# Agenda

**Yakima River Basin Water Enhancement Project Workgroup**

March 11, 2020; 9:30 AM to 12:30 PM at Kittitas County Armory (Fairgrounds)
901 E 7th Ave, Ellensburg, WA

https://goo.gl/maps/kQYWHG74HmXVFWo7

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>9:30 – 9:40</td>
<td>Welcome/Introductions and Agenda Overview/Public Comment¹</td>
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<tr>
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<td>Ben Floyd, White Bluffs Consulting</td>
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<tr>
<td>9:40 – 10:00</td>
<td>2020 Water Supply Forecast</td>
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<tr>
<td></td>
<td>Chris Lynch, Reclamation and Jeff Marti, Ecology</td>
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<tr>
<td>10:00 – 10:30</td>
<td>Water Marketing and Transfers Study Update</td>
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<td>Lisa Pelly and Justin Bezold, Trout Unlimited and Urban Eberhart, Kittitas Reclamation District</td>
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<tr>
<td>10:30 – 11:10</td>
<td>Teanaway Community Forest – Focus on Habitat Restoration and Adaptive Management</td>
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<tr>
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<td>Mike Livingston, William Meyer and Jeff Burnham, WDFW; Larry Leach and Joe Smith, DNR; Scott Nicolai, Yakama Nation; and Rebecca Wassell, MCFEG</td>
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<td>11:10 – 11:20</td>
<td>Public Comment</td>
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<td>11:20 – 11:35</td>
<td>Break</td>
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<tr>
<td>11:35 – 12:00</td>
<td>Lower River Smolt Outmigration Study – 2019 Preliminary Findings</td>
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<td>Pat Monk, Reclamation; Michael Porter, Yakama Nation; and Toby Kock, USGS</td>
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<td>12:00 – 12:30</td>
<td>Workgroup – Roundtable Discussion and Recognition</td>
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<td></td>
<td>Ben Floyd, White Bluffs Consulting</td>
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<tr>
<td>12:30 PM</td>
<td>Adjourn</td>
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</table>

**2020 Meetings:** 6/3 (Toppenish), 9/17 (Yakima) and 12/9 (Yakima)

For additional information, see the reports and documents available at this link:

¹ Public comment opportunities will be provided for each agenda item except for Welcome/Introductions, Workgroup Roundtable Discussion and the Public Comment agenda items. Those wanting to provide public comment during the designated agenda item need to sign up. Each commenter will be limited to 2 – 3 minutes for comments (depending upon number of commenters) to maintain meeting schedule. Additional written material can be submitted with comments for inclusion in the meeting notes. Previously provided comments are noted and not necessary to repeat.

**Note:** This meeting was canceled and therefore no meeting notes are available. Materials prepared for the meeting have been posted to the YRBWEP website.
Teanaway Community Forest: Focus on Habitat Restoration and Adaptive Management

Presentation to
Yakima River Basin Water Enhancement Project Workgroup
March 11, 2020
WDFW, YKFP, MCF, WDNR
Teanaway Community Forest

- DNR’s first community forest
- 50,241 acres, paid about $100 Million
- The purchase was the largest single land transaction by Washington State government in 45 years, resulting from more than a decade of collaboration by many people and organizations.
Management of the Community Forest

- DNR/DFW conservation easement
- DNR/DFW MOU
- The agencies specifically agreed to:
  - Fully, equally, and collaboratively share the land management responsibilities for the Teanaway Community Forest based on the principle of joint decision-making;
  - Manage the forest in a manner that helps Washington State achieve the goals of the Yakima Basin Integrated Plan and builds on the strong stakeholder partnerships that have formed around the YBIP and the Community Forest;
  - Jointly select restoration projects and develop performance standards to determine the projects’ effectiveness;
  - Place a top priority on projects affecting endangered or threatened species under the U.S. Endangered Species Act;
  - Allow timber management, removal of minor forest products, and livestock grazing, subject to the provisions of the management plan; and
  - Manage recreational activities to protect key watershed functions and aquatic habitat.
TCF Goals

- Water Supply and Watershed Protection
- Forestry and Grazing—working lands
- Recreation
- Fish and Wildlife Habitat
- Community Partnerships

Management Plan:
TEANAWAY COMMUNITY FOREST AQUATIC RESTORATION

2020 WORK PROPOSED

2021 BIENNIAL

PRIORITY TRIBUTARY WORK COMPLETE

2019 NF TEANAWAY WORK COMPLETE
2019 North Fork Teanaway Large Wood Additions
Wood Trapping Structures
Helicopter Placed Log Jams
3,438,500 POUNDS OF WOODY MATERIALS PLACED AND STAGED WITH HELICOPTER OVER 25.4 HOURS
Beaver Activity

~1 week!
Wood is remaining stable where we need it to
Wood Trapping Structures

LWD Bar Structure
Side Channel
LWD Bank Structure
Side Channel

RAS 2D Depth Model - Existing 2 Year Flood
ALTERNATIVE 2 - partial removal of artificial topography

- Remove the large amount of artificial topography to allow for near natural streamed ecosystem patterns while providing a sediment source for the downstream reach.
- Excavations for the proposed project (SPECT), and a retained area up to 600 feet to aid in removal. Total excavations: 8000 cubic yards.
- All removed material will be used as a suitable, layered augmentation site, and placed in place.
- The channel cross-sections with river stones are intended to provide palerative flow paths for the near natural channel conditions.

- Modeled depths are based on the proposed partial removal of artificial topography.

Artificial topography

Legend
- MI-Columbia Mills
- WSDOT Asked
- Root Wire
- Location scale

Gravel Augmentation Sites

- Model
- NPS

Modeled Depth (Q-2)

Topo Points

WPD, LLC
Berm Area Planview
North Fork Trinity Flood Risk Connection 2020

Splitters, Deflectors, Levee Removal and Gravel Augmentation
~1 mile!
Existing velocities
10yr flood event

Berm Alignment
Proposed condition velocities 10yr flood event

Berm Alignment
TCF: Why are livestock challenging?

- Aquatic restoration related to disconnected floodplains, inadequate riparian vegetation, etc.
- Livestock can degrade banks, overutilize riparian forage, and negate expected benefits of restoration
- We expect that under the TCF Grazing Framework, active and passive restoration will be successful in improving riparian function and aquatic habitat.
TCF Grazing: Setting

- Inherited three perpetually renewing leases from American Forest Land Company
- Minimal infrastructure
- Jointly managed community forest with multiple challenging goals

Coordinated Resource Management Plan
TCF Grazing: CRM

Considerations:
• Type of livestock
• Duration of grazing
• Locations to exclude livestock
• Monitoring locations & standards

Resulted in “TCF Grazing Framework”
• Grazing technical group continues to meet
• Framework provides for modifications if agreed upon
TCF Grazing Management – “Framework”

• Upon buildout: no livestock in floodplains
• Survey for needed site-specific infrastructure by late 2018
• Frequent in-season monitoring of:
  1. Upland and riparian grass stubble height
  2. Livestock-induced streambank alteration
  3. Forage consumption of riparian shrubs and trees
Existing fence at TCF creation:

~5.5-6.5 miles fixed fence

Fence constructed since TCF creation:

~4.2 miles drop fence
~2.2 miles electric fence

Proposed additional fence in 2020:

~1.3 miles drop fence
~2.5 – 3.2 miles fixed fence
TCF Grazing Management – Lessons Learned

- Probably no scenario where full floodplain exclusion makes sense
  - Maintenance workload exceeding capacity
  - Lease language not written clearly enough
  - New fence + continued monitoring should lead to additional improvements

Photo credit: Mid-Columbia Fisheries
TCF Grazing Management – Lessons Learned

2019 TCF fence maintenance hours

- DNR staff
- WA Conservation Corps
- Volunteers

Total cost >$19,000 for 6.5 miles vs 2017 estimate of $1000/mile
TCF Grazing Management – Lessons Learned

• No one thing is appropriate for every situation
  1. Fencing and fence type
  2. Large woody debris
  3. Terrain – might or might not work as expected
  4. Combination of monitoring and fence
TCF Grazing Management – Lessons Learned

• Need to anticipate effective communication
  1. Wolf activity and forage condition could lead to potentially conflicting guidance from agencies
  2. Can recreationists be helped to observe gates?
  3. Ensure that restoration practitioners and land managers are talking about issues that could affect grazing
Teanaway Community Forest
The Balancing Act

Commitment: Integrated Plan, 2013 legislation, TCF Management Plan

- Protect watershed
- Maintain/enhance recreation where compatible
- Strong community involvement
- Restore habitat
- Maintain working lands where compatible
Teanaway Community Forest
The Balancing Act

- Tremendous energy & resources invested!
- We are achieving our goals!
- We’ve also learned and are adapting!
Teanaway Community Forest
The Balancing Act

- Workgroup feedback
- Grazing lease (expires March 2022)
- Infrastructure future investments
- On-going maintenance

Photo credit: Mid-Columbia Fisheries
Questions?
2019 Drought Declaration Set to expire April 4th
1 inch of statewide SWE = ~3.5 million acre feet (MAF) of water.

~ equivalent to 3 Times the Yakima Project Storage Capacity

From Jan-1 to Mar-1, WA gained 16.6 MAF – almost FIVE Yakima Projects

Total snow storage at 23.5 MAF
River Forecasts (Percent of Normal Apr – Sept Runoff)
YAKIMA - NEAR PARKER | 2020 FORECASTED RUNOFF (APR-SEPT) COMPARED TO HISTORIC RUNOFF (1949-2019)
<table>
<thead>
<tr>
<th>WRIA_NR</th>
<th>WRIA_NM</th>
<th>Name</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
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<tr>
<td>37</td>
<td>Lower Yakima</td>
<td>YAKIMA - AT KIONA</td>
<td>111%</td>
<td>99%</td>
<td>94%</td>
<td>86%</td>
<td>89%</td>
<td>88%</td>
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<tr>
<td>37</td>
<td>Lower Yakima</td>
<td>YAKIMA - NEAR PARKER</td>
<td>118%</td>
<td>102%</td>
<td>94%</td>
<td>86%</td>
<td>91%</td>
<td>89%</td>
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<tr>
<td>38</td>
<td>Naches</td>
<td>BUMPING - BELOW BUMPING DAM</td>
<td>135%</td>
<td>127%</td>
<td>108%</td>
<td>79%</td>
<td>76%</td>
<td>83%</td>
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<td>38</td>
<td>Naches</td>
<td>NACHES - NEAR CLIFFDEL</td>
<td>122%</td>
<td>109%</td>
<td>97%</td>
<td>83%</td>
<td>81%</td>
<td>87%</td>
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<tr>
<td>38</td>
<td>Naches</td>
<td>NACHES - NEAR NACHES</td>
<td>124%</td>
<td>118%</td>
<td>100%</td>
<td>80%</td>
<td>97%</td>
<td>88%</td>
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<tr>
<td>38</td>
<td>Naches</td>
<td>TIETON - AT TIETON DAM</td>
<td>114%</td>
<td>116%</td>
<td>109%</td>
<td>91%</td>
<td>122%</td>
<td>113%</td>
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<td>39</td>
<td>Upper Yakima</td>
<td>CLE ELUM - NEAR ROSLYN</td>
<td>114%</td>
<td>95%</td>
<td>89%</td>
<td>73%</td>
<td>36%</td>
<td>48%</td>
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<td>39</td>
<td>Upper Yakima</td>
<td>KACHESS - NEAR EASTON</td>
<td>110%</td>
<td>93%</td>
<td>86%</td>
<td>92%</td>
<td>74%</td>
<td>54%</td>
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<td>Upper Yakima</td>
<td>TEANAWAY - BELOW FORKS</td>
<td>106%</td>
<td>96%</td>
<td>83%</td>
<td>62%</td>
<td>81%</td>
<td>92%</td>
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<tr>
<td>39</td>
<td>Upper Yakima</td>
<td>YAKIMA - AT EASTON</td>
<td>107%</td>
<td>96%</td>
<td>89%</td>
<td>91%</td>
<td>82%</td>
<td>67%</td>
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<td>39</td>
<td>Upper Yakima</td>
<td>YAKIMA - AT UMTANUM</td>
<td>114%</td>
<td>95%</td>
<td>90%</td>
<td>93%</td>
<td>86%</td>
<td>81%</td>
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<td>39</td>
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<td>YAKIMA - NEAR MARTIN</td>
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<td>87%</td>
<td>85%</td>
<td>79%</td>
<td>70%</td>
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<tr>
<td>40</td>
<td>Upper Yakima</td>
<td>YAKIMA - NEAR HORLICK</td>
<td>114%</td>
<td>94%</td>
<td>91%</td>
<td>84%</td>
<td>69%</td>
<td>82%</td>
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Probability of curtailment: Okanogan, Methow and Wenatchee Rivers
Summary

• Snow-dominant watersheds are forecasted to be comfortably above state drought threshold.
• Lower elevation tributary areas likely to experience below-normal runoff.
• Drier, warmer conditions will shape water demand.
• Extra water needed to erase soil moisture deficits.
What follows are reserve slides
Reclamation announces Yakima basin water supply – March forecast

YAKIMA, Wash. – The Bureau of Reclamation’s March 2020 Total Water Supply Available (TWSA) forecast for the Yakima basin indicates the water supply will satisfy senior and junior water rights this irrigation season.

“The precipitation this season was very poor in November and early December but has been strong since late December and is currently at 115% of average for the water year,” said Chuck Garner, Yakima Project River Operations supervisor. “The precipitation has helped bring our reservoirs from 53% of average in October to 107% in March. The mountain snowpack that feeds our rivers and reservoirs is currently near 100% of average with much below average amounts in the lower elevations and near or above average amounts up high.”

Reclamation manages the water in the five Yakima Project storage reservoirs, along with the basin’s unregulated inflows to fulfill water rights, water contracts and instream flow obligations. Water shortages in the basin are shared equally by the junior water rights, which represent over half of the water rights in the basin.

Reclamation will provide an updated water supply forecast monthly—at least through July—using the latest data each month to reflect any changing conditions as they develop.

The March forecast is based on flows, precipitation, snowpack, and reservoir storage as of March 1, along with estimates of future precipitation and river flows. Other future weather conditions that determine the timing of the runoff and the demand for water also are critical in determining streamflows, prorations and the extent to which the reservoirs fill.

“We still have several key months ahead of us that can have a big influence on the ultimate water supply this summer,” says Garner.

For more information, visit Reclamation’s website at https://www.usbr.gov/pn/hydromet/yakima.

# # #
River Operations Meeting Agenda
Thursday, March 5, 2020, 10:30 AM
Yakima Field Office Conference Room

I. Review February meeting notes (Garner)
II. Daily Operations (Call)
   a. System status
   b. Short Term Weather outlook
   c. Snow report
III. Water Supply (Lewicki)
    a. Hydrologic conditions
    b. Long term weather outlook
IV. Operations Outlook (Lynch)
    a. Runoff forecasts and TWSA
    b. Operations outlook (Refill, flow targets, etc)
V. Irrigation issues (Call)
    a. Water up dates
    b. March water rights/flood rights/frost control
    c. Requests for moving water
    d. 48 hour notice of flow changes
VI. Fish status and outlook (Monk)
    a. Fish count report
    b. Facility activities
    c. Spring/summer fish flow plans
    d. Upcoming SOAC meeting(s)
VII. Next meetings (Garner)
    a. Monday, Apr 6, 1300 hrs, YFO
    b. Thursday, May 7, 1030 hrs, YFO
    c. Thursday, Jun 4, 1030 hrs, YFO?
    d. Wednesday, Jul 89, 1030 hrs, YFO?

Let it snow, let it snow, let it flow!!!
US BUREAU OF RECLAMATION

YAKIMA PROJECT

SYSTEM STATUS AT 06:00, Thursday, 05-Mar-2020

<table>
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<tr>
<th>RESERVOIR</th>
<th>ELEVATION</th>
<th>FOREBAY CONTENT</th>
<th>TOTAL CAPACITY</th>
<th>PERCENT CAPACITY</th>
<th>RESERVOIR INFLOW</th>
<th>RESERVOIR RELEASES</th>
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<td>1065400.</td>
<td>60.</td>
<td>1392.</td>
<td>489.</td>
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IRRIGATION DIVERSIONS

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<th>CFS</th>
<th>RIVER FLOWS</th>
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<td>Kittitas</td>
<td>0.</td>
<td>* Yakima River at Easton 428.</td>
</tr>
<tr>
<td>Roza</td>
<td>0.</td>
<td>Teanaway River at Forks 764.</td>
</tr>
<tr>
<td>Wapato</td>
<td>0.</td>
<td>Yakima River near Umtanum 1906.</td>
</tr>
<tr>
<td>Sunnyside</td>
<td>0.</td>
<td>Yakima River blw Roza Dam 796.</td>
</tr>
<tr>
<td>Westside</td>
<td>0.</td>
<td>Tieton Rvr belw Cnl Hdwks 85.</td>
</tr>
<tr>
<td>Naches-Selah</td>
<td>0.</td>
<td>Yakima River nr Naches 1051.</td>
</tr>
<tr>
<td>OTHERS ABOVE PARKER</td>
<td>200.</td>
<td>Yakima River near Parker 3031.</td>
</tr>
<tr>
<td>TOTAL ABOVE PARKER</td>
<td>212.</td>
<td>Estimated.</td>
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Other Canal Diversions

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<td>Wapatox</td>
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<td>Roza at Headworks</td>
<td>1172.</td>
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<tr>
<td>Chandler</td>
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</tbody>
</table>

UNREGULATED TRIBUTARY & RETURN FLOW ABOVE PARKER 2753. CFS

OPERATIONAL COMMENTS: Storage is 107.1% of average (1981, 2010).

Inflow to the five reservoirs is 89% and releases from the five is 65% of average. Unregulated flow for the Yakima R nr Parker is 88% and regulated flow is 83% of average. Inflow to the five reservoirs for the Water Year to date (OCT. 01 to Mar. 04) is 670KAF, or 122% of average and releases from the five is 206KAF, or 81% of average. Unregulated flow for the Yakima R nr Parker for the same period is 1331KAF,
or 117% of average and regulated flow is 800KAF, or 105% of average.
Precipitation at the five reservoirs for Mar. 1 is 2.08 inches, or 77% of average
and 10% of the months average. Precipitation for the Water Year to date is 188.30 inches, or 115% of average.
The Mountains will be mostly cloudy with a chance of rain and snow. Highs
near 40 degrees. Snow Level near 3500 Feet. Tonight, Rain and snow likely. Rainfall up to an inch possible.
The valleys will be partly cloudy. Highs in the lower 60's. Southwest
wind 5 MPH. Tonight, mostly cloudy, lows in the mid 30's. Southwest
wind 5-10 MPH.
For the complete forecast go to http://www.wrh.noaa.gov/pdt/.
NRCS Snotel SWE, for the Upper Yakima are reporting 93% of average and
Lower Yakima Basin sites are reporting 114% of average.
No system changes expected.
For further information contact the River Operator at 509-573-8112 or go to
The next River Operations meeting is today, Mar. 5, at 10:30 AM at the YFO.
Have a great day!!!!!!:)}
River Operations and TWSA Meeting

Yakima Basin, Washington
March 5, 2020, WY 2020
KYKM - Oct 2019 Through Sep 2020

Temperature (Deg F)

Precipitation (Inches)

Yakima Airport Weather, Pendleton, National Weather Service

(47% of average, estimated)

2.37
Yakima Basin Precipitation
Oct-Feb: 185.62 in., 114.9% Avg

YAKIMA BASIN
Combined Cumulative Precipitation
5 Reservoir Sites
WATER YEARS 1981-2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
YAKIMA FIELD OFFICE
1917 MARSH ROAD
YAKIMA, WA 98901
2015 Yakima Basin Precipitation
Oct-Feb: 185.62 in., 114.9% Avg
Yakima Basin Snow Water Equivalent, Mar 1: 185.3 in., 103% of Avg.

NRCS SWE % AVG

<table>
<thead>
<tr>
<th></th>
<th>USBR</th>
<th>North</th>
<th>South</th>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1-DEC</td>
<td>20</td>
<td>12</td>
<td>39</td>
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<tr>
<td>1-JAN</td>
<td>48</td>
<td>39</td>
<td>60</td>
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<tr>
<td>1-FEB</td>
<td>96</td>
<td>83</td>
<td>102</td>
</tr>
<tr>
<td>1-MAR</td>
<td>103</td>
<td>93</td>
<td>114</td>
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<td>1-APR</td>
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<td>1-MAY</td>
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<td>1-JUL</td>
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YAKIMA BASIN WATER YEAR
SNOW WATER EQUIVALENT

Average based on greater of 1971-2000 or POR-1995
Totals derived from 7 Yakima forecast sites
Corral, Stampede, Olallie, Fish, Bumping, Domerie, & Tunnel Avenue
Yakima Basin Snow Water Equivalent, Mar 1: 185.3 in., 103% of Avg.

NRCS SWE % AVG

<table>
<thead>
<tr>
<th></th>
<th>USBR</th>
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</thead>
<tbody>
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<td>39</td>
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<td>39</td>
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<td>1-FEB</td>
<td>96</td>
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<td>1-MAR</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-JUN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-JUL</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SWE, 2020 vs Average (2004-2020)

Green – Above Average (high elevation)
Brown – Below Average (Lower elevation)
System Unregulated Flow Volume
Oct-Feb: 659 KAF, 122% Avg

YAKIMA PROJECT
SYSTEM RESERVOIRS
SUM OF INFLOWS
SUMMARY HYDROGRAPH
WATER YEARS 1981-2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
YAKIMA FIELD OFFICE
1917 MARSH ROAD
YAKIMA, WA 98901
System Observed Flow Volume
Oct-Feb: 201 KAF, 81% Avg

Water Year 2020
Minimum
Average
Maximum

SYSTEM RESERVOIRS
SUM OF OUTFLOWS
SUMMARY HYDROGRAPH
WATER YEARS 1981-2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
YAKIMA FIELD OFFICE
1917 MARSH ROAD
YAKIMA, WA 98901
Parker Unregulated Flow Volume
Oct-Feb: 1301 KAF, 118% Avg
Parker Observed Flow Volume
Oct-Feb: 778 KAF, 106% Avg
Yakima System Storage Volume
Mar 1: 626 KAF, 107% Avg

YAKIMA PROJECT STORAGE
MEAN DAILY RESERVOIR VOLUME
SUMMARY HYDROGRAPH
WATER YEARS 1981-2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
YAKIMA FIELD OFFICE
1917 MARSH ROAD
YAKIMA, WA 98901
Yakima System Storage Volume
Mar 1: 626 KAF, 107% Avg

YAKIMA PROJECT STORAGE
MEAN DAILY RESERVOIR VOLUME
SUMMARY HYDROGRAPH
WATER YEARS 1981-2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
YAKIMA FIELD OFFICE
1917 MARSH ROAD
YAKIMA, WA 98901
Yakima Subbasin forecasts

<table>
<thead>
<tr>
<th>March, 2020</th>
<th>Low</th>
<th>Adopted</th>
<th>High</th>
<th>Low</th>
<th>Adopted</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parw</td>
<td>1,542,800</td>
<td>1,997,300</td>
<td>2,453,700</td>
<td>0.78</td>
<td>1.01</td>
<td>1.24</td>
</tr>
<tr>
<td>kee</td>
<td>107,120</td>
<td>134,380</td>
<td>174,005</td>
<td>0.79</td>
<td>0.99</td>
<td>1.29</td>
</tr>
<tr>
<td>kac</td>
<td>86,994</td>
<td>121,373</td>
<td>157,213</td>
<td>0.71</td>
<td>0.99</td>
<td>1.28</td>
</tr>
<tr>
<td>cle</td>
<td>359,345</td>
<td>446,093</td>
<td>544,718</td>
<td>0.84</td>
<td>1.04</td>
<td>1.27</td>
</tr>
<tr>
<td>bum</td>
<td>105,287</td>
<td>131,921</td>
<td>167,613</td>
<td>0.82</td>
<td>1.03</td>
<td>1.31</td>
</tr>
<tr>
<td>rim</td>
<td>170,626</td>
<td>219,503</td>
<td>273,735</td>
<td>0.80</td>
<td>1.03</td>
<td>1.28</td>
</tr>
<tr>
<td>Yumw</td>
<td>703,779</td>
<td>866,157</td>
<td>1,063,546</td>
<td>0.80</td>
<td>0.99</td>
<td>1.21</td>
</tr>
<tr>
<td>Nacw</td>
<td>578,258</td>
<td>834,674</td>
<td>1,157,122</td>
<td>0.72</td>
<td>1.04</td>
<td>1.44</td>
</tr>
</tbody>
</table>
March Runoff Forecast to Reservoir Space Available

Refill Ratios

<table>
<thead>
<tr>
<th>Location</th>
<th>Refill Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keechelus</td>
<td>3.06</td>
</tr>
<tr>
<td>Kachess</td>
<td>1.16</td>
</tr>
<tr>
<td>Cle Elum</td>
<td>1.99</td>
</tr>
<tr>
<td>Bumping</td>
<td>16.56</td>
</tr>
<tr>
<td>Rimrock</td>
<td>3.87</td>
</tr>
</tbody>
</table>

Capacity | Content | Low | Mid | High

1000 Acre-ft

Keechelus | Kachess | Cle Elum | Bumping | Rimrock

0.00 | 100.00 | 200.00 | 0.00 | 300.00
Cle Elum Reservoir, Fill Analysis

Forecast Range is 0.85 to 1.27 with a median 1.01 and an average 1.03

- Chance of pool up to spillway by Apr 1 is 0.00%
- Chance of pool up to spillway by Apr 15 is 2%
- Chance of pool up to spillway by May 1 is 6%
- Chance of pool up to spillway by May 15 is 48%

86% of the years filled.

