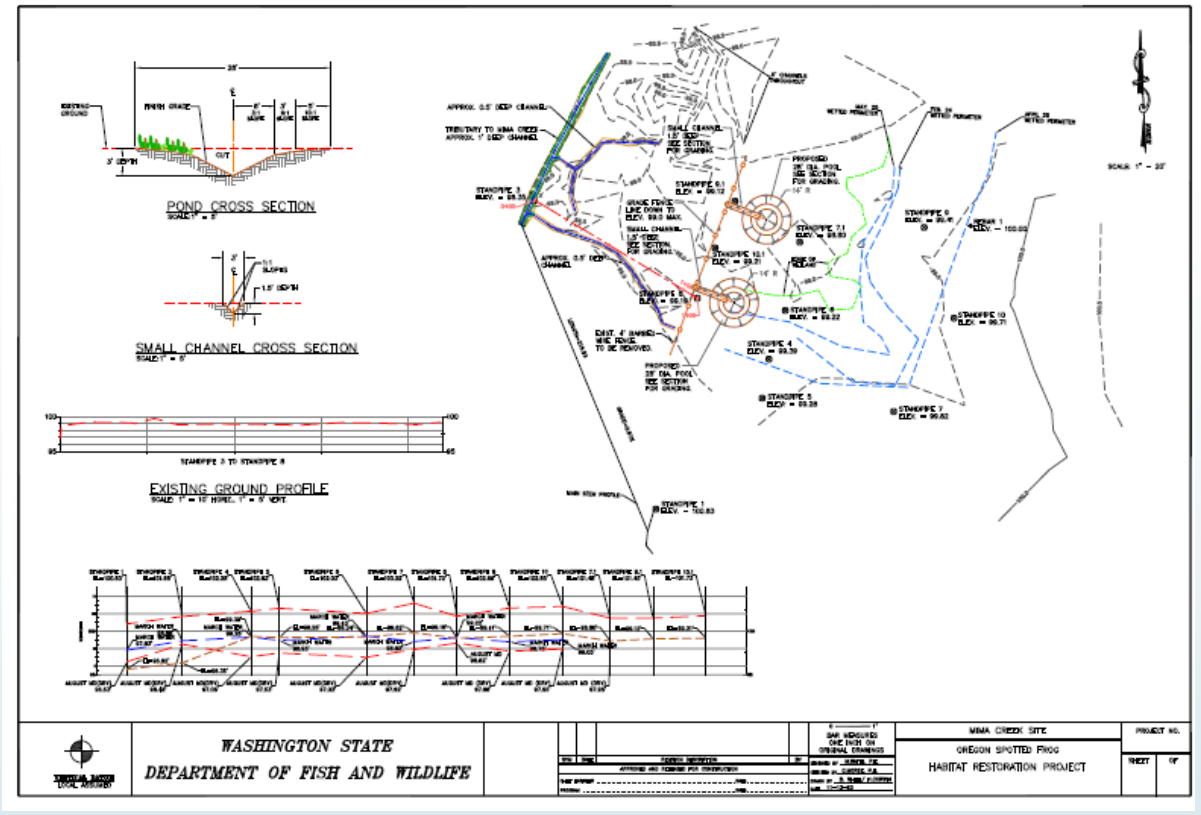
Goal: Conserve and enhance Mima Creek wetlands where Oregon spotted frogs breed and enhance the nearby Mima Creek tributary for over-wintering spotted frogs, fish and other aquatic wildlife.

1. Acquisition of the Property (2021)
2. Monitor Oregon spotted frog population and hydrology to guide restoration actions
3. Construct Oregon spotted frog breeding ponds with control features and install BDAs to ensure water availability when and where needed.



Phase 1	• Monitoring • Data Collection
Phase 2	• Concept • Design • Cultural Resources Review • Permitting
Phase 3	• **Build** • **Revegetation**

Project Action- Build Ponds



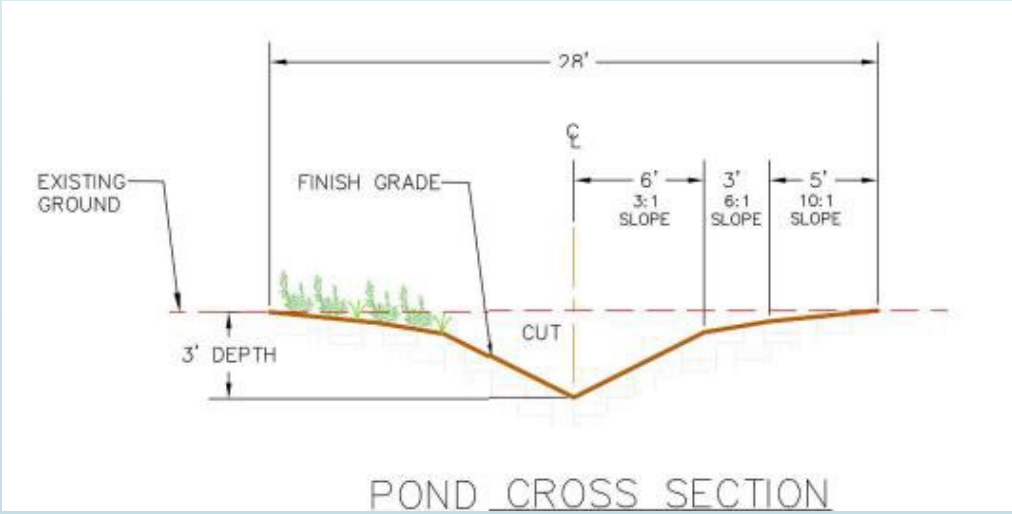
1. Construct two ponds.
2. Construct channels connecting each pond to depressions that feed into Mima Creek tributary.
3. Install water level controls on each channel
4. Remove and grade existing fence and mounded earth currently creating barrier to water movement.
5. Remove invasive RCG surrounding ponds and replant with natives.
6. Install up to two BDAs in Mima Creek tributary

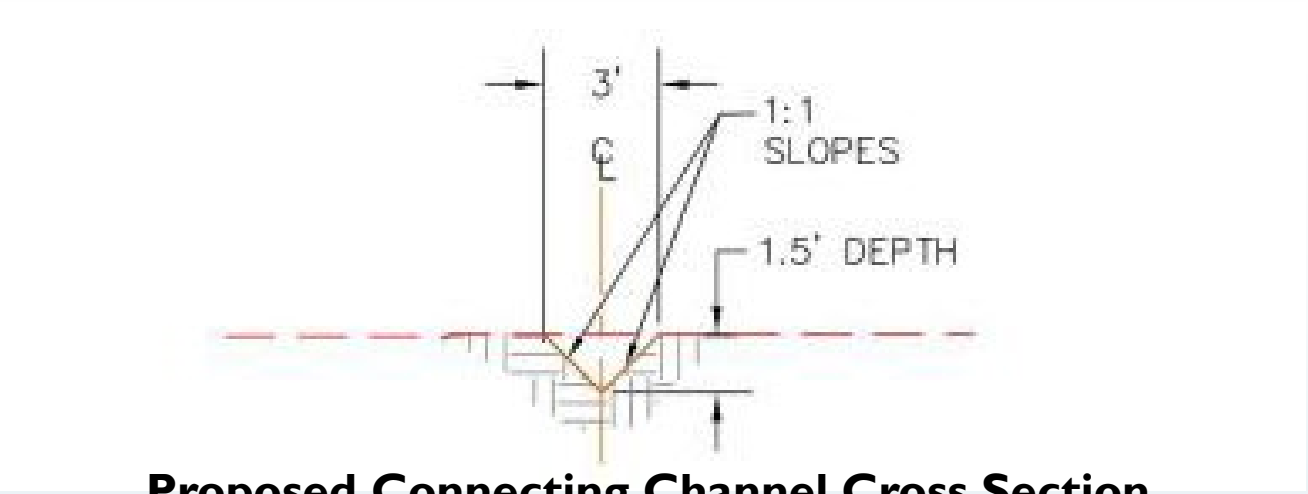
Project Basis of Design

- Achieve water depths in pond of 6-8" January to May (breeding season)
  - Design ponds with slope of 3' wide 6:1 slope and a 5' wide 10:1 slope in the outer 8' ring

