Priest Rapids Coordinating Committee (PRCC) Meeting

In Person at Wanapum Hydro Office Building and Microsoft Teams
Tuesday, September 22, 2026
1:00 p.m. to 4:00 p.m.

Meeting Minutes

PRCC Representatives, Alternates, and Facilitation

Larissa Rohrbach, Anchor QEA, Facilitator	Scott Carlon, Emi Melton (Alt), NMFS
Kristi Geris, Anchor QEA, Technical Support	Clayton Buck, Nathan Buck, Wanapum
Tom Lorz, Pete McHugh (Alt), CRITFC for CTUIR	Chad Jackson, Andrew Murdoch (Alt), WDFW
Dennis Moore, John Arterburn (Alt), CTCR	Bill Gale, USFWS
Tom Dresser, Rod O'Connor (Alt),	Keely Murdoch, Brandon Rogers (Alt), YN
Tim Taylor (Alt), GPUD	

Meeting Attendees

Larissa Rohrbach, Anchor QEA, Facilitator	Tim Taylor, GPUD
Kristi Geris, Anchor QEA, Technical Support	Chad Jackson, WDFW
Pete McHugh*, CRITFC for CTUIR	Katy Shelby†, WDFW
John Arterburn*, CTCR	Thomas Desgroseillier†, WDFW
Tom Dresser, GPUD	Bill Gale, USFWS
Rod O'Connor, GPUD	Keely Murdoch, YN

*Joined virtually.
†Joined virtually for Item III.

Action Items

- Anchor QEA will reach out to N. Buck (not in attendance) to obtain Wanapum's approval of the PRCC August 25 minutes. *(Note: N. Buck approved the minutes via email on September 23, 2026.)*
- The Confederated Tribes of the Colville Reservation (CTCR) will provide an official PRCC representation designation letter for the administrative record. *(This item is ongoing.)*
- L. Rohrbach and Tracy Hillman (Habitat Conservation Plan Coordinating Committees [HCP-CCs] Chair) will coordinate to draft a joint PRCC/HCP-CCs

letter to National Marine Fisheries Service (NMFS) concerning NMFS staffing constraints and the resulting inability to participate in PRCC and HCP processes.

- Grant PUD will review and respond to the Joint Fisheries Parties' (JFP's) revisions to the draft statement of agreement (SOA) S*urvival Evaluations – Path Forward*. *(This item is ongoing.)*
- Katy Shelby (Washington Department of Fish and Wildlife [WDFW]) will provide a revised PRCC No Net Impact (NNI) Project Specification Sheet, *Characterizing Adult Spring Chinook Holding Habitat to Support Telemetry-Based Evaluation of Prespawn Mortality in the Wenatchee Basin* (WDFW's Holding Habitat Study), to show WDFW in-kind contributions to the proposed work. *(Note: A revised specification sheet was distributed to the PRCC by K. Geris on September 24, 2026.)*
- L. Rohrbach will ask T. Hillman (PRCC Habitat Subcommittee [PRCC HabSC] Facilitator) whether WDFW's Holding Habitat Study would be a candidate for funding through the Habitat Funds.
- C. Jackson will confirm with K. Shelby when a PRCC decision is needed on WDFW's Holding Habitat Study PRCC NNI Funding Request.
- Anchor QEA and T. Hillman will start discussing proposed meeting dates to accommodate the 2026 holiday season for discussion among the PRCC and HCP-CCs during the October 27, 2026, meetings. *(Note: These discussions are underway.)*
- Anchor QEA and T. Hillman will coordinate regarding scheduling Subyearling Joint Session 17 on October 27, 2026.

Review Items

- The revised draft SOA *Survival Evaluations – Path Forward* was distributed to the PRCC by K. Geris on April 27, 2026.
- A revised PRCC NNI Project Specification Sheet for WDFW's Holding Habitat Study was distributed to the PRCC by K. Geris on September 24, 2026.

Decisions and Approvals

- None.

I. Welcome, Announcements, Agenda Review, and Meeting Minutes Approval

L. Rohrbach welcomed the PRCC and reviewed the agenda. The agenda was approved by all members in attendance.

L. Rohrbach acknowledged that NMFS would not be participating in today's meeting, but Anchor QEA will continue sending the NMFS representatives PRCC materials.

The draft PRCC August 25 meeting minutes were distributed to the PRCC by K. Geris on September 8. No edits were received from PRCC members. There was one administrative edit. The revised minutes were distributed on September 15. The August 25 minutes were approved by members who attended that meeting. Anchor QEA will reach out to N. Buck (not in attendance) to obtain Wanapum's approval of the minutes. *(Note: N. Buck approved the minutes via email on September 23, 2026.)*

II. Actions Items Review

Action items from the PRCC August 25 meeting and follow-up discussions were as follows *(Note: Italicized text corresponds to agenda items from the August 25 meeting.)*:

- *The CTCR will provide an official PRCC representation designation letter for the administrative record.*
  This item is ongoing.
- *Anchor QEA will follow up with NMFS to obtain their vote on the PRCC July 28 meeting minutes.*
  S. Carlon provided NMFS approval of the minutes via email on August 26, 2026.
- *Anchor QEA will coordinate with Tracy Hillman (HCP-CCs Chair) regarding a joint PRCC/HCP-CCs letter from the PRCC Facilitator and HCP-CCs Chair about the NMFS staffing constraints and resulting inability to participate in PRCC and HCP processes.*
  L. Rohrbach said this morning, the HCP-CCs expressed support for this joint letter. The HCP-CCs have an action item to provide a bullet list of what to include in this letter. K. Murdoch said she also suggested specifying tasks that each committee needs NMFS to be present for. B. Gale envisioned opening the letter with language from the HCPs and Salmon and Steelhead Settlement Agreement (SSSA) regarding expectations for participation. T. Dresser asked whether the HCP-CCs discussed who to address this letter to. K. Geris said Sam Rauch.[1]
  T. Dresser encouraged all Parties to individually reach out to congressional contacts at the highest level possible. B. Gale said the idea that all entities are doing outreach was discussed, but the HCP-CCs also thought a collective letter from the HCP-CCs and PRCC will supplement these efforts. L. Rohrbach said, also, preparing a joint letter from the HCP-CCs Chair and PRCC Facilitator avoids a perception of conflict created for individual Parties. L. Rohrbach said she will coordinate with T. Hillman to draft a joint PRCC/HCP-CCs letter to NMFS.
- *Grant PUD will review and respond to the JFP's revisions to the draft SOA* Survival Evaluations – Path Forward*.*
  This item is ongoing.

[1] NMFS Deputy Assistant Administrator for Regulatory Programs in Washington D.C.

- *Grant PUD will provide all dead-fish-release detections on any array deployed during Grant PUD's 2026 Smolt Survival Study.*
  This will be discussed during today's meeting.
- *Grant PUD will provide steelhead travel time by reach for Rock Island-released fish, broken down by kilometer per day (km/day), as presented on slide 15 of the presentation* Juvenile Chinook Salmon and Steelhead Survival through the Priest Rapids Project in 2026.
  This will be discussed during today's meeting.

III. WDFW NNI Funding Proposal

A PRCC NNI Project Specification Sheet for WDFW's Holding Habitat Study (Attachment A) was distributed to the PRCC by K. Geris on September 10. C. Jackson said this NNI funding request is for work that is complimentary to efforts by the WDFW Science Division toward an innovative way to evaluate prespawn mortality in the Wenatchee Basin.

Katy Shelby (WDFW), Principal Investigator for the proposed habitat study, shared on Microsoft Teams the presentation *Characterizing Adult Spring Chinook Holding Habitat to Reduce Prespawn Mortality* (Attachment B), which was distributed to the PRCC by K. Geris on September 23. Discussions were as follows.

Slide 12 – First-Year Telemetry Results

R. O'Connor noted that prespawn mortality for Nason Creek and Chiwawa River are different than the sum of All Study Fish, and he asked why the latter is higher than the two target rivers. Tom Desgroseillier (WDFW), lead and expert for the telemetry study linked to the proposed habitat study, explained that when monitoring survival of fish above Tumwater Dam, not all fish enter the Nason or Chiwawa. Some die in the Wenatchee River. These mortalities are not attributed to the spawning areas in Nason and Chiwawa. Some fish also drop back below Tumwater Dam and enter Leavenworth National Fish Hatchery. The study only accounts for where fish die and attributes mortality to that location.

Slide 20 – Field Methods

R. O'Connor said the Yakama Nation (YN) does a lot of habitat work, and he asked whether WDFW's proposed field methods comport with or differ from the YN efforts. K. Murdoch asked whether this is in reference to the habitat work the YN did years ago associated with Coho Salmon or the reach assessments the YN has conducted in many of the reaches of the Wenatchee basin. R. O'Connor said during past White River discussions, the YN produced a comprehensive report. Is there a similar report that covers WDFW's proposed areas? K. Murdoch said the YN's habitat crew has completed reach assessments in Nason Creek, but she is unsure about Chiwawa. She does not

believe the assessments were at this level of detail; she believes these were at a larger scale, such as number of pools, erosion, and riffles. She offered to look into what is available to share.

T. Desgroseillier said this is something WDFW considered—which habitat data are available and suitable for use. There is a real need for collecting data close to the timing of when fish are using the habitat. There needs to be a prescriptive approach to produce outputs, such as, at these velocities, fish are using these areas at this depth. There are already great data; just this year, he noticed a massive shift in holding areas that is believed to be due to the winter floods last year. WDFW wants to get out there to see what has changed. For this reason, past data would not be as helpful. Past data may be appropriate in areas that are more longstanding. The proposed methods are patterned after U.S. Forest Service Level II Aquatic Habitat Surveys. K. Shelby added that the interannual variability is important. Date of fish use will be incorporated, which is an annual measurement as well. The model uses each year's telemetry data as fish use intensity and pairs this with habitat data to determine whether there is a relationship. This is another reason behind the target habitat locations.

Slide 26 – Questions

R. O'Connor asked how WDFW might establish a mechanism for linking adult survival with habitat use. If this project were funded, and the data were collected, how would WDFW do that piece of it? K. Shelby said Jason Neuswanger (WDFW Quantitative Ecologist) is leading this analysis. J. Neuswanger will be looking to identify causal mediators of prespawn mortality. The study treats habitat use as a mediator. The model can identify whether habitat use contributes to certain stressors. The data can be used to describe physical conditions that are associated with adult prespawn mortality or survival.

J. Arterburn said the CTCR are excited to see this work WDFW is doing, and he asked how WDFW plans to take action on this. It seems there is this effort to research and find parameters of habitat, but how does one then manipulate the habitat to create an effective change. It seems this effort is a step short of generating actions. Does WDFW have plans to work with habitat practitioners to develop a toolbox? K. Shelby said this project focuses on what habitat is good for survival. There are no plans to do any on-the-ground restoration or monitoring of restoration sites. The purpose is to inform future restoration projects. Once this study is over, WDFW will create reports and make these available to restoration practitioners to use when creating their projects.
T. Desgroseillier said one thing related to actionable management is that prior work under the Relative Reproductive Success (RRS) study in the Wenatchee Basin have

long suggested that density and holding habitat may be limiting in the Lower Chiwawa,[2] and this habitat study could get to test this. It will not provide a design to fix any areas, but it will show what in these areas has been observed to be working (to support survival). A design team would be needed to understand what a fix would physically look like in a stream. He also wanted to highlight that the DaBOM modeling used for this study helped determine that prespawn mortality was also a problem throughout the Upper Columbia River Basin and not just in the Wenatchee Basin. So, this modeling can be applied to other locations.

J. Arterburn asked how WDFW plans to deal with the results of the wildfires and impacts to this study. There was a big wildfire in the Chiwawa Basin that will have ramifications over the next few years and will potentially create a set of difficult-to-repeat results. T. Desgroseillier agreed: this year there was a large wildfire in the region, resulting in limited access to the Chiwawa River. He understands there is access now, but it is still difficult. He has not seen the area, so he is unsure how safe it is. How WDFW is going to deal with this is a great question, and he cannot answer this because he does not know what has changed. He knows a lot has changed in the Entiat River from that wildfire, and it could be the same in the Chiwawa. Would it be impactful? Yes. Things like the effects of sedimentation affecting prespawn mortality—WDFW is thinking about this.

J. Arterburn said the spring Chinook Salmon population is mostly hatchery fish, and he questioned whether the selection of habitat-by-hatchery fish is not just a fitness issue versus actually being habitat or environmentally driven. T. Desgroseillier said it could be. The study includes bioenergetic work, and measuring lipid content can be included as a covariate. He is also looking at natural-origin and hatchery-origin fish separately to measure mortality rates independently. Also, regarding arrival timing at Tumwater Dam, perhaps the earlier fish have higher mortality because these fish wait longer to spawn. These questions are more reasons for a 5-year study, in case there are more fires or more time is needed to evaluate all of this.

T. Taylor said these fish are collected at Tumwater Dam, radio tagged, released, and then tracked. K. Shelby said this is correct. T. Taylor said, then, it seems these are two stressor events prior to collecting most prespawn data, and he asked what processes are in place to separate these potential stressors from prespawn mortality above Tumwater Dam. T. Desgroseillier asked whether T. Taylor is referring to tag effects. T. Taylor said yes and stress of navigating Tumwater Dam separately. T. Desgroseillier said tag effects were considered when designing the study. Literature was reviewed about holding and tagging studies in the Yakima River Basin and Cle Elum Reservoir

[2] T. Desgroseillier later clarified via email that prior work has shown a lower reproductive success rate associated with plane bed habitats, which are commonly associated with the Lower Chiwawa.

that found concerning results with tagging, including mortality. WDFW decided to conduct their own study where fish were held at Chiwawa Hatchery a year prior. The study tested tagging methods and determined that a hatchery was a poor place to do this work because of disease transmission issues. WDFW ended up implementing a double-tag study using PIT[3] and radio telemetry. Based on this tracking information, he does not believe tag-induced mortality is at play. If it were, this would likely be taken out of the equation (because of fish dying) before fish enter the Nason or Chiwawa. Regarding effects of Tumwater Dam, the current study has collected some rich data creating a lot of questions. Fish have been observed falling back past Tumwater Dam, and some have had trouble negotiating the dam. This is the first year the study has evaluated passage at Tumwater Dam, so this dataset is not yet complete. WDFW is also monitoring passage at Dryden Dam, but there are no clear answers at this point.