For use in 2020 only.
Reservoir Refill
Likely timing when full (% of mdl years that fill)
All Reservoirs should fill. Timing of fill will be managed so it could extend into June based on conditions as they develop.

- Cle spillway+2’ fish flume on May 23.
- Cle: 86% fill, median of June 8 (May 25-Jun 30)
- Kee: 94% fill, median of June 1 (May 5-Jun 8)
- Kac: 55% fill, median of June 22 (May 27-Jun 24)
- Bum: 100% fill,
- Rim: 100% fill, median of June 1 (May 27-Jun 24)
# March's April 1, 2020 TWSA ESTIMATE

## April 1 - September 30

<table>
<thead>
<tr>
<th>Parameter*</th>
<th>+/-/=</th>
<th>Low</th>
<th>Adopted</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr 1-Sep 30 Natural Flow at Parker est.</td>
<td>+</td>
<td>1445</td>
<td>1845</td>
<td>2258</td>
</tr>
<tr>
<td>Return Flow Estimate, est</td>
<td>+</td>
<td>330</td>
<td>350</td>
<td>360</td>
</tr>
<tr>
<td>April 1, Reservoir Content, est</td>
<td>+</td>
<td>645</td>
<td>660</td>
<td>690</td>
</tr>
<tr>
<td>TWSA</td>
<td>=</td>
<td>2420</td>
<td>2855</td>
<td>3308</td>
</tr>
<tr>
<td>SEP 30 EST RESERVOIR CONTENT</td>
<td>-</td>
<td>76</td>
<td>76</td>
<td>285</td>
</tr>
<tr>
<td>FLOW OVER SUNNYSIDE DAM</td>
<td>-</td>
<td>288</td>
<td>532</td>
<td>714</td>
</tr>
<tr>
<td>TWSA FOR IRRIGATION</td>
<td>=</td>
<td>2056</td>
<td>2246</td>
<td>2309</td>
</tr>
<tr>
<td>NONPRORATABLE ENTITLEMENT</td>
<td>-</td>
<td>1070</td>
<td>1070</td>
<td>1070</td>
</tr>
<tr>
<td>REMAINING TWSA</td>
<td>=</td>
<td>986</td>
<td>1176</td>
<td>1239</td>
</tr>
<tr>
<td>PRORATABLE ENTITLEMENT</td>
<td></td>
<td>1239</td>
<td>1239</td>
<td>1239</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% RATIO= REMAINING TWSA/PRORATABLE ENTITLEMENT</th>
<th>80%</th>
<th>95%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITLE XII FLOW TARGET, cfs April</td>
<td>300</td>
<td>400</td>
<td>600</td>
</tr>
<tr>
<td>Added flow available, cfs <strong>##</strong></td>
<td>120</td>
<td>125</td>
<td>126</td>
</tr>
<tr>
<td>Non-storeable Portion of added flow, cfs</td>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Storable portion of added flow, cfs</td>
<td>106</td>
<td>110</td>
<td>112</td>
</tr>
</tbody>
</table>

*Values are in 1,000 ac-ft unless otherwise specified.

**##* State & YRBWEP Trust, Acquisition, & Conservation additions to Title XII flow range from 120 to 126 cfs.
### March's April 1, 2020 TWSA Comparison

#### April 1 - September 30

<table>
<thead>
<tr>
<th>Parameter</th>
<th>&quot;+/-/=&quot;</th>
<th>Mar's 2017</th>
<th>Mar's 2019</th>
<th>Mar's 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr 1-Sep 30 Natural Flow at Parker est.</td>
<td>+</td>
<td>1905</td>
<td>1850</td>
<td>1845</td>
</tr>
<tr>
<td>Return Flow Estimate</td>
<td>+</td>
<td>350</td>
<td>335</td>
<td>350</td>
</tr>
<tr>
<td>April 1, Reservoir Content</td>
<td>+</td>
<td>605</td>
<td>566</td>
<td>660</td>
</tr>
<tr>
<td>TWSA</td>
<td>=</td>
<td>2860</td>
<td>2752</td>
<td>2855</td>
</tr>
<tr>
<td>SEP 30 EST RESERVOIR CONTENT*</td>
<td>-</td>
<td>76</td>
<td>76</td>
<td>76</td>
</tr>
<tr>
<td>FLOW OVER SUNNYSIDE DAM</td>
<td>-</td>
<td>529</td>
<td>486</td>
<td>532</td>
</tr>
<tr>
<td>TWSA FOR IRRIGATION</td>
<td>=</td>
<td>2255</td>
<td>2189</td>
<td>2246</td>
</tr>
<tr>
<td>NONPRORATABLE ENTITLEMENT</td>
<td>-</td>
<td>1070</td>
<td>1070</td>
<td>1070</td>
</tr>
<tr>
<td>REMAINING TWSA</td>
<td>=</td>
<td>1185</td>
<td>1119</td>
<td>1176</td>
</tr>
<tr>
<td>PRORATABLE ENTITLEMENT</td>
<td></td>
<td>1239</td>
<td>1239</td>
<td>1239</td>
</tr>
<tr>
<td>% RATIO= REMAINING TWSA/PRORATABLE ENTITLEMENT</td>
<td></td>
<td>96%</td>
<td>90%</td>
<td>95%</td>
</tr>
<tr>
<td>TITLE XII FLOW REQUIREMENTS, cfs</td>
<td>April</td>
<td>400</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>TOTAL FLOW AVAILABLE AT PARKER, cfs <strong>##</strong></td>
<td></td>
<td>511</td>
<td>521</td>
<td>525</td>
</tr>
</tbody>
</table>

*Values are in 1,000 ac-ft unless otherwise specified.

**## State & YRBWEP Trust, Acquisition, & Conservation additions to Title XII flow.
<table>
<thead>
<tr>
<th>Period</th>
<th>Temperature</th>
<th>Precipitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-10 day (9-13 Mar)</td>
<td>Normal</td>
<td>Below Normal</td>
</tr>
<tr>
<td>8-14 day (11-17 Mar)</td>
<td>Above Normal</td>
<td>Normal</td>
</tr>
</tbody>
</table>

**Seasonal Outlook (date issued)**

- Mar (Feb20): Equal Chance, Below Normal
- Spring (Feb20): Above Normal, Equal Chance
- Summer (Feb20): Above Normal, Below Normal

“ENSO-neutral is favored through Northern Hemisphere spring 2020 (~60% chance), continuing through summer 2020 (~50% chance).” 2 March 2020.
Extended Range Forecasting 30-60 Day

“we will stay wet with some decent breaks too. These late season upper lows will bring decent snow and rain to the region but will also keep snow levels very low for this time of year. This helps to set up for a good Spring Freshet around the region, leading to good streams flows during late Winter and as we head into the Spring/summer!. ” Phil Volker, Feb 29, 2020.

<table>
<thead>
<tr>
<th>Period</th>
<th>Temperature</th>
<th>Precipitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar</td>
<td>HIGH: +1.2 TO -2.5 LOW: +1.5 TO -2.5</td>
<td>PREC: 115 TO 144%</td>
</tr>
<tr>
<td>Apr</td>
<td>HIGH: +2.5 TO -1.2 LOW: +1.8 TO -1.6</td>
<td>PREC: 105 TO 128%</td>
</tr>
<tr>
<td>May</td>
<td>HIGH: +2.7 TO -1.0 LOW: +1.5 TO -0.9</td>
<td>PREC: 073 TO 095%</td>
</tr>
</tbody>
</table>
Yakima Basin Conservation Water 2019

- Conservation water account from 2019.
  - Bucket started on June 3, when prorationing started.
  - Storage Control Date was Jun 7.
  - The proration rate varied from a high of 74% in June to a low of 67% in July before settling at 72% in mid-September.
  - Bucket calculations are based on a proration rate of 72% for the entire period June 3 – September 30.
  - Storable conservation water total is 21,777 AF, Jun3-Sep30.
  - 10,437 AF remains in the conservation account.
  - 3,292 AF saved in October.
  - 13,729 AF Total available.
  - Tributary water will be charged.
## Yakima Basin Flows

Winter-Spring Minimum Targets, WY 2020

<table>
<thead>
<tr>
<th>Location</th>
<th>Target Flow (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keechelus (KEE)</td>
<td>80</td>
</tr>
<tr>
<td>Easton (EASW)</td>
<td>190</td>
</tr>
<tr>
<td>Cle Elum (CLE)</td>
<td>180</td>
</tr>
<tr>
<td>Tieton River (TICW)</td>
<td>75</td>
</tr>
<tr>
<td>Rimrock</td>
<td>50</td>
</tr>
<tr>
<td>Bumping (BUM)</td>
<td>130 (range: inflow to 130+)</td>
</tr>
<tr>
<td>Parw</td>
<td>414 (TXII + non-storable)</td>
</tr>
<tr>
<td>Yrpw</td>
<td>414 (TXII + non-storable)</td>
</tr>
</tbody>
</table>

Yrpw subordination: 800 Oct-Nov, 600 Dec-Mar, 1000 Apr-Jun

Rbdw subordination: 500 Oct-Mar, 1300 Apr-May, 500 Jun-Oct
Yakima Basin Outmigration Flows

Table 2-14. Minimum volume of water (acre-feet) that will be available in April and May during years when water proroting levels are equal to or greater than 70% to provide outmigration flows. Outmigration flows are measured at Tieton Dam (RIM), Cle Elum Dam (CLE), and Yakima River at Easton gage (EASW).

<table>
<thead>
<tr>
<th>Monthly Min. acre-feet for Outmigration Flows</th>
<th>April TWSA (MAF)</th>
<th>May TWSA (MAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 2.36</td>
<td>2.36 - 3.13</td>
</tr>
<tr>
<td></td>
<td>&lt; 2.20</td>
<td>2.20 - 2.61</td>
</tr>
<tr>
<td>RIM</td>
<td>4,500</td>
<td>8,400</td>
</tr>
<tr>
<td>CLE</td>
<td>4,200</td>
<td>9,900</td>
</tr>
<tr>
<td>EASW</td>
<td>3,700</td>
<td>4,800</td>
</tr>
</tbody>
</table>

Easton (EASW) can be met from unregulated local inflow below Kee and Kac.
Hydrologic Summary

• El Nino neutral continues in WY2020.
• System Storage is just above average.
• Most of the snow is at higher elevations, relatively.
• WY precip and snow are near normal.
• Refill outlook for the reservoirs has improved.
• Prorationing is 95%.
• Parker TXII target is at 400 cfs
• BA Pulse flow guidelines are at the mid-range.
Market-Based Water Reallocation – aka: Water Marketing

The Kittitas Reclamation District (KRD), in partnership with Trout Unlimited (TU), is implementing a project to research, design, and evaluate a Yakima-specific water market to advance the Market-Based Water Reallocation element of the Yakima Basin Integrated Plan (YBIP). Started in early 2019, KRD and TU are working through the challenging technical, legal, and policy analyses to fully evaluate a Smart Market format for more efficient transfers of water within Yakima Basin. The tasks making up the analyses include:

- Outreach: [https://www.yakimabasinwatermarketing.org/](https://www.yakimabasinwatermarketing.org/), TWG, YBIP, community stakeholders
- GIS: water rights and streamflow priorities analyses
- Modeling: smart market simulations and water valuations
- Legal & Policy: transfer rules framework, management, and protection
- Development: market strategy and administrative needs

To date, significant progress has been made with Outreach, GIS, Modeling, and Legal & Policy tasks. The work is designed to build a Yakima-specific Smart Market, or the most efficient version of an automated water rights transfer system reasonable. With that in mind, advancement includes:

- Outreach efforts focused on: website development; coordination with a somewhat complementary water market technology study underway by Washington State University; and Technical Work Group development, coordination, and meetings.
- GIS progress has resulted in a comprehensive database for use with instream flow and water rights transfer suitability analyses.
- Modeling efforts may more accurately be described as ‘Smart Market’ development. On this front, the work has involved significant efforts to develop the transfer rules framework for use in computer-based water transfer modeling.
- Legal & Policy task advancement focused on the literature review and transfer rules framework.

The development task that has not been much addressed to date involves identifying the technical, administrative, and staffing needs that the Smart Market would require.

Some high points of the work completed to date:

- The literature review identified common themes from water market stakeholders across different states and countries. These themes include market confidence and transparency, as well as concern about monitoring/enforcing water use.
- The GIS work has reinforced the complexity of water rights in the Yakima Basin, even after the Acquavella Adjudication. Thousands of rights exist within the Basin and developing a workflow for analyzing the transferability of these rights is both complex and time consuming.
- The Legal & Policy efforts—building the transfer rules framework—are closely tied to the Smart Market modeling that depends on a clear, well-defined set of transfer rules suitable for algorithmic coding.

Research to date has also identified key challenges related to data complexity/availability/usability and policy awareness regarding water right transfers within Washington state. This all leads to our next steps of:

- Water Rights Analysis: determining irrigated acres, individual/major claimants, consumptive use, etc.
- Smart Markets: algorithm coding based on initial rules.
- Stream Flows: identifying and developing a framework for simplified stream flow portion of transfers.
- Policy: coordination with the WA Department of Ecology’s efforts on water rights and water banking.
- Outreach: ongoing community engagement.

Funding for this project is provided by grants from the Washington Department of Ecology and the U.S. Bureau of Reclamation.
Agenda

Yakima River Basin Water Enhancement Project Workgroup Meeting

June 11, 2020; 9:30 AM to 12:30 PM

https://meethdr.webex.com/meethdr/j.php?MTID=me92f42cea591c7fc6a5b57d3450aa6c9

Time
9:30 – 9:40 Welcome/Introductions and Agenda Overview/Public Comment¹
  - March Meeting Materials – please see
    Ben Floyd, White Bluffs Consulting

9:40 – 10:00 Stay at Home Order and Integrated Plan
  State Budget/2021-2023 Funding Request Update
  Wendy Christensen, Reclamation and Tom Tebb, Ecology

10:00 – 10:40 Technical Projects – Updates on Progress
  Cle Elum Fish Passage Richard Visser, Reclamation
  Cle Elum Pool Raise, Dave Empel, Reclamation
  Schaaake Habitat Restoration, Jeanne Demorest, Reclamation
  Bull Trout Restoration & Monitoring, Jason Romine, USFWS; Russ Byington, Yakama Nation;
  Richard Visser, Reclamation

  Conservation to date and Proposal to meet March 2019 Legislation 85,000 acre-feet Goal
  Wendy Christensen, Reclamation, Melissa Downes and Janine Empel, Ecology

10:55 – 11:10 Public Comment

11:10 – 11:20 Break

11:20 – 12:10 Lower River Update
  Wendy Christensen, Reclamation; Jeff Tayer, WDFW; Jason McShane, KID; Phil Rigdon and
  Michael Porter, Yakama Nation; Toby Kock, USGS; and Lori Brady and Ron Cowin, Sunnyside
  Valley Irrigation District

12:10 – 12:30 Workgroup – Recognitions and Roundtable Discussion
  Ben Floyd, White Bluffs Consulting

12:30 PM Adjourn

2020 Meetings: 9/17 (Yakima/Webex - TBD) and 12/9 (Yakima/Webex- TBD)

For additional information, see the reports and documents available at this link:

¹ Public comment opportunities will be provided via Webex chat function for each agenda item except for Welcome/Introductions, 
Workgroup Roundtable Discussion and the Public Comment agenda items. Those wanting to provide public comment during the 
designated agenda item need to message Jenna Scholz, HDR using the Webex chat function. Each commenter will be limited to 2 – 3 
minutes for comments (depending upon number of commenters) to maintain meeting schedule. Additional written material can be 
submitted with comments for inclusion in the meeting notes. Previously provided comments are noted and not necessary to repeat.
Yakima Basin
Integrated Plan
Technical Projects Update

Yakima, WA
June 11, 2020

Presented by:
Richard Visser, Bureau of Reclamation
Dave Empel, Bureau of Reclamation
Jeanne Demorest, Bureau of Reclamation
Jason Romine, US Fish and Wildlife Service
Russ Byington, Yakama Nation
Todd Newsome, Yakama Nation
William Meyer, Washington State Department of Fish and Wildlife
Scott Kline, Washington State Department of Fish and Wildlife
Cle Elum Dam
Fish Passage Facilities

Reservoir Fish Passage
Cle Elum Dam Fish Passage

Looking downstream at dam/spillway and secant/helix facility location, March 2019
Cle Elum Dam Fish Passage
Tunnel Contract

Outer tunnel liner & rebar and forms for the inner liner concrete placement.

April - May 2020
Cle Elum Dam Fish Passage
Tunnel Contract
Concrete Liner Placement

June 3, 2020
Cle Elum Dam Fish Passage
Intake Gate and Helix Contract
Intake #6 under construction and mostly complete looking toward the Cle Elum Reservoir at low pool.

October – December 2019
Cle Elum Dam Fish Passage
Intake Gate and Helix Contract

Intake trench with shotcrete walls in place.

November 2019
Cle Elum Dam Fish Passage
Intake Gate and Helix Contract

Precast concrete conduits

February 2020
Cle Elum Dam Fish Passage

Looking upstream at dam/spillway and tunnel portal and adult facility location, March 2019
Clear Creek Dam Fish Passage
Final Design – in process
Cle Elum Pool Raise Project

Structural and Operational Changes
Cle Elum Pool Raise Project

Completed Projects
- Radial Gates Modification
- Saddle Dikes 1, 2, 3
- Cle Elum River Campground
- Speelyi Beach Day Use Area

Legend:
- Shoreline Mitigation Area
- Salmon La Sac Road Embankment
- Mileage Indicator
- 2,240-foot Elevation Contour (Current Maximum Pool)
- Perennial Stream/River
- Intermittent Stream/River
- Major Roads
- Completed Project Element
- Est. Construction Start Date

Radial Gate Modification

Cle Elum River Campground

Speelyi Beach Day Use Area

Boat Ramp
Cle Elum Pool Raise Project

2020 Construction

- Construction Projects
  - Wish Poosh Campground & Boat Launch (September 2020)
  - Salmon La Sac Road embankment areas (September 2020)
Wish Poosh Campground

Cle Elum Reservoir

Picnic Island

Wish Poosh Campground

Wish Poosh Boat Launch

Salmon La Sac Road

Wish Poosh Campground and Boat Launch, not to scale
Award June 2020, USFS Facility
Construction: September 2020 to May 2021
Salmon La Sac Road Embankment
Cle Elum Pool Raise Project

Remaining Shoreline Protection
- Night Sky
- Timber Cove
- Sandelin Lane
- Speelyi

Easements
In process
Shoreline Protection and Easements

Example - Timber Cove
Schaake Habitat Improvement Project
Habitat/Watershed Protection and Enhancement
Schaake Habitat Improvement Project

Construction

Phase 1 (2019)
- Levee Removal
- Berm Construction
- Floodplain Excavation
- Permanent roads (BPA/KPUD)
- Revegetation

Phase 2 (2020)
- Begin side channel construction
- Install floodplain wood
- Excavate alcoves
- Revegetation

Phase 3 (2021)
- Complete side channel construction
- Install channel inlet structures
- Revegetation
Schaake Habitat Improvement Project
Construction 2019

- Flood protection berm
- Levee removal
- Floodplain enhancement
  - Floodplain 1
Schaake Habitat Improvement Project

Flood Event February 2020

Floodplain 1

Floodplain 2

Side Channel 1
Schaake Habitat Improvement Project
Revegetation 2019

Floodplain 1 - looking south toward Floodplain 2

Fall 2019

Looking south toward Tjossem Ditch
Bull Trout Restoration and Monitoring Project
Habitat/Watershed Protection and Enhancement
# Bull Trout Restoration and Monitoring Project

US Fish and Wildlife: Jason Romine

## Trap and haul upper basin

<table>
<thead>
<tr>
<th>Capture Location</th>
<th>Genetic Origin</th>
<th>Tag Year</th>
<th>n</th>
<th>Acoustic tags</th>
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</thead>
<tbody>
<tr>
<td>Keechelus Dam</td>
<td>Gold Creek</td>
<td>2019</td>
<td>14</td>
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<tr>
<td>Keechelus Dam</td>
<td>Kachess River</td>
<td>2019</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Kachess Dam</td>
<td>NA</td>
<td>NA</td>
<td>0</td>
<td>NA</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>15</td>
<td>1</td>
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</tbody>
</table>
Bull Trout Restoration and Monitoring Project
US Fish and Wildlife: Jason Romine

Keechelus-Gold Creek Fish

Line graph showing the number of Bull Trout transported and the number of Bull Trout reds from 1984 to 2018.
Bull Trout Restoration and Monitoring Project
US Fish and Wildlife: Jason Romine
Trap and haul/tagging overall

Number of tagged Bull Trout by location

- Location:
  - Box Canyon Creek
  - CCD
  - Kaechelus Dam
  - NFT Trap

Graph showing number of tagged Bull Trout by location and year.
Bull Trout Restoration and Monitoring Project
US Fish and Wildlife: Jason Romine

Monitoring

- PIT tag antennas
- Acoustic Telemetry
Bull Trout Restoration and Monitoring Project
Yakama Nation: Todd Newsome & Russ Byington

Capture / Rescue

Day & Night Rescue Efforts
July-August 2019
Bull Trout Restoration and Monitoring Project
Yakama Nation: Todd Newsome & Russ Byington

Rearing

August 7, 2019

December 19, 2019
Bull Trout Restoration and Monitoring Project
Yakama Nation: Todd Newsome & Russ Byington

2019-2020 **KACHESS** BT Growth

Kachess BT Released at 150mm @ 36.2g
1,162 rescued 14% Survival
152 released
12 remain at LaSalle for USFWS project

2019-2020 **GOLD** BT Growth

78 Gold BT Released at 167mm @ 45.3g
107 rescued 73% Survival
78 released
Bull Trout Restoration and Monitoring Project
Yakama Nation: Todd Newsome & Russ Byington

Marking

- All Bull Trout were:
  - Pit tagged
  - DNA taken
  - Adipose fin clipped
  - Weighed
  - Measured

- 2 Keechelus Releases
  - Gold Creek Bridge
  - Near Boat Ramp

- 2 Kachess Releases
  - Mouth of Kachess River
  - Mouth of Gale Creek
Bull Trout Restoration and Monitoring Project
Yakama Nation: Todd Newsome & Russ Byington

Release

May 26, 2020 Keechelus Reservoir
May 27, 2020 Kachess Reservoir
Bull Trout Restoration and Monitoring Project
Yakama Nation: Todd Newsome & Russ Byington

2020-2021 Adaptive Management Strategies for Increasing Captive Rearing Survival

- **GOAL**: increase survival to release by reducing or eliminating cannibalism in captivity.

- Condense rescue window (<2 weeks)
- Reduce densities to 200 fish/tank
- Increase feed rations
- Introduce live feed earlier
- Grade
Bull Trout Restoration and Monitoring Project
WDFW: William Meyer & Scott Kline
Partnership and Collaboration

• Thank you to all who helped get to the release of Bull Trout in Kachess and Gold Creek May 2020
  – Yakama Nation
    • Todd Newsome
    • Russ Byington
    • Zack Mays
    • Andrew Matala
  – Bureau of Reclamation
    • Richard Visser
    • Scott Willey
  – Washington Department of Ecology
    • Michael Callahan
  – US Fish and Wildlife
    • Jason Romine
    • Craig Haskell
    • Rob Randall
  – Washington State Fish and Wildlife
    • William Meyer
    • Scott Kline
  – Mid-Columbia Fisheries Enhancement Group
    • Conner Parrish
    • Emily Smith

Thank you !!
Bull Trout Restoration and Monitoring Project
WDFW: William Meyer & Scott Kline

- Bull Trout Release – Videos
  - Kachess, May 2020
  - Gold Creek, May 2020
Stay Safe!

For further information on the web:

http://www.ecy.wa.gov/programs/wr/cwp/YBIP.html
Enhanced Water Conservation

YRBWEP Workgroup Meeting
June 11, 2020

Presented by:
Wendy Christensen, Bureau of Reclamation
Melissa Downes, Washington State Department of Ecology
Janine Empel, Washington State Department of Ecology
Enhanced Water Conservation

- **Goals**
  - Improve instream flows in critical stream reaches to benefit priority fish species
  - Improve water management with more precise water delivery and operational efficiency
  - Improve water supply reliability and drought resiliency
Enhanced Water Conservation Element

Agricultural Conservation
• Lining/piping/sealing canals & laterals
• Water measurement devices
• Re-regulation reservoirs
• On farm irrigation efficiency
  – to reduce seepage, evaporation, & spills

Municipal and Domestic Conservation Program
• Promote efficient landscape irrigation practices
• Expand education/incentives to encourage voluntary efficiency
• Establish best practice standards
Enhanced Water Conservation Element

Legislation

• Washington State – **2013 RCW 90.38**
• Federal – **2019 Dingell Act**

Goals

• **Initial Development Phase (2013-2029)**
  – 85,000 acre-feet conserved in first 10 years (per Dingell Act)
  – By 2029

• **Total overall YBIP Goal**
  – 170,000 acre-feet conserved
Parameters in Accounting To Date

1. Conservation project began in 2013
2. Is an agricultural or municipal improvement project resulting in conserved water
3. Not part of the Title XII, Section 1203 Basin Conservation Program
Enhanced Water Conservation 2013-2020

58 conservation projects to date

• ~$66M invested

Conserved ~34,951 acre-ft = 41% of 85k ac-ft 2029 goal

• $1,900/acre-ft
• Accounting is on-going
Meeting the Goal: Enhanced Conservation

• Current status: working on accounting for existing conservation and proposal to prioritize projects to meet initial development phase goal (by 2029)
  • Identify projects for future conservation to develop draft proposal
  • Meet with partners to review proposal, get feedback, and refine proposal

Figure 5-21. Conceptual control of the proposed West Branch Unit 2 Pump regulating reservoir

Left: Roza canal sealing
Above: Proposed Unit 2 reregulating reservoir as part of WIP
Meeting the Goal: Enhanced Conservation

- Develop plan, budget and schedule
- Finalize & Implement
- Monitor
- Document Results
- Use to inform additional conservation to achieve total 170,000 acre-ft
Thank You!