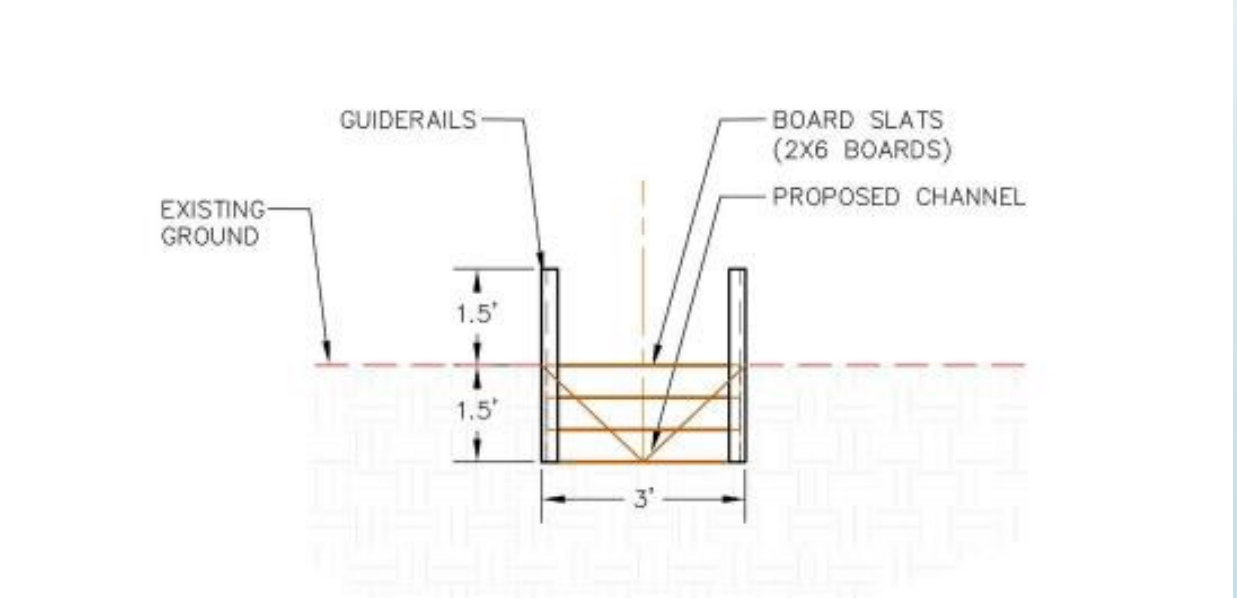
- Water maintained in ponds and connectors until spotted frog metamorphosis and outmigration to deep water tributary June-July (non-breeding season)
  - Design ponds with a 6' wide 3:1 slope in center ring of each pond

- Center ponds where water monitoring data (piezometers 2021-2025) ensured water availability to meet needs
- Each pond = 28' diameter, 3' deep





Proposed Connecting Channel Cross Section

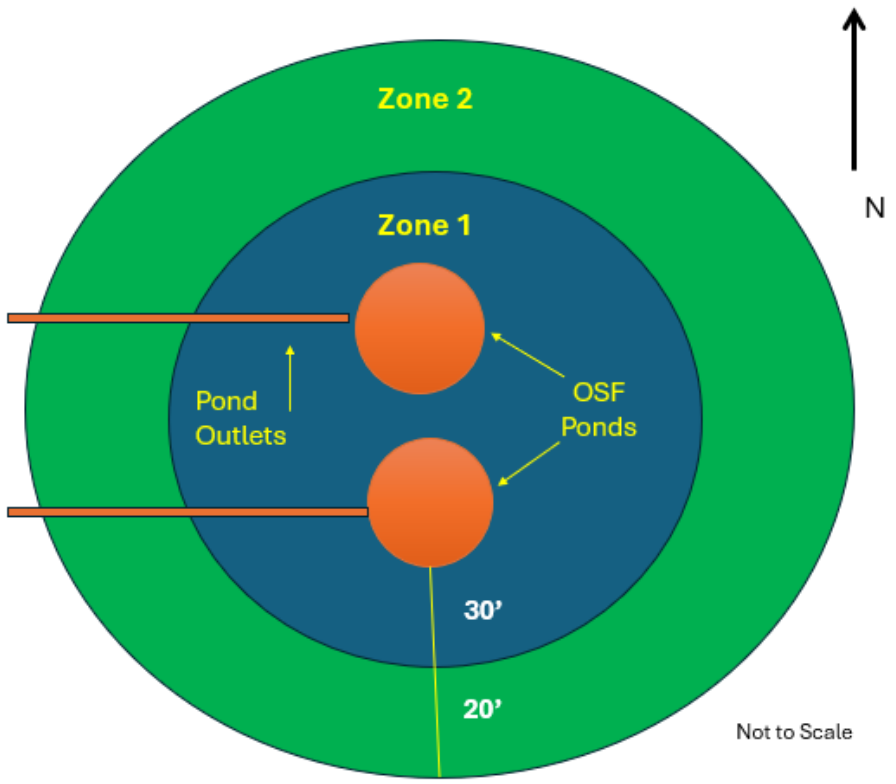


Proposed Water Level Control Structure

Project Action—Revegetate

Conceptual Native Vegetation Planting Plan

Site Prep	Mow/masticate reed canarygrass rhizomes in both Planting Zones; retain biomass plus apply coir cloth and 6 inches of mulch to Planting Zones 1 and 2 to retain elevation
Planting Zone 1	Plant short stature native wetland plants to include *Juncus* and *Carex* species (install plugs)
Planting Zone 2	Plant mid-height woody vegetation (12' max height) to include salmonberry, ninebark, wetland equivalent of snowberry (install 1 or 2-gallon plants)



Phase 2: Permitting

- Hydraulic Project Approval (WDFW. Qualified for HRPP short process)
- Certification Of Compliance (USACE)
- NWP verification letter (USACE)
- Thurston County floodplain permit review/JARPA exemption (Thurston County)
- Cultural Resource Findings Report




TYLER RENTAL


TYLER RENTAL
135G


TYLER RENTAL

















The not so fun part….pounding holes ☹









The fun part….Planting!!!!!




























4X4
HONDA









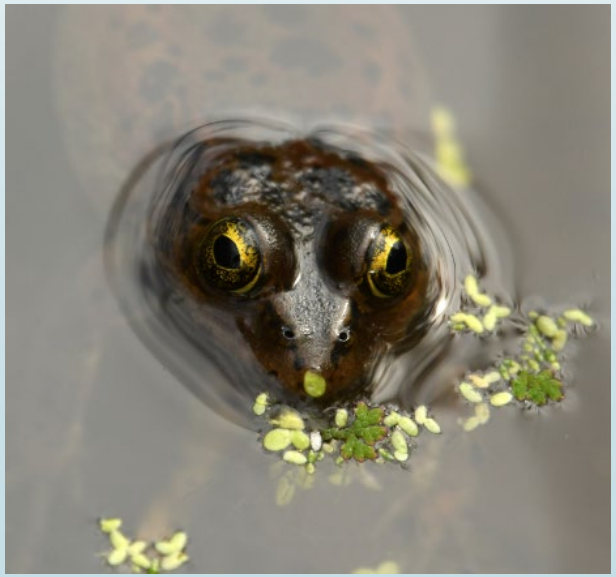




Oregon spotted frog !!!

Questions?

Michelle Tirhi
District Wildlife Biologist, District 11
Michelle.Tirhi@dfw.wa.gov
206-406-9966