T. Taylor asked whether the next phase of the study is using the DaBOM model (which is based on PIT-tagged fish) and whether it is possible to estimate prespawn mortality of those PIT-tagged fish compared with radio telemetry data to get a baseline effect from there, with and without radio telemetry. T. Desgroseillier said it is possible. He explained, however, that BPA[4,5] is a flat funding organization that allowed WDFW to research some critical uncertainties. Part of this process included PIT tagging at Priest Rapids Dam (PRD) and running the DaBOM model for 4 years. To do radio telemetry, this first part has to end, so the two are not happening concurrently. WDFW could rerun the DaBOM model from Tumwater Dam exclusively, based on PIT tags, and calculate survival as T. Taylor described and compare it to survival calculated from radio telemetry. T. Taylor clarified that he recognized that spring Chinook Salmon tagging at the Off-Ladder Adult Trap (OLAFT) for the DaBOM model had ceased, and he was wondering if this was needed for the proposed analysis.

B. Gale said this presentation (Attachment B) will help with further review of the NNI specification sheet (Attachment A), but he has a few initial thoughts to share. First, U.S. Fish and Wildlife Service (USFWS) has some concern that the results are going to yield correlations not causal determinations and habitat factors could be spuriously correlated prespawn mortality. USFWS needs to understand more about how the data will be analyzed to decide whether collection is worthwhile. He and his habitat staff may reach out with questions. Second, he thought reach assessments for both drainages have recently been completed, and he would like to look further into this. Third, the NNI specification sheet (Attachment A) shows leverage of BPA funds, which is great, and he asked whether WDFW is also providing in-kind contributions. He guessed WDFW could show more leverage in in-kind contributions, and he encouraged WDFW to do this.

[3] Passive integrated transponder
[4] Bonneville Power Administration
[5] BPA Project 2010-034-00 funded the radio telemetry study linked to this proposed habitat study

T. Desgroseillier asked whether this is a requirement or something the PRCC would like to see. B. Gale clarified that he was speaking for himself. T. Dresser said there is no formal protocol that a project must have in-kind contributions or a cost share, but it looks good, and he agrees with B. Gale's comments that it is important to highlight. K. Shelby said she can provide a revised NNI specification sheet to show WDFW in-kind contributions to the proposed work. *(Note: A revised specification sheet was distributed to the PRCC by K. Geris on September 24, 2026.)*

J. Arterburn said a couple of agencies have completed imaging flights in the basin, and if WDFW can apply the habitat study's findings to these flight datasets, it would expand the value across the rest of the basin. This would not be an exact fit because these flights were completed at a different time and place, but connecting the datasets could be useful. K. Shelby will look into this, but she is currently planning on using three different types of temperature data: 1) temperature tags; 2) HOBO data loggers; and 3) light detection and ranging (lidar). J. Arterburn asked whether WDFW can correlate HOBO signals with fish signals to look at the differential experience in fish in static placement. The CTCR would be interested in these data.

P. McHugh thanked K. Shelby and T. Desgroseillier for the presentation and said the CRITFC for CTUIR[6] have no further questions at this time.

K. Shelby and T. Desgroseillier left the meeting.

PRCC Discussion

L. Rohrbach asked for preliminary reactions.

T. Dresser said this is a great proposal, but Grant PUD believes it belongs in the PRCC HabSC because this is a habitat project and the data should go to the experts closer to this work. He would need to take this proposal to his PRCC HabSC representatives for review anyway, which would just tie up resources.

K. Murdoch said the YN is not opposed to sending this proposal to the PRCC HabSC, but it strikes her as a PRCC HabSC and PRCC Hatchery Subcommittee (HSC) interaction study. K. Shelby had shared graphs for spawner density, which are driven by the hatchery programs, and to the extent that the PRCC HSC can manage density with hatchery projects, she sees this proposal bridging both subcommittees. This issue of prespawn mortality in the Wenatchee Basin is something managers have been wrestling with for a couple of decades, and the RRS study hones in on the magnitude. Where it is occurring, why is it so high, and what can be done about it is still not fully understood. The PRCC HSC has collectively grappled with this, and the YN appreciates

[6] Columbia River Inter-Tribal Fish Commission for the Confederated Tribes of the Umatilla Indian Reservation

that people are trying to answer these questions. If Grant PUD feels strongly that this belongs in the PRCC HabSC, she asked whether funding could be a cost share between the PRCC HabSC and PRCC HSC.

T. Dresser said it is not about NNI funds; it is about the PRCC HabSC knowing best about habitat projects in the Nason and Chiwawa. B. Gale said USFWS is supportive of sending this to the PRCC HabSC. K. Murdoch said she is not convinced this is a habitat issue alone. In the PRCC HSC, different prespawn mortality is observed in wild versus hatchery fish. She questioned whether this is a hatchery effect or how much is this habitat-related. The data from this study would inform both.

B. Gale reiterated USFWS's concerns about only seeing this small piece of the study without any idea about the other covariates, how the data will be analyzed, and how the final results will be achieved. B. Gale said Tracy Bowerman (USFWS PRCC HabSC Representative) had several other concerns. USFWS is noting that this study is not just focusing on habitat and is concerned about the possibility of spurious correlations by the way the data are collected. K. Murdoch said the YN is less concerned about distinguishing correlation from causation; just understanding correlation is important.

C. Jackson said, regarding USFWS's concerns, the PRCC would receive everything, including the habitat database, analysis of all variances, and final reports. This is a complimentary effort and a component in a larger project. He decided to present this proposal to the PRCC, per the latest NNI funding guidance,[7] because he believes it fits well here and there are limitations to use of the Habitat Funds. WDFW understands PRCC members may need to consult with their respective PRCC HabSC members. If the decision is to move this proposal to the PRCC HabSC, he can inquire about this internally. However, he believes this proposal is akin to when the PRCC funded the screening project in the Wenatchee Basin tributaries, and to the habitat work that Realtime Research (RTR) does as part of avian predation monitoring. K. Murdoch also recalled the WDFW PIT Barge to evaluate overwintering survival of juveniles that she believes was co-funded as a cost share by NNI and Habitat funds.

R. O'Connor said this proposal seems to be within the framework of how BPA views this project, and it seems like a compelling add-on, but he asked whether this is not an option for BPA funding. C. Jackson said no, had there been funding that fit the scope, maybe; but as T. Desgroseillier said, the overall mark-recapture study had to end the spring Chinook Salmon tagging at the OLAFT, and addition of the habitat portion apparently did not align with BPA's guidelines.

[7] Distributed to the PRCC by K. Geris on October 22, 2024.

J. Arterburn said the CTCR view this as basic research, and he believes it would discount value and outcome of this by pigeonholing it as a habitat project. He believes at some point it may produce tangible habitat restoration options, and then those options should go to the PRCC HabSC. He asked where basic research fits, and L. Rohrbach said she believes it can be covered under the PRCC NNI fund.

B. Gale said he likes the cost-share idea and putting this in front of the PRCC HabSC for review and consideration for funding. C. Jackson suggested that L. Rohrbach ask T. Hillman (PRCC HabSC Facilitator) about whether WDFW's Holding Habitat Study would be a candidate for funding through the Habitat Funds. B. Gale said he is interested in understanding whether the PRCC HabSC sees value in this information or not, and he reiterated USFWS's concerns about the analysis. C. Jackson said J. Neuswanger can attend a future meeting to field questions about the analysis component.

K. Murdoch said if the PRCC HabSC does not find this work appropriate for Habitat Funds, then the PRCC needs to reconsider this for NNI funds. She believes this fits with NNI funds, both, or a cost share. This is important work that needs to be funded. She also believes the results would be beneficial to all subcommittees. C. Jackson believes K. Shelby would be supportive of presenting the results to all subcommittees.

L. Rohrbach summarized that she will first discuss with T. Hillman about whether this proposal fits within the PRCC HabSC and then possibly have J. Neuswanger present on the analysis portion of this work, depending on the committee's interest. This agenda topic will be carried forward to next month.

T. Dresser reiterated that this belongs in the PRCC HabSC and he does not want to tie up resources in the PRCC with a cost share between funds. Focus needs to be on survival evaluations. K. Murdoch asked how funding this proposal would interfere with the survival study. T. Dresser said that if NNI funds are used, then contracting and administration tasks would require time; additionally, cost sharing between PRCC and PRCC HabSC would mean Grant PUD has to manage and track two separate contract administrative processes. In the past, there was a similar proposal that resulted in a lot of back and forth internally.

T. Dresser agreed this is a great proposal. He suggested sending this to the PRCC HabSC and advising those representatives to approve it. B. Gale said before he advises his representative to approve anything, he wants to know whether the PRCC HabSC has any concerns with this proposal. C. Jackson said he also is interested in what T. Hillman has to say. T. Dresser stated that he had reservations about asking a subcommittee facilitator where a proposal fits because the PRCC is the parent body and advises the subcommittee per the SSSA. L. Rohrbach explained that part of her

interest in discussing this with T. Hillman is to better understand how the PRCC HabSC and Habitat Funds work.

L. Rohrbach asked about WDFW deadlines for a decision on this proposal. C. Jackson guessed by the end of the year, but he will confirm this with K. Shelby.

IV. 2026 Smolt Survival Study Update

R. O'Connor shared on Microsoft Teams 2026 Smolt Survival Study dead fish and travel rates slides (Attachment C), which were distributed to the PRCC by K. Geris on September 23. Discussions were as follows.

Dead-Fish-Release Detections

R. O'Connor recalled Grant PUD's action item to provide all dead-fish-release detections on any array deployed during Grant PUD's 2026 Smolt Survival Study. He said there were a couple of loggers in the immediate PRD tailrace where the dead fish were released, so there were several detections there (Slide 1). There was also one fish detected at Vernita Bridge (Slide 1), which is located about 9 miles downstream of PRD (Slide 2). L. Rohrbach said it is interesting there was only one fish detected at Vernita Bridge and asked, if this fish could have been preyed upon, whether that tag could be in a predator's stomach. R. O'Connor agreed that it could be.

Travel Rates

R. O'Connor recalled Grant PUD's action item to provide steelhead travel time by reach for Rock Island-released fish, broken down by km/day. R. O'Connor said there were relatively slow travel rates from Cresent Bar to Wanapum Dam, these increased to Mattawa, then slowed down to PRD, then sped up past PRD (Slide 3). These were fairly similar between species (Slide 3).

General Update

R. O'Connor said since the last meeting, Grant PUD met with Rebecca Buchanan (Buchanan Statistical Consulting LLC). She is on track with the statistical analysis, has the data she needs, and is focusing on validating the data and working through the model assumptions. She is comparing what was actually done to what was in the study plan to verify whether study assumptions are still valid. She said results will be available in October. Grant PUD has another meeting with R. Buchanan before the PRCC October 27 meeting, and R. O'Connor hopes to be able to run through data validation checks during the October meeting. LGL Limited is still working on their pieces.

K. Murdoch asked whether R. Buchanan will be presenting results in October. R. O'Connor said R. Buchanan is unavailable for the October meeting but plans to put something together for Grant PUD to present in October, and she plans to attend the PRCC November conference call. K. Murdoch asked whether there will be something to

read and review in October. R. O'Connor said he does not know yet, but Grant PUD has requested this to help inform planning for 2027, which is where Grant PUD would like to take this discussion next.

L. Rohrbach asked whether the plan is still to study Sockeye Salmon in 2027. R. O'Connor said this was the plan, but without the full suite of information learned in 2026, Grant PUD is not ready to fully confirm they will go forward with any particular species.

R. O'Connor noted that the current meeting schedule (November 24) is the same week as Thanksgiving and he asked about rescheduling. L. Rohrbach said Anchor QEA and T. Hillman will start discussing proposed meeting dates to accommodate the 2026 holiday season for discussion among the PRCC and HCP-CCs during the October 27, 2026, meetings. *(Note: These discussions are underway.)*

V. White River PRCC Policy Committee (PC) Meeting Recap

The PRCC PC met in person at the Wanapum Hydro Office Building in Beverly, Washington, on Wednesday, September 16, from 9:00 a.m. to 12:30 p.m. The meeting was attended by all signatory Parties, except for NMFS. The Wanapum Tribe also attended in person and the CTUIR attended virtually.

L. Rohrbach felt the meeting was productive and positive. There was a healthy discussion at the beginning of the meeting about NMFS not being present and what this means. All Parties agreed to move discussions forward, reach consensus, and then seek consensus from NMFS. The PRCC PC supported the idea of developing another SOA to replace PC SOA 2013-01[8] which only directs activities through the end of 2026. The PRCC PC shared consensus on the following 1) continuing to pause the White River spring Chinook Salmon supplementation program; 2) continuing to meet the White River NNI production by additional production from the Nason Creek hatchery program; and 3) continuing M&E activities. The PRCC PC discussed the recently approved M&E Plan,[9] which describes how these fish continue to be monitored. The PRCC PC discussed the technical recommendations in the PRCC HSC's memorandum.[10] There were no objections, but there were a range of opinions regarding prioritization. There were good questions raised, which she has paraphrased and will send back to the subcommittees. These questions are not cumbersome or intended to slow the process, but will provide more insight into the relative importance of the

[8] *Priest Rapids Coordinating Committee - Policy Committee Statement of Agreement White River Spring Chinook Mitigation* (PC SOA 2013-01). Approved by the PRCC PC on February 8, 2013.
[9] *Monitoring and Evaluation Plan for the Chelan, Douglas, and Grant County PUDs Hatchery Programs*. 2026 Update. August 19, 2026.
[10] PRCC HSC's memorandum, *White River Mitigation Recommendations*, distributed to the PRCC PC on August 6, 2026 (Attachment A).

recommendations. For example, how the Lake Wenatchee study will inform an analytical approach such as the Integrated Population Model and questions about what reach assessments and habitat improvements are already underway. She has the following action items: 1) prepare a list of questions for subcommittees' review during next month's meetings; and 2) start a draft SOA for PRCC PC review along with dates and time frames. The PRCC PC discussed some natural intersections related to processes in place like recalculation to be completed for release year 2033, or the next M&E Plan 10-Year Update. These would be natural points where the PRCC HSC re-evaluates all programs. She guessed the PRCC PC will probably need to meet again to review and refine the SOA. The PRCC PC made a lot of ground and there was a lot of alignment to move forward. Lastly, she will stay in communication with NMFS. Anchor QEA already distributed the final action items and is working on the draft meeting minutes. She appreciated how all PRCC PC members thought things through as much as possible before the meeting.