Questions?

For further information on the web:
http://www.ecy.wa.gov/programs/wr/cwp/YBIP.html
Lower River Overview

- Facilities
- Flow
- Temperature
- Predation
## Lower River Activities

<table>
<thead>
<tr>
<th>Schedule</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
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<tbody>
<tr>
<td></td>
<td>Q1</td>
<td>Q2</td>
<td>Q3</td>
<td>Q4</td>
<td>Q1</td>
</tr>
<tr>
<td><strong>Coordination</strong></td>
<td></td>
<td></td>
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<tr>
<td>Reclamation ESA Consultation with Services</td>
<td>Ongoing</td>
<td>Ongoing</td>
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<td>Reclamation, Ecology, YN and KID Discussions</td>
<td>Ongoing</td>
<td>Ongoing</td>
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<td><strong>Flow and Supply Group Evaluations</strong></td>
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<td>Model updates and meeting</td>
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<td>Modeling Scenarios S/21 mtg</td>
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<tr>
<td>Additional evaluations and mtgs (dates TBD)</td>
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<td><strong>Yakama Nation Lower River Coordinator</strong></td>
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<tr>
<td>Set up funding plan/agreements</td>
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<tr>
<td>Select person/ramp up</td>
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<tr>
<td>Coordinate Work Activities</td>
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<td>Annual mtg</td>
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<td><strong>Benton CD Technical Work Coordination</strong></td>
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<tr>
<td>USGS/Reclamation Lower River Smolt Study / Implementation</td>
<td>Review 2019 results</td>
<td>Field work suspended - COVID; Compile 2018 and 2019 results</td>
<td>Prepare report elements</td>
<td>Conduct field work</td>
<td>Prepare draft and final report</td>
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<td>Lower River Adult Sockeye Monitoring Study - Passage</td>
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<td>Field work</td>
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<td>Prepare draft and final report (all 3 years)</td>
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<td>USGS/Benton CD Water Quality Monitoring - Thermal</td>
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<td>BCD/MCF Water Stargrass Mapping (Wapato Reach)</td>
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<td>Field work suspended - COVID?</td>
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<tr>
<td>Deploy equipment/Conduct mapping</td>
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<tr>
<td>Prepare draft and final report</td>
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<td>BCCD/YN/MCF Lower River Thermal Profiling Reach</td>
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<td>Deploy loggers</td>
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<td>Install</td>
<td>Monitor</td>
<td>Report</td>
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<td>MCF/YN/BCD Install fish survey equipment at RM 25</td>
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<td>BCD/MCF WQ Monitoring - Metabolism/Aquatic Veg Mgmt Plan</td>
<td>QAPP</td>
<td>Field work</td>
<td>Draft Findings/Develop Veg mgmt</td>
<td>Final Report</td>
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<td><strong>Technical Studies/Baseline Conditions</strong></td>
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<td><strong>Improvement Projects</strong></td>
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<td>USACE 1135 Study Phase and Environmental Review</td>
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<tr>
<td>Design and Initiate Construction</td>
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<td><strong>Yakima Delta Restoration</strong></td>
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<td><strong>Stargrass Harvesting Pilot Project</strong></td>
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<td>SOW</td>
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<td>QAPP</td>
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<td>Implement (if not COVID-delayed)</td>
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<td>Implement</td>
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<td>Q1</td>
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<td><strong>Sunnyside Diversion - Fish Passage Design/Construction</strong></td>
<td>Scope</td>
<td>SRFB grant app/design contract</td>
<td>Design and permitting</td>
<td>Construction</td>
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<td><strong>Amon and I-182 thermal refuge feasibility</strong></td>
<td>RFP</td>
<td>Conceptual Design</td>
<td>Findings</td>
<td>Prelim and final design</td>
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<td>Reclamation Lower River Smolt Survival Project Planning and Funding Strategy for Fiscal Years 2020 - 2024</td>
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<td>--------------------------------------------------</td>
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<tr>
<td><strong>Lower River Smolt Survival Study</strong></td>
<td><strong>2020</strong></td>
<td><strong>2021</strong></td>
<td><strong>2022</strong></td>
<td><strong>2023</strong></td>
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<tr>
<td>(Reclamation has $1,047,000 in total funding for remaining smolt survival study needs for FY20-FY22)</td>
<td>ESA = $175,000</td>
<td>ESA = $300,000</td>
<td>ESA = $322,000</td>
<td>ESA = $322,000</td>
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<tr>
<td>(Remaining tasks are one more year of field data collection in FY21 and a final report in FY22)</td>
<td>YRBWP = $250,000</td>
<td>Total = $425,000</td>
<td>Total = $300,000</td>
<td>Total = $322,000</td>
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<tr>
<td></td>
<td>(Field work suspended in FY20 due to COVID)</td>
<td>(Fully fund USGS field work in FY21)</td>
<td>This should be the reporting year for the survival study. How much is actually needed for report completion? USGS IA estimate was $125,000.</td>
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<tr>
<td><strong>Smolt Survival SDBOC Pilot Study and Planning</strong> (Sunnyside Boom)</td>
<td><strong>2020</strong></td>
<td><strong>2021</strong></td>
<td><strong>2022</strong></td>
<td><strong>2023</strong></td>
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<tr>
<td>(Estimated Total 3-Yr cost is $750,000)</td>
<td>SDBOC Boom (Year-1)</td>
<td>SDBOC Boom (Year-2)</td>
<td>SDBOC Boom (Year-3)</td>
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<tr>
<td></td>
<td>SRFB = $249,000</td>
<td>YRBWP = $250,000</td>
<td>YRBWP = $250,000</td>
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<tr>
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<td>Total = $499,000</td>
<td>Total = $250,000</td>
<td>Total = $250,000</td>
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<tr>
<td></td>
<td>If SRFB funding falls through, then $249,000 could come from Habitat Subcommittee funding?</td>
<td>If construction occurs in FY21, then what does this $250,000 fund? Monitoring of smolt entainment?</td>
<td>What does this $250,000 fund for Year-3 of this study? Monitoring of smolt entainment?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Long-term Smolt Survival Improvement Project and Implementation</strong> (Chandler and Wapato)</td>
<td><strong>2020</strong></td>
<td><strong>2021</strong></td>
<td><strong>2022</strong></td>
<td><strong>2023</strong></td>
<td></td>
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<tr>
<td>(Estimated Total 3-Yr cost is $1,713,000)</td>
<td>(Smolt Survival Improvement)</td>
<td>(Smolt Survival Improvement)</td>
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<td>ESA = $464,000</td>
<td>ESA = $500,000</td>
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<td>SRFB = $249,000</td>
<td>Total = $713,000</td>
<td>Total = $500,000</td>
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<td>Total = $713,000</td>
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<td>If SRFB funding falls through, then $249,000 could come from Habitat Subcommittee funding?</td>
<td>If SRFB funding falls through, then $249,000 could come from Habitat Subcommittee funding?</td>
<td>Does this funding pay for boom installation, maintenance, and operation in FY23? or does it also include monitoring and</td>
<td>Does this funding pay for boom installation, maintenance, and operation in FY24? or does it also include monitoring and</td>
<td></td>
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<tr>
<td>Project/Study</td>
<td>Ground Water Mitigation Funding</td>
<td>YBIP Funding</td>
<td>YRBWEP = $75,000</td>
<td>YBIP Funding</td>
<td>YRBWEP = $75,000</td>
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<tr>
<td>------------------------------------------------------------------------------</td>
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<tr>
<td><strong>Lower River Project Coordinator/Manager Estimated funding</strong></td>
<td>$100,000</td>
<td>YBIP Funding</td>
<td>$75,000</td>
<td>YBIP Funding</td>
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<td><strong>Lower River Adult Sockeye Monitoring Study - Passage</strong></td>
<td>YRBWEP = $73,502</td>
<td>YRBWEP = $99,666</td>
<td>YRBWEP = $100,000</td>
<td>YRBWEP = $100,000</td>
<td>YRBWEP = $125,000</td>
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</table>
Outmigration Survival of Juvenile Salmonids in the Lower Yakima River, 2018–2020

Tobias Kock¹, Michael Porter², Pat Monk³, and Russell Perry¹

¹U.S. Geological Survey
²Yakama Nation Fisheries
³Bureau of Reclamation

June 11, 2020
Acknowledgments

Funding provided by:

- Bureau of Reclamation
- Yakama Nation
- U.S. Geological Survey
- Yakima Basin Joint Board
- Kennewick Irrigation District
Study Area

Wapato Dam ($n = 8$)
Sunnyside Dam ($n = 7$)
Granger ($n = 2$)
Mabton ($n = 2$)
Prosser Dam ($n = 8$)
Yakima River Mouth ($n = 2$)
Wanawish Dam ($n = 8$)
Chandler Outfall ($n = 2$)
Columbia River ($n = 7$)
## Tagging Overview

<table>
<thead>
<tr>
<th>Species</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
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<tbody>
<tr>
<td>Yearling Chinook salmon</td>
<td>429</td>
<td>590</td>
<td>330</td>
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<tr>
<td>Steelhead</td>
<td>313</td>
<td>350</td>
<td>400</td>
</tr>
<tr>
<td>Subyearling Chinook salmon</td>
<td>344</td>
<td>393</td>
<td>456</td>
</tr>
<tr>
<td>Lamprey</td>
<td>97</td>
<td>126</td>
<td>130</td>
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<tr>
<td>Adult smallmouth bass</td>
<td>-</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>Northern pikeminnow</td>
<td>-</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>Adult Chinook salmon</td>
<td>-</td>
<td>4</td>
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<tr>
<td>Adult sockeye salmon</td>
<td>20</td>
<td>60</td>
<td>?</td>
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<td><strong>Total =</strong></td>
<td><strong>1,203</strong></td>
<td><strong>1,543</strong></td>
<td><strong>1,316</strong></td>
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River Conditions

Flow, in cubic feet per second

- 2018
- 2019
- 10-year average

Mar Apr May Jun Jul

Water temperature, in degrees Celsius

- 2018
- 2019
- 10-year average

Mar Apr May Jun Jul

USGS
Paired Releases at Prosser Dam

<table>
<thead>
<tr>
<th>Release</th>
<th>n</th>
<th>Species and date range</th>
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<tbody>
<tr>
<td>R1</td>
<td>60</td>
<td>Yearling Chinook salmon</td>
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<tr>
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Percent of fish using the canal
Yearling Chinook salmon = 21.6%

Survival through Canal = 0.78
Survival over the Dam = 0.98
Cumulative Survival and Flow

2018
Yearling Chinook salmon

2019
Yearling Chinook salmon

Juvenile steelhead

Subyearling Chinook salmon
Flow/Survival Relationship

- Yearling Chinook salmon
- Juvenile steelhead
- Subyearling Chinook salmon

Survival probability vs. Flow, in cubic feet per second

- 2019
- 2018
Predator Abundance

- Fish and Avian
- Reach Specific + Hot Spots
- Compensatory Effects
- Identify Areas for Management
- Gain the Ability to Track Abundance Changes
- Incorporate Predator Data as a Variable of Smolt Survival
Fish Predators Below Prosser Dam
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</table>
Reclamation Facilities

- High entrainment rate: proportion of fish diverted into canals
- Canal survival poor relative to in-river
- High entrainment times poor survival: facilities significantly limiting productivity
- Cumulative Effects: high priority passage improvements will yield significant, measurable smolt survival benefits
The Sunnyside Division located in south central Washington is part of the Yakima Reclamation Project and delivers irrigation water to 95,000 acres in the Yakima basin.
Sunnyside Diversion Dam
Sunnyside Diversion Dam – Proposed Improvements
Fish Guidance Boom Examples

Pacific Netting Products

- Pictures show 36” HDPE pipe with a metal screen on one boom and a combination of metal and rubber on the other boom.
Managed Flow Releases

- Limited volumes to manage for fish survival in low water years
- Current survival study needs to isolate flow from facilities
- USGS Decision Support tool to predict flow and survival
- Volumes of flow needed to meet survival objectives can be estimated
Workgroup Questions and Input

- What questions do you have?
- Discussion
Meeting Notes
Yakima River Basin Water Enhancement Project Workgroup

June 11, 2020
WebEx Teleconference

Welcome, Introductions and Agenda Overview

Ben Floyd, White Bluffs Consulting, welcomed the Yakima River Basin Water Enhancement Project (YRBWEP) Workgroup members and other attendees, and noted that materials planned for display at the March Workgroup meeting are available on the Bureau of Reclamation (Reclamation) YRBWEP website. Katie DeLorbe, HDR Engineering, described the meeting ground rules for the WebEx meeting format. Ben introduced several new agency staff who will be participating in Yakima Basin Integrated Plan (Integrated Plan) meetings as representative of their agencies:

- Talmadge Oxford, Reclamation, is the new Area Manager of the Columbia-Cascades Area Office (CCAO)
- Carolyn Chad, Reclamation, is the Deputy Area Manager for CCAO
- David Empel, Reclamation, is the new project manager for the Cle Elum Pool Raise project
- Janine Empel, Washington Department of Ecology (Ecology), is the new Ecology liaison for Reclamation’s YRBWEP.
- David Blodgett, Yakama Nation Fisheries, is the new technical work coordinator for the Yakama Nation fisheries program
- Joe Blodgett, Yakama Nation Fisheries, is the new Yakima-Klickitat Fisheries Project (YKFP) project coordinator
- Maddie Moore, Washington Department of Agriculture economist, will be serving as an alternate on the YRBWEP Workgroup to Jaclyn Hancock, with a focus on supporting water supply-related projects

The following notes summarize the YRBWEP Workgroup presentations and public comments. For more information, please see the full presentations available on the Integrated Plan website: http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html.

Stay-at-Home Order and the Integrated Plan

Wendy Christensen, Reclamation: Reclamation staff in the Yakima area are currently teleworking, and regional conditions in Yakima County will determine when staff may return to the office. Construction for Cle Elum Fish Passage, Cle Elum Pool Raise, and Schaake floodplain restoration is on-going, but site visits are not allowed at this time. Reclamation has received $20.8 million for Fiscal Year (FY) 2020 budget. This includes approximately $8 million for Cle Elum Fish Passage, $4 million in Water Infrastructure Improvements for the Nation Act funding for Cle Elum Pool Raise, and funding for
Wapato Irrigation Project improvements and Kittitas Reclamation District (KRD) conservation efforts and various other projects.

Tom Tebb, Ecology, stated much of Ecology’s work is essential and on-going. High-priority field work has continued, and a phased reintroduction approach is planned for more field work. The State Office of Financial Management (OFM) will provide an economic impact report mid-June; preliminary projections estimate $4 - $7 billion in State revenue loss. OFM has noted to Ecology that Integrated Plan work is high priority and that continued progress is important.

Melissa Downes, Ecology: Activities under grant agreements with Ecology were required to follow the stay-at-home order. Some resumption of activities has begun with guidance in place for capital contracted work. In mid-May, Ecology established a hiring, contract, and equipment purchase freeze. Ecology is using $42 million as a placeholder for the 2021 – 2023 biennium budget request. The budget request will be developed over the summer and discussed at the September Workgroup meeting. Ecology will also prepare a 15% budget reduction scenario.

There were no questions from Workgroup members or the public on this agenda item.

Technical Work Progress Update

Cle Elum Fish Passage – Richard Visser, Reclamation

The project is being constructed using five contracts. The access road and secant pile construction contracts are completed. Reclamation is working on two contracts: intake, gate, and helix construction; and tunnel construction. The adult fish collection facility will be the final contract.

Secant foundation construction is underway and the tunnel bypass entry is being formed. The intake trench has been excavated, in which the 6 intakes, each facilitating passage at a specific reservoir pool level, will be constructed. Each intake will be connected to a conduit that will pass the fish between the intake and the helix. The contractor constructed intake #6, the lowest elevation intake, last year. Richard displayed images of the secant, tunnel, and intake trench.

The tunnel contract is planned for completion in fall 2020. The intake, gate, and helix is scheduled for construction through 2023. Richard acknowledged a key aspect for achieving the intended project benefits is the Sockeye reintroduction effort underway by the Yakama Nation in coordination with Washington Department of Fish and Wildlife (WDFW).

Richard also described the status of Clear Creek Dam fish passage. The final ladder design is in progress. Next steps include meeting with basin biologists to define the range of species targeted for passage and provide input for designers on ladder geometry by the end of June.

Cle Elum Pool Raise – Dave Empel, Reclamation

Raising the reservoir pool at Cle Elum requires several sub-projects, most of which are shoreline protection and easements. Two shoreline protection projects have been completed at Cle Elum River Campground and Speelyi Beach Day Use Area. Reclamation is currently working on two additional shoreline protection projects: Wish Poosh Campground and boat launch renovation and the Salmon La Sac road embankment. Both projects are planned to begin construction in September 2020. Dave described several remaining shoreline protection projects, which will be accomplished using one of
several methods including perched beach, log terracing, rockery wall, and anchored logs. Reclamation is also working with landowners along the shoreline to acquire easements, as appropriate.

Schaake Floodplain Restoration – Jeanne Demorest, Reclamation

Reclamation is restoring 130 acres of floodplain over a 2 mile reach of the Yakima River. This is one of the largest floodplain projects in the Yakima River basin. Phase 1 construction was completed in 2019 and primarily focused on levee removal and flood protection berm construction, floodplain excavation, and revegetation. Phase 2 construction begins on June 15, 2020, and will focus on side channel construction and large wood placement to attenuate large flow events. Revegetation will take place throughout the project into 2021. A flood event in February 2020 exemplified the success of Phase 1 construction and served as proof-of-concept for the upcoming side channel construction. Jeanne showed several images of construction progress and the flood event.

Bull Trout Restoration and Monitoring

This is a joint effort between the Yakama Nation, WDFW, U.S. Fish and Wildlife (USFWS), Ecology and Reclamation. Jason Romine, U.S. Fish and Wildlife, described the tagging and tracking results from 2019 for fish in Kachess River above Kachess Reservoir and Gold Creek above Keechelus Reservoir. Bull Trout migration is monitored using PIT tags and acoustic telemetry.

Todd Newsome and Russ Byington, Yakama Nation, described the rescue and rearing efforts conducted by the Yakama Nation, WDFW, USFWS, Ecology, Reclamation and Mid-Columbia Fisheries Enhancement Group (MCFEG). The team captured nearly 1,200 bull trout and brought them to the Yakama Nation’s rearing facility in July and August 2019. Some bull trout were moved upstream of the dewatered reach from which they were rescued. The fish generally met their target release size in the rearing facility, though there was significant cannibalism amongst the bull trout from Kachess River (14% survival). There was less cannibalism in the Gold Creek group (73% survival). The fish were then released into Kachess and Keechelus Reservoirs, depending on the watershed of origin, in late May 2020. The Tribe will focus on strategies to increase captive rearing survival in the 2020-2021 period.

William Meyer, WDFW, recognized the broad scope of organizations involved in the effort to capture, rear, and release bull trout, and noted that monitoring of released fish will focus on the ability to reach upper tributary spawning reaches. The Workgroup viewed videos of the aforementioned bull trout releases into the two reservoirs.

Jeff Tayer, WDFW, thanked all the participants working on projects described in the technical work update. Several of these projects are huge in scale and have required decades of work to get moving. Jeff reflected on the difference between when the projects were authorized, and the significant efforts required to move the projects to where they are now.

Questions for Technical Work Update:

How will the Yakama Nation address cannibalism issues during bull trout rearing?

- Todd Newsome: Methods include condensing the rescue window, reducing rearing tank densities, increasing feed rations, and introducing live feed earlier during rearing. The Yakama Nation has plans to upgrade the rearing facilities to accomplish these goals and is aiming for at least 70% survival.
Does it make sense to intermix the Kachess and Gold Creek populations?

- **Jason Romine:** The populations are kept separate throughout capture, rearing, and release.
- **Richard Visser:** If released fish do well in the wild, we may see a doubling of spawning populations in three to four years, which is significant.

Is there a monitoring plan for Schaake floodplain restoration? Does it include aquifer recharge?

- **Jeanne Demorest:** Monitoring will include side channel quality after floods and fish benefits in the stream adjacent to the floodplain. Monitoring will occur throughout construction and upon completion. No plan is established for monitoring aquifer recharge, yet, although some recharge is anticipated to occur.

Is dissolved oxygen an issue for sockeye in Cle Elum Reservoir?

- **Richard Visser:** No study specific to Cle Elum Reservoir has been conducted. Richard will touch bases with the managers of the smolt survival study for more information on this topic.

**Enhanced Water Conservation Element – Review Proposed Process: Accounting for Conservation to Date and Proposal to Meet March 2019 Legislation 85,000 acre-feet Goal**

Wendy Christensen: The goals of enhanced water conservation in the Yakima River basin include instream flow improvement in critical reaches to benefit priority fish species, improve water management with more precise water delivery and operational efficiency, and improve water supply reliability and drought resiliency. Wendy noted that water conservation does not add “new water” to the system; rather, conservation reduces water diversion and allows more water to flow through reaches below diversion infrastructure.

Upon passage of the Dingell Act in March 2019, the Integrated Plan has a federal mandate to conserve 85,000 acre-feet of water by 2029. The overall conservation savings goal upon full Integrated Plan implementation is 170,000 acre-feet. Projects that count towards this goal must adhere to three parameters:

- Begin in 2013 or later
- Be an agricultural or municipal improvement project resulting in conserved water
- Not be part of the Title XII, Section 1203 Basin Conservation Plan

Jeanine Empel: There have been 58 conservation projects completed to date as part of the Integrated Plan. Approximately $66 million invested has resulted in approximately 35,000 acre-feet conserved, with an average cost of $1,900 per acre-foot saved. This represents 41% of the 2029 goal. Accounting is on-going and these values are subject to change.

Reclamation and Ecology plan to develop a project prioritization proposal for achieving the remaining portion of the initial development phase goal. Melissa Downes noted the Water Use Subcommittee will identify projects to include in a draft proposal for the initial development phase and meet with partners to refine proposal. Bob Montgomery, Anchor QEA, will assist in this process. Melissa recognized Raechel Chandler, Washington Department of Ecology, as the Ecology lead for this effort, and Elayne Hovde-Knudson, Reclamation, as the Reclamation lead.

There were no questions from Workgroup members or the public on this agenda item.
General Public Comments

**Chris Maykut, Friends of Bumping Lake:** Chris noted the proposed North Fork Cowiche Creek Reservoir was listed in the April 2020 Quarterly Update. When was this project incorporated into the Integrated Plan?

**David Ortman, Sierra Club:** David echoed Chris’ question, and noted the Upper Yakima System Storage was listed in the Quarterly Update as well. Neither project was included in the federal Environmental Impact Statement for the Integrated Plan. When were these adopted into the Plan?

- **Wendy Christensen:** These projects are not formally adopted into the Integrated Plan, but partners are considering reviews for inclusion as part of the adaptive management process. The North Fork Cowiche Creek Reservoir would be an element of Tieton area storage efforts and help optimize operations of the Yakima Project. KRD continues to study options for the upper system storage project and will evaluate its future as an Integrated Plan project. Both projects were part of a presentation at the December 2018 YRBWEP Workgroup meeting given by Dawn Wiedmeier and Tom Tebb.

**David Ortman, Sierra Club:** What is the status of the lawsuit filed against Ecology and Reclamation regarding Kachess Drought Relief Pumping Plant in light of COVID-19?

- **Tom Tebb:** The respondents have filed the necessary documentation and are waiting to hear from the court on next steps.

Lower River Update

Jeff Tayer: Yakima River basin inhabitants have long known the lower river is a bottle neck for fish migration. Critical issues at the river delta and the Wapato Reach need resolution to facilitate fish passage. Through information gathering and studies, the Workgroup understands four primary issues in the lower river need resolution: mortality due to infrastructure, flows, temperature, and predation. Jason McShane, Kennewick Irrigation District, acknowledged the lower river subgroup and the associated entities, including those not represented on the subgroup. Jason reviewed the list of activities on-going in the lower river and pointed out that good science and research results in good restoration. Phil Rigdon, Yakama Nation, noted the Yakama Nation is hiring a habitat biologist as the Lower River Project Lead, who will work in the Wapato reach to the delta on a suite of projects including fish enhancement and out-of-stream uses. Wendy Christensen and Jason described the current status of the Lower River Smolt Outmigration Survival study. Other associated projects that will begin next year include the smolt survival pilot study at the Sunnyside Canal and the Long-term Smolt Survival Improvement Project and Implementation and Chandler and Wapato Dams. Wendy acknowledged the work of Reclamation staff Scott Willey, Candy McKinley, Pat Monk and Chad Stuart for their teamwork in these projects.