Washington Department of FISH and WILDLIFE

BLACK RIVER & SCATTER CREEK

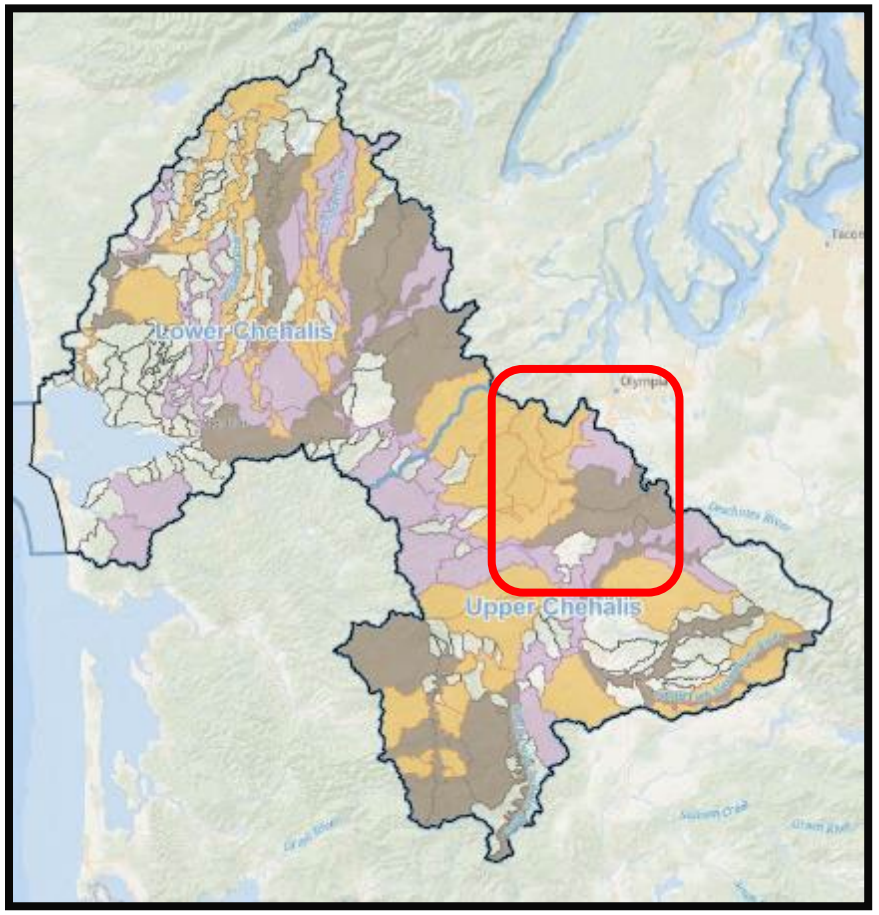
THURSTON CONSERVATION DISTRICT

PAUL CEREGHINO
KIANA SINNER
MARA HEALY
KATRINKA HIBLER
JOEY BURGESS

October 14, 2026

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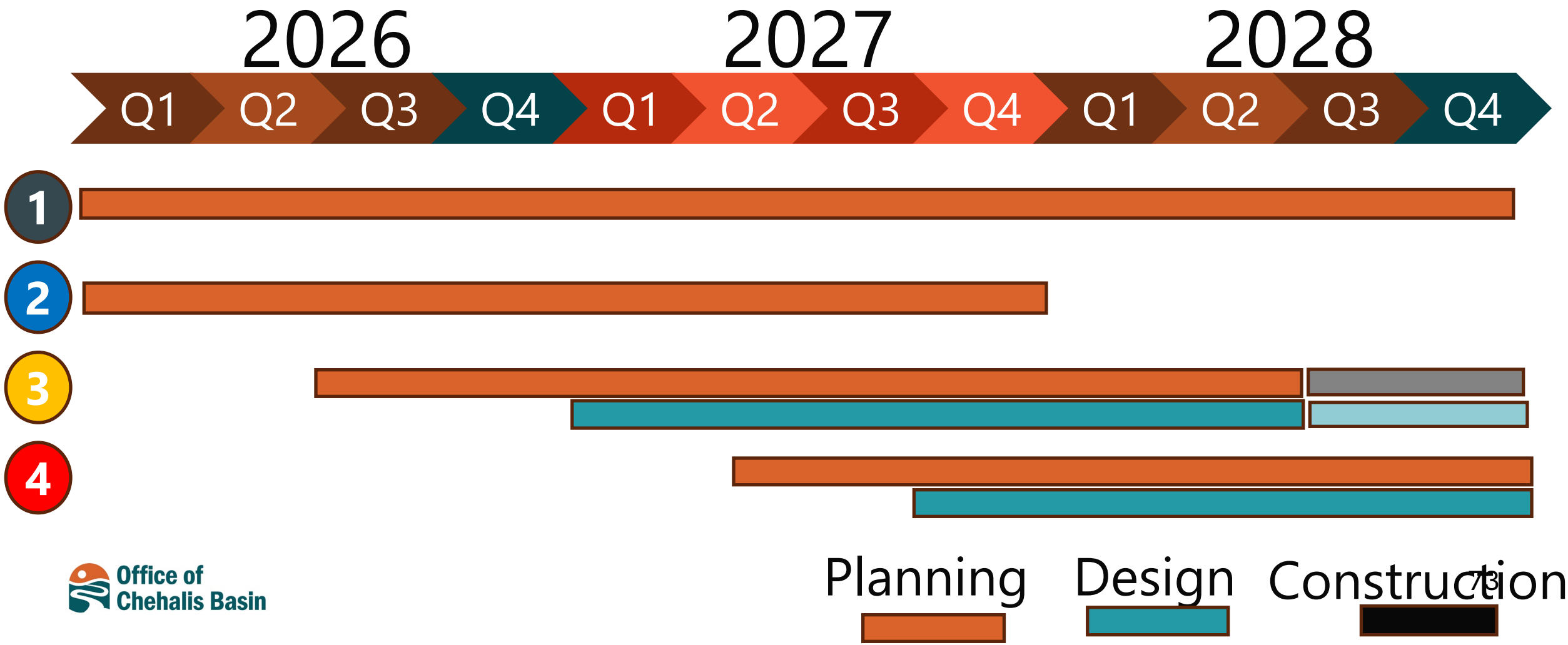


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Project Name (Sponsor)	Status	Project Cost	River miles & Acres
1 **Black River OSF Engagement**	Initiation	$239,036	Black River Basin
2 **Chehalis RM 56.5-58**	Initiation	$150,000	2 Side Channels
3 **Scatter Creek 0-6.6**	Initiation	$487,897	6.6 Miles TBD Acres
4 **Beaver Creek Confluence (Proposed)**	Proposed	$412,893	0.6 Miles ~16.5 Acres

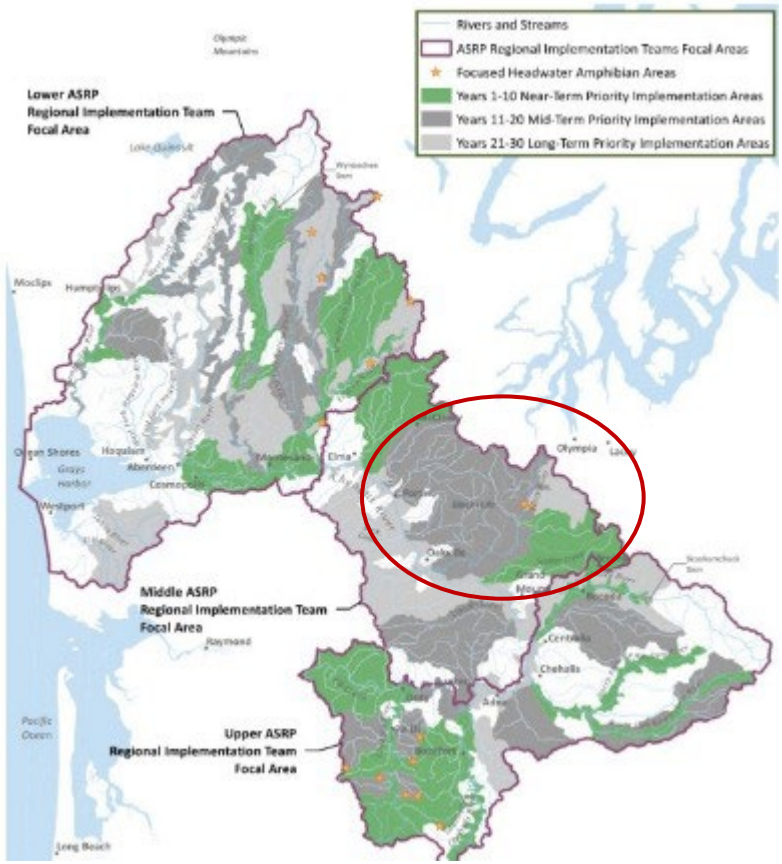
	BDAs/ PALS	ELJs	Side Channel Creation	Planting/ Invasive control
Water Temp				3 4
Winter High Flow Refugia	2 4 3	2 4 3		
Side Channel Habitat	4	DESIGN - PROSPECTIVE		
Floodplain Connection	3 4	3 4	3	
Habitat Diversity	3 4	2		1 3 4
Sediment Storage		3		
Summer Low Flow				
Total (Structures, Acres, etc)	TBD	TBD	TBD	TBD

PROJECT TIMELINE



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1 Black River OSF Engagement