VI. 2026 Fish Passage Operations Report

A. Fish Ladder Inspections

K. Murdoch said the September inspection will be conducted in person next week. She guessed this will be the last in-person inspection of the year.

B. Fish Spill Updates

T. Dresser said both plants are currently in adult fallback spill, which is 2,000 cubic feet per second.

Priest Rapids Dam Spillway Stability Improvement Project

T. Dresser shared on Microsoft Teams the presentation *Priest Rapids Dam Spillway Stability Improvement Project* (Attachment D), which was distributed to the PRCC by K. Geris on September 23. T. Dresser presented and spoke to a series of slides (Slides 2 to 8) that reviewed why the work is needed and the remedial action and illustrated where the work is being performed. Outages per event typically range between 7 and 8 hours; however there have been a couple of exceptions to date where they were around 10 hours. In August, it was initially estimated that 80 hours of outage time would be necessary. In August, outage time for the Priest Rapids Spillway work was 52 hours. Remaining outages for the month of September are scheduled to occur on September 25 to 29. It is expected that there will only be a single outage in October. T. Dresser reminded the group that this effort is intended to reduce outages during the juvenile outmigration in 2027. L. Rohrbach said there will be another update next month.

Fish Mode

T. Dresser shared on Microsoft Teams *Energy Emergency Alert Level 3 (EEA 3) Exception from Fish Mode* (PRCC SOA 2024-01) (Attachment E),[11] which was redistributed to the PRCC by K. Geris on September 23. T. Dresser said PRCC SOA 2024-01 was not utilized in 2026. There were a couple of fish mode deviations, but there were no emergencies in the region that would trigger the reporting requirements stipulated in this SOA.

C. Adult Fish Counts for 2026 (April 15 to November 15)

L. Rohrbach reviewed the adult fish counts through September 11, as shown below:

Project	Spring Chinook Salmon[a]		Summer Chinook Salmon[b]		Fall Chinook Salmon[c]		Sockeye Salmon	Coho Salmon	Steelhead
	Adults	Jacks	Adults	Jacks	Adults	Jacks			
PRD	10,307	200	34,939	1,324	4,169	1,192	67,451	2,760	1,780
WAN	9,945	272	35,787	1,379	2,111	1,318	66,003	1,845	1,751
RIS	8,573	563	35,154	1,046	1,294	225	66,330	673	1,213

Notes:
a: Chinook Salmon counted from April 15 to June 13 are considered spring Chinook Salmon.
b: Chinook Salmon counted from June 14 to August 13 are considered summer Chinook Salmon.
c: Chinook Salmon counted after August 14 are considered fall Chinook Salmon.
PRD = Priest Rapids; WAN = Wanapum; RIS = Rock Island

UPDATES

VIII. Review of Outstanding NNI-Funded Projects

- **Northern Pike Removal**
  No updates were shared.
- **WDFW PIT-Tag Detection Barge**
  No updates were shared.
- **2026 Quincy Northern Pikeminnow Derby**
  T. Dresser shared on Microsoft Teams a 2026 Quincy Northern Pikeminnow Derby Update (Attachment F), which was distributed to the PRCC by K. Geris on September 23. T. Dresser noted the number of boats this year was lower than usual, which is typically in the low forties. The total number of Northern Pikeminnow removed and weights and sizes were typical of past years. He noted that this event does not target walleye or bass, which may be one reason behind the reporting of zero non-native predatory fish caught and retained. There were no adult steelhead collected. The largest Northern Pikeminnow caught was 23 to 24 inches, but the angler was fishing outside of the area, so this did not count toward the derby.
- **2026 RTR Avian Predation Study**
  No updates were shared.

[11] Approved by the PRCC on July 23, 2024, and distributed to the PRCC by L. Rohrbach on August 5, 2024.

- **Tag Effects Evaluation for Summer Subyearling Chinook Salmon**
  R. O'Connor read an email update received from Doug Peterson (Spheros Environmental) on August 31, as follows: "This will be the last update before the final dataset is compiled, and this week marks the beginning of the end of the experiment. After tagged fish have been measured, weighed, scanned for tags, they will be frozen and bagged by tank and tag type. The frozen specimens will be transferred to Wenatchee for tag extraction by some of our field technicians. I will schedule a team check-in after the experiment has ended, when we can debrief on the take down and discuss the timeline for analyses and report writing." L. Rohrbach said during this morning's HCP-CCs meeting, Chelan PUD received an action item to look into whether study results might be ready to share during a joint subyearling session next month. R. O'Connor said he reached out to D. Peterson about this, and results will likely be ready to share. L. Rohrbach added that she understands Douglas PUD will not yet be ready to share results next month. She said Anchor QEA and T. Hillman will coordinate regarding scheduling Subyearling Joint Session 17 on October 27, 2026.

IX. Subcommittee Updates

K. Geris will continue to forward subcommittee notes and materials to PRCC members and alternates as follows:

- Priest Rapids Fish Forum – met September 2, next meeting November 4.
- Habitat Subcommittee – met September 10, next meeting November 12.
- Fall Chinook Work Group – met April 30, next meeting October 5.
- Hatchery Subcommittee – will meet September 16, next meeting October 21.

X. SOAs Discussed in 2026

SOA number	Key Words	Last Discussed	Status
2026-01	Decoupling Summer Subyearling Survival	February 24, 2026	Approved (March 20, 2026)
2026-XX	Survival Evaluations - Path Forward	April 28, 2026	In Review

XI. Next Meetings

The next PRCC meeting will be on Tuesday, October 27, 2026, from 1:00 p.m. to 4:00 p.m., to be held in person at the Wanapum Hydro Office Building in Beverly, Washington. The next Subyearling Joint Session (Session 17) with the HCP-CC may be held that same day.

XII. Attachments

Attachment A – PRCC NNI Project Specification Sheet for WDFW's Holding Habitat Study

Attachment B – Presentation *Characterizing Adult Spring Chinook Holding Habitat to Reduce Prespawn Mortality*
Attachment C – 2026 Smolt Survival Study dead fish and travel rates slides
Attachment D – Presentation *Priest Rapids Dam Spillway Stability Improvement Project*
Attachment E – *EEA 3 Exception from Fish Mode* (PRCC SOA 2024-01)
Attachment F – 2026 Quincy Northern Pikeminnow Derby Update

PRCC NNI Funds

Project Specification Sheet

Characterizing Adult Spring Chinook Holding Habitat to Support Telemetry-Based Evaluation of Prespawn Mortality in the Wenatchee Basin

Date submitted: August 27, 2026

Project Sponsor(s): Katy Shelby, WDFW Fish and Wildlife Biologist 4, Wenatchee Field Office, 3515 State Highway 97A Wenatchee WA 98801, 509-436-7521, Katy.Shelby@dfw.wa.gov

Project Liaison: PRCC Representative Chad Jackson (Chad.Jackson@dfw.wa.gov)

Project Title: Characterizing adult spring Chinook holding habitat to support telemetry-based evaluation of prespawn mortality in the Wenatchee Basin

Project Type: Assessment: field data collection (research/monitoring to inform anadromous fish survival)

Project Location:

The project area is the Wenatchee River Basin, Chelan County, Washington. The Wenatchee spring Chinook are one of three independent populations within the Upper Columbia River spring Chinook salmon ESU (along with the Methow and Entiat populations), and the basin supports five Major Spawning Areas (MaSAs): the Chiwawa River, Nason Creek, White River, Little Wenatchee River, and mainstem Wenatchee.

Habitat surveys under this project are limited to two of these MaSAs, the Chiwawa River and Nason Creek, which together support the majority of natural spring Chinook spawning in the basin (Nason Creek ~41%, Chiwawa River ~40% of the 5-year average) and each host a spring Chinook hatchery program. Both are recognized as Major Spawning Areas under the Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan (UCSRB 2007).

Specific holding areas are identified each year using holding, mortality, and spawning locations documented by the ongoing WDFW-led radio-telemetry study investigating prespawn mortality. Those telemetry data provide the basis for selecting sites for this habitat assessment, which is a separate but complementary effort. Characterizing holding-habitat conditions was identified as an important piece of understanding prespawn survival, but it falls outside the scope and funding of the BPA-funded telemetry study; it is therefore proposed here as a stand-alone field data-collection project that supplies the missing habitat information.

Project Justification:

The Priest Rapids Coordinating Committee (PRCC) No Net Impact (NNI) Fund provides the Parties with additional financial capacity to undertake measures that improve survival of Covered Species, including investigating means and methods to increase survival and to reduce sources of Project-related mortality.

Adult spring Chinook pass Tumwater Dam in the spring and early summer and then hold in the basin's tributaries through the summer until they spawn in the fall, concentrating the prespawn population upstream of Tumwater Dam during the holding period. Female prespawn mortality (PSM) is mortality occurring between Tumwater Dam passage and successful spawning, and it averages ~40% (range 12–66%) among Wenatchee females. PSM increases with number of holding adults, exceeding 50% at higher escapements.

PSM has been recognized in this population through the Wenatchee River spring Chinook Salmon Relative Reproductive Success study over the 2000-2023 time series and, more recently PIT tag-based abundance estimates from the Dam Branch Occupancy Model (DaBOM) for spawning years 2022-2024; what has not been quantified are the habitat conditions associated with it. It therefore remains one of the largest sources of mortality affecting this population that management has not yet been able to target directly, and it occurs at a life stage where each female represents a fish that has nearly completed its life cycle.

The ongoing WDFW-led radio-telemetry study documents where adult females hold, the temperatures they experience, and whether they survive to spawn, but it does not measure the habitat conditions, the geomorphic, hydraulic, thermal and structural characteristics, at those holding locations. This project supplies that missing habitat data and integrates

it directly with the telemetry study, so the analysis can determine whether habitat availability, habitat quality, temperature, and intensity of habitat use are associated with prespawn mortality. By identifying habitat-related mechanisms of mortality, this project provides a scientific basis for targeted restoration actions to improve adult survival to the spawning grounds, and in turn, increase the number of eggs successfully deposited in the gravel and the natural juvenile/smolt production the population generates.

The work fits NNI Fund's purpose of investigating means and methods to reduce mortality and improve survival of Covered Species: telemetry identifies where mortality occurs; this project characterizes habitat at occupied and locally available holding sites; the telemetry-study analysis evaluates habitat–survival relationships; and the results identify the habitat conditions and locations where actions could improve adult survival. The request is also a comparatively small incremental investment that substantially increases the management value of an existing, secured telemetry survival study, duplicating no telemetry, fish handling, or analysis. The primary application is improving adult spring Chinook survival in the Upper Columbia; because the resulting habitat–survival relationships may transfer to other populations, the framework could ultimately benefit spring Chinook throughout the Columbia and Snake River basins.

Project Description:

The project collects standardized habitat data describing adult spring Chinook holding habitats in the Chiwawa River and Nason Creek to complement the BPA-funded radio-telemetry study of prespawn mortality. The data are standardized in that every site is surveyed with the same transect-based measurements, following established stream habitat-assessment protocols (Bisson et al. 1982; Simonson et al. 1994; Kaufmann et al. 1999) and the adult holding habitat survey protocol developed alongside the telemetry study, and recorded digitally in ArcGIS Field Maps. Scope is intentionally limited to field data collection; all analysis is conducted under the companion telemetry study and is not requested from the NNI Fund. Specific objectives are to:

1. **Characterize habitat quality** of adult holding areas by measuring geomorphic, hydraulic, thermal, and structural characteristics of habitats occupied by radio-tagged adults, including pool length, width, and depth (and residual pool depth), estimated pool volume, water velocity and low-velocity refuge, substrate composition, instream and overhead cover, large woody debris, and water temperature (spot and continuous);
2. **Characterize local habitat availability** using a used-versus-available sampling design (Manly et al. 2002), surveying nearby accessible pools within the same stream reach; and
3. **Deliver a standardized habitat database** including an annual data summary and a final technical report documenting the habitat data collected, for integration with telemetry-derived movement, occupancy, residence-time, and survival data collected under the telemetry study. The integrated habitat-and-survival findings will be documented in the telemetry study's reporting and made available to the PRCC.

Using a used-versus-available sampling design, crews survey telemetry-identified occupied holding habitats and up to three nearby habitats considered available to fish. Available habitat will include the nearest qualifying habitat upstream and downstream of each occupied habitat, plus one randomly selected qualifying pool within a predefined search distance (~100-250 m), for approximately 40–60 surveys per year. Candidate available habitats must meet minimum geomorphic criteria characteristic of adult holding habitat (e.g., residual pool depth and wetted area). Surveys follow the established protocols cited above, , are recorded digitally in ArcGIS Field Maps, and quantify pool/habitat geometry, depth, velocity, substrate, instream and overhead cover, large wood, and temperature (spot and continuous). Surveys are conducted after fish depart the holding areas (August–October) to avoid disturbance during this sensitive life stage. The resulting quality-controlled database is delivered annually to the telemetry study, which pairs it with fish-fate data on the same fish, in the same holding areas, in the same years.

Three field seasons (2027–2029) of this project align with the final three years of the five-year telemetry study (2025–2029), enabling direct fish-level pairing of habitat and survival data; surveying after the telemetry study ends would forfeit that pairing. Three years also span the run-size, spawner-density, and thermal variation associated with the basin's elevated PSM, in which mortality increases with the number of spawners. The project involves no in-water construction, no land acquisition, and no private-property access.