**Lower River Smolt Outmigration Survival Study**

Toby Koch, U.S. Geological Survey, and Michael Porter, Yakama Nation Fisheries, provided an update on the Smolt Outmigration Survival study in the Lower Yakima river from 2018 – 2020. The team focuses monitoring at the dams, with other monitoring locations representing important river reaches between the dams. The team observed variable flow conditions between 2018 and 2019 and noted a
strong trend between discharge and smolt survival. They were also able to complete some fieldwork in 2020, starting in May, and this will continue through much of June.

Michael described data related to predator abundance. Observed predator issues include ineffective displacement, unclear whether abundance will change in response to management. Small mouth bass are the largest predator of smolts by a significant margin. The team ultimately is trying to understand the relationship of predation to overall smolt survival and determine if predator management will be key to smolt survival.

Chad Stuart, Reclamation, described key issues with Reclamation infrastructure related to survival. The Lower River Smolt Outmigration study indicates high entrainment rates in irrigation canals and that survival in the canals is poor compared to in-river. Chad commented that high priority passage improvements will yield significant and measurable smolt survival benefits.

Lori Brady and Ron Cowin, Sunnyside Valley Irrigation District (SVID), described the Sunnyside diversion dam fish boom project. The fish boom is expected to guide fish passing downstream away from the canal and over the sluice gate. The project has some funding and an applications are being submitted for other funding sources, and SVID is currently in discussion with vendors. SVID will be putting out the request for statement of qualifications on June 14 for engineering services. The expected completion date is mid-March 2021, if all the funding sources come through.

Walt Larrick, Yakima Basin Joint Board, noted discussions within the Systems Operation Advisory Committee (SOAC)\(^1\), on managed flow releases for fish survival in low water years. Walt noted that the survival study needs to isolate the effects of facilities from the effects of flow, and that volumes of flow needed to meet survival objectives may be estimated using a U.S. Geological Survey decision support tool. Walt lauded the SOAC’s efforts this year to facilitate fish survival as adaptive and creative.

Sean Gross, NOAA Fisheries, noted at the outset of the Integrated Plan, no clear needs and concepts were articulated for significant efforts in the lower river. Sean stated, “We now know there’s important work to be done through the organic process of the Integrated Plan, and this exemplifies the adaptive process necessary to meet Integrated Plan goals.” Sean recognized the Benton Conservation District and MCFEG for their work in the lower river and help in identifying what work will be valuable and important. Phil Rigdon echoed these comments and stated the data and science we are seeing will help guide future actions in the lower river.

**Questions for Lower River Update:**

**Why do we see significant entrainment in irrigation canals?**

- **Chad Stuart:** Several Reclamation facilities are aged and do not operate ideally for current conditions. Improved data reveals there are opportunities for improved facility operation to adapt to changing river conditions.

- **Mike Porter:** Fish screens are generally located downstream of the headgate in the canal. Entrainment values address survival from the headgate to the fish screen bypass, not the entire canal.

**Do pelicans prey on small mouth bass? Are pelicans a threatened species?**

- **Michael Porter:** Pelicans do prey on small mouth bass.

\(^1\) SOAC advises the Reclamation Yakima Project Manager, Chad Stuart, on operations of water storage and distribution.
• **Mike Livingston**: Pelicans are listed as “threatened” under State endangered species law.

**Workgroup Member Recognitions**

Dawn Weidmeier, Reclamation, and Dave Fast, Yakama Nation, are retiring from their agency positions. Kelly Lawrence, U.S. Forest Service, has taken a position in the Olympic National Forest. All three participants will no longer participate in Integrated Plan meetings. Ben Floyd displayed a presentation celebrating their contributions to the Integrated Plan.

Wendy Christensen acknowledged Dawn’s history as YRBWEP Manager and YFO Manager before accepting the role of CCAO Area Manager. Dawn had participated on the Workgroup since its inception in 2009. The group wished her well in her retirement.

Phil Rigdon acknowledged Dave Fast’s role in sockeye reintroduction and as a champion for the lower river smolt study. Dave was an integral part of the YKFP team for a long time, both for the Integrated Plan and other projects. Dave expressed he’s had a great career and noted his involvement in the Integrated Plan as an important aspect of his career. Actions thought impossible a decade ago are getting done. He is hopeful for the future of the YRBWEP Workgroup.

Jeff Tayer noted that during initial development of the Integrated Plan, the Workgroup acknowledged that interactions with the Forest Service would be critical to the success of the Plan. Kelly Lawrence was in the right place at the right time for the Integrated Plan; she’s a high-quality person with the drive and willingness to work with others on the Integrated Plan. She helped the group get under the hood of the Forest Service, which is not easy to do with such a large organization. She has a unique ability to look beyond land ownership property lines at the full picture of the Integrated Plan and appreciates the value of activities occurring beyond Forest Service boundaries. This has helped the USFS to be a great partner. Kelly stated it was an honor to be involved in the Integrated Plan and witness a monumental collaborative effort. She considers this process a model for how she’d like to work in the future in the Olympic National Forest and beyond.

**Upcoming Meetings**

The next Workgroup meeting is scheduled for September 17, 2020. Meeting format will be determined based on the status of the Safe Start plan at the time of the meeting.

**Attendance**

**Workgroup Members:**
Ron Anderson, Yakima County
Dale Bambick, National Marine Fisheries Service
Dave Brown, City of Yakima
Wendy Christensen, Reclamation, Columbia-Cascades Area Office
Rick Dieker, Yakima-Tieton Irrigation District
Peter Dykstra, Plauche & Carr and Chair of Watershed Lands Conservation Subcommittee
Urban Eberhart, Kittitas Reclamation District
Jaclyn Hancock, Washington Department of Agriculture
Larry Leach, Washington Department of Natural Resources
Mike Livingston, WDFW
Wendy McDermott, American Rivers
Jason McShane, Kennewick Irrigation District and Chair of Lower River Subgroup
Sid Morrison, Yakima Basin Storage Alliance
Talmadge Oxford, Reclamation, Columbia-Cascades Area Office
Lisa Pelly, Trout Unlimited
Jason Romine, U.S. Fish and Wildlife Service
Phil Rigdon, Confederated Bands and Tribes of the Yakama Nation
Jeff Tayer, WDFW and Chair of Habitat Subcommittee
Tom Tebb, Ecology
Cory Wright, Kittitas County
Erick Walker, U.S. Forest Service
Bret Walters, U.S. Army Corps of Engineers

Other Attendees:
Marcella Appel, Benton Conservation District
Tom Appler, Reclamation, Umatilla Field Office
Justin Bezold, Trout Unlimited
David Blodgett, Yakama Nation Fisheries
Joe Blodgett, Yakama Nation Fisheries
Lori Brady, Sunnyside Valley Irrigation District
Gordon Brandt, Kachess Homeowners Association
Russ Byington, Yakama Nation Fisheries
Michael Callahan, Washington State Department of Ecology
Cynthia Carlstad, Northwest Hydraulic Consultants
Carolyn Chad, Reclamation, Columbia-Cascades Area Office
Raechel Chandler, Washington State Department of Ecology Alan Chapman
Michelle Cooke, Benton County
Stuart Crane, Confederated Tribes and Bands of the Yakama Nation
Jane Creech, Washington State Department of Ecology Raquel Crowley, Office of Senator Patty Murray
Seth Defoe, Kennewick Irrigation District
Katie DeLorbe, HDR Engineering, Inc.
Jeanne Demorest, Reclamation, Columbia-Cascades Area Office
Melissa Downes, Washington State Department of Ecology David Empel, Reclamation, Columbia-Cascades Area Office
Janine Empel, Washington State Department of Ecology
Dave Fast, Yakima/Klickitat Fisheries Project
Ben Floyd, White Bluffs Consulting
Clancy Flynn, Columbia Irrigation District
Joel Freudenthal, Yakima County
Kathryn Furr, U.S. Forest Service
Adam Fyall, Benton County
Chuck Garner, Reclamation, Columbia-Cascades Area Office
Raelene Gold, Seattle Audubon Society
Dan Graves, HDR Engineering, Inc.
Kelsey Green, American Rivers
Sean Gross, NOAA Fisheries
Justin Harter, Naches-Selah Irrigation District
Kevin Haydon, Washington Water Trust
Craig Haskell, U.S. Fish and Wildlife Service
Rodney Heit, South Yakima Conservation District
Adam Hill, Anchor QEA
Elayne Hovde-Knudson, Reclamation
Joel Hubble, Kittitas Reclamation District
Isaac Kastama
Brady Kent, Yakama Nation
Chuck Klarich, Yakima Basin Storage Alliance
Toby Koch, U.S. Geological Survey
John Kohr, Washington State Department of Fish and Wildlife
Scott Kuhta
Walt Larrick, Yakima Basin Joint Board
Edward Lizowski, Citizen
Chris Lynch, Reclamation, Columbia-Cascades Area Office
Steve Malloch, Western Water Futures LLC (alternate for American Rivers)
Larry Martin, Velikanje Halvorson
John Marvin, Yakama Nation
Larry Mattson, Jacobs Engineering
Chris Maykut, Friends of Bumping Lake
Candy McKinley, Reclamation, Columbia-Cascades Area Office
William Meyer, Washington State Department of Fish and Wildlife
Jim Milton, Yakima-Tieton Irrigation District
Maddie Moore, Washington Department of Agriculture
Tom Myrum, Washington State Water Resources Association
David Ortman, Sierra Club
Tim Poppleton, Washington State Department of Ecology
Joye Redfield-Wilder, Washington State Department of Ecology
Jenna Scholz, HDR Engineering, Inc.
Mike Schwisow, Schwisow & Associates
Jeanne Sheldon, Lake Kachess HOA
Danielle Squeoehs, Confederated Tribes and Band of the Yakama Nation
Chad Stuart, Reclamation, Columbia-Cascades Area Office
Bruce Sully, Reclamation, Columbia-Cascades Area Office
Arden Thomas, Kittitas County
Where to Find Workgroup Information

Meeting materials, notes, presentations, and materials submitted during public comment for each Workgroup meeting will be posted on Reclamation’s project website: (http://www.usbr.gov/pn/programs/yrbwap/2011integratedplan/index.html). A list of information sources, many available online, is also posted on the website.

If you need help finding an information source, contact those listed at the top of page 1 of these notes or Ben Floyd at White Bluffs Consulting, (509) 539-3366 or ben@whitebluffsconsulting.com.
# Agenda

**Yakima River Basin Water Enhancement Project Workgroup Meeting**  
Sep 17, 2020; 9:30 AM to 12:30 PM

**Join meeting**  
To join from a mobile device  
+1-408-418-9388,,1460689735##

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| 9:30 – 9:35 | Welcome/Introductions and Agenda Overview/Public Comment¹  
Ben Floyd, White Bluffs Consulting |
| 9:35 – 9:45 | State Budget Update  
Tom Tebb and Melissa Downes, Ecology |
| 9:45 – 10:10 | Watershed Lands Subcommittee – Next 10 Years Planning Overview  
Peter Dykstra, Chair (Plauche & Carr); Wendy McDermott, American Rivers; and Michelle Capp, US Forest Service |
| 10:10 – 10:30 | Technical Projects – Recent Activities Highlights  
Wendy Christensen, Reclamation  
▪ Cle Elum Fish Passage Richard Visser, Reclamation  
▪ Sockeye Tracking, Richard Visser, Reclamation |
| 10:30 – 10:50 | Water Marketing/Reallocation Element - Study Update  
Urban Eberhart, Kittitas Reclamation District; Lisa Pelly and Justin Bezold, Trout Unlimited |
| 10:50 – 11:00 | Public Comment |
| 11:00 – 11:10 | Break |
| 11:10 – 11:30 | Nelson Dam Removal Project: Water Supply, Riverine Process, and Fish Passage Improvements  
Dave Brown, City of Yakima |
| 11:30 – 12:30 | Workgroup – Roundtable Discussion  
Ben Floyd, White Bluffs Consulting |

**12:30 PM Adjourn**

**2020 Meeting: 12/9 (Yakima/Webex- TBD)**

For additional information, see the reports and documents available at this link:  

¹ Public comment opportunities will be provided for each agenda item except for Welcome/Introductions, Workgroup Roundtable Discussion and the Public Comment agenda items. Those wanting to provide public comment during the designated agenda item need to message Jenna Scholz, HDR using the Webex chat function. Each commenter will be limited to 2 – 3 minutes for comments (depending upon number of commenters) to maintain meeting schedule. Additional written material can be submitted with comments for inclusion in the meeting notes. Previously provided comments are noted and not necessary to repeat.
## Yakima Basin Integrated Plan Elements

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HEALTHY WATERSHEDS ARE ESSENTIAL TO ENSURE WATER FOR FISH, FAMILIES, AND FARMS

Phase 2
Watershed Lands Plan

- Building on successes in first phase and adaptive to make biggest contribution to YBIP
- Identifying and engaging new partnerships, knowledge, and tools
SUBCOMMITTEE MISSION

• Implement Targeted Watershed Protections and Enhancements
• Liaise with aligned entities
• Advise on land-related issues in YBIP
ACCOMPLISHMENTS

Land Acquisitions:
- Secured 55k acres of forestland (met target)
- Secured 7,375 acres of shrub-steppe (50% of target)

Land Designations:
- Cle Elum River Wild & Scenic
Case Statement
PHASE 2 – TAILORING OUR APPROACH

• Actions to protect, maintain and restore healthy watershed lands
• Expand and deepen Partnerships to leverage efforts
• Reinforce/enhance land contribution to YBIP goals
PHASE 2 – WHAT AND HOW

Apply new knowledge to refine the Watershed Lands Conservation Plan

Focus areas:

• Promote Strategic Designations Efforts
• Advance Additional Land Acquisitions from Willing Sellers
• Support Forest Health and Management Activities
1. Continue pursuing Wild and Scenic River designations for Upper Cle Elum, Waptus, and Cooper

2. Develop creative designation(s) for Yakima Basin that promotes cooperative management, wilderness, wild and scenic, and watershed restoration
EMERGING THOUGHTS:
FOREST HEALTH & MANAGEMENT

- Aimed at improving snowpack retention, reducing fire risk, improving forest healthy resiliency, and creating economic value
- Enhance synergies with Tapash Collaborative, Western Watershed Enhancement Partnership, Checkerboard Partnership, and other efforts in the Basin
EMERGING THOUGHTS: ACQUISITIONS

- Principle-based instead of target-based
- Linked to water, fisheries, and forest health goals
- Opportunity-driven and adaptive
NEXT STEPS

• Finalize Phase 2 Plan
• Present final plan to Workgroup before adoption
• Continue to build partnerships and opportunities
TAKE-HOME MESSAGE

Healthy watersheds provide healthy water supply and support healthy communities!
Cle Elum Dam Fish Passage
Intake #6 Under Construction

Looking “Downstream” into Intake #6
Cle Elum Dam Fish Passage - Intakes

Intake trench with shotcrete walls.

Intake Conduits/Tunnels x-section
Conduits are placed together to form the tunnel running from the Intakes to the secant and helix.
Cle Elum Dam Fish Passage
Intake, Gate and Helix Construction

Conduit Connections to the Helical Flume
Cle Elum Dam Fish Passage
Intake, Gate and Helix Construction

Gate and Helical Chamber Foundations
Helical Flume – Precast Helix Flume
Cle Elum Dam Fish Passage

Tunnel Training Wall - July 9, 2020
Cle Elum Dam Fish Passage
Tunnel Contract - Concrete Liner Placement

- Invert Liner Placement
- Rebar Installation
- Form and Concrete Placement
- Repair as needed
Cle Elum Dam Fish Passage

Looking upstream at dam/spillway and tunnel portal and adult facility location, March 2019

Sockeye Salmon at Cooper River Bridge

Secant/Helix

Tunnel Portal

Adult Facility
Yakima River Sockeye Passage Study

- 2018 Tracking – Roza to Cle Elum Dam (n 20) = 100%
- 2019 Tracking – Yakima Mouth to Roza (n 60) = < 5%
- 2020 Tracking – Yakima Mouth to Roza (n 144) = TBD

- Radio tagged fish released in “hot” water = low survival rate
- Radio tagged fish released in “cooler” water = survive but stay

- Causes of Mortality
  - Tagging stress
  - Bird predation
  - Poaching
  - Tribal harvest
  - Stranding/Unsuccessful Migration

- Migration behaviors observed
  - Fall Back - McNary
  - Milling Around and Waiting
  - Upstream Migration – Columbia
  - Upstream Migration – Yakima
Thank you! Yakama Nation, USGS, WDFW and Volunteer Fishers

Picture by Tom Ring
2020 Sockeye Returns & Translocations to Cle Elum Lake

Translocation from Upper Columbia Stocks
10,000

Natal Yakima River Returns
1,850 – so far

Great numbers for this year’s Cle Elum spawners

Picture by Tom Ring
Questions?

Upper Cle Elum River
Near Cooper River Bridge
**Research & Development**

- **Outreach**: website, TWG, YBIP, community stakeholders
- **GIS**: water rights transfer suitability and streamflow priorities
- **Modeling**: smart market simulations and water valuations
- **Legal & Policy**: transfer rules, management and protection framework
- **Development**: smart market strategy and administrative needs

[https://www.yakimabasinwatermarketing.org/](https://www.yakimabasinwatermarketing.org/)
SMART MARKET BASICS

Sellers

S1  20 AF  80 AF
S2  20 AF
S3  60 AF

Buyers

B1  20 AF
B2  60 AF
B3  80 AF
**Coverage:** Australia, Canada, Chile, U.S. (WA, OR, ID, CO)

**Key Points:**
- Timeliness and transparency (decisions/outcomes)
- Confidence in market structure and administration
- Local collaboration to promote market legitimacy
- Well-defined purpose may help; top-down administration may hurt

**Challenges:** enforcement/management, defining/measuring rights

https://www.yakimabasinwatermarketing.org/
Rules & Policies Approach

- Transfer rules/policies framework: simplex to complex – assumptions and automation
- Automate downstream transfers
- Validity: assume all valid to max extent
- Streamflow impacts: general gaining/losing reaches
- Public considerations: YBIP – transfer consistent with plan objectives
RULES: BASIC TRANSFER FRAMEWORK

1. Is it a valid water right?
   1. Does the applicant have title to or a valid claim to the title of only one water right?
   2. Are there any overlapping water rights?

2. Can the transfer be made without detriment or injury (impairment) to existing junior or senior rights?
   1. Is the proposed water right transfer water budget neutral?
   2. Does the transfer of the right result in an increase in consumptive use?
   3. Would the transfer decrease the Total Water Supply Available (“TWSA”)?

3. Would the transfer result in an adverse change in instream flows?
   1. Would instream flows be reduced in an identified “flow impaired” river/tributary reach?
   2. Is the transfer upstream?
   3. Does the transfer involve a previously identified reach where upstream transfers do not result in impairment?
   4. Is there a risk the transfer will create a flow impaired reach?

4. Does the transfer have or create negative operational considerations for USBR, other water users, or fish/aquatic life?

5. Are there other factors that must be considered?

6. The transfer can be approved.

https://www.yakimabasinwatermarketing.org/
With named streams, PODs, POUs (surface/ground source), but no KRD acreage or irrigation data

Using this to develop:
POD and POU data combined with accurate water right Qi + Qa + source + priority date + crop data + irrigation method, stream miles, gaining/losing reaches, and more.

https://www.yakimabasinwatermarketing.org/
# Swauk Adjudication Tables and Coding

[Table Image]

[Link to Website]

https://www.yakimabasinwatermarketing.org/
Next Step + Ongoing Challenges

• Next Steps:
  • Water Rights Analysis = irrigated acres, individual/major claimants, consumptive use
  • Smart Markets = algorithm coding – Simple to Complex!
  • Policy = coordinate with Ecology’s efforts on water rights, TWRP, water banking
  • Outreach = ongoing community engagement

• Ongoing Challenges:
  • Data complexity, availability, usability
  • Policy Awareness

https://www.yakimabasinwatermarketing.org/
NELSON DAM REMOVAL PROJECT: WATER SUPPLY, RIVERINE PROCESS, AND FISH PASSAGE IMPROVEMENTS

David Brown
Assistant Director of Public Works
City of Yakima

September 17, 2020
1865 General Land Office Cadastral Survey showing Nelson Homestead, Naches River, unnamed stream meandering in SW of Section 9 is Cowiche Creek, orange star indicates approximate current location of Nelson Dam.
1949 Sketch of infrastructure at Nelson Dam. South Naches Road is located on a shelf cut into the Tieton Andesite. Most of State Highway No. 5 lies in a very active floodplain and regularly was flooded due to its location, the narrow bridge constriction, and the raised water surface elevation as a result of Nelson Dam.
3 Miles
RAMBLERS REACH AND NELSON DAM PHASES
NELSON DAM REMOVAL PROJECT: WATER SUPPLY, RIVERINE PROCESS, AND FISH PASSAGE IMPROVEMENTS

$24,600,000

- City of Yakima - $7,500,000 bond (rate payers)
  - Plus City’s share of $1.8M design and permitting contract
- Yakima County - $4,800,000 Floodplains by Design Grant
  - Includes the County share of $1.8M design and permitting contract
- Legacy River Fund - $70,000
- Brian Abbot Fish Barrier Removal Board $4,134,000 #1 out of 88 projects!
- WDFW Capital Program Asking $8,200,000, Currently at step one headed for the Governor's budget
- USBOR – USFWS - NMFS- Added to their Stimulus requests
- BPA – TBD
- City and County will be funding Construction Services
City of Yakima
Yakima County
Yakima Basin Intergrated Plan
Naches Cowiche Canal Association
Yakama Nation
Yakima Basin Fish and Wildlife Recovery Board
WDFW
NMFS
USFWS
USBOR
American Rivers
Rivers Legacy Fund
Yakima Basin Joint Board
Meeting Notes
Yakima River Basin Water Enhancement Project Workgroup

September 17, 2020
WebEx Teleconference

Welcome, Introductions and Agenda Overview

Ben Floyd, White Bluffs Consulting, welcomed the Yakima River Basin Water Enhancement Project (YRBWEP) Workgroup members and other attendees. Katie DeLorbe, HDR Engineering, described the meeting ground rules for the WebEx meeting format. Tom Tebb, Ecology, thanked the meeting participants for their patience as the group continues to use the virtual format. Wendy Christensen, Reclamation, echoed this sentiment.

The following notes summarize the YRBWEP Workgroup presentations and public comments. For more information, please see the full presentations available on the Integrated Plan website: http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html.

State Budget Updates

Tom Tebb, Ecology, submitted its budget to the State Office of Financial Management (OFM) on September 14, 2020. OFM will review the budget in October 2020 and subsequently refine with Ecology in preparation for submittal to the Governor’s office. Ecology anticipates the Governor’s budget will be announced in December 2020.

Melissa Downes, Ecology, displayed the Integrated Plan 2021 – 2023 biennium capital budget request, broken down by element. The total request is $42 million. The display showed the request alongside the prior biennium (2019 – 2021) request. Cle Elum Fish Passage is the largest piece of the request. Several element-specific requests (such as Habitat and Enhanced Water Conservation) were provided by Subcommittees that have reviewed project proposals. Subcommittees have contemplated future budgets as well. Budget reductions, if necessary, could be absorbed by scalable projects.

The State will publish a revenue forecast on September 27, 2020, which may reveal the need for budget reductions. Melissa also noted that the Washington Department of Natural Resources (DNR) has a separate budget request not reflected in the Ecology table for stewardship activities on the Teanaway Community Forest that would be in addition to the $42 million.

Tom Tebb noted that State revenue has been impacted this year and the State will focus on working through shortfalls. The State averages capital budget economic impact over 3 biennia (6 years), so it is unknown at this time exactly how this year’s budget shortfalls will affect the proposed biennial State budget. Ecology was directed to submit a business-as-usual budget but was also asked to do a 15% reduction exercise, which they have done.
Questions for State Budget Update:

Chris Maykut, Friends of Bumping Lake: What is the $2.7 million request for surface storage specifically earmarked for?

- Melissa Downes: This will continue to support Kachess Drought Relief Pumping Plant environmental review and/or design for fish passage related to that project.

David Ortman, Sierra Club: Do all water conservation projects in the budget remain voluntary?

- Tom Tebb: Yes, all conservation projects are voluntary proposals from irrigation district entities.

Water Marketing

Urban Eberhart, Kittitas Reclamation District (KRD), stated we must keep in mind the importance of water marketing alongside the other elements of the Integrated Plan. Water marketing must be available to make the whole plan work. For example, KRD has saved water through conservation projects that they now return to tributaries; a healthy and efficient water market would provide the ability to move water to where it is needed most. KRD and Trout Unlimited are working together to build upon and improve the current water markets in the Yakima River basin.

Justin Bezold, Trout Unlimited, is the project manager for the water marketing study and provided the technical presentation. The goal is to streamline the entire market to be more available to all stakeholders. The current program only allows one-to-one trades. This study hopes to identify how to establish a system where water can be transferred “by many, to many.” A key player in guiding this study is a technical workgroup that has been formed.

Literature and policy research was the first task completed. The project team reviewed markets in regions with similar water rights systems, including both domestic and international examples. Some key conclusions from the research include:

- Trust and confidence in the market is critical.
- Local collaboration promotes market legitimacy.
- There are challenges with enforcement and management that need to be worked through (subcontractors are currently working on this).

The project team is using a model to develop a smart market system and determine how it could be used in the Yakima River basin. The system will act like a stock market for water and allow quick and efficient movement. The team is conducting simulations for current trading and forecasts of future trading.