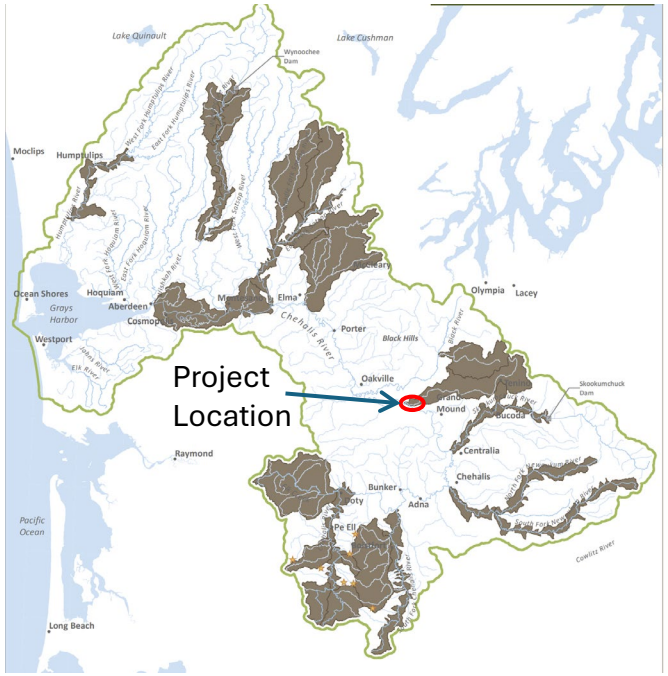


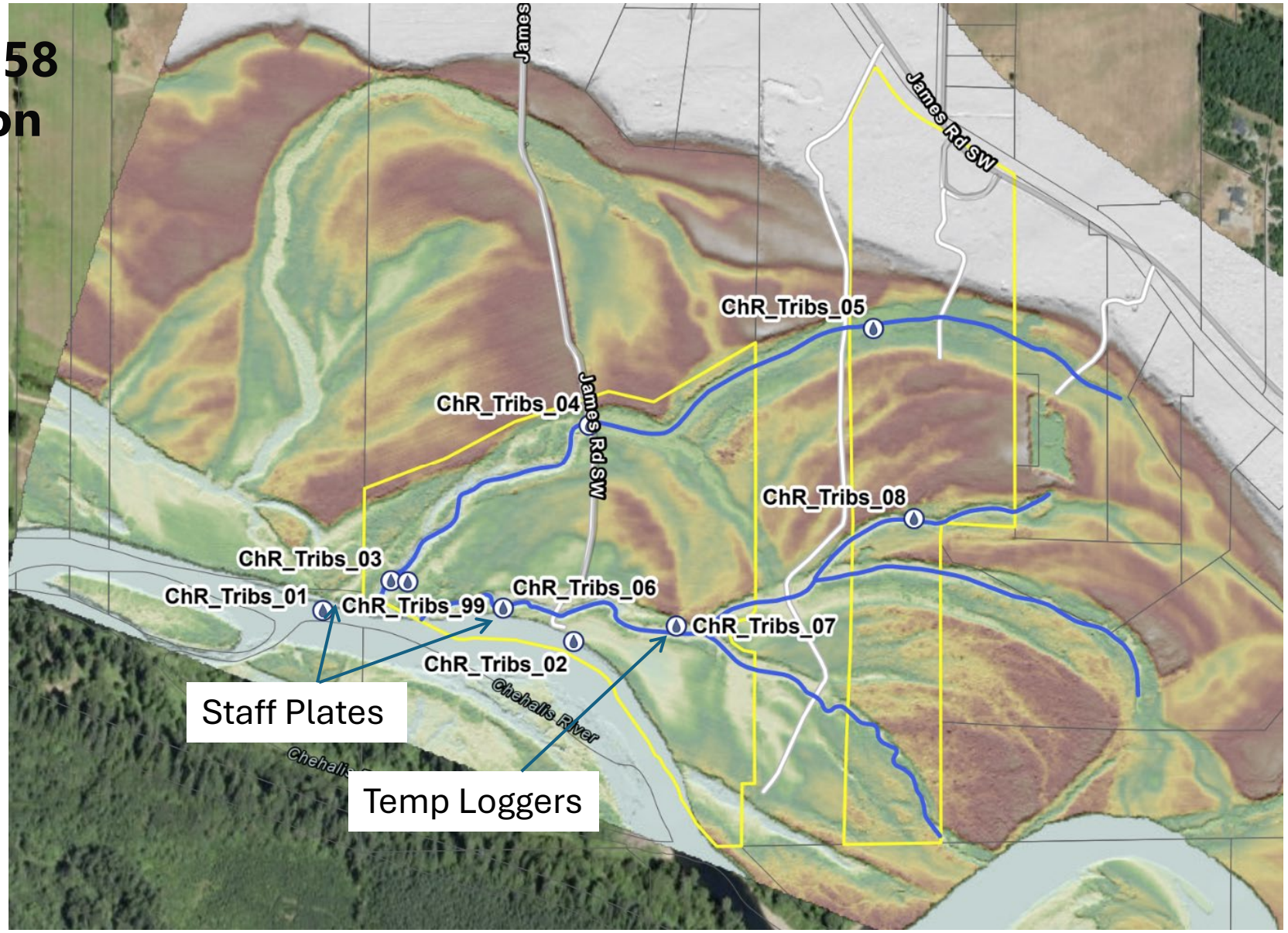
Deliverables

- OSF Partner Collaboration
- Landowner Outreach and Engagement
  - Workshops: Farming with ESA Listed Species
  - Focal Conversations
- Landowner Technical Assistance
- Phase 1 Development of a Conservation Benefits Agreement

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2 Chehalis River Mile 56-58 Restoration Initialization





In mid June 2026
Mainstem near 20 degrees C
Tributaries were 16.4 C and 14.8 C

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3 Scatter Creek

RM0-6.6 Conceptual Design

- Project initialization: Ecology ASRP grant (June 2027 – May 2028)
- Conceptual Designs & Landowner Engagement for RM0-2
  - Currently 6 willing landowners
- Landowner & Community Engagement in RM2-6.6
- Next: Phase 2 design 2028–29, Phase 3 build 2030

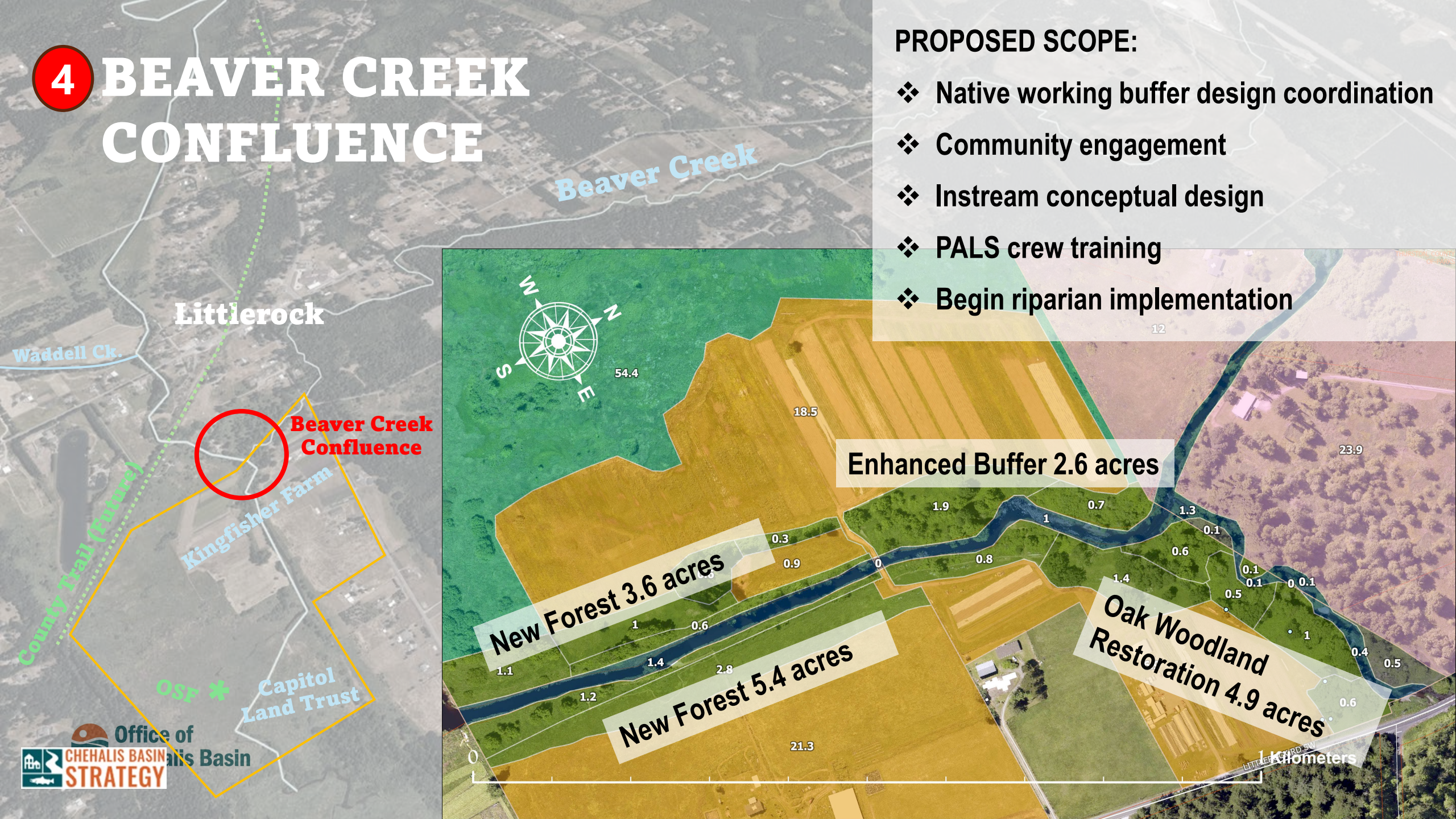


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4 BEAVER CREEK CONFLUENCE

PROPOSED SCOPE:

- ❖ Native working buffer design coordination
- ❖ Community engagement
- ❖ Instream conceptual design
- ❖ PALS crew training
- ❖ Begin riparian implementation



LESSONS LEARNED/ REMAINING QUESTIONS

- Landowners require respect and assurances (OSF)
- Seep fed side channels provide refuge from warm mainstem temperatures.
- Landowner interest exceeds staff capacity.
- How large of a staff should we build on soft money?

BLACK RIVER LOCAL RESTORATION STRATEGY

Cory Archer, Consultant for Chehalis Basin Partnership

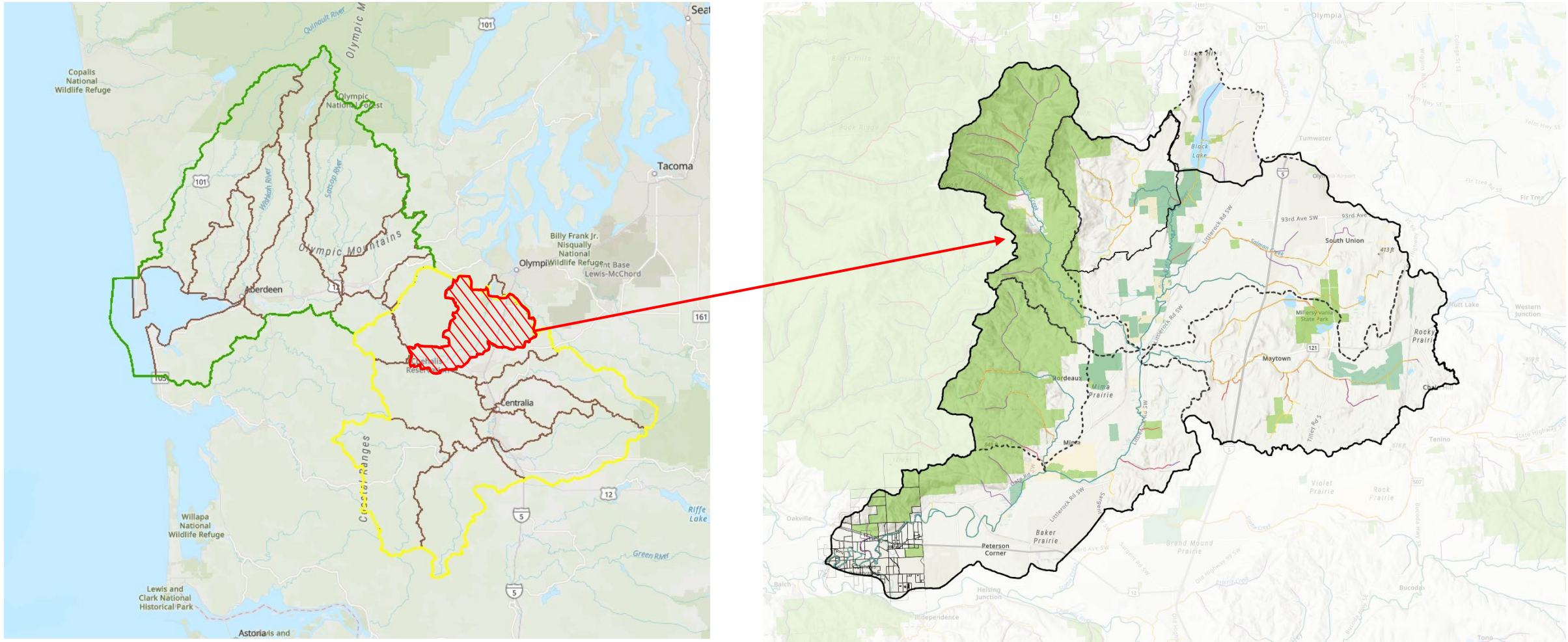
October 14, 2026

ASRP Progress & Planning Workshop

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Black River Sub-Basin



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Overview

Goal: Develop a Local Restoration Strategy that includes tactics and prioritized project concepts to improve the ecological function and ASRP priority species in the Black River Basin.

- Working with a subset of partners to help set the vision and restoration targets:
  - WDFW, USFWS Partners, Thurston County CD, Ducks Unlimited, Capitol Land Trust, Chehalis Tribe, Quinault Indian Nation, and Landowners
- Coordinating with Hydrological Model (WDFW) and landowner outreach (Thurston CD)
- Developing three planning-level project concepts.

Timeline Overview

We are here!



Black River Subcommittee Input

April 2026

December 2027

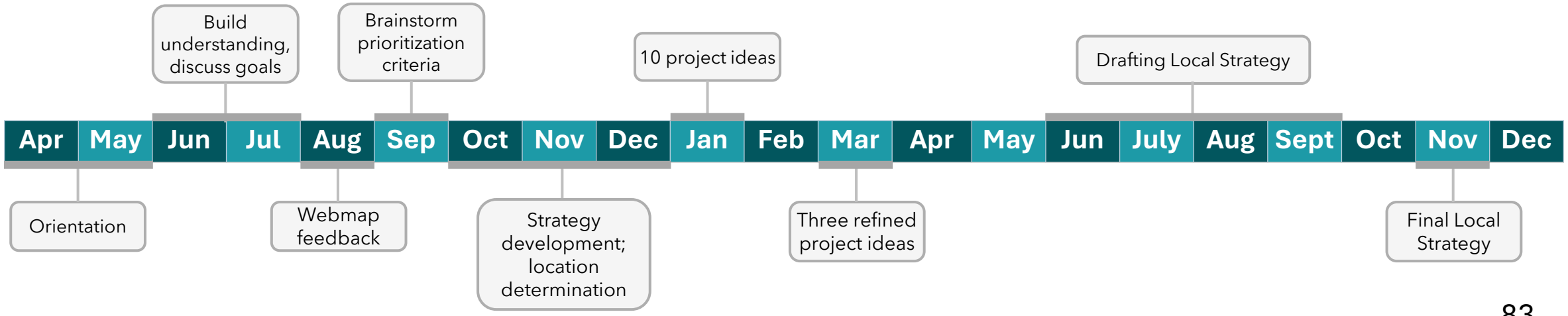
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So far:

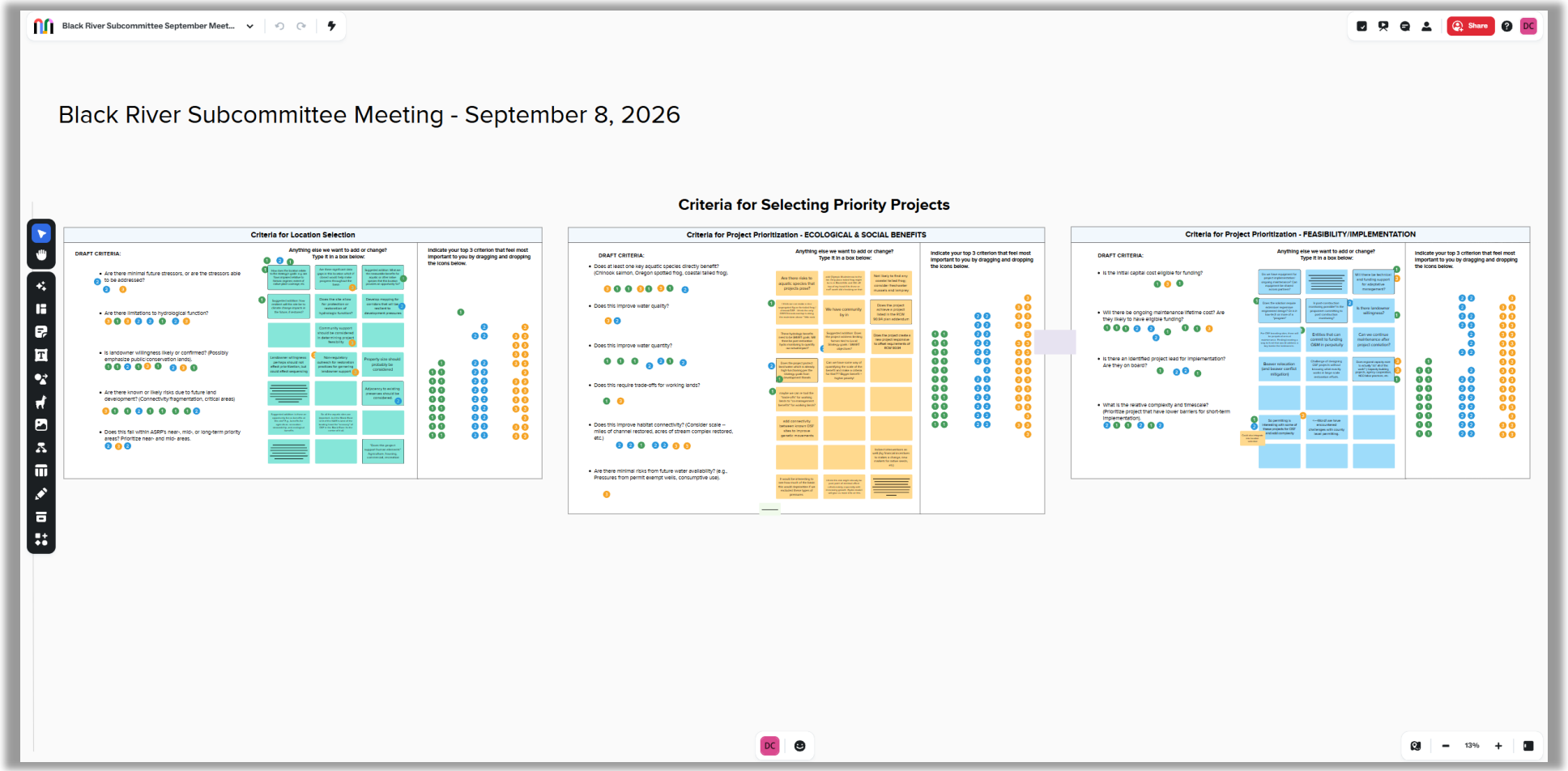
- Four subcommittee meetings
  1. Orientation
  2. Field Visit
  3. Webmap feedback/review
  4. Brainstorm project criteria & prioritization

Still to come:

- Additional coordination with hydrological model team, landowner outreach, and OSF working group
- Project concept development
- Three refined project concepts
- Draft Local Strategy development
- Final Local Strategy



Collaboration & Input in Action



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Future Opportunities

- We are currently exploring possible future projects in the Black River Basin.