Project Cost:

Our NNI request funds three field seasons of habitat data collection: a seasonal crew (one Fish & Wildlife Biologist 4 and two Scientific Technician 2 field technicians, August–October), agency vehicle and mileage, field-readiness training,

field supplies and non-capital equipment, and WDFW indirect (32.75%). Non-capital equipment includes waders and wading boots, two iPads/field tablets for ArcGIS Field Maps (software free to WDFW), and miscellaneous habitat survey gear such as laser rangefinder, survey rod, spherical densiometer, gravelometer, and measuring tapes. The 2027 field season totals $110,410; 2028 and 2029 increase by 2.5% per year, for a three-year NNI request of $339,579. The approximate three-year distribution across cost categories is shown below.

Cost Category	Three-year amount (NNI request)
Personnel	$223,755
Travel & training	$17,439
Field supplies/ non-capital equipment	$14,609
Indirect (32.75%)	$83,777
TOTAL NNI request (2027–2029)	**$339,579**

The project leverages the concurrent BPA- funded radio-telemetry study led by WDFW (project 2010-034-00), a secured five-year (2025–2029) investment of roughly $1.43M. Its Wenatchee PSM work elements are summarized below; about $858,900 (three years at ~$286,300 per year) is concurrent with this project's three field years and is shown below as leverage, not charged to NNI.

BPA telemetry-study work element (project 2010-034-00)	Approx. annual cost
Radio tagging (~100 adult females at Tumwater Dam)	~$17,300
Field/lab data collection (fixed-station and mobile telemetry tracking, detection download and processing, temperature-logger network operation, and temperature-sensing tag recovery)	~$204,000
PSM analysis	~$65,000
Total (per year)	**~$286,300**
Concurrent leverage (3 years, 2027–2029)	**~$858,900**

The combined NNI request and concurrent telemetry study leverage are summarized in the following budget table.

Budget Item	NNI Funding Request	Telemetry study (leverage)	Total Cost
2027 field season	$110,410	$286,300	$396,710
2028 field season (+2.5%)	$113,170	$286,300	$399,470
2029 field season (+2.5%)	$115,999	$286,300	$402,299
TOTAL (2027–2029)	**$339,579**	**$858,900**	**$1,198,479**

Estimated Timeline:

Activities by month within a representative field year; the cycle repeats across 2027, 2028, and 2029. Field staff are engaged August–October, and habitat surveys are conducted only after fish have spawned or departed the holding areas. Annual reports are due at year end. X = primary activity.

Activity	J	F	M	A	M	J	J	A	S	O	N	D
Planning, holding-area selection (from telemetry), hiring, training						X	X					
Habitat surveys (after fish depart holding areas)								X	X	X		

Activity	J	F	M	A	M	J	J	A	S	O	N	D
Logger deployment/retrieval & data download (companion network)					X					X		
Habitat data QA/QC										X	X	
Habitat database delivered to telemetry study												X
Annual / final reporting	X											X

This is a targeted effort to investigate a source of mortality for a Cover Species and to inform future survival-improving habitat actions, which is why NNI funding is requested. WDFW is available to present the project to the committee at any time and to provide any additional information or materials requested to support the review process.

References Cited:

Bisson, P. A., J. L. Nielsen, R. A. Palmason, and L. E. Grove. 1982. A system of naming habitat types in small streams, with examples of habitat utilization by salmonids during low streamflow. Pages 62–73 in N. B. Armantrout, editor. Acquisition and utilization of aquatic habitat inventory information. American Fisheries Society, Bethesda, Maryland.

Kaufmann, P. R., P. Levine, E. G. Robison, C. Seeliger, and D. V. Peck. 1999. Quantifying physical habitat in wadeable streams. EPA/620/R-99/003. U.S. Environmental Protection Agency, Washington, D.C.

Manly, B. F. J., L. L. McDonald, D. L. Thomas, T. L. McDonald, and W. P. Erickson. 2002. Resource selection by animals: statistical design and analysis for field studies, 2nd edition. Kluwer Academic Publishers, Dordrecht, The Netherlands.

Simonson, T. D., J. Lyons, and P. D. Kanehl. 1994. Guidelines for evaluating fish habitat in Wisconsin streams. General Technical Report NC-164. U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station, St. Paul, Minnesota.

UCSRB (Upper Columbia Salmon Recovery Board). 2007. Upper Columbia spring Chinook salmon and steelhead recovery plan. Wenatchee, Washington.

WDFW (Washington Department of Fish and Wildlife). 2026. Adult spring Chinook holding-habitat survey protocol (companion to BPA project 2010-034-00). Wenatchee, Washington.

No Net Impact (NNI) Fund · Grant Proposal

aracterizing Adult Spring inook Holding Habitat to duce Prespawn Mortality

itat companion to the ongoing radio-telemetry study — Wenatchee field seasons 2027–2029

Shelby (Principal Investigator, Fish & Wildlife Biologist 4)
esgroseillier · Jason Neuswanger · Andrew Murdoch
gton Department of Fish and Wildlife — Wenatchee Fish Science

3-yr request: $339,579

Field data collection only

ed to the Priest Rapids Coordinating Committee (PRCC)



Washington D
FISH & W

VIEW

here we're going today

The problem	Prespawn mortality (PSM) is a major, habitat-linked bottleneck for Wenatchee spring Chinook
The evidence	Independent datasets show ~40% female PSM that rises with density and temperature
The knowledge gap	Telemetry shows WHERE fish die but not WHICH habitat conditions promote survival
This proposal	Holding-habitat surveys that fill that gap - Field data collection only
Leverage & fit	Small habitat project leverages a secured, funded radio telemetry study and serves the NNI Fur purpose

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THE NNI FUND PURPOSE

mall habitat investment with Columbia basin-scale impact

I FUND PURPOSE *"…provide the Parties with additional financial capacity to undertake measures to* ***improve survival of Covered Species*** *or to attaining Project survival standards."*

rgets a source of adult ortality

Identifies holding-habitat features that promote survival to spawning

Future restoration efforts target habitat that improves survival.

Leverages a secured telemetry study funded by BPA

- Rides on a ~$1.4 million, 5-year radio-telemetry study funded through 2029.
- NNI funds only habitat surveys (no tagging, telemetry, or analysis).

Transferable across the Columbia

- Standardized methods and results apply across the Columbia Basin.
- Informs adult-survival restoration wherever spring Chinook hold and spawn.

shington
partment of
SH &
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PART 1 — THE PROBLEM

Adults are dying weeks before they spawn

Prespawn mortality is one of the largest bottlenecks on natural spring Chinook production in the Wenatchee Basin.



endangered stock at risk of extinction

UC Spring Chinook NOAA 2019 Status Review								WDFW Qua Extinctior Analysis (20
pulation	Abundance		Productivity		Categorical Risk			
	Plan Goal	Current Level	Plan Goal	Current Level	Abundance/ Productivity	Spatial Structure/ Diversity	**Overall**	**100-year Qu Extinction R**
natchee	2,000	630	1.2	0.89	High	High	**High**	**56%**
at	500	193	1.4	0.90	High	High	**High**	**72%**
thow	2,000	323	1.2	0.49	High	High	**High**	**63%**

Ford (2022) ESA viability update; Chasco, Murdoch & Hurst (2025), WDFW quasi-extinction analysis.

ny it matters here: every additional female that survives to spawn naturally is production gained without adding a hatchery fish.

espawn mortality: a bottleneck at the adult stage

What is PSM?

ortality of adults between passage at Tumwater Dam and ccessful spawning

hy the holding period is so costly:

- Protracted freshwater holding period: late May – mid-September
- Accumulate thermal stress, pathogen exposure, and energy depletion
- Females are hit hardest and each female lost removes an entire brood
- Mortality translates directly into fewer redds and lower natural production



GROUND · THE PROBLEM

espawn mortality: a bottleneck at the adult stage

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- Mortality translates directly into fewer redds and lower natural production

~40%

average female PSM

Wenatchee Basin, 2000–2023 (range 12–66%)

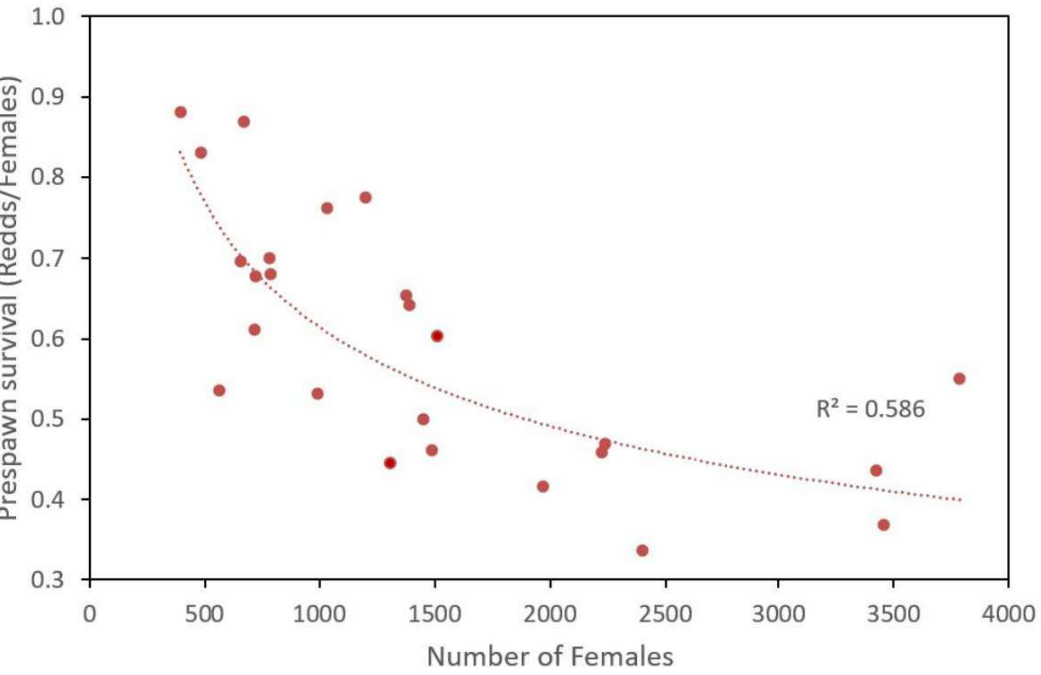
The opportunity

↑ Survival ↑ Natural productio

Identify **which habitats support survival.**

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dence 1 : more females ≠ more redds



e 1. Wenatchee spring Chinook number of females past Tumwater Dam vs. prespawn survival 0-2023).

What the data show

- **Because each female builds only ONE redd, zer PSM would yield ~100% prespawn survival**
- Below ~1,000 females, variable but high surviva
- Above ~1,000 females, prespawn survival declir
- **Survival declines as density rises → density-dependent holding mortality.**

Take-away: the basin loses more adults precisel the run is strong enough to rebuild the populati

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GROUND · EVIDENCE

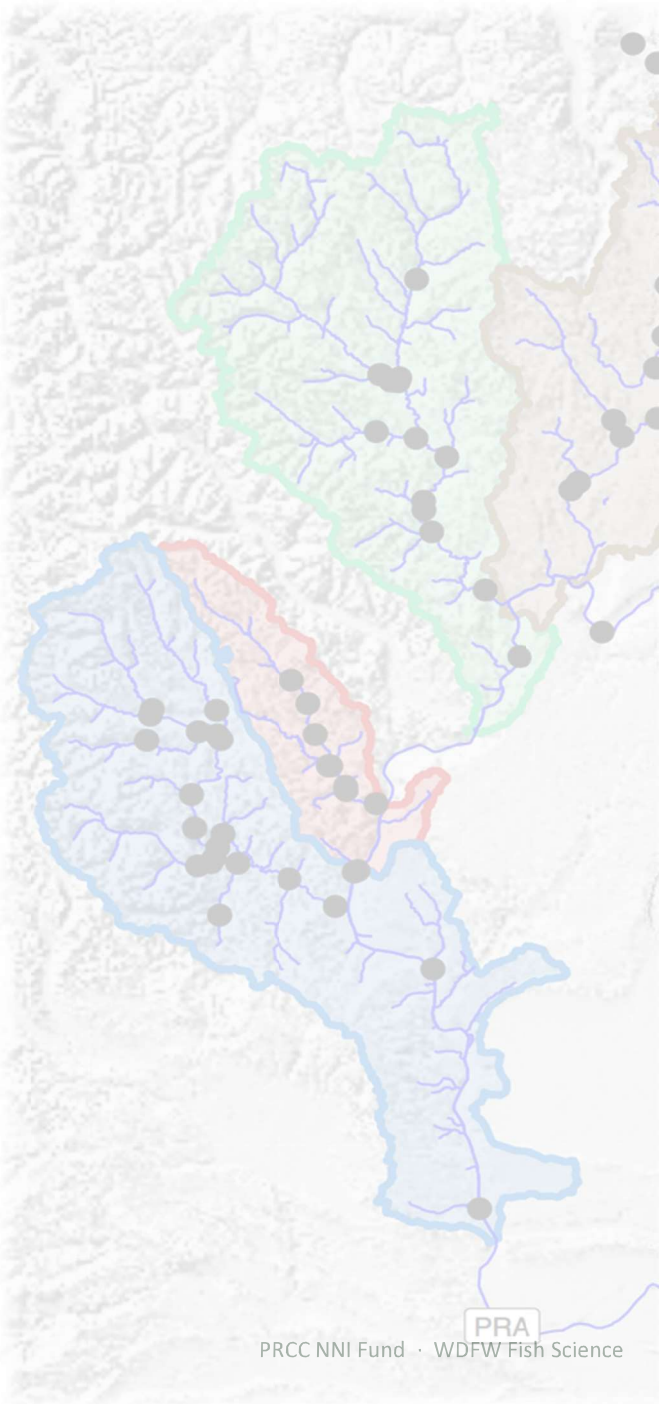
dence 2 : PIT/DaBOM estimates high PSM

g abundance compared with redd counts finds the same high PSM

tion	PSM 2022	PSM 2023	PSM 2024
Tumwater (basin-wide)	44%	52%	37%
va River	51%	43%	36%
Creek	14%*	50%	28%

Two methods, one conclusion

- PSM is consistently high and rises with the number of holding adults.
- Habitat conditions behind it remain unmeasured.