The model was originated with simple assumptions and the team is gradually adding complexity for realistic refinement. They are developing a rules transfer framework which feeds into how the smart market evaluates trading. The market is straightforward on an individual basis; the team is working to see how this can be expanded to the “from many, to many” framework and incorporate unique types of contracts. Justin described the example of how this market could work using the Swauk watershed as an example.
Questions for Water Marketing Update:

Alex Conley, Yakima Basin Fish and Wildlife Recovery Board (YBFWRB): Is the goal to show, under the current situation, how we can expect the market to operate and its outcomes? Will the model be able to test different policies or incentives? For example, could it run a potential scenario of long-term drought year options, such as pre-approved options in a year when TWSA drops below a certain threshold? This could help water users assess long-term income assurance.

- Justin Bezold: Depends how complex and forward looking we’re going to make the market. First step is descriptive. Could expand from there.

Jay Schwartz, Yakima Basin Resident: How is this study addressing water transfers between districts?

- Justin Bezold: This ties to the assumption of a price point at which any property right would be transferred. Current practices and policies are restrictive on this matter, but that doesn’t preclude the possibility. The model may provide insight regarding how to overcome this constraint.

David Ortman, Sierra Club: A 2015 report noted several irrigation districts have not installed measuring devices on canals per requirements in the 1994 YRBWEP legislation. Has this been improved, and does it play into model?

- Justin Bezold: No comment on whether districts have installed measuring devices but is unlikely to affect the model.

Technical Work Progress Update

Wendy Christensen introduced the technical work update. These updates are being refined to focus on a few projects with timely milestones occurring. For this meeting we are focused on Cle Elum Fish Passage and the associated sockeye salmon tracking project. The Workgroup will receive a Cle Elum Pool Raise update in December. Wendy noted Reclamation is open to feedback on how best to share technical project progress information.

Cle Elum Fish Passage – Richard Visser, Reclamation

Intake 6 (the lowest intake) is complete, and Richard anticipates completion of intake #5 this fall. All precast conduit sections (which connect the intakes to the helix) have been transported to Cle Elum. 188 conduit sections will form all 6 intakes. The first conduit section for intake #6 was placed on September 16, 2020 and the tunnel will be completed this fiscal year. Richard shared a diagram of the helix and gate chamber. The foundation for the gate and helix will be complete at the end of this year. The steel structure that will hold the secant will begin construction in spring 2021. The construction team has built the training wall at the base of the helix, which helps control and stabilize flow as it enters the tunnel to ensure safe passage of fish through the tunnel.

Richard and Wendy emphasized that a critical project purpose is the return of sockeye salmon and reintroduction into their headwater habitat. They encourage the audience to visit Cooper River Bridge above Cle Elum Reservoir to see the sockeye spawn. They Yakama Nation have released 10,000 sockeye into Cle Elum Reservoir from Priest Rapids on the Columbia River. In addition to the approximately 3,500 sockeye that have returned into the Yakima River. It is anticipated that the Cle Elum River above the reservoir have many sockeye spawning through mid-October.
The sockeye tracking study is collecting data to help the project team understand current trends and establish good passage from the mouth of the Yakima River to Cle Elum Dam. In 2019 and 2020, the study focused on passage from the Yakima River mouth to Roza Dam. In 2018, the study focused on passage from Roza Dam to Cle Elum Dam. Passage was very successful in the Roza-to-Cle Elum reach, but has issues in the mouth-to-Roza reach. The next step is to understand the level of stranding and impeded migration and determine specific causes. Richard thanked the Yakama Nation, U.S. Geological Survey, Washington Department of Fish and Wildlife (WDFW), and volunteer fishermen who have helped make the study work.

Questions for Technical Work Update:

How much passage is expected through each intake?
- Richard Visser: The intakes will be operated one at a time, dependent on the reservoir pool elevation. Between 100 and 400 cubic feet per second may flow through each intake when open. We don’t yet know exactly how many fish will pass through each intake. Reclamation will monitor and count as they go through and the structure is designed to handle any fish.

What is the anticipated design life for the system?
- Richard Visser: 50 years, but we expect it to last much longer.

Jeff Tayer, WDFW, noted the significance of the work Richard is doing. This is a huge project to manage and is a truly integrated approach as the team investigates lower river problems that prevent sockeye migration to Cle Elum Dam. This work will build the foundation for comprehensive solutions. Even with the problems we see, just a slight improvement in summer conditions provides great improvements in sockeye runs. This is encouraging. Richard noted that of the 1,850 fish that passed over Prosser Dam, most did so before July 5, 2020. Those that did not make it up the Yakima have been sitting in the Columbia River. A few fish returned upriver during a cool down in mid-August. A significant cool down in September 2020 allowed significant fish passage over Prosser Dam, and over 100 passing were observed on September 14 and 15, 2020.

Watershed Lands Conservation Subcommittee

Peter Dykstra, Plauche & Carr, introduced the update. The Watershed Lands Conservation Subcommittee is developing a Phase 2 Plan which builds on successes in the original plan (the “2012 plan”) and will engage new partnerships, knowledge, and tools. Peter described accomplishments towards goals in the 2012 plan which include secured forest land acquisitions, completing approximately half of targeted shrub-steppe acquisitions, and developing the Cle Elum River Wild and Scenic case statement.

Wendy McDermott, American Rivers, stated that the approach is based on the maxim that healthy watersheds are essential to ensure water for fish, families, and farms. The Subcommittee is tailoring their approach in the Phase 2 Plan based on data about positive effects of land management and partnerships on the goals of the Integrated Plan. Using this new knowledge, the Subcommittee is exploring three components for the Phase 2 Plan: strategic land designations, additional land acquisitions, and forest health and management activities.

The Subcommittee will continue to pursue river designations identified in 2012 plan. The Upper Cle Elum River is a priority because of its connection to fish passage and sockeye reintroduction.
In the Phase 2 Plan, the Subcommittee is exploring creative designations packages and actions which may include a combination of cooperative management strategies, wilderness and wild & scenic designations, and watershed restoration. The Subcommittee is reviewing examples in the western United States to gather information. The Subcommittee is currently considering the Cle Elum, Manastash-Taenum, Little Naches, and Bumping watersheds for creative designations.

Michelle Capp, U.S. Forest Service, described the forest health and management component. The goal is to incorporate these activities more directly into the Integrated Plan. Benefits include improved snowpack retention, reduced fire risk, economic opportunities, and forest resiliency. Forest health and management provides a more balanced approach to managing landscapes and can secure Integrated Plan investments in habitat health, water quality, quantity, and keeping water high in the system. These investments can be wiped out quickly by wildfires. The Subcommittee is exploring how it can leverage synergies with other organizations focusing on forest health such as the Tapash Forest Collaborative, Western Watershed Enhancement Partnership (WWEP), and the Checkerboard Partnership. The Yakama Nation and DNR are critical forest health partners.

Acquisitions in the 2012 plan were based on predefined targets. Looking forward, the Subcommittee is considering a principle-based approach rather than target based. This allows the acquisitions component to be opportunity-driven and adaptive, and builds upon acquisition efforts already taken through the Subcommittee as well as project-by-project acquisitions through the Habitat Subcommittee. The Subcommittee has begun discussions with The Nature Conservancy regarding their Central Cascades forest lands.

Peter stated the Subcommittee will continue to look for information on forest health and management to develop a plan that benefits Integrated Plan goals. They will determine the targeted designations and identify acquisition standards for adaptive acquisition opportunities. He reemphasized the point that fisheries and water supply goals won’t be fully realized without healthy watersheds

Questions for Watershed Lands Conservation Subcommittee Update:

Sean Gross, NOAA Fisheries: My understanding is the Phase 2 Plan will envision new ways of doing business that make it into the plans of agencies that manage lands in the upper basin. How will this be done without a land purchase?

- Peter Dykstra: Partners have lands and the Subcommittee is looking into funding opportunities and policy measures the Integrated Plan can support related to land management’s effect on Integrated Plan goals. Partners have said this could help them focus on the interaction of terrestrial and aquatic elements.
- Michelle Capp: Land ownership discontinuity is a significant issue. Putting the “checkerboard” back together will allow for efficient and holistic solutions. This is beneficial to good land management that supports sustained fish habitat.

David Ortman, Sierra Club: We’ve seen significant impacts to shrub-steppe lands through wildfire. Why would the Integrated Plan suggest flooding out a large site of shrub-steppe for a reservoir?

- Wendy Christensen: The Integrated Plan takes a long term look at all the issues. Environmental review will be done to avoid and mitigate significant adverse environmental impacts.
- Peter Dykstra: Refer to the original plan that describes why the Integrated Plan pursues certain actions. Acquisitions are always approached through willing buyers and sellers. Most of the remaining shrub-steppe land in the Yakima River basin is in private ownership. We must work with willing sellers to bring it into protection.
Chris Maykut, Friends of Bumping Lake: What land in the Bumping Reservoir vicinity is the Subcommittee considering for a designation?

- Peter Dykstra: Certain eligible wilderness lands are identified in the 2012 Plan.

**General Public Comments**

No additional public comments were provided.

**Nelson Dam Replacement Update**

Dave Brown, City of Yakima, provided the update, and began with a brief history of the dam. The dam was originally an irrigation dam that converted to domestic water as the City of Yakima grew. The dam has caused stream aggradation issues since the 1940s.

The City will reach 90% design on the project by the end of September, followed by an opinion of probable cost. The City plans to prepare full bid documents in January 2021.

In 2005, the Naches River Coordination group identified a suite of projects to improve conditions on the lower Naches, which includes Cowiche Creek. Nelson Dam replacement was one of those projects. This specific project focuses on dam replacement but will also have significant influence several miles up and downstream. Notably, aggradation upstream of the dam will be reduced and a gravel shortage on the downstream end will be remediated. The Yakima County flood control district has done work upstream in preparation for the dam replacement.

Dave described the roughened channel concept. The dam crest will be moved upstream 150 feet and the dam will be 450 feet wide. Several design features will be incorporated for fish passage to account for flip flop operations. This includes primary channels and overflow channels also accommodates recreation.

Numerous funding sources have been secured. The City has sent a letter to the Federal Emergency Management Agency for flood mitigation funds. For permits, the City has filed its hydraulic project approval with WDFW, which was the final permit process to complete. Ecology has issued the 401 permit.

**Comments/Questions for Nelson Dam Replacement Update:**

Alex Conley noted it’s great to see the numerous funding sources come together for the projects. It’s great to talk about the breadth of the funding package which makes the project strong.

John Reeves, Lake Kachess HOA: Will this project serve as a model for other diversions on the Mainstem of the Yakima River?

- Dave Brown: This is a model for replacing traditional dams that don’t impound water. This style demonstrates how to maintain a river diversion while meeting river health parameters. Standard one-to-one dam replacement would likely be more costly and wouldn’t be permitted.
Workgroup Roundtable

Ben Floyd recognized two prior Workgroup members who have recently passed away, Bill Lover, Council Member from the City of Yakima and Norm Childress, Yakima County Commissioner. Ben asked Dave Brown, City of Yakima and Ron Anderson, Yakima County Commissioner, to share some comments about them.

Dave Brown noted Bill Lover was the first City of Yakima council member to serve on the Workgroup. Dave also acknowledged Bill’s involvement in early fish and wildlife habitat planning efforts on the Yakima Fish and Wildlife Recovery Board (YBFWRB).

Ron Anderson stated Norm Childress was an active commissioner at his time of passing. He had a strong commitment to the valley and community. He was not directly involved with the water issues but provided his vocal support for the Integrated Plan. Through his experience at the Benton County Public Works Department, he had a wealth of knowledge to share on Yakima County government topics. He was a talented storyteller and often used stories to explain his reasoning on the issues.

Ben initiated the Workgroup roundtable:

Ron Anderson: Ron still feels new to many details because of the complexity of the plan. He appreciates those who have worked on everything over all the years. His goal is to continue learning and listening and is interested to hear how he can get involved further as a better partner. He expressed appreciation for Yakima County staff who work on all projects.

Joe Blodgett: Joe expressed his appreciation to be part of the Workgroup in Dave Fast’s place. He is learning a lot each meeting.

Alex Conley: Alex thanked the Workgroup for a good meeting and good work in the current virtual situation. Bill Lover was a board member of YBFWRB, and was sad to learn of his death. He was a truly constructive skeptic who was willing to work with others to get to the right solutions.

Urban Eberhart: Bill and Norm were very constructive. Their passing underscores the importance of what we’re doing and how vulnerable we all are. It is unusual for a group/society to get together and create such strong momentum. Each success hinges on something else and shows us opportunities we didn’t realize we had. Once piece at a time, we’re protecting agricultural and municipal economies and will eventually bring 300,000 fish back into the Yakima River. There isn’t anything else like this in the United States and Urban is proud to be a part of the group.

Jaclyn Hancock, Washington Department of Agriculture: It’s inspiring to see the progress on land acquisitions; we reached a 30-year goal in five years with forest acquisitions. The work of the Lands Subcommittee is good for overall watershed health and in turn all basin users. The Department of Agriculture is working on drought impacts to agriculture with the primary goal of understanding what to expect with future climate change and how to plan ahead. Partners on the Workgroup are helping this effort. This plan will be more important in the future for Washington agriculture.

Mike Livingston, Washington Department of Fish and Wildlife: We’ve seen significant fires in-basin this year. The Lands Subcommittee work is relevant to protection of watersheds and we’re seeing that in real time. Mike echoed Commissioner Anderson’s comments regarding Norm Childress’ value as a commissioner in the Yakima River basin. Mike appreciates the unifying force that exists behind the variable nature of those involved.

Wendy McDermett: Wendy appreciates everyone’s time and commitment to the process and echoed earlier sentiments about Bill and Norm.
Sean Gross: It’s great to see the efforts in the water marketing element. Some Integrated Plan elements had a quicker start-up than others, so it’s very positive to see further development of this effort (on Water Marketing) to catch up with other elements. Sounds like a good team. It’s a highly complex concept and we have much further to go.

Talmadge Oxford, Reclamation: Talmadge appreciates everyone’s time for today’s meeting. He sees good discussions and good work and is proud to be involved. He looks forward to being a strong supporting member going forward.

Phil Rigdon, Yakama Nation: The Tribe has put time and effort into reintroduction of sockeye, and it is great to see those efforts come to fruition. Phil appreciates everyone who is participating in this work.

Jim Craig, U.S. Fish and Wildlife Service: The U.S. Fish and Wildlife Service appreciates the working going on. Happy to be active participants. The agency is encouraged by movement on Nelson Dam replacement.

Jeff Tayer: On the heels of Bill and Norm’s passing, Jeff is reflecting on early days of YBFWRB. Norm was a close ally with leaders of the board. Our expectations have been raised so much since then. At the outset, there was an open question about whether anything could happen. These days, we’re at the opposite end of spectrum, asking “what couldn’t we do to benefit the Integrated Plan goals?” We are truly stronger together. We’ve seen presentations about projects today we couldn’t have conceived 20 years ago. Those guys helped us get this going, and we’ve come very far.

Tom Tebb: Tom echoed Jeff’s comments. Let’s keep up the momentum. The virtual meeting format is not ideal, but he appreciates everyone’s patience through the electronic world. Tom is looking forward to being together again and sharing time together in person. He expressed condolences to those close to those who recently passed.

Kristin Bail, U.S. Forest Service: Kristin noted that Erick Walker is out on an important assignment for fire recovery and response on a national team. Kirstin will be filling in for now. Impressed by work accomplished and that which will be accomplished. She will be the USFS Workgroup representative for the time being and is looking forward to continued connection.

Arden Thomas, Kittitas County: Arden echoed the grand scope and breadth of work being accomplished. She thanked all those behind this work. It is exciting to see what’s going on with fish passage and sockeye tracking. She is very happy to see the water marketing component. From Kittitas County’s perspective, efficient options for accessing water will be important for adaptive management. The County is grateful for KRD and Trout Unlimited leadership and ready to provide continued support. She sees lots of potential on this element.

Wendy Christensen: Bill and Norm were politicians. Reclamation is focused on technical aspects of projects. It takes all sides for this to work. The partnership with everyone fulfilling their respective roles has contributed to successes of the plan. Bill was around when we formed the Workgroup and began developing the plan and provided a key voice of support from the City of Yakima. Wendy noted Norm’s questions and interest in the Integrated Plan during meetings and site visits. His interest was a good reminder of interest from those less directly involved. We owe lots of thanks to everyone for pulling their weight.
Upcoming Meetings

The next Workgroup meeting is scheduled for Wednesday, December 9, 2020. Meeting format will be determined based on the status of the Safe Start plan at the time of the meeting.

Attendance

Workgroup Members:
Ron Anderson, Yakima County
Dale Bambrick, National Marine Fisheries Service
Joe Blodgett, Yakama Nation Fisheries
Dave Brown, City of Yakima
Wendy Christensen, Reclamation, Columbia-Cascades Area Office
Alex Conley, Yakima Basin Fish and Wildlife Recovery Board
Ron Cowin, Sunnyside Valley Irrigation District
Seth Defoe, Kennewick Irrigation District
Rick Dieker, Yakima-Tieton Irrigation District
Peter Dykstra, Plauche & Carr and Chair of Watershed Lands Conservation Subcommittee
Urban Eberhart, Kittitas Reclamation District
Kristin Bail, U.S. Forest Service
Jaclyn Hancock, Washington Department of Agriculture
Larry Leach, Washington Department of Natural Resources
Mike Livingston, WDFW
Wendy McDermott, American Rivers
Charlie de la Chappelle, Yakima Basin Storage Alliance
Talmadge Oxford, Reclamation, Columbia-Cascades Area Office
Lisa Pelly, Trout Unlimited
Jim Craig, U.S. Fish and Wildlife Service
Phil Rigdon, Confederated Bands and Tribes of the Yakama Nation
Jeff Tayer, WDFW and Chair of Habitat Subcommittee
Tom Tebb, Ecology
Arden Thomas, Kittitas County
Bret Walters, U.S. Army Corps of Engineers

Other Attendees:
Marcella Appel, Benton Conservation District
Kathryn Furr, U.S. Forest Service
Darcy Batura, The Nature Conservancy
Justin Bezold, Trout Unlimited
Dave Blodgett, Yakama Nation Fisheries
Lori Brady, Sunnyside Valley Irrigation District
Miles McPhee, Yakima County Resident
Jason McShane, Kennewick Irrigation District and Chair of Lower River Subgroup
Dale Meck, CBEC Eco Engineering
Pat Monk, Reclamation, Columbia-Cascades Area Office
Maddie Moore, Washington Department of Agriculture
Bryan Myre, Yakama Reservation Irrigation District
Tom Myrum, Washington State Water Resources Association
Emma Olney
David Ortman, Sierra Club
Elaine Packard, Sierra Club
Sage Park, Ecology
Tim Poppleton, Washington State Department of Ecology
Joye Redfield-Wilder, Washington State Department of Ecology
John Reeves, Lake Kachess HOA
Jenna Scholz, HDR Engineering, Inc.
Jay Schwartz, Yakima River Basin Resident
Mike Schwisow, Schwisow & Associates
Jeanne Sheldon, Lake Kachess HOA
Danielle Squeochs, Confederated Tribes and Band of the Yakama Nation
Bruce Sully, Reclamation, Columbia-Cascades Area Office
Richard Visser, Reclamation, Columbia-Cascades Area Office

Where to Find Workgroup Information

Meeting materials, notes, presentations, and materials submitted during public comment for each Workgroup meeting will be posted on Reclamation’s project website: (http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html). A list of information sources, many available online, is also posted on the website.

If you need help finding an information source, contact those listed at the top of page 1 of these notes or Ben Floyd at White Bluffs Consulting, (509) 539-3366 or ben@whitebluffsconsulting.com.
# Agenda

**Yakima River Basin Water Enhancement Project Workgroup Meeting**  
Dec. 9, 2020; 9:30 AM to 12:30 PM

**Join meeting**

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<td>Welcome/Introductions and Agenda Overview/Public Comment†</td>
<td>Ben Floyd, White Bluffs Consulting</td>
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<tr>
<td>9:35 – 9:40</td>
<td>2020 Highlights Newsletter for Yakima Basin Integrated Plan</td>
<td>Wendy Christensen, Reclamation</td>
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<tr>
<td>9:40 – 9:50</td>
<td>Implementation Committee Update</td>
<td>Tom Tebb, Ecology</td>
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<td>9:50 – 10:10</td>
<td>Tieton River Fisheries Enhancement and Water Reliability– Recent Activities Highlights</td>
<td>Rick Dieker, Yakima-Tieton Irrigation District</td>
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<td>10:25 – 10:45</td>
<td>YBIP Relationships Help Get Critical Work Completed - Tucker Creek Fish Passage and Habitat Improvements</td>
<td>Jen Nelson, WDFW and Walter Larrick, Kittitas Reclamation District</td>
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<td>10:45 – 10:55</td>
<td>Public Comment</td>
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<td>10:55 – 11:05</td>
<td>Break</td>
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<td>11:05 – 11:25</td>
<td>Bull Trout Monitoring Update</td>
<td>Jason Romine, USFWS; Todd Newsome and Russ Byington – Yakama Nation; Aimee Taylor, Central Washington University; and Craig Haskell, USFWS</td>
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<tr>
<td>11:25 – 11:45</td>
<td>Sockeye Monitoring Update</td>
<td>Richard Visser, Reclamation and Tobias Kock, USGS</td>
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<tr>
<td>11:45 – 12:15</td>
<td>Workgroup – Roundtable Discussion</td>
<td>Ben Floyd, White Bluffs Consulting</td>
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<tr>
<td>12:15 – 12:30</td>
<td>Workgroup – Future Meetings Schedule and Topics</td>
<td>Tom Tebb, Ecology; Wendy Christensen, Reclamation and Ben Floyd, White Bluffs Consulting</td>
</tr>
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**12:30 PM Adjourn**

**2021 YRBWEP Workgroup Meetings: 3/10, 6/2, 9/16 and 12/8**

For additional information, see the reports and documents available at this link: [http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html](http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html)

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† Public comment opportunities will be provided for each agenda item except for Welcome/Introductions, Workgroup Roundtable Discussion and the Public Comment agenda items. Those wanting to provide public comment during the designated agenda item need to message Jenna Scholz, HDR using the Webex chat function. Each commenter will be limited to 2 – 3 minutes for comments (depending upon number of commenters) to maintain meeting schedule. Additional written material can be submitted with comments for inclusion in the meeting notes. Previously provided comments are noted and not necessary to repeat.
Inside:

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Welcome to the Yakima Basin Integrated Plan 2020 Highlights

Welcome to the 2020 Highlights, reviewing the progress made in the Yakima basin to improve water supplies and restore ecological functions under the Yakima Basin Integrated Water Management Plan. The year 2020 proved challenging, due to the COVID-19 pandemic and ancillary restrictions. Still, we were able to move forward many initiatives and pivot as needed to advance the objectives under the Integrated Plan.

As we look to 2021, we have many successes to share and joint ventures to continue. We open with greetings from the Confederated Tribes and Bands of the Yakama Nation, one of our most valued partners and stewards of the basin:

Greetings,

On behalf of the Yakama Nation, I would like to express our pleasure to be an integral part in the conception, development, and implementation of the Yakima Basin Integrated Plan. These unique partnerships result in long-term benefits for our people and the resources we value. Since time immemorial, Yakamas have recognized the ecological and religious significance of water to our existence as people.

As caretakers of the resource and as partners in the Integrated Plan, we continue to invest in and lead habitat restoration, salmon enhancement and reintroduction, and water conservation throughout the basin.

We look forward to the day when our children and our children’s children benefit from the work that we are doing today. Thank you.

Sincerely,

Gerald Lewis
Fish & Wildlife Committee Chairman
Yakama Nation Tribal Council

Progress continues at Cle Elum

Following the success of raising the radial gates on the spillway at Cle Elum Dam by three feet, we have made great progress to protect shorelines, upgrade campgrounds, boat launches and day-use areas along the reservoir’s shores. These activities will accommodate the pool raise that will increase storage capacity by 14,600 feet.

Construction of shoreline protection at the last of three U.S. Forest Service facilities began at Wish Poosh campground and boat launch spring 2021.

The pool raise is crucial for supporting salmon migration, providing additional stored water for out migration and an integral part of the helix-designed fish passage, which also is underway.

We continue to meet with landowners as work continues to upgrade the shorelines, which will be completed prior to raising the reservoir.

When the project is completed, the additional water will be dedicated to enhancing instream flows for fish rearing, habitat and migration, and may allow the passage operations to occur sooner in the season.
YBIP Highlights 2020

Improvements pave the way for fish passage

Left: Work continues in the secant pile, placing foundations for gate and helix structures.

Top: First conduit box being placed for connection between reservoir intake to helix. The conduit will transport the juvenile fish from the reservoir to the helix.

Bottom: Concrete lining is being placed in the tunnel invert and crown. The tunnel will transport the juvenile fish from the helix to the Cle Elum River.

Construction is well underway on an innovative helix design to transport juvenile fish downstream, replacing a temporary flume on the spillway at Cle Elum Dam. Combined with the Cle Elum pool raise, sockeye salmon will be able to out migrate April 1 through June in most years, greatly enhancing the survival of this important basin species.

Surface flow from the reservoir will attract juvenile salmon to an open intake and gate system, transporting them into the smooth flowing water of the helix and into the bypass tunnel to the Cle Elum River. From there, the salmon will out migrate to the Yakima River and on out to the ocean to mature before returning to spawn above Cle Elum Reservoir.