Leaping Toward Conservation

Saving the Oregon Spotted Frog

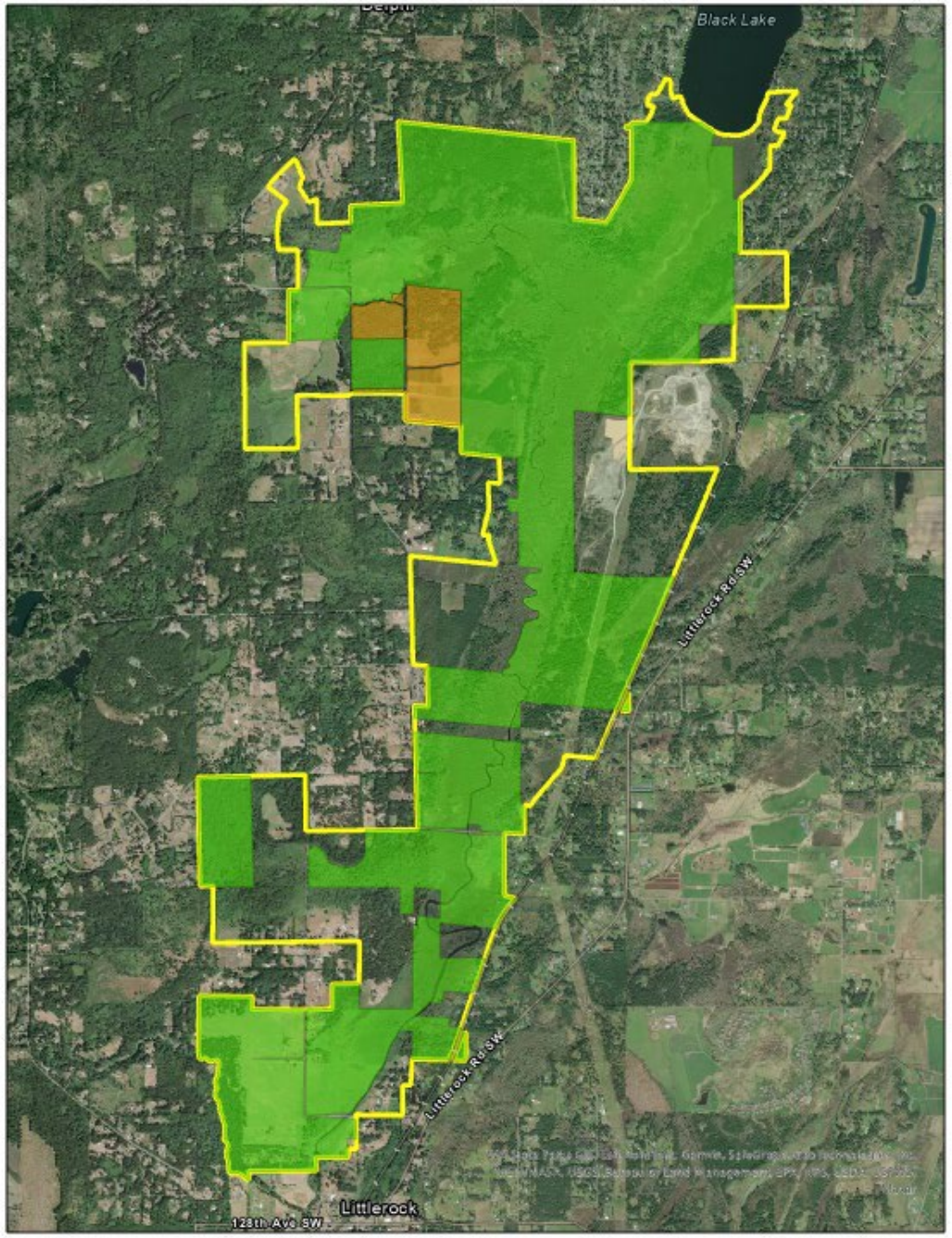
Dempsey Creek Culverts Delphi Rd

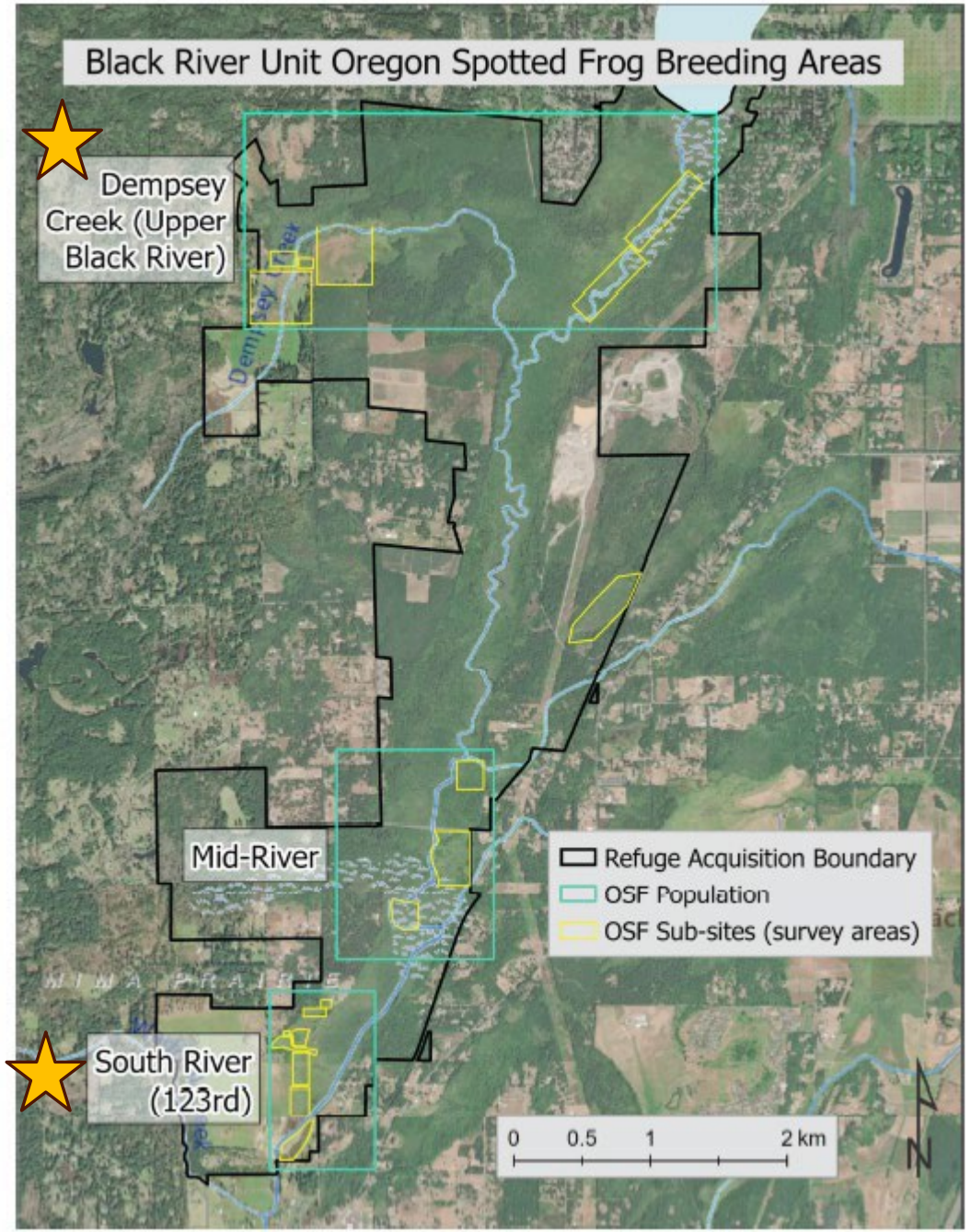


Ryan Munes
Wildlife Biologist
Nisqually NWR Complex






Black Lake
Littlerock Rd SW
Littlerock Rd SW
Littlerock
123th Ave SW


Black River Unit Oregon Spotted Frog Breeding Areas
Dempsey Creek (Upper Black River)
Mid-River
South River (123rd)
Refuge Acquisition Boundary
OSF Population
OSF Sub-sites (survey areas)
0
0.5
1
2 km
N



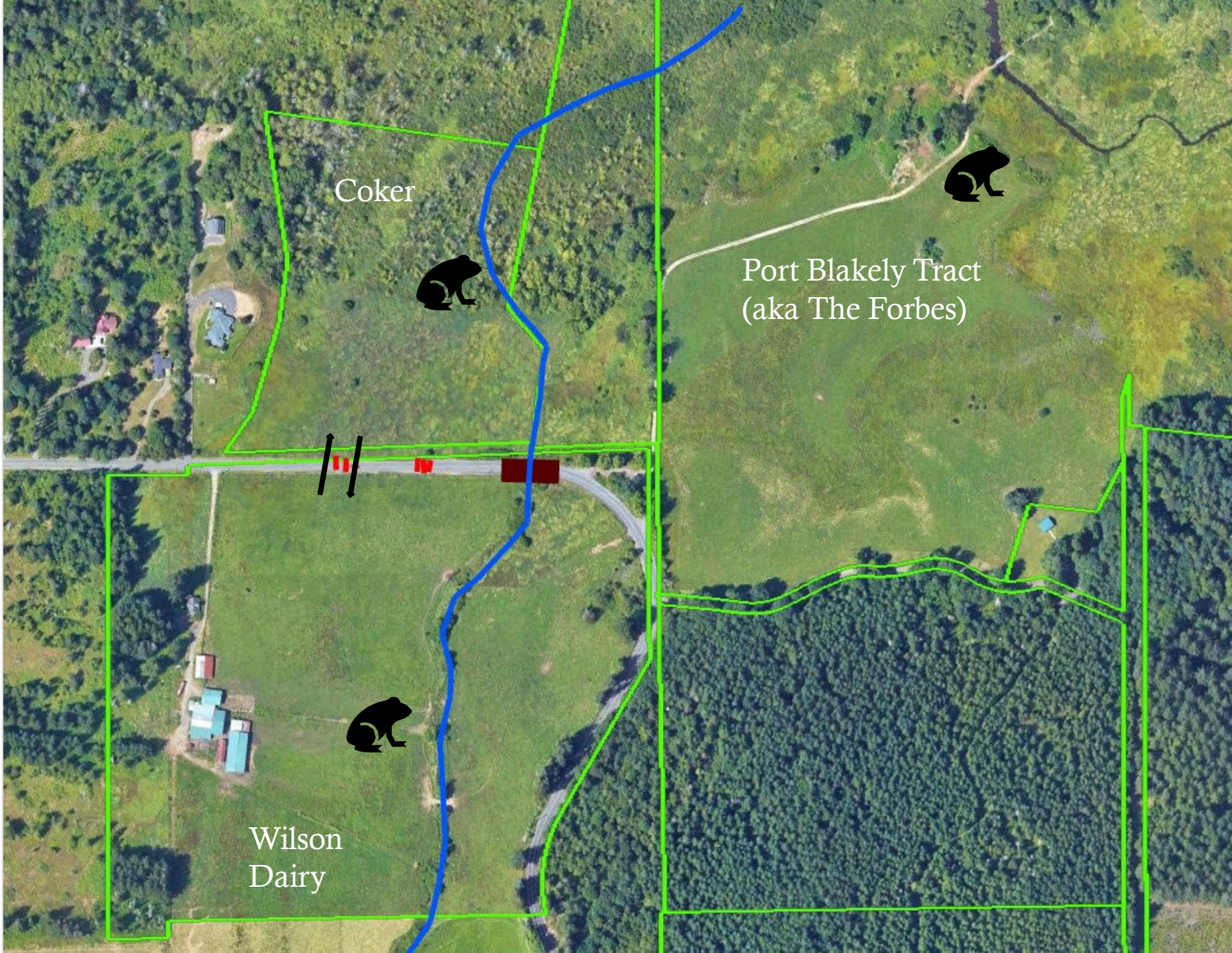


Dempsey Creek at Delphi Rd

Issues- 5 Culverts (red lines) & Creosote Pilings Bridge (brown)