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GROUND · THE THREAT

nate change will intensify the blem

ojected Wenatchee stream warming

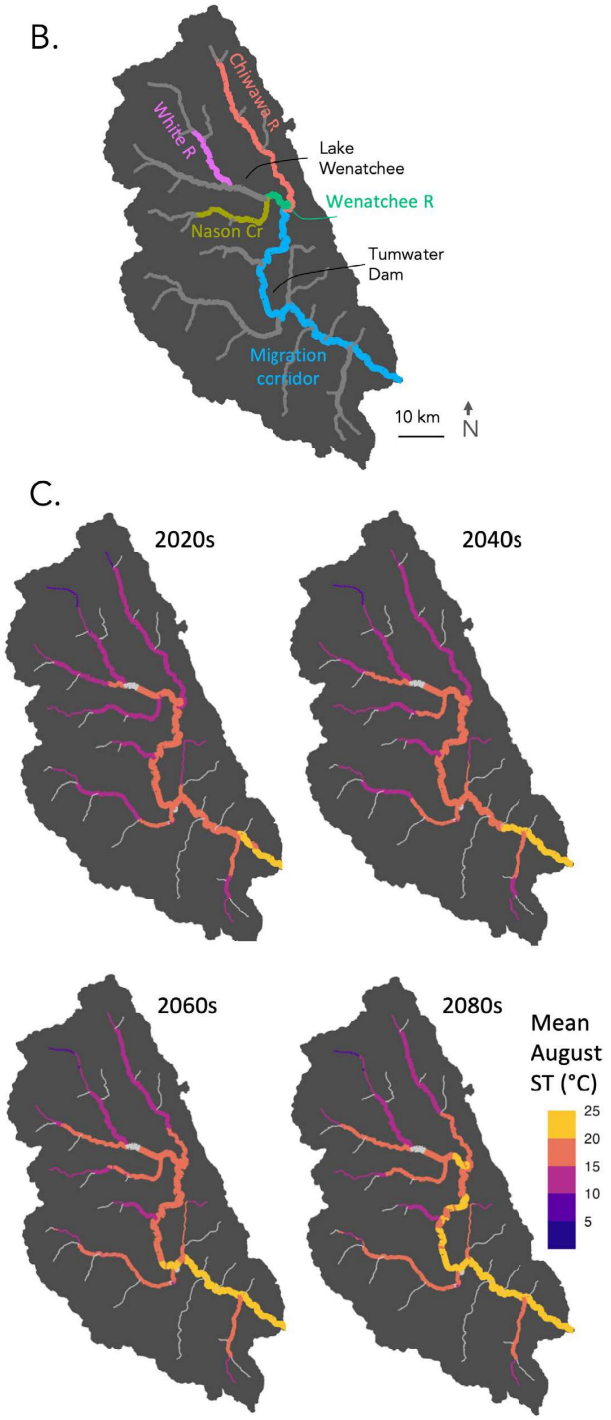
lerton et al. (2026), mean daily stream temperature:

+1.5 °C by the 2040s

+2.0 °C by the 2060s

+2.5 °C by the 2080s

creases in spring, reduced snowpack, earlier melt, warmest reaches in lower tributaries.



Cold-water ref become the difference

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RAGE

The radio telemetry study



PA Project 2010-034-00

per Columbia Spring Chinook PSM assessment · 5-yr agreement, 25–2029

Quantify spatial and temporal PSM rates for female Wenatchee spring Chinook above Tumwater dam.

- ~100 adult female spring Chinook radio-tagged annually at Tumwater Dam (temperature/activity sensing tags)
- 7 fixed telemetry stations + weekly mobile tracking (vehicle, raft, foot)
- Distributed water-temperature logger network across the study area
- Document behavioral thermoregulation and characterize thermal experiences in terms of energetic costs.
- Delivers fate, movement, occupancy, residence time & PSM and ALL data analysis

~$1.4M

Secured, leveraged BPA investment

tagging · telemetry · loggers · analysis — none charged to NNI

Built in Efficiency

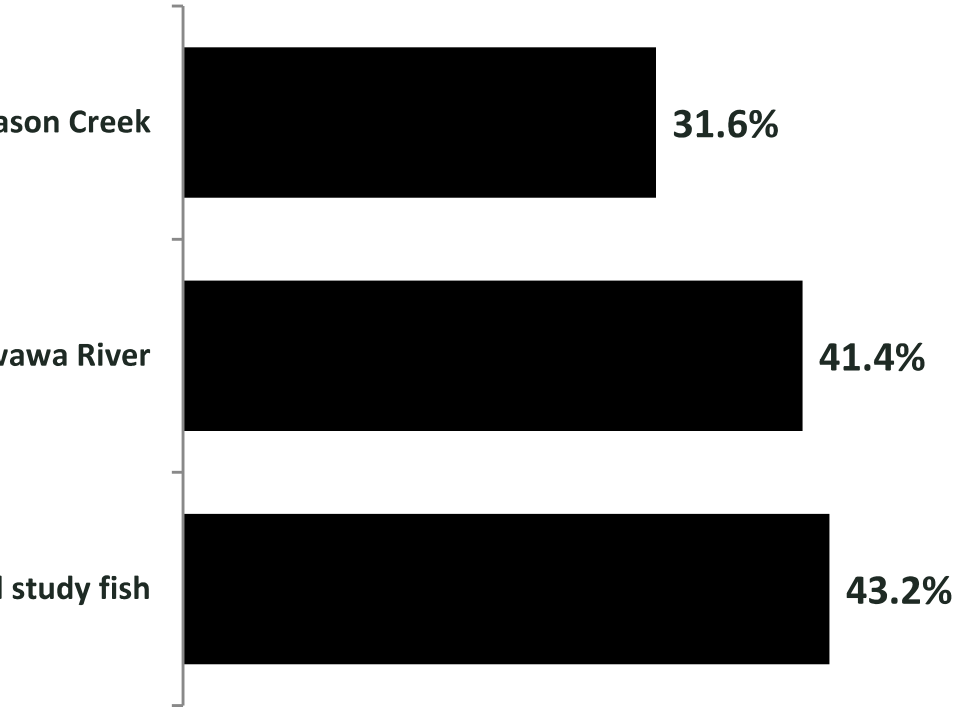
- The expensive infrastructure already exists and is funded
- NNI funds only the habitat surveys
- No duplication of tagging, telemetry, or analysis

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F OF CONCEPT · 2025

st-year telemetry results

bserved 2025 PSM by area (radio-tagged females)



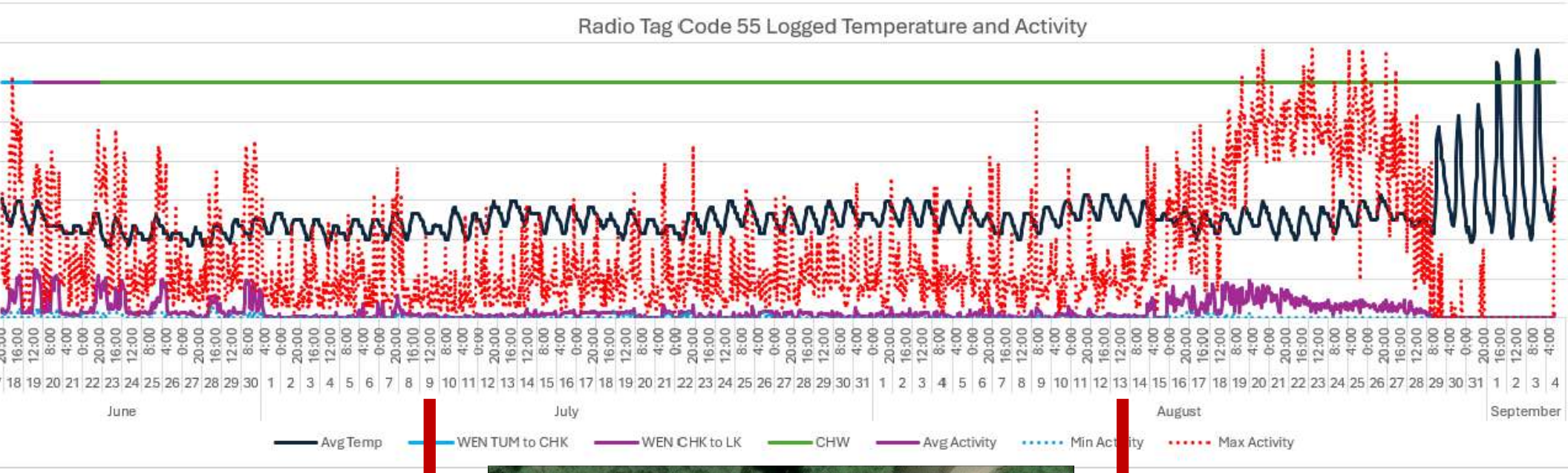
ding pools are identified annually for targeted surveys

025, ~14 discrete holding areas identified in the
wawa & Nason.



F OF CONCEPT · 2025

st-year telemetry results





Washington Department of FISH & WILDLIFE

PRCC NNI Fund · WDFW Fish Science

KNOWLEDGE GAP

ctors contributing to PSM?

We now know WHERE

om the radio-telemetry study:

- Where individual adult females hold
- How they move and how long they stay
- Whether each fish spawns or dies (fate)
- The temperatures each fish experienced

but…

We don't know WHY

The telemetry study does not measure the habita at holding locations:

- Pool depth, volume, and hydraulics
- Cover, wood, and channel complexity
- Thermal structure & refugia
- How much suitable habitat is available nearby

is proposal supplies the missing habitat data — so the telemetry study can finally connect fish fate to the habitat conditions that shaped it.

PART 2 — THE PROPOSAL

Measuring the habitat behind the fate

A focused, field-only habitat study that plugs directly into the secured telemetry effort.



PROPOSAL · SCOPE

s proposal: purpose and objectives

urpose: collect standardized habitat data describing adult spring Chinook holding habitat in the **Chiwawa Riv**
d Nason Creek, so the telemetry study can evaluate the habitat drivers of prespawn mortality.

1 Characterize habitat quality

Quantify geomorphic, hydraulic, thermal & structural features of pools occupied by radio-tagged adults.

2 Characterize local availability

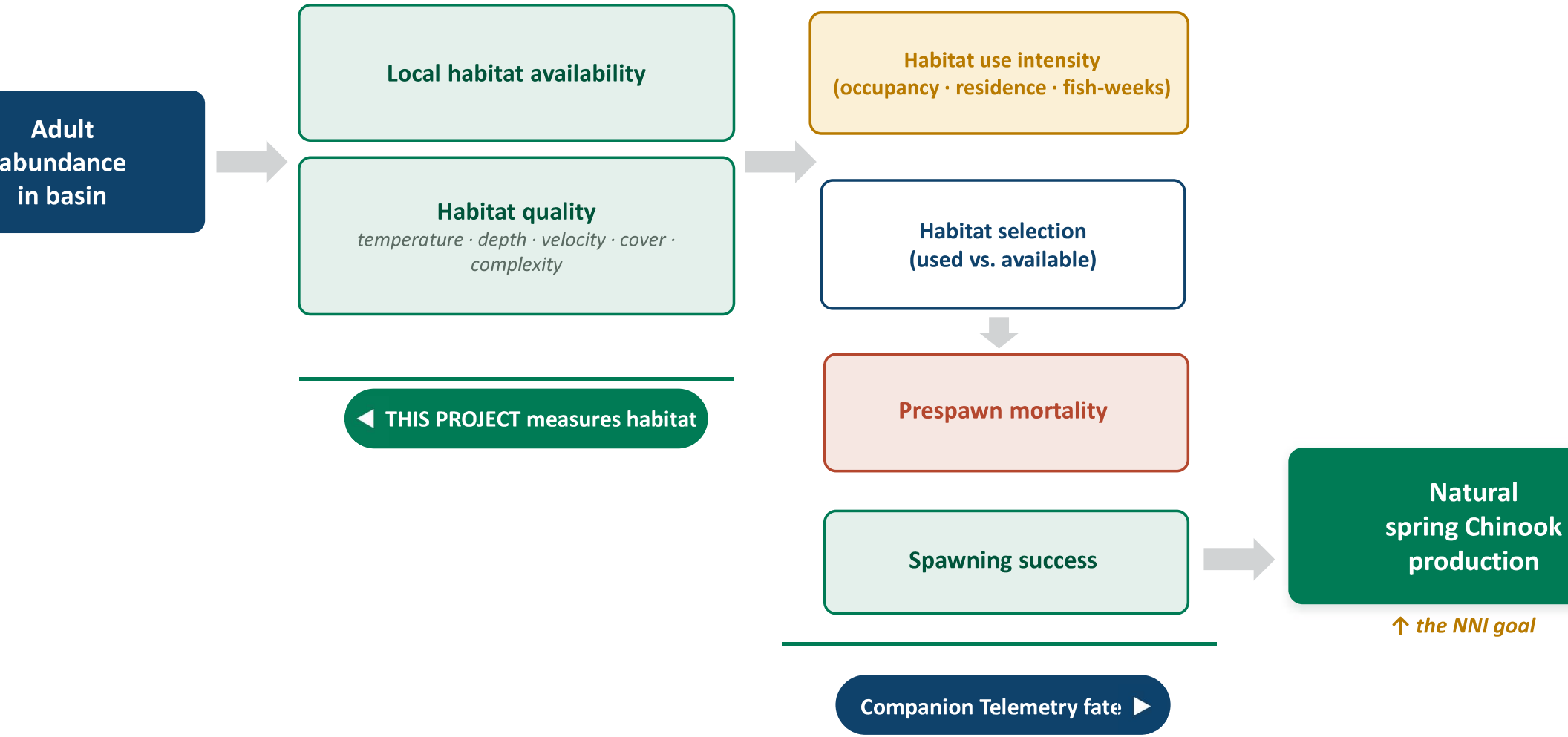
Used vs Available design:
survey nearby accessible pools in the same reach.