Construction of the intake, gate and helix will continue for the next few years. Construction for the downstream bypass tunnel will be complete in early 2021. Also shovel ready is an upstream adult collection facility that will capture fish and funnel them into a truck to haul them for release to upstream tributaries or directly to the reservoir. Construction is set to begin in 2023 on the adult collection facility.

Reservoir to provide relief during drought years

We have been exploring how to use up to 200,000 acre-feet of water stored at Kachess Reservoir. The Dingell Act, passed in March 2019, authorizes Reclamation to enter into agreements with irrigation districts to construct, operate and maintain a Kachess drought relief pumping plant.

In fall 2020, the Roza Irrigation District Board selected the floating pumping plant alternative to access additional stored water for farmers during drought years at Kachess Reservoir. This triggers further environmental review, following Reclamation’s record of decision on the Kachess drought relief pumping plant, released April 2019, that identified the need for additional analyses.

Water pumped from the lower reservoir would serve the Roza Irrigation District via the Kachess River to the Yakima River. Along the way, the Kittitas Reclamation District Tributary Supplementation Program (see KRD: Integrating all seven elements for more details) diverts the water at Easton Reservoir to hydrate creeks that otherwise dry up and lets the water flow back into the Yakima River above Roza Dam in time to meet downstream irrigators’ needs. The KDripp project would mitigate impacts to threatened bull trout populations via habitat improvements in the reservoir, its tributaries or in surrounding reservoirs.

Primary funding for construction and operation comes from the participating partners in exchange for receiving a portion of the water in drought years. To date, the Roza Irrigation District has been the primary district interested in the near term. Other participants could include the Wapato Irrigation Project on the Yakama Reservation, KRD and Kennewick Irrigation District.

Stored water would be pumped only during droughts, when supply is less than 70% (to provide up to 70% supply for proratable water users) and the lake (which is 400 feet deep in places at full pool) would remain a minimum of 250 feet deep, even if the entire 200,000 acre-feet were accessed.

Surface flow from the reservoir will attract juvenile salmon to an open intake and gate system, transporting them into the smooth flowing water of the helix and into the bypass tunnel to the Cle Elum River. From there, the salmon will out migrate to the Yakima River and on out to the ocean to mature before returning to spawn above Cle Elum Reservoir.

Kachess Reservoir looking north close to minimum pool, Kachess Dam at bottom left.

In 2020, record numbers of sockeye salmon returned to the Yakima basin to spawn above Cle Elum Reservoir. The Yakama Nation fisheries transported 15,000 sockeye from Priest Rapids on the Columbia River to Lake Cle Elum. Also, 5,000 in-basin sockeye returning via the Yakima River were trapped at Roza Dam and hauled to Cle Elum Reservoir. Reintroduction of sockeye continues to bring hope of even greater returns once permanent fish passage is operational, which is anticipated in 2024.
Critical partnerships turn a dream into reality

Above: Bull trout being released at Kachess Reservoir May 2020 as part of rescue, captive rearing and release program.

Bull trout have been a long-term concern for the Yakama Nation who have been leading efforts to restore and enhance bull trout habitat in partnership with the other Yakima Basin Integrated Plan partners throughout the watershed.

Efforts to improve conditions for bull trout, an important native species of the Yakima River system, continue with collaborations in the basin. These include ongoing tagging, tracking and rescue, and rearing efforts to improve survivability.

A team of biologists from the Yakama Nation, Washington Department of Fish and Wildlife, U.S. Fish and Wildlife Service, Washington Department of Ecology and Bureau of Reclamation work to turn this dream into a reality. Jason Romine, USFWS, described the tagging and tracking results from 2019 for fish in Kachess River above Kachess Reservoir and Gold Creek above Keechelus Reservoir. Bull trout migration is monitored using Passive Integrated Transponders tags and acoustic telemetry.

Yakama Nation biologists conducted rescue and rearing efforts in coordination with WDFW, USFWS, Ecology, Reclamation and Mid-Columbia Fisheries Enhancement Group. The team captured nearly 1,200 bull trout and brought them to the Yakama Nation’s rearing facility in July and August 2019. Some bull trout were moved upstream of the dewatered reach from which they were rescued. The fish generally met their target release size in the rearing facility, though there was significant cannibalism amongst the bull trout from Kachess River (14% survival). There was less cannibalism in the Gold Creek group (73% survival). In late May 2020, 152 fish were released into Kachess Reservoir, and 78 fish were released in Keechelus Reservoir, their watershed of origin. The Tribe will focus on strategies to increase captive rearing survival in 2020–2021, and reintroduction efforts in the upper Yakima River tributaries will continue.

Project plans in 2021 also include implementing the reintroduction of bull trout to historic habitats in the upper Yakima, using the healthy South Fork Tieton River as a donor population. Closely monitored and adaptively managed reintroduction efforts will begin in Taneum Creek and expand to other suitable streams as permitting is obtained. Additionally, a pilot study designed to suppress and eventually eradicate non-native brook trout populations in bull trout habitats is underway. The goal of the pilot study is to minimize or eliminate brook trout impacts on bull trout populations and maximize reintroduction efforts.

Today Gold Creek, considered the headwaters of the Yakima River located near Snoqualmie Pass, is still home to one of just four remaining populations of bull trout in the upper Yakima basin.

In early 2020, the USFS, WDFW and Yakama Nation kicked off an environmental assessment to determine restoration strategies that could work best for the Gold Creek Valley and Gold Creek Pond.

While the primary purpose of this effort is to restore the once thriving habitat, especially for threatened bull trout, other salmonid species and wildlife connectivity, partners recognize the importance of the recreational, visual, and accessibility values that current visitors enjoy and are developing elements that maintain access. This collaborative restoration project will improve habitat conditions at Gold Creek, so keystone species like bull trout can thrive, thereby improving the entire ecosystem.

These same improvements would also benefit chinook salmon, sockeye salmon, and Mid-Columbia steelhead during future recovery efforts. Existing recreation opportunities would be modified to accommodate restoration; similar day-use opportunities would be provided in this valued area.

Final analysis and a draft decision are expected February 2022.

Top: Aerial photo of Gold Creek Pond with Keechelus Reservoir in the distance.
Bottom: Picnicking at Gold Creek Pond, one of many ways to recreate in this area.
KRD: Integrating all seven elements

KRD and its YBIP partners are demonstrating how their originally designed irrigation water delivery system can be “rettooled” by integrating all seven elements of the Integrated Plan to help achieve its goals: to benefit anadromous and resident salmonid populations, increase Yakima Project operational flexibility, and improve the reliability of the water supply for irrigation and municipal supply uses.

An example is the KRD Tributary Supplementation Program initiated in 2015 by KRD, providing flow augmentation to tributaries (i.e., Tucker, Big, Little, Taneum and Manastash) that prior to 2015 were intermittent or experienced low flow. Enhanced tributary flows also help macroinvertebrates that serve as food for several fish species, preserve and enhance the riparian habitat, and increase salmonid rearing and spawning habitat. In addition, in drought years, a portion of the water from the proposed KDRPP could be diverted into the KRD main canal and delivered to these small tributaries in the Kittitas Valley that otherwise dry up and then flow back into the Yakima River above the Roza Diversion Dam in time to meet irrigators’ needs.

To address surface water storage, the KRD is investigating sites in the Kittitas Valley through the Upper Yakima System Storage Study. This project is entering phase two of examining a handful of locations from the original list of 50 sites.

In June 2020, the Kittitas Reclamation District completed its Yakima River Basin Managed Aquifer Recharge Assessment, identifying the most promising sites (with an emphasis in the Kittitas Valley) for groundwater recharge to be used for instream and out-of-stream purposes. The top sites in the Kittitas Valley were Taneum, Big, Little and Naneum creeks.

While the YBIP Fish Passage element is focused on fish passage at the major storage reservoirs, in October, KRD, Trout Unlimited and other YBIP partners designed and constructed a temporary wooden pool-weir fishway in Tucker Creek, eliminating a 90-year passage barrier at the main canal siphon. With stream flows and fish passage re-established on Tucker Creek, access to an additional 1.5 miles of quality salmonid habitat has been realized. Monitoring of the temporary fish passage at Tucker Creek is in process and will help inform a permanent solution.

Schaake habitat project phase 2 construction completed

Reclamation is restoring 130 acres of floodplain over a two-mile reach of the Yakima River. This is one of the largest floodplain projects in the Yakima basin. Phase 1 construction was completed in 2019 and primarily focused on levee removal, construction of a flood protection berm, floodplain excavation, and revegetation. Phase 2 construction was completed in October 2020 and included installation of a large culvert, additional floodplain excavation, wetland creation, and large wood placement to attenuate large flow events. Phase 3 construction in fall 2021 will complete side channel excavation and inlet structures. Revegetation and monitoring will take place throughout the project into 2025. A flood event in February 2020 exemplified the success of the project and served as proof-of-concept for the project.
Water conservation effectiveness is on the rise

We have tabulated the multitude of water conservation projects funded under the Integrated Plan and determined how far we have come in meeting the 2029 goal of achieving 85,000 acre-feet in water savings. So far, the partners have implemented approximately 100 conservation and water efficiency projects in the last seven years.

With approximately $87 million of state, federal and farmer dollars invested, these projects have yielded over 49,000 acre-feet of conserved water. That breaks down to approximately $1,800 per acre-foot of water. With these projects, we have accomplished about 58% of the Integrated Plan’s first phase conservation goals.

The water savings support stream flows to aid fish and riparian habitat and provide drought resiliency for irrigators. Some conserved water will allow the Wapato Irrigation Project to provide additional irrigation on tribal land.

To account for what projects have occurred, we have gathered information from our partners with the Yakama Nation, Reclamation, irrigation districts, conservation districts, cities, counties and other involved organizations. Nearly all parties involved are moving ahead with plans for future conservation projects. A strategy is underway to prioritize projects to achieve the 2029 goal and make the basin irrigation systems as efficient as possible. We anticipate technological advances will continue to evolve and increase conservation effectiveness in the future. It is a challenge, but one that is being taken on with eagerness and enthusiasm.

Streamlined processes will help transaction efficiencies

Water markets help re-allocate water during times of shortage in the Yakima basin. KRD, in close partnership with Trout Unlimited, Ecology, Reclamation and water users, is making progress to identify transaction costs for water transfers and the mechanisms and pathways to improve transaction efficiency.

The work is progressing toward a Yakima Basin Smart Market, a computer-based system that electronically matches willing buyers/sellers, streamlining the process. By automating processes wherever possible, the Smart Market will help buyers and sellers quickly and efficiently move water.

A critical part of the research process is involvement of a stakeholder group that reviews the work and provides technical expertise to help build toward a more accessible market. Environmental impacts of water transfers on fish, wildlife and river health will continue to be important and taken into consideration when transfers are made.

Improved recharge generates late season flows

In 2019–2020 Yakama Nation’s Toppenish Fan Alluvial Aquifer Recharge project recharged approximately 1,500 acre-feet to the shallow aquifer. Recharged groundwater flows towards Simcoe Creek, generating late season baseflow and providing cool water to a steelhead-bearing creek. Recharge may also reactivate of springs and seeps, which provide cultural foods for the members of the Yakama Nation.

Left: Location of passive groundwater infiltration via water spreading over the surface near Toppenish Fan.
Creating a conservation ethic across the basin

The municipal subgroup of the Integrated Plan is working to develop municipal water conservation goals that are meaningful and measurable. We are also looking at borrowing ideas that have worked for others in Washington State. For example, the working group hired a conservation group from Benton County, just south of Yakima, to develop a heritage garden program that would apply to the entire Yakima basin region. By applying the concept Integrated Plan wide, we can foster a conservation ethic with businesses, residents and planning groups in all of our communities.

In 2020, the Heritage Gardens of the Columbia River Basin adapted quickly to the ever-changing environment related to COVID-19 and moved to a virtual platform to continue to share their knowledge for creating landscapes and gardens that rely on less water.

In May and October, the Heritage Gardens program hosted free public webinars. The May webinar focused on native plants and pollinators, and the October webinar focused on the Missoula Floods, native plants and bee pollinators, and native landscape design. Highlights included a local backyard transformed into a heritage garden over the years.


Looking toward the 2021, Heritage Gardens is hopeful to host a Butterfly Discovery Day as well as in-person webinars to continue sharing information to interested parties.

Re-envisioning a salmon stream in a working landscape

Lower Toppenish Creek runs 45 miles through the Yakama Reservation from the foothills of the East Cascades to its confluence with the Yakima River. This creek provides water, fish, wildlife and medicine for the Yakama people; however, land-use changes and irrigation developments over the last century have reduced the water quality and degraded fish and wildlife habitat.

In particular, engineers in the early 1900s incorporated the creek into the Wapato Irrigation Project as a canal and a drain, with little regard for natural stream function or aquatic habitat. In recent decades, the Yakama Nation has pushed for the restoration of lower Toppenish Creek, in the process of developing the Toppenish Creek Corridor Enhancement Plan with support from Reclamation.

The Toppenish Creek Corridor Plan integrates irrigation re-engineering and ecological restoration along 45 miles of stream and floodplain. The plan has two overarching goals: 1) to separate the natural stream channels from the canals and drains of the Wapato Irrigation Project, and 2) restore stream and floodplain habitat that has been impaired because of land-use changes. Currently, the Yakama Nation and Reclamation are preparing a five-year agreement that will jump-start implementation with work on eight priority projects included in the first 10 years of the Integrated Plan.

While the Toppenish Creek Corridor Plan was being developed, the Yakama Nation pushed to enact multiple habitat restoration actions on Toppenish Creek to address urgent needs. These include restoring more than a mile of stream habitat and 15 acres of spawning and rearing habitat for threatened Middle Columbia steelhead. These and other projects support the Toppenish Creek Corridor Plan goals and pave the way for accelerated progress as the plan is implemented.

Key actions over the next five years will include preventing steelhead migration into Marion drain by separating the drain waters from Toppenish Creek, increasing water use efficiency on the 17 mile Unit 2 Canal, increased monitoring of groundwater recharge in the Toppenish alluvial fan area, enhancing historic wetlands, and comprehensive habitat restoration on 2.5 miles of stream and floodplain.

Map: Actions planned for the first five years of the Toppenish Creek Corridor Plan.

Bottom: Excavator beginning the work of tearing down the old levee as the first step of levee setback in the Toppenish Creek 3-way Levee project, completed in 2018.
Smolt passage improves on the lower river

Above: Infographic shows Sunnyside Dam diversion is being modified to facilitate passage of smolts downstream.

Lower Yakima River Smolt Survival Study

While much work has occurred in the upper Yakima basin, our focus is turning to critical issues in the lower Yakima River, from the Union Gap near the City of Yakima to the Yakima River delta. Existing infrastructure, predators, low flows and warm water temperatures can be bottlenecks for fish migration and cause increased mortality.

Large numbers of juvenile salmon (smolts) migrate to the ocean annually during the springtime. Smolt survival can influence the abundance of returning adults and the availability of fish for harvest years later. River flows, water quality, passage at irrigation diversion dams, and predation are primary factors affecting smolt survival. The Lower Yakima River Smolt Survival Study, which started in 2018, is investigating factors affecting smolt survival from the City of Yakima to the confluence with the Columbia River.

In 2020, research was paused in late March due to state-wide travel restrictions. However, by early May, USGS and Yakama Nation developed safe work practices, resumed tagging, and released 348 spring chinook, 495 sub yearling chinook, and 376 steelhead at Wapato, Sunnyside, and Prosser dams. Data are currently being analyzed, and in 2021, the study will focus on reporting results for the past three years and monitoring the Sunnyside Dam fish guidance boom project. Early indications are juvenile fish survival is higher if fish can be redirected to stay in the river and not enter the canal.

Sunnyside Dam Smolt Passage Improvement Project

The first project developed to improve lower river smolt survival is a partnership with the Sunnyside Division Board of Control at Sunnyside Dam, which diverts irrigation water into Sunnyside Canal. A fish guidance boom and dam gate modifications are being designed and installed during 2020–2021. The boom and gate modifications are designed to reduce the number of fish diverted through the canal and improve overall fish survival as they migrate past the dam. Fish survival will be studied and reported on to evaluate project effects.

Causeway removal to aid in reducing negative impacts

For the past several years, our work has focused on improving fisheries, habitat and water quality in the upper Yakima basin. However, there are many issues in the lower Yakima River that negatively impact fisheries, water quality, water supply and public health that need to be addressed.

One such issue is the Bateman Island causeway. Bateman Island is located at confluence of the Yakima and Columbia rivers. The causeway on the south side of the island blocks cooling Columbia River flows, thereby creating a backwater habitat that forms a thermal barrier hindering salmon and steelhead from migrating up the Yakima River.

In addition to stalling salmon and steelhead migration, the warm backwater habitat is ideal habitat for non-native fishes that prey on out-migrating juvenile salmonids. High water temperatures also encourage algal blooms and invasive water stargrass growth, and create ideal conditions for mosquitoes and disease pathogens. Overall, this causeway has led to severely degraded water quality and flows.

In August 2019, the U.S. Army Corps of Engineers formally accepted the Yakima River Delta Ecological Restoration project under Section 1135 of Water Resources Development Act 1986 ecological restoration authority. The Washington Department of Fish and Wildlife is the non-federal sponsor. Almost $1 million has been committed to remove the causeway to date. The first phase includes evaluating options and selecting a preferred restoration plan, and is anticipated to be completed by the end of 2021. Design and construction are slated for completion in 2025.

Top: The causeway contributes to water quality and temperature issues at the confluence of the Yakima and Columbia rivers.

Bottom: Thermal overview showing water temperatures with causeway removed. The existing (inset) shows how the causeway is affecting water temperatures and blocking fish passage near mouth of the Yakima River.
Presentation Topics

1. Gravity Tunnel Investigations
2. Tieton River Fisheries Enhancement and Water Reliability Study

Both studies have been very active in recent months
Gravity Tunnel Investigations

- Includes a new, 5-mile-long gravity tunnel
- Tunnel replaces most vulnerable lower half of YTID’s canal
Gravity Tunnel Investigations

- Existing canal
- Completed tunnel boring (typ. of 6)
- Proposed 5-mile-long gravity tunnel
- Proposed tunnel boring (spring 2021)
Tunnel Profile

**Proposed 25,000 feet long tunnel @ 0.1% slope**

400 ft horizontal boring (Spring 2021)

BASALT FLOWS

EXISTING GROUND ALONG PROPOSED TUNNEL

POSSIBLE WEAK INTERFLOW ZONES AND HIGH-ANGLE JOINTS

BASALT FLOWS DIP 2-3 DEGREES EAST (3.5 - 5 PERCENT), LOCALLY UP TO 6 DEGREES (10 PERCENT)

EL 2220 feet
Summary of Preliminary Findings

- Rock is generally highly fractured in all boreholes near the tunnel profile, with some better-quality zones
- More fractured than originally expected
Benefits of a Gravity Tunnel

- Gravity – no pumping costs
- Low maintenance and high reliability once constructed
- Few environmental impacts and mitigation
- Subsurface easements are easier to obtain
- Affordable without outside support
- Compatible with NFCCR

- Preliminary cost estimate: $140 million
- Excludes NFCCR and repairs to upper 5-miles of canal
Tieton River Fisheries Enhancement Study

• YTID, Reclamation, and Yakama Nation are studying benefits of moving YTID’s diversion to Wapatox

• Study is partially funded by a Reclamation Pilot Project Grant

• Study includes…
  ✓ Tieton River bathymetry
  ✓ HEC-RAS modeling to simulate depth, velocity and habitat suitability
  ✓ Identifies new water management opportunities
  ✓ Coordinates with Reclamation’s Riverware modeling of other YBIP alternatives
Tieton River Fisheries Enhancement Study

• Reclamation and YTID completed the Tieton River bathymetry in July 2020

• HEC-RAS modeling and habitat snorkel surveys are currently in progress
Tieton River Fisheries Enhancement

Study is identifying new water management alternatives:

- Rewatering the lower Tieton River
- Mitigating and reducing flip-flop flow
- Improved utilization of Naches River
Hydromet Data Used to Estimate Available Water

There are no storage reservoirs on the main stem of the Naches River. Discharge is currently unregulated.

Volume and timing of unregulated flow can be estimated by subtracting Tieton and Bumping River from Naches River.
Average Daily Flow Rates (all available data)
Average Daily Flow Rates (all available data)

NFCCR and Wapatox could provide more water and colder water to lower Yakima River during summer.

Reclamation’s RiverWare model will determine the volume and timing of available water without impacting existing water rights.

Unregulated Naches River (currently no storage or flow control)
Tieton River Fisheries Enhancement

How it works...

Water historically released for YTID in summer is now released for fish benefits.

Wapatox fills NFCCR in winter/spring from unregulated Naches River (35 kAF).

Summer releases create side-channel connectivity in lower Tieton River.

Summer releases remain in river below Parker to support adult migration.

YTID uses NFCCR water in summer (35 kAF).
Benefits of Wapatox and NFCCR

• Wapatox and NFCCR would greatly expand water management opportunities and flexibility
  • Increases TWSA
  • Improves water management of unregulated Naches River
  • Provides more water for fish and prorated water districts
  • Improves timing of Rimrock releases to benefit fish

• Climate change is expected to increase the need for storage and regulation flexibility
Reservoir options
French Canyon Dam 5 foot raise
150 to 180 AF additional storage
Next Steps

• Reclamation to complete HEC-RAS modeling (fall 2020)
• Reclamation to complete RiverWare modeling (winter 2020-21)
• YTID and Reclamation to develop drilling plan for NFCCR (spring 2021)
• YTID to continue subsurface exploration for gravity tunnel (spring 2021)
• YTID’s goal is to select a preferred alternative by end of 2022
Questions and Answers
Surface Water Storage

• **Kachess Drought Relief Pumping Plant**
  Existing Reservoir: Access up to 200,000 acre-feet from inactive storage pool in dry years

*Water Supply and Flow Discussion/Modeling*

• **Wymer Dam and Reservoir**
  New off-channel reservoir, 163,000 acre-feet

• **Bumping Dam & Reservoir Enlargement**
  Replace existing dam to add 165,000 acre-feet

Additional Proposed Surface Storage

• **Upper Yakima System Storage**
  New off-channel reservoir, 20,000 acre-feet

• **North Fork Cowiche Creek Reservoir**
  New off-channel reservoir 30,000 to 35,000 acre-feet
WYMER RESERVOIR VIA KRD GRAVITY OVERVIEW
POTENTIAL TUNNEL OPTIONS TO WYMER RESERVOIR VIA KRD CANAL
KRD UPPER YAKIMA SYSTEM STORAGE

Five Potential Sites

UP TO 20 KAF STORAGE POTENTIAL
SPRINGWOOD RESERVOIR VIA KRD
NORTH BRANCH

20,000 ACRE-FEET
SPRINGWOOD – OPTIONS

• USE – 100% FISH FLOWS

• QUANTITY
  • 20,000 ACRE-FEET – DAM

• FILLING
  • GRAVITY FEED FROM KRD CANAL

• RELEASE
  • GRAVITY TO YAKIMA RIVER
THANK YOU!
YBIP Relationships Help Get Critical Work Completed
Tucker Creek Fish Passage and Habitat Improvements

Yakima River Basin Enhancement Project Workgroup Meeting

Jen Nelson (WDFW) & Walt Larrick (KRD Consultant)

December 9, 2020
THE STORY BEGINS IN 2015 WITH THE KRD TRIBUTARY SUPPLEMENTATION PROGRAM

PVC pipe

lower Tucker Creek with both natural & supplemental flow (near I-90)
FISH PASSAGE BARRIER AT THE KRD MAIN CANAL SIPHON- BEFORE

5’ vertical drop

Total vertical drop is approx. 8’ from entrance to exit
Reclamation’s preliminary “Rock Ramp” design

Got so far as a BPA & YN Biological Assessment and an “Essential Fish Habitat” review by NMFS
FISH PASSAGE BARRIER AT THE KRD MAIN CANAL SIPHON- AFTER

still a work in progress as we discover additional design modifications
HPA VIOLATION & FIRE EQUAL OPPORTUNITY
Before

Tore out old culvert & pushed material into channel (right bank)

After

Banks were rebuilt in the former road prism. All slash is new in this photo (view looking downstream)
HPA VIOLATION - 2ND TRIBUTARY CROSSING

Before

Bladed & filled channel (left side of photo)

After

Banks were rebuilt and large wood & slash placed within the channel
(same viewpoint looking across the channel)
DNR crew placing logs in the channel down slope from the road.
obstacle about 200 yds up abandoned road

abandoned road before the 1st ford crossing

looking downstream from 1st road crossing

logs placed at road erosion site
July 16-17 Yakama Nation PIT Tagged & Released 500 Coho Parr Upstream & Downstream of the KRD Canal.