Dry summers tadpoles/juvenile OSFs get stranded in culverts

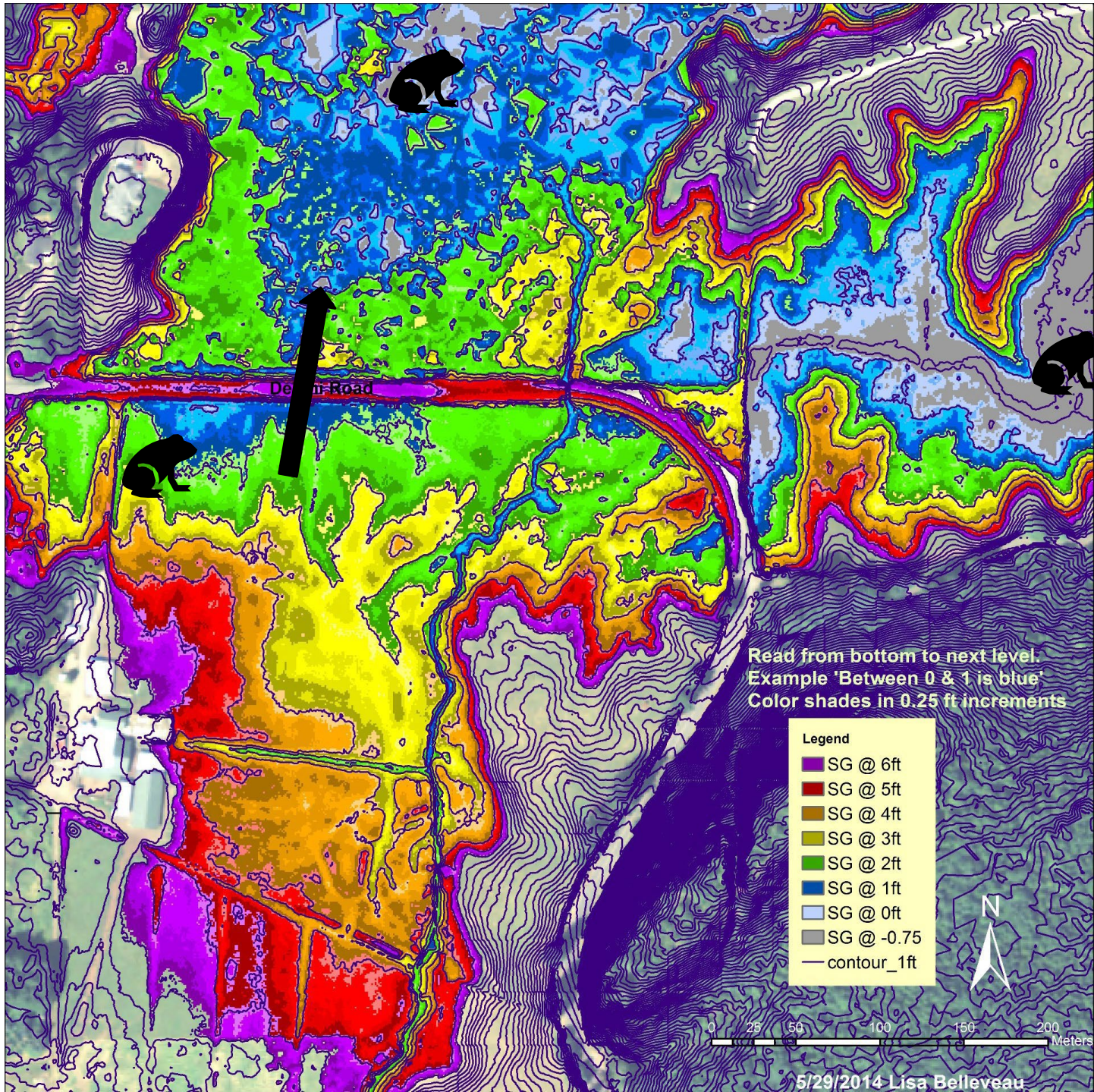
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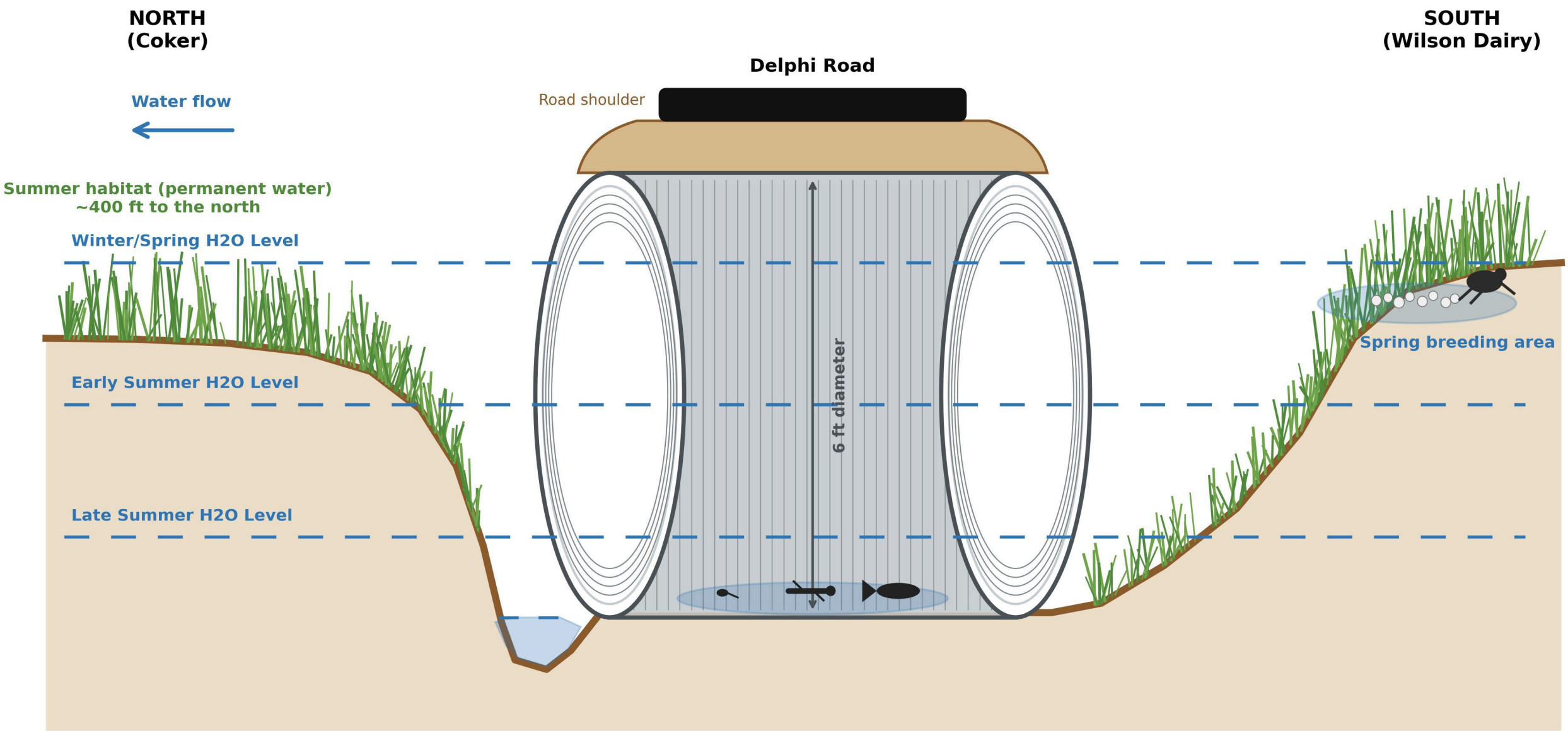
Dempsey Creek at Delphi Rd

- Frogs typically use areas in blue and gray

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North–South Cross Section — Culvert















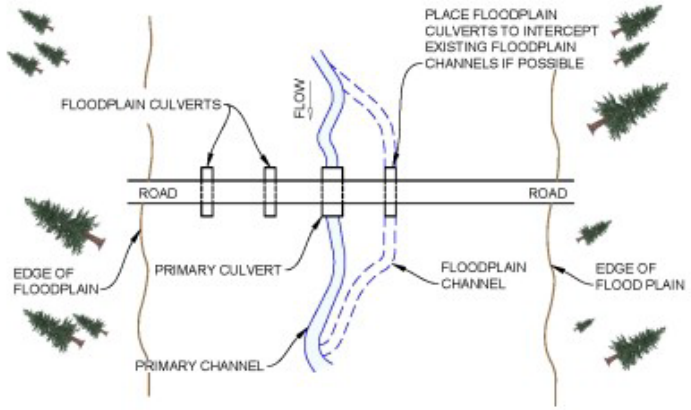


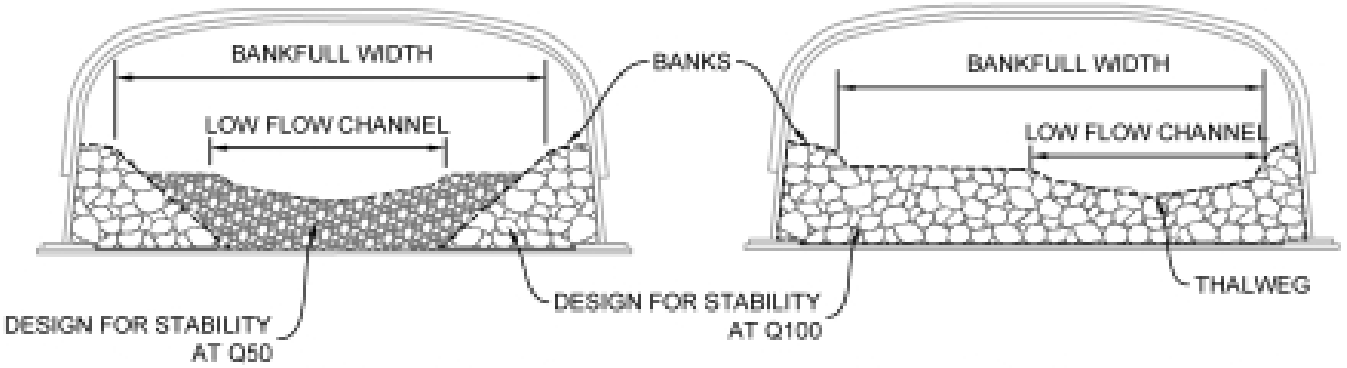




The Work Continues

- Water Level Monitoring (ongoing)
- Preliminary Site Design (next step)
  - removal of culverts?, box culverts?, replace bridge?, regrade?
- Work with Partners
- Secure Funding
- Do the work!
- Monitoring after restoration
- Adaptive management





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Culvert Design Guidelines for Ecological Function | U.S. Fish & Wildlife Service