3 Deliver standardized dat

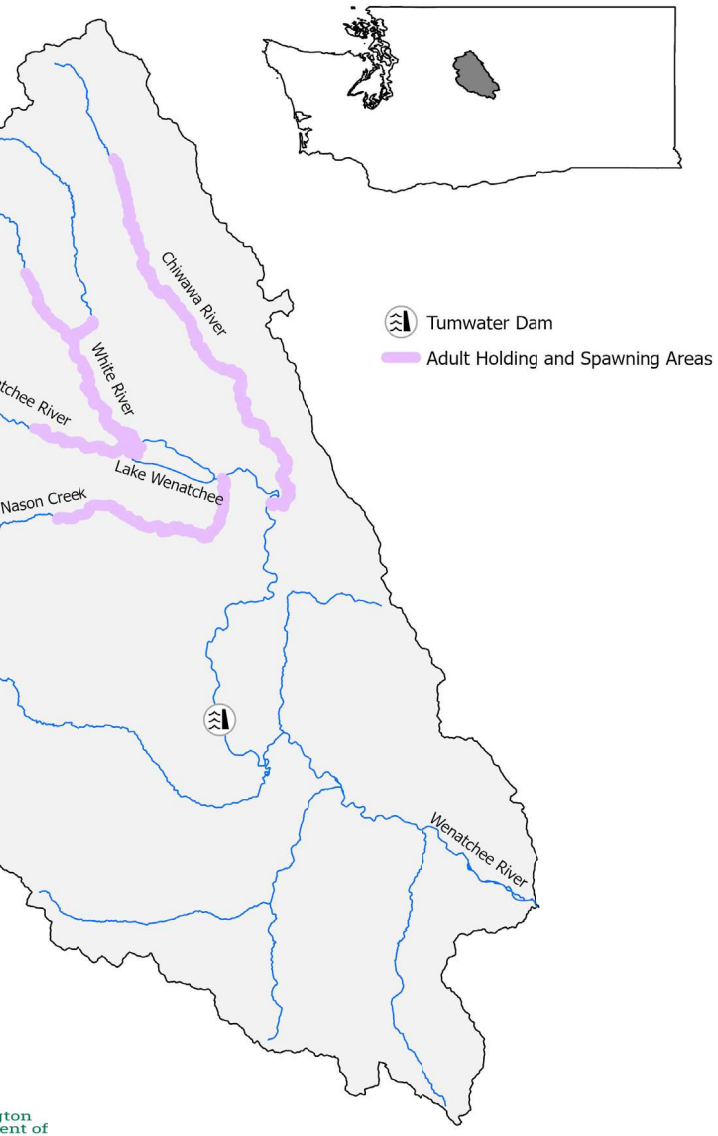
A quality-controlled habitat database for integration with telemetry movement, occup & survival data.

Scope is intentionally limited:
Field data collection only. No fish handling, no in-water construction, no land acquisition, and **no data analysis is requested from the NNI Fund**

nceptual framework: habitat → survival → production



udy area: the Chiwawa River & Nason Creek



- **~81% of Wenatchee spring Chinook spawn here**

  Chiwawa River ≈ 40% · Nason Creek ≈ 41%

- Natural- and Hatchery-origin contrast
- Most radio-tagged fish hold in these two tributaries

A built-in thermal contrast

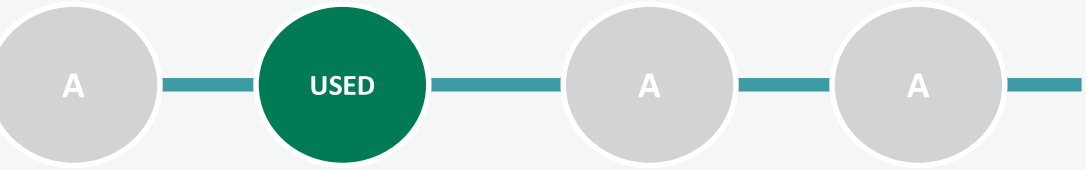
Chiwawa River
Large, snowmelt-driven, high-elevation. Stays cooler; little projected change in temperature-related PSM.

Nason Creek
Smaller; lower reaches warm in summer (>20 °C in Aug). Greate potential for warming-driven PS

dy design: a used-vs-available comparison

ame reach : occupied vs. nearby available habitats

nearby available habitats (1–3 per occupied habitat)



occupied holding habitat (from telemetry)

ailable = accessible during holding but not occupied by tagged fish; selected by a ndardized rule (nearest up/down-stream qualifying habitats + one random, hin ~100–250 m).

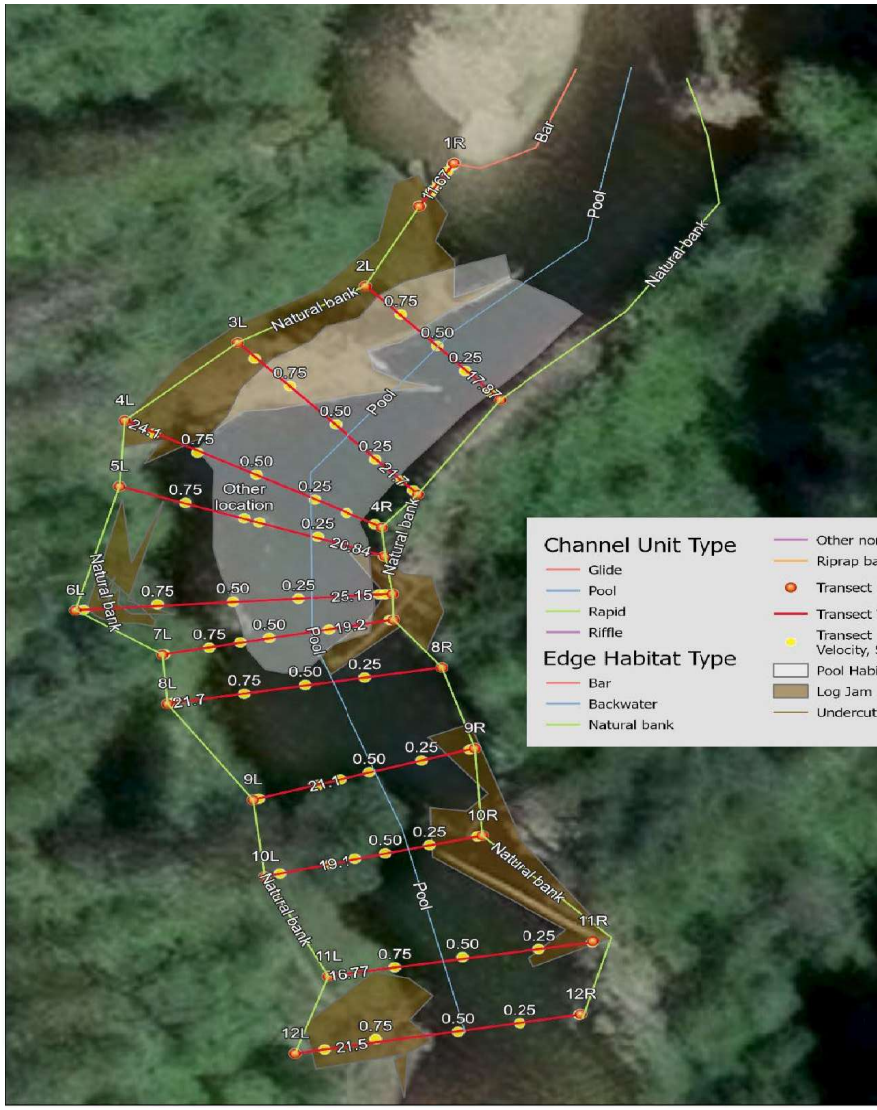
- Identifies habitat selection
- Controls for local conditions (same reach, same tim
- Estimates local habitat availability without costly ba wide inventories
- **Lets the telemetry study relate each fish's fate to t habitat it selected.**

Effort: ~14 occupied habitats/yr × 1–3 available ea ≈ **40–60 surveys/year**, by 3 staff over Aug–Oct.

ld methods: standardized, digital, repeatable

Pool geometry	length · width · depth · residual depth · wetted area · volume
Hydraulics	point velocities · low-velocity refuge area
Temperature	spot readings · continuous HOBO loggers at selected sites
Complexity & cover	large wood / log jams · instream & overhead cover · undercut banks
Channel & substrate	channel type · gradient · pebble-count substrate

Transect-based surveys logged digitally in ArcGIS Field Maps

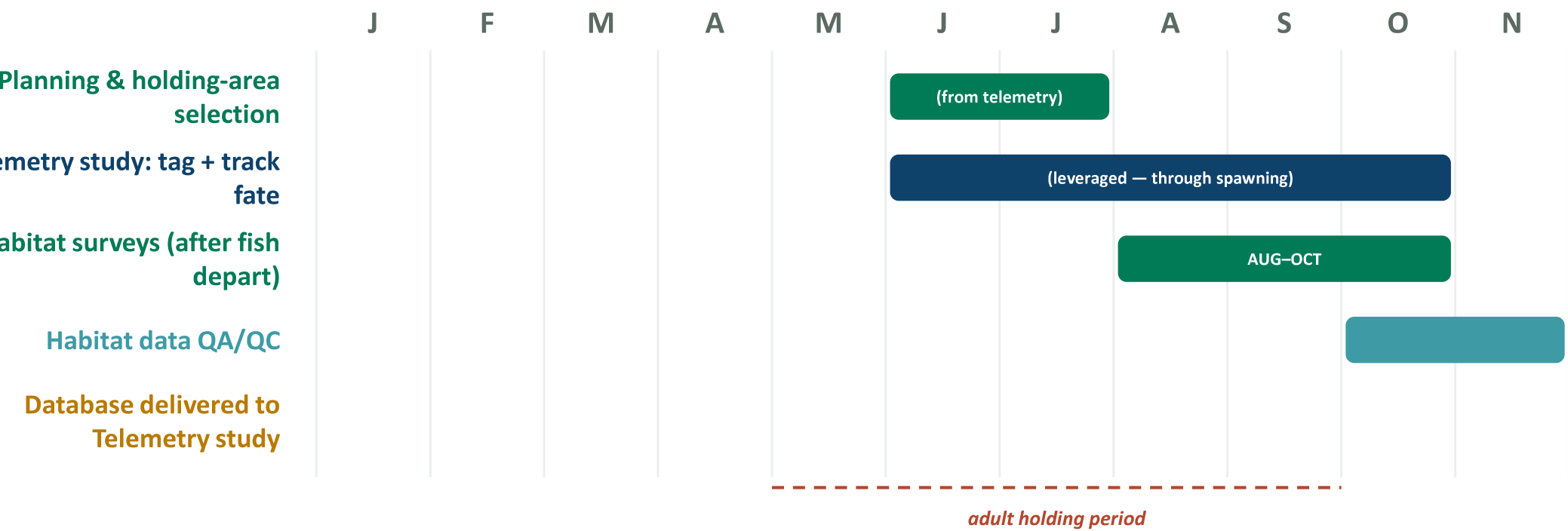


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PROPOSAL · SCHEDULE

ning: surveys never disturb holding fish

epresentative field year (repeats 2027 · 2028 · 2029). Habitat surveys begin only after fish have spawned or left the holding areas.



By design: crews enter holding areas only after fish have spawned or moved on to minimize disturbance

PROPOSAL · INTEGRATION

w the two studies combine

THIS PROPOSAL · NNI

ndardized habitat database

ality & local availability at occupied and available holding pools —
morphic, hydraulic, thermal, structural.

Telemetry Study

Fish movement & fate

Holding locations · residence time · weekly occupancy · spawning success · prespawn mortality.

egrated analyses (run by the telemetry study)

bitat selection (used vs. available) · habitat quality of preferred holding habitats · habitat use intensity · relationships among habitat, temperature & PSM
edictive survival–habitat models

Restoration prioritization → ↑ adult survival → ↑ natural spring Chinook production

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FF · THE NNI FUND PURPOSE

om habitat data to restoration action

Habitat findings → Restoration targets → ↑ Adult survival → ↑ Natural product

estoration actions the results can inform

- Increase pool depth & volume
- Enhance hydraulic complexity
- Improve instream & overhead cover
- Restore large woody debris & log jams
- Increase access to thermal refugia
- Reconnect & protect high-quality holding habitat

Scales across the Columbia and Snake Bas

- **Standardized, transferable methods**
- Many Columbia populations face the same prolonge holding, warming, and habitat pressures.
- Provides a repeatable framework to prioritize adult- survival restoration basin-wide.