The Plan is to Release in Fall 2021 Adult Spawning Coho into Upper Tucker Creek
ONGOING MONITORING ACTIVITIES

- Electrofishing survey
- PIT tag detection array
- Continuous flow and water temperature
PROPOSED PHASE I HABITAT RESTORATION PROJECT

Double K Retreat & Adventure Center

- add wood & obstruction deflector
- roughen avulsion
- plant native shrubs
- beaver pond (hatchery Coho parr rearing site?)
QUESTIONS?

photos of high-quality habitat in upper Tucker Creek
Upper Yakima Bull Trout redd and juvenile rearing surveys: Scott Kline, William Meyer, Marc Divens, Eric Anderson (ret.)
Upper Yakima Bull Trout Redds
Historical, Recent, Current

- Box Canyon Creek
- Kachess River
- Gold Creek

Redds

period of record  10-yr ave  2020
Box Canyon Creek
Juvenile Rearing Survey 2016-2020

Bull Trout Distribution

Box Canyon Watershed

Bull Trout Distribution

0 1 2 3 4 Miles

fish / 100 m²

2016 2017 2018 2019 2020

All

YOY

KECHESS LAKE

PEEKABOO FALLS
Kachess River juvenile rearing survey 2016-2019
Kachess River juvenile rearing survey 2017-2019
Yakama Nation Bull Trout Restoration and Monitoring Project: Todd Newsome and Russ Byington

Rescue

Rearing

Release
Capture/rescue

Day & Night Rescue Efforts

July-August
Bull Trout growth at La Salle rearing facility 2019-2020

- Kachess BT Released at 150mm @ 36.2g
  - 1,162 rescued
    - 152 released
    - 14% survival
  - 12 held for acoustic tags

- Gold BT Released at 167mm @ 45.3g
  - 107 rescued
    - 78 released
    - 73% Survival
Mark and release procedures

• All Bull Trout were:
  • Pit tagged
  • DNA taken
  • Adipose fin clipped
  • Weighed
  • Measured

• 2 Keechelus Releases
  • Gold Creek Bridge
  • Near Boat Ramp

• 2 Kachess Releases
  • Mouth of Kachess River
  • Mouth of Gale Creek
Release

- 5/26/2020 Keechelus Reservoir
- 5/27/2020 Kachess Reservoir
2020-2021 Adaptive management strategies

- GOAL: increase survival to release by reducing or eliminating cannibalism in captivity.
  - Condense rescue window (<2 weeks)
  - Reduce densities to 300 fish/tank
  - Increase feed rations
  - Introduce live feed later
  - Grade
2020-2021 Rearing

- Kachess Population
  - Tank #1—300
  - Tank #2—302
- Gold Creek Population
  - Tank #1—72

**2021 Spring Rearing and Release Plans**
- Introduce live fry March 2021, 2 months later than 2020.
- Acoustic tag some Kachess Bull Trout for continued USFWS movement study
- Hold up to 100 fish for later summer release into Taneum Creek
- Continue to mark, measure and weight 100% of all Bull Trout Released
2020-2021 Adaptive management strategies

• **GOAL:** increase survival to release by reducing or eliminating cannibalism in captivity.

• Condense rescue window (<2 weeks)
• Reduce densities to 300 fish/tank
• Increase feed rations
• Introduce live feed later
• Grade
Bull Trout trap and haul: USFWS

Number PIT tagged Bull Trout by Location

- Box Canyon Creek
- Bumping Dam
- Clear Creek Dam
- Gold Creek
- Keechelus Dam
- North Fork Tieton Trap
- Tieton Dam

Gold Creek - 2019

- # Bull Trout Transported
- # of Bull Trout Redds

BUREAU OF RECLAMATION
DEPARTMENT OF ECOSYSTEMS
State of Washington
# Bull Trout trap and haul 2020

<table>
<thead>
<tr>
<th>Stilling Basin</th>
<th>Sampling Dates</th>
<th>Observed</th>
<th>Collected</th>
<th>Hybrid</th>
<th>Transported (Detected)</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bumping</td>
<td>7/15, 9/30</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>Deep Creek</td>
</tr>
<tr>
<td>Clear Creek*</td>
<td>6/17, 6/22, 7/6, 7/20, 7/27</td>
<td>12</td>
<td>12</td>
<td>1</td>
<td>3 (2)</td>
<td>NF Tieton, SF Tieton, Indian Creek</td>
</tr>
<tr>
<td>Kachess</td>
<td>6/8, 7/29, 10/19</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Keechelus</td>
<td>9/14, 10/5, 10/19</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>1 (1)</td>
<td>Gold Creek</td>
</tr>
<tr>
<td>Tieton*</td>
<td>6/22, 7/13, 8/5</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>2 (1)</td>
<td>SF Tieton</td>
</tr>
</tbody>
</table>

* Collection only, no snorkeling
Kachess acoustic telemetry

- Objectives
  - Determine habitat use and time of use
  - Spawning run timing (passage at the Narrows)

- Methods
  - Acoustically tagged Bull Trout from Kachess River and Box Canyon
  - Depth and temperature tags

- Current tags in play
  - 2 adult Box Canyon Bull Trout tagged in August at Peekaboo Falls
    - Jesse (12740) & Juno (12742)
  - 2 juvenile Kachess River Bull Trout reared at La Salle (Jeremy & 8370)
  - Deploy more tags in 2021
Kachess acoustic telemetry
Kachess acoustic telemetry

Depth

Celcius

L Kachess Narrows
B Kachess
Kachess acoustic telemetry
Kachess acoustic telemetry

Depth

Celcius

L Kachess Narrows
B Kachess
Kachess acoustic telemetry
Kachess acoustic telemetry

Depth

Celcius

L Kachess Narrows
B Kachess
Questions?

Photo: Courtesy of Zack Mays
Yakima Basin Integrated Plan
Adult Upstream Sockeye Passage Study

December 9, 2020

Presented by:
Richard Visser, Bureau of Reclamation
Tobias Kock, U.S. Geological Study

Project Partners
Yakama Nation
Washington Department of Fish and Wildlife
Washington Department of Ecology
Volunteers
Yakima River Sockeye Passage Study

Goal is to understand adult Sockeye migration in the Yakima River
To Cle Elum Dam

- Passage Issues
  - Diversion Dams
  - Thermal or other Barriers
  - Low River Flows
- False Attraction
- Micro-climate Use (cool water areas)
- Columbia River Stranding or Unsuccessful Migration
- Other Issues

- 2018 Tracking – Roza to Cle Elum Dam (n 20) = 100%
- 2019 Tracking – Yakima Mouth to Roza (n 60) = < 5%
- **2020 Tracking – Yakima Mouth to Roza (n 144)**
- 2021 Tracking – Working on Study Design
Evaluation of Sockeye Salmon Behavior in the Lower Yakima River, Washington

Tobias Kock¹, Brian Saluskin², Mark Johnston², and Richard Visser³

¹U.S. Geological Survey
²Yakama Nation Fisheries
³Bureau of Reclamation

December 9, 2020
Research Objectives

- Determine if elevated summer water temperatures affect sockeye salmon in the lower Yakima River
- Determine if cool water inputs in the lower Yakima River are important to migrating sockeye salmon
- Identify migration impediments or mortality sources, if present
- Determine migration success of adult sockeye salmon from the Yakima River mouth to Roza Dam

Water temperature data collected June 25, 2019
Study Area and Methods

92 fish radio-tagged
144 fish PIT-tagged
Summer Water Temperatures

USGS 12511800 YAKIMA RIVER AT VAN GIESEN BR NEAR RICHLAND, WA

Temperature, water, degrees Celsius

USGS 12511800 YAKIMA RIVER AT VAN GIESEN BR NEAR RICHLAND, WA

Temperature, water, degrees Celsius

--- Provisional Data Subject to Revision ---

Temperature

+ Record has been discontinued at the measurement site.
Daily Sockeye Counts at Prosser Dam
Tagged Fish Leaving the Yakima River

![Graph showing water temperature and number of fish leaving the Yakima River.](image)
PIT-tagging at Yakima River Mouth

WDFW Volunteer Anglers
- 118 fish collected and PIT-tagged
Residence Times at Sites

![Graph showing residence times at various sites]
Temperature Use by Tagged Fish

CHCODEA:9030B

Temperature (°C)

Date

01-Aug
02-Aug
05-Aug
12-Aug
15-Aug
16-Aug
20-Aug
22-Aug
29-Aug
29-Sep
03-Sep
19-Sep
28-Sep
10-Oct
17-Oct
24-Oct
31-Oct

USGS
Temperature Use by Tagged Fish

Direction of movement
Temperature Use by Tagged Fish
Pelican Predation?

Confirmed Pelican Consumption in 2020
- 6 radio-tagged fish released in Yakima River
- 2 PIT-tagged fish released in Columbia River
Dam Passage Delays?
## Migration Success

<table>
<thead>
<tr>
<th>Location</th>
<th>Number of fish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonneville Dam</td>
<td>11,790*</td>
</tr>
<tr>
<td>Prosser Dam</td>
<td>2,549</td>
</tr>
<tr>
<td>Roza Dam</td>
<td>4,379</td>
</tr>
</tbody>
</table>

### Conversion from Prosser Dam to Roza Dam

- 0 of 13 radio-tagged fish released in Prosser Dam forebay
- 21 of 40 PIT-tagged fish released at Yakima mouth
- 10 of 14 PIT-tagged fish released at Bonneville Dam

*Estimate from CRITFC study*
Summary

- Determine if elevated summer water temperatures affect sockeye salmon in the lower Yakima River
  - Sockeye avoid the lower Yakima during warm periods, stage near Columbia River mouth. Evidence of wandering and straying

- Determine if cool water inputs in the lower Yakima River are important to migrating sockeye salmon
  - Sockeye spend little time at sources of cool water in the lower Yakima

- Identify migration impediments or mortality sources, if present
  - Evidence of pelican predation and migration delay at dams

- Determine migration success from Prosser Dam to Roza Dam
  - Some evidence that sockeye fail to arrive at Roza Dam after passing Prosser Dam, magnitude of migration failure unclear
Questions
Yakima River Basin Water Enhancement Project (YRBWEP) Workgroup
Draft Agenda Topics for Meetings in 2021
(For Discussion Purposes Only)

March 10 and June 2 (Virtual meetings planned)
• Draft Watershed Lands Strategy – Next 10 Years
• Groundwater storage
• Water Supply/Flow Framing update
• Sunnyside Diversion Fish Passage Improvements project status
• WIP Modernization and Conservation Plan
• Yakima Delta Restoration Alternatives/Next Steps

September 16 (Toppenish?)
• Washington State Legislature Report – OCR Progress Report
• Lower river update
• Market reallocation study findings
• TBD
• TBD

December 8 (Yakima?)
• 2021 highlights
• Reflections on 2020 and look ahead to 2021 workplan
• YBIP Adaptive Management status
• TBD
• TBD
Meeting Notes
Yakima River Basin Water Enhancement Project Workgroup

December 9, 2020
WebEx Teleconference

Welcome, Introductions and Agenda Overview

Ben Floyd, White Bluffs Consulting, welcomed the Yakima River Basin Water Enhancement Project (YRBWEP) Workgroup members and other attendees. The following notes summarize the YRBWEP Workgroup presentations and public comments. For more information, please see the full presentations available on the Integrated Plan website: Yakima Basin Integrated Plan

2020 Yakima Basin Integrated Plan Highlights Newsletter

Bureau of Reclamation: The YRBWEP Workgroup has been producing the annual YBIP Highlights Newsletter since 2018. This year, the development team used a “flipbook” format for the online version. Hard copies have been mailed to the YRBWEP Workgroup members and alternates. Reclamation, Ecology, Yakama Nation and Outreach Subcommittee have received 100 copies each. If members of the public would like a hard copy, please let Dan Graves know and we will send you one.

Wendy Christensen reviewed the articles in the newsletter and expressed her appreciation for the team that contributed articles, photos and time to review. A lot of effort went into coordinating between all the agencies to provide accurate and concise articles highlighting this year’s progress on several important projects.

The online 2020 Highlights Newsletter Flipbook can be accessed at the this link: 2020 Yakima Basin Integrated Plan Highlights.

Implementation Committee Update

Tom Tebb, Washington Department of Ecology: The Implementation Committee (IC) had a busy spring, summer and fall. The IC has submitted the fiscal year 2021 budget request of $46 million to the Congressional delegation. The IC has also outlined approximately $200 million of potential work available if Congress passes an infrastructure/stimulus package.

Tom thanked the YRBWEP Workgroup Outreach team and IC members who devoted their time to making this a successful year. All communications thus far have been virtual, and The Outreach team is using the virtual platform to begin outreach activities to state representatives in preparation for the ’21-’23 biennial legislative session, which includes the submission of an Integrated Plan capital budget request. Ecology is asking for a $42 million capital budget appropriation and $4.28 million for on-going YRBWEP Phase 2 Sunnyside Division Board of Control conservation work.
Tieton River Fisheries Enhancement and Water Reliability Project – Recent Activity Highlights

Yakima-Tieton Irrigation District (YTID) is studying two project alternatives to improve their canal infrastructure and restore Tieton River for enhanced fisheries: a gravity-fed tunnel, and a Wapatox pumping plant. Both alternatives would be able to feed water to the proposed North Fork Cowiche Creek Reservoir. Rick Dieker, Yakima-Tieton Irrigation District, showed the Workgroup a video describing the proposed alternatives. That video can be found at this link: The YTID Story.

The gravity tunnel alternative includes developing feasibility plans for a new, 5 mile gravity tunnel which would replace the most vulnerable lower half of YTIDs canal. Rick described the tunnel investigations and results to date. The tunnel could convey between 350 and 380 cubic feet per second. Key benefits to the gravity tunnel include:

- No pumping costs
- Low maintenance and high reliability
- Few environmental impacts and mitigation
- Subsurface easements that are easier to maintain
- Affordable without outside support
- Compatible with North Fork Cowiche Creek Reservoir (NFCCR)

The cost for this alternative is $140 million. This estimate does not include construction of NFCCR or repairs to the upper 5-miles of canal.

Rick then described the Wapatox pumping plant alternative. The alternative would move YTID’s diversion to Wapatox, which is at the confluence of the Tieton River with the Naches River. YTID and Reclamation along with Yakama Nation and partners are currently conducting a WaterSMART Pilot Study which includes a survey of Tieton River bathymetry, HEC-RAS modeling to determine habitat suitability, and coordination with Reclamation RiverWARE modeling efforts for other Integrated Plan project alternatives. The WaterSMART Pilot Study would greatly expand water management opportunities and flexibility and provide benefits such as:

- Increased total water supply available
- Improved water management of unregulated Naches River flows
- Provides more water for fish in the Tieton River and prorated water districts
- Improves timing of Rimrock Reservoir releases for habitat flows

Rick described several alternatives for the NFCCR, as well as a short-term solution for increasing the size of French Canyon Reservoir. YTID will continue exploring these alternatives with the goal of selecting a preferred alternative by the end of 2022.

Questions and comments for YTID Recent Activity Update:

Seth Defoe, Kennewick Irrigation District: Are impacts to water temperatures in the lower Yakima River from this project being modeled?
Rick Dieker: Yes, the temperature modeling work will be performed by Reclamation. Details of the modeling work are to be determined. One proposed option is to estimate changes in water temperatures in the Lower Yakima River for alternatives where water is released from North Fork Cowiche Creek Reservoir (NFCCR) for fish benefits in the lower river. Also, Cramer Fish Sciences has already deployed temperature data loggers in the Tieton River this past summer and they are currently collecting temperature data. The temperature data will provide a “baseline” understanding of existing water temperatures in the river and a basis for modeling temperatures under various Wapatox/NFCCR alternatives.

Jeff Tayer, Washington Department of Fish and Wildlife: Jeff thanked Rick and YTID for incorporating the Integrated Plan team into the analysis for these project alternatives. Jeff recognizes that no action on the aged canal is not an option. Therefore, when YTID selects a preferred alternative, Jeff believes the Integrated Plan partnership will be well positioned to aid YTID’s efforts. This is important work. The consequences of failure of the canal would be catastrophic for the riverine corridor below the canal.

Scott Kline, Washington Department of Fish and Wildlife: Rick referenced using two sources if the Fisheries Enhancement alternative is selected. Does this mean YTID would use the Wapatox diversion as well as the existing diversion on the Tieton River?

Rick Dieker: The Tieton diversion would be decommissioned. We currently can only divert water from the Tieton River at the dam. The Wapatox diversion would allow YTID to divert water sourced from both the Tieton and Naches Rivers, (i.e., the two sources).

Upper Yakima Storage Work Status, Next Steps and How Storage works with Conservation

Urban Eberhart, Kittitas Reclamation District: The YRBWEP Workgroup recognizes the need to address climate change as part of the Integrated Plan. Part of addressing climate change includes looking at opportunities to provide ecosystem benefits throughout the basin using all elements of the Integrated Plan.

Urban displayed the storage projects being considered in the Integrated Plan. The success of storage projects requires water conservation; water conservation success requires new storage; and successful habitat restoration needs both. This applies to all elements of the Integrated Plan; each is stronger with the success of the others. For storage projects, we are looking at a 74% increase of winter flow captures and decreased summer diversions. This will provide resilience for forecasted snow reduction due to climate change. Kittitas Reclamation District (KRD) is studying an “Upper System Storage” project to consider in the Integrated Plan Surface Water Storage Element.

As we implement conservation in the upper Yakima River basin, letting the conserved water go down the river with no regulation does not provide benefits. Conserved water should be placed in storage where it can be released down the river at an appropriate time to serve the ecosystem function that the water will be needed for later in the season. One option is to use upper system storage to gravity-fill a future Wymer Reservoir via a tunnel on the downstream end of KRD’s service area. Urban described tunnel alternatives for Wymer Reservoir. KRD could convey via tunnel conserved water or high-flow water into Wymer Reservoir through their canals.
Urban described examples of potential small reservoir sites in the KRD service area, with a focus on the Springwood Reservoir alternative. Springwood Reservoir could store 20,000 acre-feet of water entirely for fish flows. This and potentially other reservoirs could be a tool that Yakima River basin water managers use to release water in a pattern similar to how a historic snowpack melt hydrograph would look.

**Questions and comments for Upper Yakima Storage:**

**Seth Defoe:** Would the KRD diversion at Easton be decommissioned with the alternative diversion option? Will there be any impacts to the tributary supplementation program?

- **Urban Eberhart:** No, KRD supports irrigable areas above the proposed diversion to Wymer. There are key opportunities at that site, including potential upgrades for 12-month operations. There will be no negative impacts to tributary supplementation.

**John Reeves, Lake Kachess HOA:** KRD water diversions are dependent almost entirely on stored water. Is the purpose of this project to provide flexibility with that storage?

- **Urban Eberhart:** We can use our existing infrastructure and capacity to spread water out across the upper basin to make up for lack of snowpack and climate change.

**Aimee Taylor, U.S. Fish and Wildlife Service:** Is KRD concerned about high temperatures due to spreading water on the landscape? Will the water planned for fish flow be artificially warm?

- **Urban Eberhart:** KRD recognizes this concern. We are constantly monitoring temperatures along with several agencies to ensure we’re not putting warm water into streams. The goal is to only use water at optimal growing temperatures for fish. Springwood will be a deep reservoir, and with a low outlet, the released water would likely be quite cool.

Several Workgroup members recognized the valuable forward-thinking nature of this project during comments made via the “chat” function in the meeting.

**YBIP Relationships Help Get Critical Work Completed – Tucker Creek Fish Passage and Habitat Improvements**

Walt Larrick, consultant to Kittitas Reclamation District: Fish passage and habitat improvements along Tucker Creek are examples of the benefits of YRBWEP Workgroup partnerships.

The Tucker Creek watershed is a relatively small upper basin watershed. In the 1930s, construction of the KRD canal blocked fish passage into Tucker Creek. The floodplain near the outlet was modified and surface water within the watershed was lost to groundwater. During dry periods, there would be no water in the creek reaching the Yakima River without supplementation.

The Yakama Nation recognized the habitat potential of the watershed in the early 2000s and came to Reclamation to develop solutions. The team developed concepts, but none were feasible and potential restoration projects were shelved.

KRD began their tributary supplementation program in 2015 which plays a significant role in keeping tributaries flowing, including lower Tucker Creek below the fish barrier. KRD, alongside Trout Unlimited, WDFW, and Reclamation, developed a fish passage structure this year at the canal siphon crossing. The structure will require modification overtime, but there is now passage into Tucker Creek,
which opens a mile of upstream habitat. The stream is now supplemented by flow above the passage structure so that passage may be possible throughout the summer.

Jen Nelson, Washington Department of Fish and Wildlife: Now that fish are returning to the watershed, we need to protect the watershed against habitat degradation. WDFW and the Washington Department of Natural Resources (DNR) received reports of recreational bulldozing in the Tucker Creek watershed. DNR, Yakama Nation, WDFW, and KRD staff all came together to investigate and develop solutions focused on rectifying unauthorized trail-cutting before fall rains and legal processes began. Jen displayed perennial tributary images of unauthorized recreation cutting and bulldozing and how restoration was completed. For example, KRD provided woody debris from maintenance activities for placement in the channel to improve bank stabilization and channel function. The speed and efficiency of this project was remarkable. Within a few weeks of project initiation, areas impacted by unauthorized bulldozing were restored, and upper Tucker Creek was prepared for fall rains, which came mere days after completion.

Walt Larrick: During project execution, the Yakama Nation PIT tagged and released 500 coho upstream and downstream of the KRD canal crossing. The Yakama Nation will release adult spawning coho into upper Tucker Creek in fall 2021 as well. The project partners will conduct ongoing monitoring to learn more about the system with the new modifications and how fish will survive and thrive within it.

The project continues to evolve for habitat enhancement work. The project partners described a phase 1 restoration project near the Double K Retreat & Adventure center, and the landowners have welcomed the projects.

This project is a prime display of the effectiveness and benefits of relationships developed through the Integrated Plan. This is just the beginning of tributary restoration in the upper basin.

Questions and comments for Tucker Creek Restoration:

Urban Eberhart, KRD: Urban expressed thanks to Larry Leach, DNR, Ryan Deknikker and Todd Newsome, Yakama Nation, and Jen Nelson. It was their efforts that made this work possible.

Larry Leach, DNR: Thanks to Ryan and Todd with Yakima-Klickitat Fisheries Project for notifying DNR of the unauthorized bulldozer work. The individual rented the dozer to build these trails on DNR and central cascades lands without permission. Thanks to the great relationships in this group a lot of restoration was done very quickly. Larry appreciates that his staff's first introduction to the Integrated Plan was such a positive one with this project. There are other conservation opportunities on DNR-managed lands and he hopes similar models of collaboration can help on these. This is an exciting project and Larry appreciates the help of everyone involved.

General Public Comments

Chris Maykut, Friends of Bumping Lake: Chris submitted a letter to Reclamation and Ecology which Friends of Bumping Lake signed on to calling for an end to unnecessary high-price storage projects. Chris recognizes the good work coming out of these meetings and is noticing a tenor shift from the Workgroup in regard to the Integrated Plan. He would like Workgroup members to review the letter. The coalition that signed onto the letter believes the projects are too expensive and will not provide the return on investment. The money could be much better spent elsewhere and we need to move on from the three major storage project plans. Chris offered to discuss questions or comments about the letter with Workgroup members. The letter is attached to these notes as Attachment 1.
Ann Lewis, Yakima Basin Coalition: Ann provided a link to an article discussing rock ripples as fish passage. Could using rock ripples replace the wooden fish ladder at Tucker Creek eventually? Lots of other good ideas in this article: The Rancher Trying to Solve the West’s Water Crisis.

Ann also provided the following message for the record:

*I strongly recommend that you all read Eager, by Ben Goldfarb. His subtitle says it all, "The surprising, secret life of beavers and why they matter." I think it could start discussion about ways to help salmon, increase aquifer storage, and help with respect to climate change. The Methow Valley (Kent Woodruff, Methow Beaver Project) has already seen results and there are many Beaver Believers throughout the US with clear scientific data supporting their positive impacts, especially on our de-watering West. Urban, your "smaller" reservoir presentation, Walt L. and others' presentation about Tucker Creek, and Phil R, certainly the ancient rights of Native Americans all came to mind from your December YBIP workgroup meeting, as I read Eager. Please consider including beavers in your work to restore salmon and increase water storage in our Yakima Valley.*

Bull Trout Monitoring Update

Jason Romine, U.S. Fish and Wildlife Service: Despite the adverse working conditions in 2020, the team had a successful field season.

Scott Kline described juvenile bull trout rearing surveys the team is conducting in Box Canyon Creek and the Kachess River. A notable finding is that 70% of bull trout in the Kachess River use a dewatering reach for rearing. Dewatering has been occurring too fast for bull trout to migrate to healthy habitat, increasing mortality. This discovery led to the bull trout rearing and release enhancement project.

Todd Newsome, Yakima-Klickitat Fisheries Program: The Yakama Nation is conducting rescue, rearing, and release operations to improve bull trout survival in these reaches. The effort is led by Yakama Nation and WDFW and is a collaborative effort between many agencies. Fish are rescued from dewatered streams in July and August. Up to 1,200 were brought to the LaSalle (in Yakima) rearing facility, with a goal of releasing at least half upstream into perennial waters. Fish were released into their respective streams this past May. Todd described adaptive management strategies the Yakama Nation is implementing for fish being reared at La Salle.

Craig Haskell, U.S. Fish and Wildlife Service: The USFWS is conducting an upstream passage trap-and-haul program for adult bull trout. Objectives are to collect fish below dams in the upper basin, PIT tag and hold for 24 hours while doing a genetic assessment to determine stream of origin, then transport upstream of dams and monitor behavior with PIT tag arrays. The team has expanded the number of dams where they are collecting fish in recent years.

Aimee Taylor: The USFWS is conducting acoustic telemetry tracking at Kachess Reservoir to understand how fish released in the reservoir move and the conditions affecting their movement. Aimee displayed data from several fish, indicating fish generally spend time upstream of the narrows and that the depth they swim at relates to water temperature and their size.