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ET

dget: a lean request, heavily leveraged

-year NNI request

eld year 2027	**$110,410**
eld year 2028 (+2.5%)	**$113,170**
eld year 2029 (+2.5%)	**$115,999**
OTAL request	**$339,579**

27 cost categories

ersonnel	**$72,751**	Travel & training	**$5,670**
eld supplies	**$4,750**	Indirect (32.75%)	**$27,239**

Secured Telemetry leverage (in-kind)

tagging · telemetry · loggers · analysis — not charged to NNI

~$1.4M

Cost efficiencies

- No separate tagging, telemetry, or analysis cost
- Small seasonal crew (1 Bio 4 + 2 techs) over a 3-month wind
- Reuses the companion study's Field Maps forms
- Concurrent with the telemetry study's final 3 years → maxir return on both

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CLOSE

liverables, reporting & fit with NNI criteria

What the NNI Fund receives

- Annual reports
- Standardized, quality-controlled habitat database for integration with telemetry study
- Final technical report
- Repeatable protocol

Meets NNI funding criteria

- ✓ Improves survival of a Covered Species
- ✓ Investigates a source of mortality
- ✓ Coordinated & not otherwise funded
- ✓ Leverages secured funding
- ✓ Minimal administration
- ✓ No private land access

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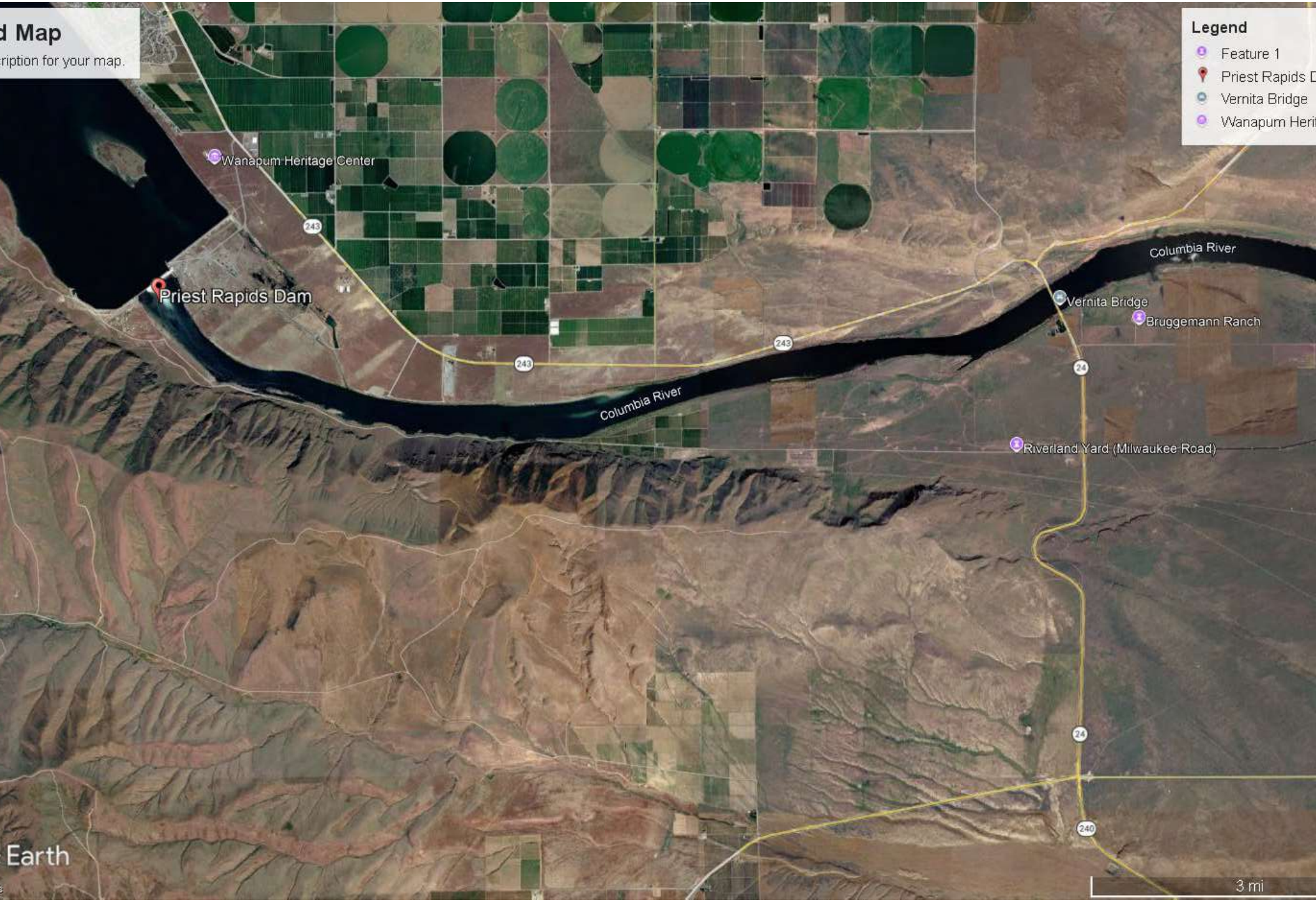
ank you — questions & discussion

eraged habitat study that turns the telemetry "where" into a restoration-ready "why."

aty Shelby
incipal Investigator · Fish & Wildlife Biologist 4
aty.Shelby@dfw.wa.gov · 509-436-7521
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homas.Desgrosiellier@dfw.wa.gov · 509-669-4572

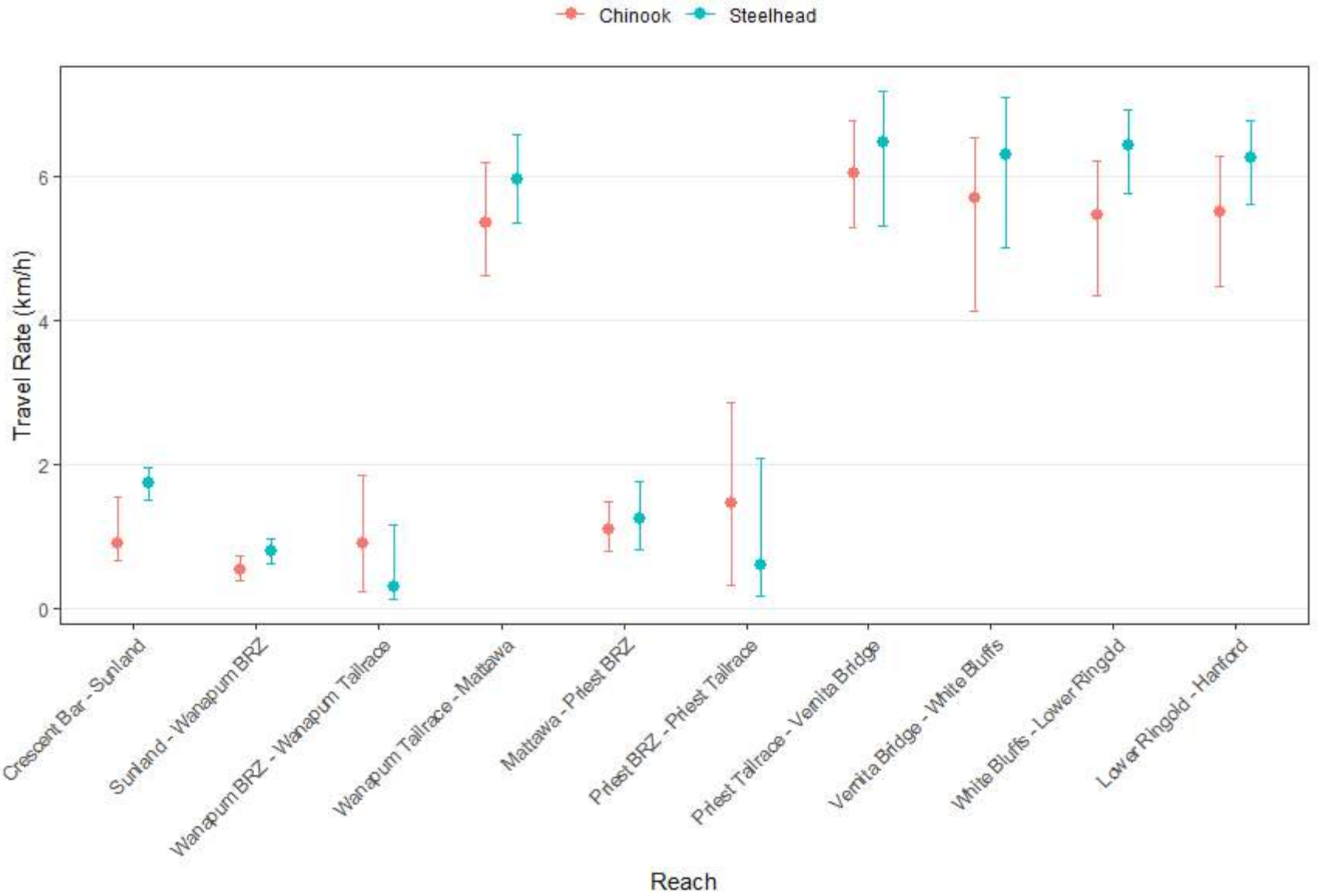
3-yr request $339,579 · field data only · ~$1.4M BPA leverage · Chiwawa & Nason

Location reached	Number of dead fish (n=83)
Priest Rapids Tailrace	53
Vernita Bridge	1
No detections	29


d Map
cription for your map.
Legend
Feature 1
Priest Rapids D
Vernita Bridge
Wanapum Heri
Wanapum Heritage Center
Priest Rapids Dam
Columbia River
Vernita Bridge
Bruggemann Ranch
Columbia River
Riverland Yard (Milwaukee Road)
243
243
243
24
24
240
Earth
3 mi

2026 Travel Rates by Reach

Median travel rate; bars show interquartile range



Priest Rapids Dam
Spillway Stability Improvement Project



Priest Rapids Dam
Spillway Stability Improvement Project

Why Needed (Required)

FERC Dam Safety – Necessary to address the potential future degradation and improve the structural capacity at locations of the dis-bonded lift joint (elevation 405'). Provides modern seismic loading capacity of the Priest Rapids spillway.

Remedial Action

Installation of 38 post-tensioned anchors through the spillway concrete ogee into the underlying foundation/bedrock.

Two tendons need to be installed downstream of each spillway gates (1-19).

PR Fish Bypasses

Does not require anchors.

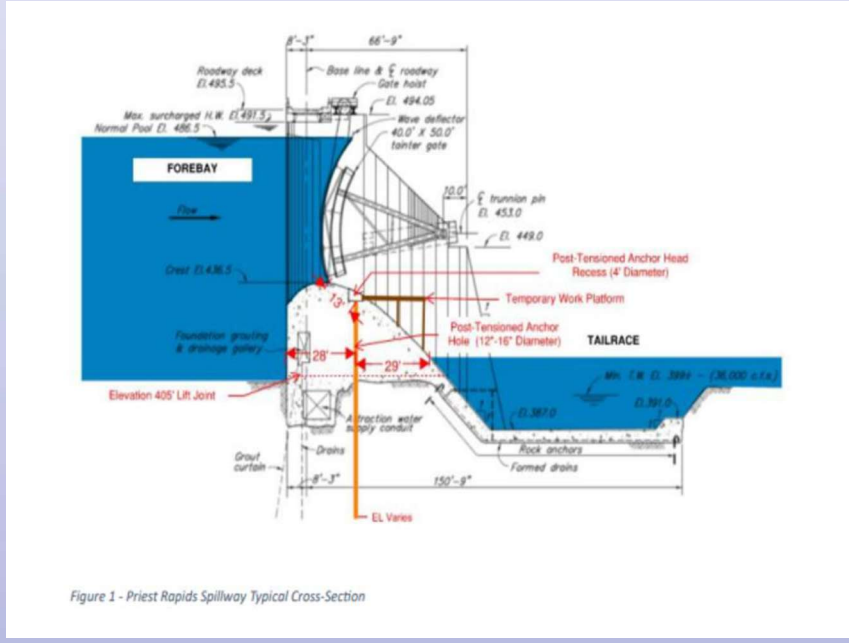
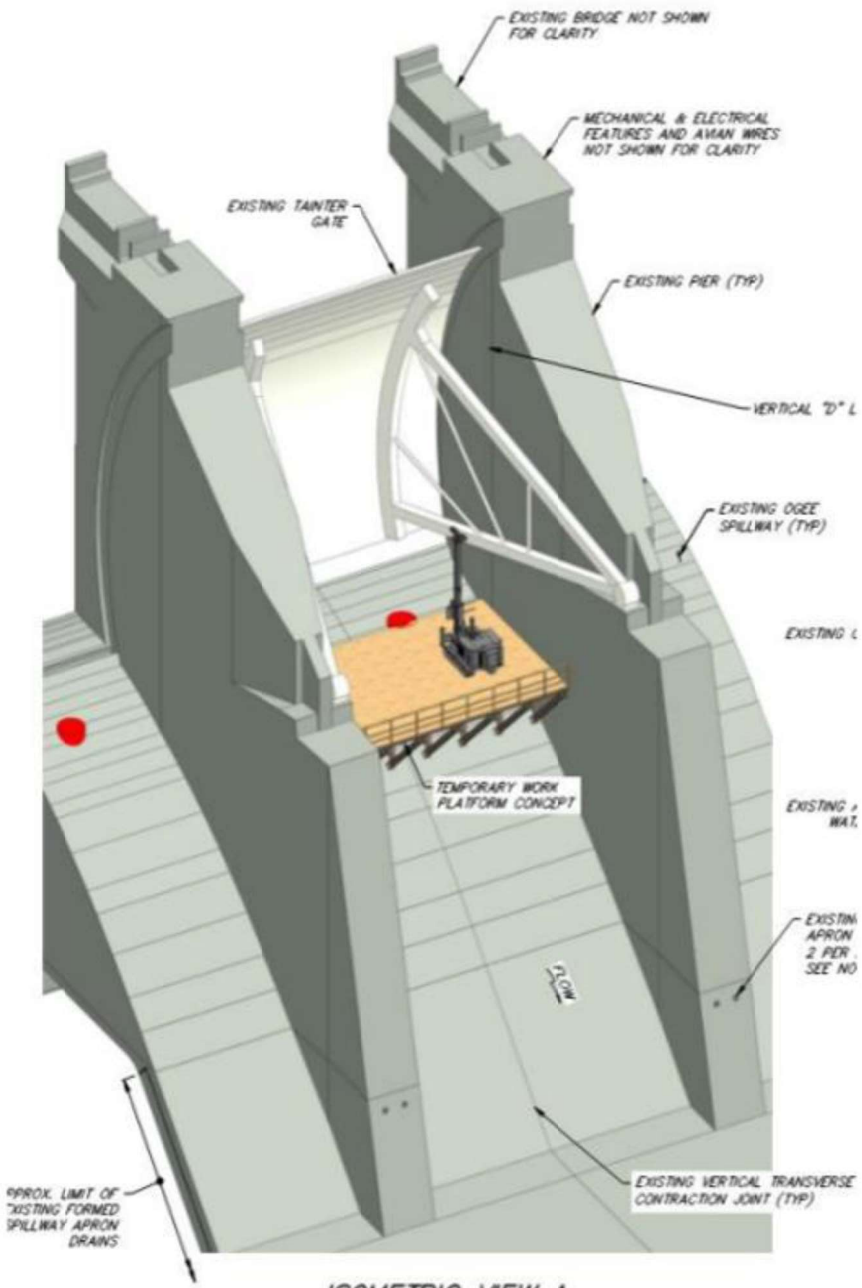
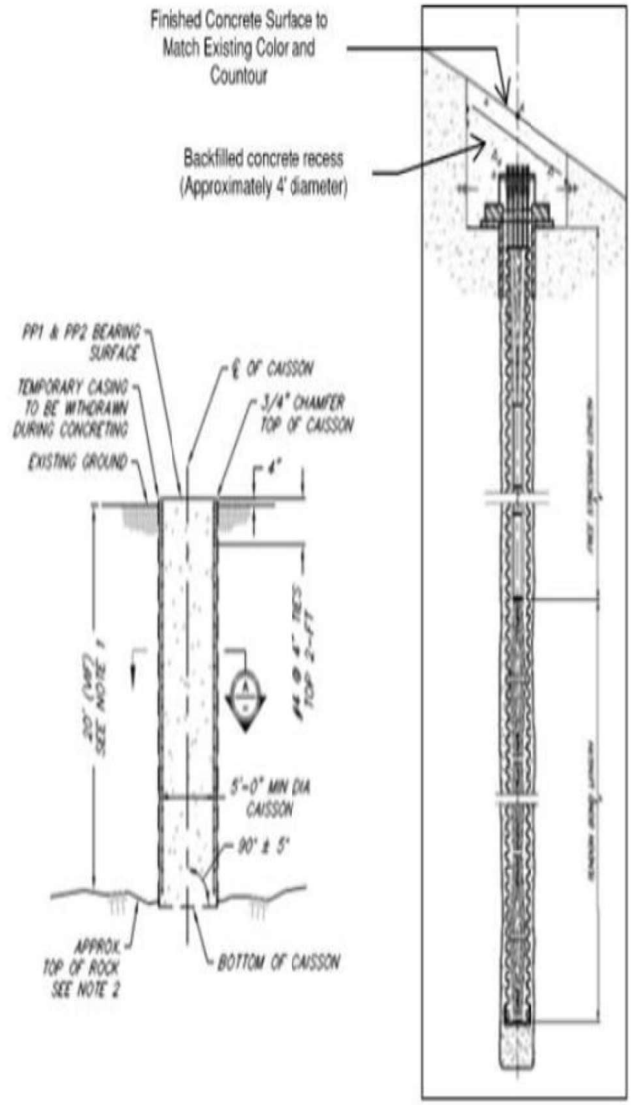