Questions and comments for Bull Trout Monitoring Update:

Tom Tebb thanked the Yakama Nation, WDFW, Central Washington University, and the USFWS for their collaborative efforts for restoring bull trout in the Yakima River basin.
Jeff Tayer emphasized how much bull trout restoration has increased due to the Integrated Plan. There’s no comparison between before and after the Integrated Plan.

David Ortman, Sierra Club: What authority do state and federal agencies have to enter into a Memorandum of Understanding for the bull trout action plan?

- Wendy Christensen: No specific authority is needed since it’s an MOU. The MOU only memorialized the commitment to work with partners to support the work. There is no legal commitment from an MOU. Only works within existing authority, which lies in the tributary section of the 1994 YRBWEP legislation.

- Mike Livingston: For WDFW, the authorizing statutes are RCW 39.34 and RCW 77.12.230.

Sockeye Monitoring Update

Richard Visser, Bureau of Reclamation: Sockeye were not present in the Yakima River basin for 100 years after dam construction. The Yakama Nation took the lead in 2009 to reintroduce sockeye in Cle Elum Reservoir from which the current reintroduction and monitoring efforts have developed. The goal of the study is to identify adult sockeye migration issues and look for actions to improve migration success.

Toby Koch, U.S. Geological Survey: Toby described study details from 2019 and 2020. These studies focused on passage from the Yakima River delta to Roza Dam. A volunteer team of anglers caught 118 fish at the Yakima mouth, which WDFW PIT-tagged for the monitoring program. In 2020 Sockeye counts at Prosser Dam peaked in early July and late September. Minor peaks were observed during weather patterns that cooled the river temperature. Sockeye avoid the lower river during hot periods and will sit in the Columbia at the mouth of the Yakima and wait until cool water reaches the mouth to migrate upstream.

Toby described observed residence time at cool water sites. The team detects fish as they move past the monitoring sites, but they generally move quickly and have short residence times.

Pelican predation causes issues with migration mortality. The team sees a fair number of fish injuries at Prosser Dam. PIT-tag temperature data indicate that pelicans are preying on sockeye. Toby displayed an example where a tag showed a temperature shock to 34 degrees, which was likely a sockeye inside a pelican. Six tagged fish were consumed in 2020 based on recoveries of PIT tags that had passed through predators.

Richard Visser thanked the USGS for their partnership. The study would not be successful without the partner efforts of USGS, WDFW, and the Yakama Nation. This study is revealing key insights for lower river sockeye migration, and more conclusions will be forthcoming following more data collection and analysis.

Questions and comments for Sockeye Monitoring Update:

David Ortman, Sierra Club: Given the large cost of Cle Elum fish passage which relies on successful sockeye reintroduction, is the Workgroup willing to consider removal of the Lower Snake River dams to improve temperatures to ensure sockeye can migrate to Cle Elum dam?


  https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll7/id/16248. This is outside of the scope of Integrated Plan.
Seth Defoe, Kennewick Irrigation District: Was there any significant behavior between the Chandler Outfall and Prosser Dam?

- Toby Koch: Most residence time detections occurred in the fall. Fish hold at Chandler Outfall and move upstream to Prosser, but nothing noteworthy.

Rachel Little, Benton Conservation District: Could sockeye be moving fast through the lower river just because they are 'late' to migrate?

- Toby Koch: Travel times from Prosser to Roza tend to be quick regardless of month. We can’t say if “lateness” is driving movement speed. It’s more likely related to water temperature. Sockeye are notoriously speedy migrators.

Workgroup Roundtable

Ben Floyd provided two prompts to guide the Workgroup Roundtable:

- One thing you are most pleased to see that happened recently.
- One thing you are hoping for in 2021.

Alex Conley, Yakima Basin Fish and Wildlife Recovery Board: Alex is thankful for the sockeye restoration work, bull trout tracking work, and especially the smolt survival study. Seeing the Workgroup come together around the need for data to address uncertainties is great since this will guide us in the future. For 2021, Alex hopes to see everyone together again in-person and is excited to see the next phases of on-going work.

Arden Thomas, Kittitas County: Arden is pleased to see continued progress in a difficult year with lots of uncertainty. There was a significant scramble at the beginning of the year to figure out safe protocols and balancing work/life from home. We see that progress has been made on long-term projects, and Tucker Creek exemplifies that we are adaptable to new challenges and can do so quickly. The relationships are key. In 2021, Arden is hoping for in-person meetings. Exciting work is going on in Kittitas County including Schaake floodplain restoration project and solutions to the Ringer Reach boat ramp location.

Dave Blodgett, Yakama Nation: Dave appreciates being involved in all the partnerships and getting to know the people in the Workgroup. He commended today’s presenters. He has enjoyed being involved in Implementation Committee presentations.

Dale Bambrick, National Marine Fisheries Service: There are so many exciting things happening. Dale is pleased with progress on the Sunnyside Boom. This will be significantly beneficial to smolt migration. Dale is also pleased with how the Workgroup rallied around the Nelson Dam project. He’s hoping to see the Workgroup wage discussion about power production at Roza and Chandler and hoping this happens before May when Dale retires.

Dave Brown, City of Yakima: Dave is pleased with progress on many fronts. We have lots of balls in the air and we’re handling it well. Looking forward to Nelson Dam progress in 2021.

Wendy Christensen, Bureau of Reclamation: Wendy echoed what others have said. She is most pleased about the work done for fish passage and knowing we are only a few years away from having water run through the structure is very exciting. Happy to see partners come together for success with bull trout and sockeye. For 2021, hoping for more of the same and continuing to work on succession planning and institutionalizing Integrated Plan relationships in the agencies.
Joe Blodgett, Yakama Nation: Being new this past year, Joe was pleasantly surprised by the working relationships that have been sustained. Common goals are accomplished through diligent work. Seeing the habitat restoration in the tributaries and real return of fish into these areas has been very encouraging and is attributed to the work we all do together. For 2021, a lower river focus needs to be emphasized since it’s a key area for all fish migration.

Jaclyn Hancock, Washington Department of Agriculture: Excited to learn from the irrigation districts about their storage project evaluations. Major shifts in runoff timing will require key adaptations. In the coming year, looking forward to seeing next phases of Cle Elum fish passage. It’s a great feat.

Jason Romine, U.S. Fish and Wildlife Service: Thankful for the SVID boom project, which should make a big difference for smolt survival. Thankful for Clinton Wertz who picked up management of Clear Creek Dam fish passage and keeping that momentum alive. Happy to see designs and progress. Nelson Dam will be huge for bull trout and anadromous salmonids. Also pleased with progress on Bateman Island and work with the Yakama Nation and WDFW with rearing and seeing that these reared fish are acting like wild fish. Hope to see some return to normalcy in 2021 and keeping momentum going.

Jeff Tayer, Washington Department of Fish and Wildlife: Jeff is happiest about keeping to the lower river emphasis the Workgroup committed to at the 2019 strategic planning workshop. This includes the SVID boom and Bateman Island projects. Jeff reflected on how many times we must keep coming back to infrastructure. It’s hard to make infrastructure in the river complementary to fish migration. For 2021, Jeff is hoping for removal of Nelson Dam from the river which will keep us out of the loop of trying to continually fix problems at this location.

Lisa Pelly, Trout Unlimited: The last few meetings have been terrific for Lisa. She likes listening to all the good data we’re collecting and all the folks out in the field collecting the data. This is the key - having science behind all the projects we’re doing. Looking forward, Lisa would love to meet in-person and is looking forward to pushing the envelope for bringing more funding to the basin. We have a lot of good projects that need to be funded.

Mike Livingston, Washington Department of Fish and Wildlife: Mike is excited about progress on bull trout. When Mike started as regional director, Erik Anderson noted one of the most important things we can do is to start a fish rearing program. This would raise fish across a critical threshold size which would improve survival in their natural environment. We’re now doing this work and that’s exciting. For next year, Mike is looking forward to the water supply framework discussion and how the results can improve instream flow in the long term.

Melissa Downes, Washington Department of Ecology: Melissa is most pleased by the continued progress given 2020s limitations. It’s amazing to see how much work continued to move forward under very trying circumstances. We are collecting great data. In 2021, Melissa hopes we continue taking care of ourselves and our neighbors and hope for the best with the legislative session.

Rick Dieker, Yakima-Tieton Irrigation District: Rick agreed with everything said so far. Rick is looking forward to modeling and work on storage options. To see progress on storage which includes modeling to help us pinpoint and move other storage options forward would be great. This will help all aspects of the Integrated Plan. Rick also wants to push the envelope and acquire more funding.

Ron Cowin, Sunnyside Valley Irrigation District: Thankful for teamwork as part of the SVID Boom project. Looking forward to getting it done on schedule and providing a report for how it went.
Scott Revell, Roza Irrigation District: Progress on bull trout has been stunning and Nelson Dam has been a real success story.

Seth Defoe, Kennewick Irrigation District: Seth is happy to see heightened attention to issues in the lower river and good data on smolt migration. Seth wants to see this work continue. In 2021, Seth hopes to see progress on these studies and is interested in subordination at Chandler and Roza. These concepts have been on the table for a while and we should have these discussions.

Sid Morrison, Yakima Basin Storage Alliance: On behalf of the Storage Alliance, we look at the date 2021 and are reminded that when Derek Sandison was head of the DOE Columbia River Program he told us to give the Enhancement Program "ten years" to find an answer to the need for water storage in the Yakima Basin. While we see lots of progress on little things since then, the 10 years have gone by with limited progress on the big issue of storing enough water every year to meet the needs of irrigated agriculture. In recent years we have added water for fish to our shopping list since the Yakama Nation has switched from supporting the option of going to the Columbia in short water years to working only in the Yakima Basin. For 2021, it is important to revisit the water supply issue and make something happen. While a variety of potential water storage options are listed, we see a limited amount of effort going into real progress. At the same time, climate change sends more water to the ocean that could be stored and managed to benefit fish, forests, and farms.

Steve Malloch, American Rivers: Steve is grateful that the coalition is hanging together in trying times and continuing to make enormous progress on all fronts. This is the most functional coalition Steve has ever been involved in and he is grateful to be a part of it.

Tom Tebb, Washington Department of Ecology: Tom is thankful for the human capacity and relationships that make this important work happen. For 2021, Tom is hoping for a full Integrated Plan capital budget request including additional funds for Nelson Dam.

Urban Eberhart, Kittitas Reclamation District: Urban thanked everyone for taking the time to participate today. The most rewarding thing this year was seeing all of the successes that are possible up and down the basin because of positive energy created through civil discourse and relationships. It allowed rapid response to unanticipated problems. It is special to be part of something unlike anything else in the United States. For 2021, Urban is looking forward to a healthy federal budget.

Wendy McDermott, American Rivers: For 2020, Wendy was pleased to see the Columbia Basin Taskforce share their agreements on salmon recovery around the entire basin and the four northwest states now have an agreement for moving forward. In the Yakima River basin, we have a jumpstart on this work and we’re a good model for how to work together. Wendy is pleased to see how we’ve taken adaptive management to the human level of how we work together in adverse conditions. In 2021, hoping to get together in-person again and looking forward for a solid plan for the Yakima River delta project. She’s also looking forward to seeing where we can get with federal legislation in the Cle Elum watershed for Wild and Scenic river designation, which will protect our big investments in the watershed.

Urban Eberhart echoed Wendy’s appreciation of the Columbia Basin Taskforce, and noted we should talk about this at a future Workgroup meeting.

Jonathon Kohr, Washington Department of Fish and Wildlife: John thanked everyone for all of the work going on. He enjoyed the shared work in Tucker Creek and proud that we’ve observed redds in Little and Tucker Creeks. This would be unlikely without the tributary supplementation program. In 2021, Jonathon is hoping for more progress on storage projects; we have great ideas on the table. Also looking forward to fish passage at upper Naneum creek complex, Nelson Dam, and a return to normalcy.
Upcoming Meetings

Ben displayed draft agenda topics for 2021 Workgroup meetings. This is only a tentative schedule and not a comprehensive look at topics to cover. Workgroup members are encouraged to follow up with the facilitation team about their thoughts and preferences for future meetings.

Wendy Christensen: We are interested in feedback. We may adjust meetings to address a variety of projects by a variety of partners. We aim to get a holistic look throughout the year. Wendy encouraged participants to forward the 2020 YBIP Highlights Newsletter to others and gave a huge thank you to the Yakama Nation, irrigation districts, her staff, Ecology, and all others who contributed. We are very pleased with this year’s product. Wendy wished the Workgroup happy holidays.

Tom Tebb: We expect Ecology will remain in the telework environment until at least June 2021. Tom is pleased with how we are handling the capacity we have. He is excited about finishing larger scale projects and will be paying closer attention in that realm.

The next Workgroup meeting is scheduled for Wednesday, March 10, 2021. Meeting format will be WebEx teleconference.

Attendance

**Workgroup Members:**
Alex Conley, Yakima Basin Fish and Wildlife Recovery Board
Arden Thomas, Kittitas County
Bret Walters, U.S. Army Corps of Engineers
Dale Bambrick, National Marine Fisheries Service
Dave Brown, City of Yakima
Jaclyn Hancock, Washington Department of Agriculture
Jason McShane, Kennewick Irrigation District and Chair of Lower River Subgroup
Jason Romine, U.S. Fish and Wildlife Service
Jeff Tayer, WDFW and Chair of Habitat Subcommittee
Jerome Delvin, Benton County
Joe Bledgett, Yakama Nation Fisheries
Kathryn Furr, U.S. Forest Service
Larry Leach, Washington Department of Natural Resources
Lisa Pelly, Trout Unlimited
Mike Livingston, WDFW
Peter Dykstra, Plauche & Carr and Chair of Watershed Lands Conservation Subcommittee
Rick Dieker, Yakima-Tieton Irrigation District
Scott Revell, Roza Irrigation District and Chair of Water Use Subcommittee
Sid Morrison, Yakima Basin Storage Alliance
Talmadge Oxford, Reclamation, Columbia-Cascades Area Office
Tom Tebb, Ecology
Urban Eberhart, Kittitas Reclamation District
Wendy Christensen, Reclamation, Columbia-Cascades Area Office
Wendy McDermott, American Rivers
Other Attendees:
Aaron Stockton, U.S. Forest Service
Adam Fyall, Benton County
Aimee Taylor, U.S. Fish and Wildlife Service
Ann Lewis, Yakima Basin Coalition
Ben Floyd, White Bluffs Consulting
Bob Hall, Yakima Basin Storage Alliance
Brady Kent, Yakama Nation
Brian Saluskin, Washington Department of Fish and Wildlife
Bruce Sully, Bureau of Reclamation, Columbia-Cascades Area Office
Bryan Myre, Yakama Reservation Irrigation District
Carolyn Chad, Reclamation, Columbia-Cascades Area Office
Chris Maykut, Friends of Bumping Lake
Chuck Garner, Bureau of Reclamation
Chuck Klarich, Yakima Basin Storage Alliance
Craig Haskell, U.S. Fish and Wildlife Service
Cristy Fiander, Confederated Tribes and Bands of the Yakama Nation
Cynthia Carlstad, Northwest Hydraulic Consultants
Dan Graves, HDR Engineering, Inc.
Danielle Squeochs, Confederated Tribes and Band of the Yakama Nation
Darcy Batura, The Nature Conservancy
Dave Empel, Reclamation, Columbia-Cascades Area Office
Dave Fast
David Blodgett, Yakama Nation Fisheries
David Empel, Reclamation, Columbia-Cascades Area Office
David McKenzie, Kennewick Irrigation District
David Ortman, Sierra Club
Debbie Carlson, Bonneville Power Administration
Edward Lizowski
Elayne Hovde-Knudson, Reclamation, Columbia-Cascades Area Office
Jane Creech, Washington State Department of Ecology
Janine Empel, Reclamation
Janine Empel, Washington State Department of Ecology
Jean Mendoza
Jeanne Demorest, Reclamation, Columbia-Cascades Area Office
Jen Nelson, Washington Department of Fish and Wildlife
Jenna Scholz, HDR Engineering, Inc.
Jim Milton, Bureau of Reclamation
Joel Hubble, Kittitas Reclamation District
John Kohr, Washington Department of Fish and Wildlife
John Marvin, Confederated Tribes and Bands of the Yakama Nation
John Reeves, Lake Kachess HOA
Joye Redfield-Wilder, Washington State Department of Ecology
Kerrie Mathews
Kevin Haydon, Washington Water Trust
Kirstin Stein, Bureau of Reclamation, Columbia-Cascades Area Office
Laine Young, Washington Department of Ecology
Larry Martin, Velikanje Halvorson
Maddie Moore, Washington Department of Agriculture
Marcella Appel, Benton Conservation District
Melissa Downes, Washington State Department of Ecology
Merritt Mitchell-Wajeeh, Mid-Columbia Fisheries Enhancement Group
Michael Callahan, Washington State Department of Ecology
Michelle Capp, U.S. Forest Service
Michelle Cooke, Benton County
Mike Porter, Yakama Nation
Raechel Chandler, Washington Department of Ecology
Richard Visser, Reclamation, Columbia-Cascades Area Office
Rick Evans, Office of Senator Maria Cantwell
Ron Cowin, Sunnyside Valley Irrigation District
Scott Kline, Washington Department of Fish and Wildlife
Seth Defoe, Kennewick Irrigation District
Steve Malloch, Western Water Futures LLC (alternate for American Rivers)
Stuart Crane, Confederated Tribes and Bands of the Yakama Nation
Tim Poppleton, Washington State Department of Ecology
Toby Koch, U.S. Geological Survey
Todd Hunziker, Jacobs Engineering Inc.
Todd Newsome, Yakama-Klickitat Fisheries Program
Tom Appler, Reclamation, Columiba-Cascades Area Office
Tom Myrum, Washington State Water Resources Association
Tyson Carlson, Aspect Consulting
Walt Larrick, Consultant to Irrigation Districts
William Meyer, Washington Department of Fish and Wildlife

Where to Find Workgroup Information

Meeting materials, notes, presentations, and materials submitted during public comment for each Workgroup meeting will be posted on Reclamation’s project website: (http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/index.html). A list of information sources, many available online, is also posted on the website.

If you need help finding an information source, contact those listed at the top of page 1 of these notes or Ben Floyd at White Bluffs Consulting, (509) 539-3366 or ben@whitebluffsconsulting.com.
Attachment 1 – Public Comment from Chris Maykut
Date: December 8, 2020

TO: Department of Ecology
   Bureau of Reclamation - Yakima Workgroup Meeting

We are organizations that have worked hard over years to build and enhance support for the protection of Washington’s wild lands, waters, and endangered species. We are requesting the elimination of Federal and State funding of the Yakima Plan for continued study of uneconomical and environmentally damaging new water storage dams or pumping project in the Yakima River Basin.

SAVE MONEY - No New Bumping Lake Dam

In 2008, the Bureau of Reclamation presented four pages summarizing why it eliminated the Bumping Lake Enlargement alternative from further consideration in its Yakima River Basin storage study (pages 2-128 to 2-131). In addition to flooding ESA listed spotted owl ancient forest habitat and ESA listed bull trout habitat, the Bureau concluded that the amount of additional stored water available in average water years would not represent a meaningful amount to exchange with the three reservoirs in the upper Yakima River basin to warrant further consideration of this alternative. *Yakima River Basin Water Storage Feasibility Study Final Planning Report/Environmental Impact Statement, released by the Bureau of Reclamation December 19, 2008 (Final PR/EIS).* We support the Bureau’s decision and strongly urge that no further federal or state study funding on the Bumping Lake Enlargement be spent. Dropping the new Bumping Lake Dam project and on-going studies would allow the ancient forest around the existing Bumping Lake to be added to the William O. Douglas Wilderness.

The Washington State Water Research Center’s (WRC) 2014 Benefit/Cost Analysis Report on the Yakima Plan to the Washington Legislature determined that a new Bumping Lake Dam would have a B/C ratio of 0.18 (18 cents of benefits for every dollar spent) (page iii). The WRC also calculated that the damages from lost ancient forest flooded by the project at $1.85 billion (page 108).
SAVE MONEY - No New Wymer Dam
The 2012 Ecology/Bureau Yakima Plan Final Programmatic EIS findings regarding greater sage-grouse and the Wymer Dam site (between Ellensburg and Yakima), include:

- Wymer Dam would inundate a large area of shrub-steppe habitat used by the greater sage-grouse, a State candidate species. (Ex. Summary p. xiii)
- 15,000 acres in the Yakima River canyon, including the valley bottom and eastern slopes, from the Yakima River to Interstate 82 (I-82), are composed primarily of basalt cliffs and shrub-steppe vegetation. In addition, the Yakima Canyon riparian area provides salmon, steelhead, and resident rainbow trout habitat. The area is important because of documented greater sage-grouse breeding areas and golden eagle nest sites. (page 2-30)
- A second population of 213 sage-grouse is on the YTC in Kittitas and Yakima Counties adjacent to the proposed Wymer site (WDFW, 2011). (page 3-60)
- Data from radio-tagged greater sage-grouse indicate that they use habitat in the Wymer Reservoir site. The shrub-steppe habitat in the project area is within the Umtanum Ridge Management Unit identified by the State as a potential expansion and reintroduction area for greater sage-grouse (see Figure 3-5) (Stinson et al., 2004). (page 3-60)
- Construction at Wymer Dam would occur in habitat for greater sage-grouse, a State candidate species, and the threatened Middle Columbia River steelhead and bull trout in the Yakima River. Human activity and noise associated with construction of new access roads, the reservoir and dam, and water conveyance facilities would disturb or displace listed wildlife such as greater sage-grouse in the vicinity. (page 4-32)
- Greater sage-grouse, a State candidate species, use shrub-steppe and, to a lesser extent, grassland and agricultural areas. Loss of this habitat at the Wymer site would exacerbate ongoing losses in the area resulting in potentially substantial impacts to this species. (page 5-67)
- Reclamation and Ecology acknowledge that construction of the [Wymer] reservoir would cause potentially significant impacts to shrub-steppe habitat in the Yakima River basin and would reduce habitat for the greater sage-grouse. (page CR-13)

The (WRC) 2014 Benefit/Cost Analysis Report on the Yakima Plan determined that a new Wymer Dam would have a B/C ratio of 0.09 (nine cents of benefits for every dollar spent) (page iv). Dropping the new Wymer Dam project and on-going studies would save desperately needed greater-grouse habitat in Eastern Washington.

SAVE MONEY - No Lake Kachess Pumping Plant Project
Yakima irrigators have not met water conservation targets established by Congress in 1994. But Yakima irrigators continue to push for a pumping plant project to drain 200,000 acre-feet of water from Lake Kachess.
This ill-conceived project would further drain Lake Kachess, threatening ESA listed bull trout in Lake Kachess and Box Canyon Creek and reducing recreational opportunities. In 2019, Congress passed the John D. Dingell, Jr. Conservation, Management, and Recreation Act (P.L. No. 116-9), which authorized the Bureau to enter into an agreement with a “proratable irrigation entity in the Yakima River basin for the non-Federal financing, construction, operation, or maintenance of the Drought Relief Pumping Plant.” Sec. 8201(c)(1)(a).

However, no irrigation district has come forward with a written guarantee that it would fund this project, and the Washington State Legislature has already spent state taxpayer money for this project. Although the Roza Irrigation District (RID) would be the prime beneficiary of a Kachess Pumping Plant project, Ecology just award the RID a $1,000,000 grant to fund a feasibility report for a NEPA process (Agreement No. WRYBIP-1921-RozID-00015).

The (WRC) 2014 Benefit/Cost Analysis Report on the Yakima Plan determined that a Lake Kachess Pumping Plant Project would have a B/C ratio of 0.46 (46 cents of benefits for every dollar spent) (page iv).

In 2013, the Washington State Legislature agreed to pay half the cost of the multi-billion dollar Yakima Plan and in 2019, Congress authorized the Yakima Plan, which includes the above three projects. Instead of further funding the uneconomical and environmentally damaging projects, we urge Congress and the State Legislature to help ensure that Yakima irrigation districts achieve the water conservation targets established by Congress in 1994, over a quarter century ago. It is now time to save taxpayers money and stop funding these environmentally destructive projects.

Sincerely,

Rick McGuire, President
Alpine Lakes Protection Society
Seattle WA

Noah Greenwald, Endangered Species Program Director
Center for Biological Diversity
Portland, OR

Brock Evans, Past President
Endangered Species Coalition
La Grande, OR

Federation of Western Outdoor Clubs
George Milne, President
Oak Grove, OR

Chris Maykut, President
Friends of Bumping Lake
Seattle, WA
Christine L. Johnson, Board President
Kachess Community Association
Seattle, WA

Terry Montoya, Pres/Director
Kachess Ridge Management Association
Easton WA

Judy Hallisey, President
Kittitas Audubon Society
Ellensburg, WA

Lindsay Frickle, Executive Director
Issaquah Alps Trails Club
Issaquah, WA

Dana Ward, Conservation Committee Chair
Lower Columbia Audubon Society
Richland, WA

Mark Boyar, President
Middle Fork Outdoor Recreation Coalition (MidFORC)
Seattle, WA

Philip Fenner, President
North Cascades Conservation Council
Seattle, WA

John Reeves
Save Lake Kachess
Fall City, WA

Erik Molvar, Executive Director
Western Watersheds Project
Laramie, WY

George Nickas, Executive Director
Wilderness Watch
Missoula, MT

John de Yonge, President
Wise Use Movement
Seattle, WA

cc: WA Congressional Delegation
    WA State Senate Ways and Means Committee
    WA State House Capital Budget Committee