Figure 1 - Priest Rapids Spillway Typical Cross-Section



ISOMETRIC VIEW A
TEMPORARY WORK PLATFORM CONCEPT
NOT TO SCALE



Forebay Work – PR Dam River Right

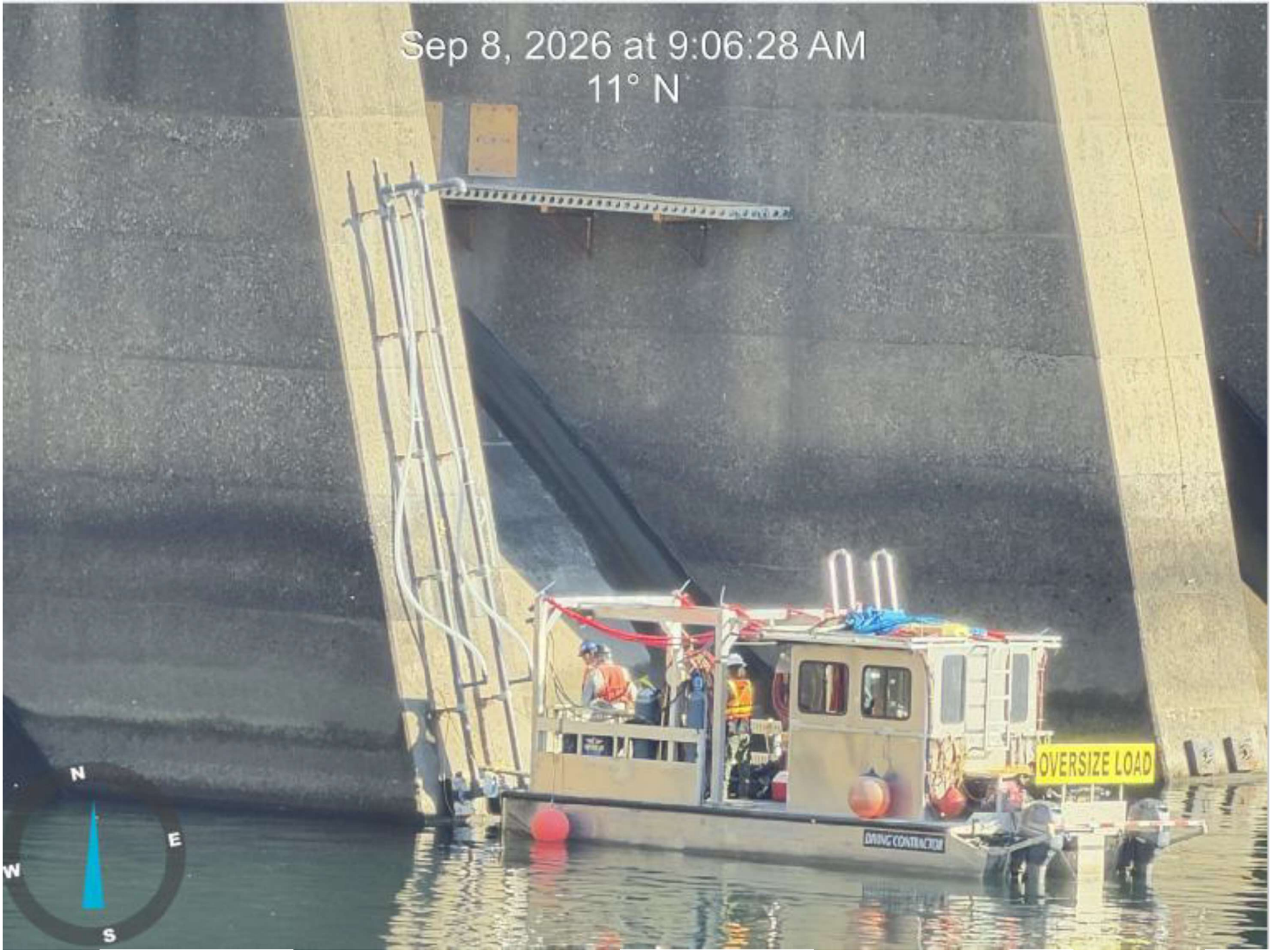


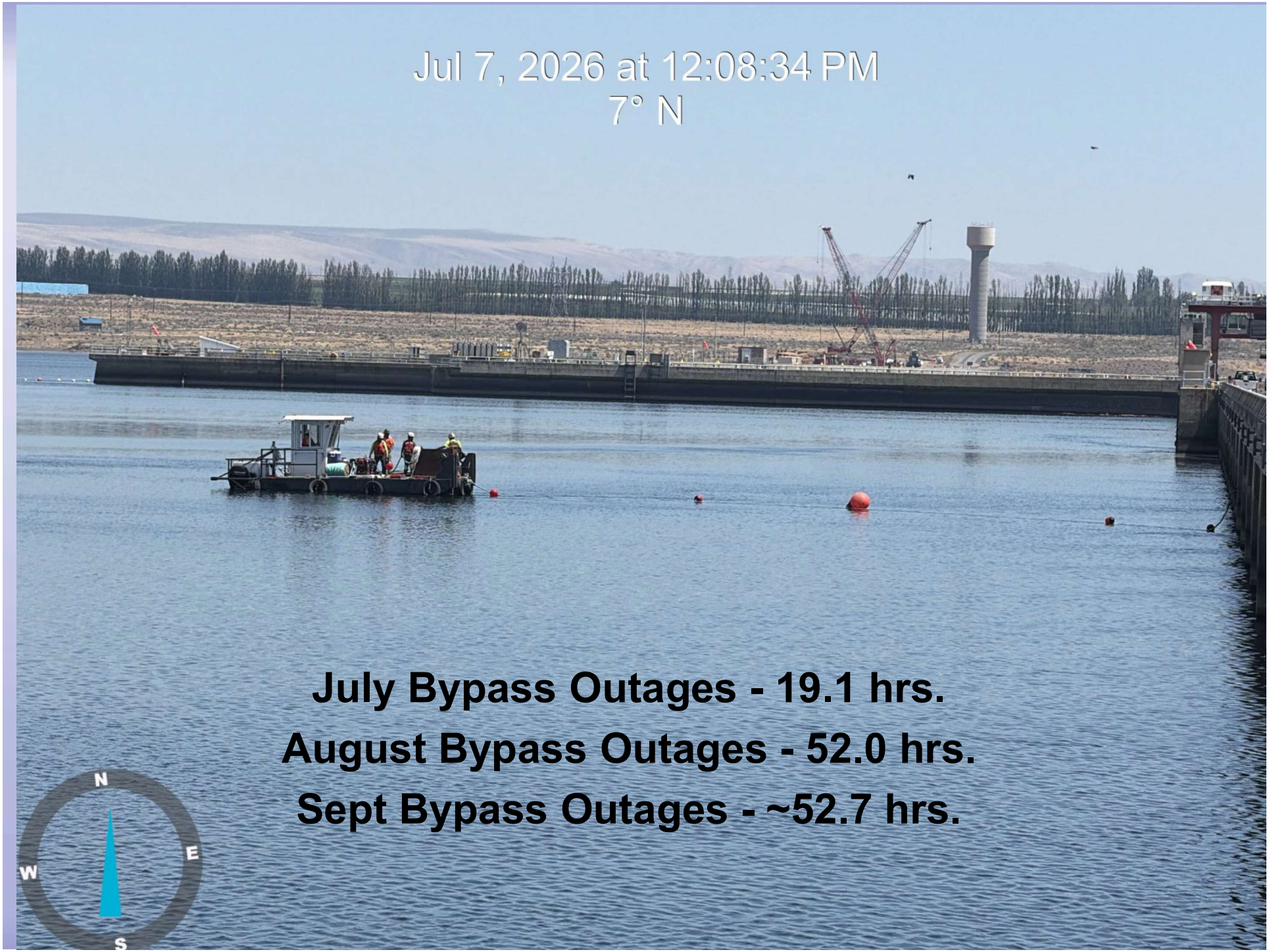
Installing Catwalk




Sep 1, 2026 at 3:09:01 PM
47° NE
N
E
W
S


Sep 9, 2026 at 12:36:28 PM
25° NE
N
E
S
W


Sep 8, 2026 at 9:06:28 AM
11° N
OVERSIZE LOAD
DIVING CONTRACTOR
N
E
S
W


Jul 7, 2026 at 12:08:34 PM
7° N
July Bypass Outages - 19.1 hrs.
August Bypass Outages - 52.0 hrs.
Sept Bypass Outages - ~52.7 hrs.
N
E
W
S

SOA 2024-01

Priest Rapids Coordinating Committee
Statement of Agreement on
Energy Emergency Alert Level 3 (EEA 3)
exception from Fish Mode.

Submitted to PR Coordinating Committee: June 25, 2024
Approved by PR Coordinating Committee: July 23, 2024

Statement

The Priest Rapids Coordinating Committee (PRCC) agrees that in an Energy Emergency Alert Level 3 (EEA 3), as defined by the North American Electric Reliability Corporation (NERC) in the Reliability Standard Emergency Operations Procedure (EOP-011-2), Grant PUD may utilize the generating capacity of a turbine unit in excess of its maximum operating limit imposed by operating in "Fish Mode". If and when an Energy Emergency Alert Level 3 (EEA 3) has been declared by Grant PUD or one of the Priest Rapids Project participants, the generation capacity in excess of "Fish Mode" may be utilized until the EEA 3 has ended. Within five (5) business days of an event, Grant PUD shall provide an incident report to the PRCC explaining the incident and all actions taken, to include data about the magnitude of energy generation provided by operating out of "Fish Mode". At the September PRCC meeting of each year, an annual report of that year's usage of this SOA will be presented for review. This SOA will remain valid for five (5) years from the approval date or the September following a cumulative count of five (5) EEA 3 incidents. The PRCC also reserves the right of evaluating the use and effectiveness of this SOA, with the understanding that authorization for use of these turbine units as during an EEA 3 during "Fish Mode" season can be withdrawn by a vote from the PRCC.

Background

In rare but extreme conditions GPUD or one of our Balancing Authority Participants may run out of energy, energy reserves, or capacity. In these energy situations, Balancing Authorities may issue an Energy Emergency Alert (EEA). The purpose of an EEA is to provide real-time indication of potential and actual energy emergencies. To ensure that all Reliability Coordinators clearly understand potential and actual Energy Emergencies the North American Electric Reliability Corporation (NERC) has established three levels of EEAs.

An **EEA** Level 1 is an indication that all available generation resources are in use and the Balancing Authority is experiencing conditions where all available generation resources are committed to meet firm Load, firm transactions, and reserve commitments, and is concerned about sustaining its required Contingency Reserves. In an **EEA Level 2**, the Balancing Authority is no longer able to provide its expected energy requirements and is energy deficient but is still able to maintain minimum Contingency Reserve requirements. In the most severe level, **EEA Level 3**, a Balancing Authority is unable to meet minimum Contingency Reserve and load interruption or load shedding is imminent or in progress (i.e. rolling black outs or brown outs). During an **EEA Level 3**, the Reliability Coordinator may direct generation and transmission utilities across the region to implement temporary, rotating power interruptions to prevent the system from reaching its breaking point. Load shedding involves systematically cutting power to different areas for short periods. This intentional reduction in demand helps prevent the electric system from overloading and potential equipment failures and gives the grid a chance to stabilize, as well as prevent extensive power outages.

We are proposing to allow GPUD to open capacity that is held back by fish mode if GPUD, or any of our load serving participants enter an **EEA Level 3**. We are proposing to keep the capacity above fish mode available until the **EEA Level 3** is resolved.

QUINCY VALLEY
CHAMBER OF COMMERCE

2026 Pikeminnow Final Report

COPY

1. Total funds expended - $24,979.61
2. Total number of anglers participating - 107
3. Number of boats participating - 27
4. Residency (zip code) for all participants – See attached sheet.
5. Total number of northern pikeminnow removed during 3-day event - 1009
6. Total weight for all northern pikeminnow removed during 3-day event – 1154.54lbs
7. Average weight of northern pikeminnow removed during 3-day event – 1.144lbs
8. Total number of (by species) of non-native predatory fish caught & retained - 0
9. Overall cost per fish removed; See attached sheet
10. Report on the number of non-native predatory fish retained - 0
11. Comparison or prior spring versus fall derby events – See attached sheet
12. Prizes awarded. See attached sheet