BAKER RIVER PROJECT RELICENSE

Aquatic Resources Working Group

December 12, 2002

8:30 a.m. – 3:00 p.m.
U.S. Forest Service
Conference Room A/B (425-775-9702)
21905 64th Avenue West, Mountlake Terrace, WA

AGENDA

1. Review Agenda and Minutes	8:30 – 8:45
2. Review Relicense Schedule	8:45 – 9:00
3. Settlement Process-Developing 1st Draft PM&Es	9:00 – 10:30
Break	10:30 – 10:45
4. Report from Fish Passage Technical Working Group	10:45 – 11:00
5. Report from Instream Flow Technical Working Group (A09)	11:00 – 12:00
Lunch (meeting snacks or bring your own)	12:00 – 12:30
6. Review Study Plans/Requests: updates on A1a,b, A26a,b, Brief status review on all active plans/requests	12:30 – 1:45
7. Action Items	1:45 - 2:00
8. Update from Solution Team Meeting	2:00 - 2:15
9. Additional Issues	2:15 - 2:30
10. Set Agenda for January 9th 2003 (USFS Mountlake Terrace)	2:30 - 2:40
11. Evaluate Meeting	2:40 – 3:00

September 12, 2002

Driving Directions to US Forest Service Office:

1) Driving North from Seattle (or South from Everett) on I-5, take the 220th St. SW exit (exit 179).
2) Turn west (right if from southbound I-5, left if from northbound I-5) onto 220th St. SW.
3) Drive west about a block and turn right onto 64th Ave W.
4) The office building is about ¼ block down the street on the right side of the road.

BAKER RIVER PROJECT RELICENSE

Aquatic Resources Working Group

December 12, 2002
8:30 a.m.- 3: 00 p.m.
USFS Building, Mountlake Terrace, WA

MEETING NOTES

Aquatics Working Group Mission: *"To identify issues and develop solutions and recommendations addressing fish and aquatic resource interests related to the Baker River Project and its operations, leading to a settlement agreement."*

Fish Team Leader: Arnie Aspelund, 425-462-3442, arnie.aspelund@pse.com

PRESENT: Arnie Aspelund, Cary Feldmann, and Doug Bruland (PSE), Arn Thoreen (Skagit Fisheries Enhancement Group), Phil Hilgert and Adam Waybriight of (R2), Bill Reinard (Wildcat Steelhead Club), Steve Fransen (NOAA Fisheries), Gary Sprague (WDFW), Brady Green (USFS), Dick Raisler (Fidalgo Fly Fishers), Margaret Beilharz (U.S. Forest Service by phone), Ruth Mathews (Nature Conservancy), Stan Walsh (Skagit System Cooperative), Rod Sakrison (DOE), Mark Daily (Meridian Environmental), Bruce Freet (Environmental Agreements), Dee Endleman (Agreement Dynamics), Lyn Wiltse Facilitator and Mary Jean Bullock (PDSA Consulting, Inc.).

FUTURE DATES AND LOCATIONS (2nd Thursday of each month):
January 9, February 13, March 13, 2003 from 8:30-3:00 at USFS Office in Mountlake Terrace.

- **Conference Call Number:** The conference call line will be available for team members to participate in the Working Groups meetings by phone. This is a toll-free call. The procedure is:
  -- Dial **1-866-280-6429** at the designated date and time
  -- Enter the Participant code of **144995** followed by the **# sign**
  -- Participants will be asked to record their name
  -- Participants will hear hold music until the Host has dialed into the call

Note: Below are 2003 meeting dates where the USFS Office in Mountlake Terrace is NOT available:
4/10, 5/08, 7/10, 9/11

December 12, 2002 Agenda
8:30 – 3:00 p.m. at USFS Building in Mountlake Terrace

1. Review Agenda and Minutes
2. Review Relicensing Schedule
3. Settlement Process – Developing 1st Draft PM&Es
4. Fish Passage Technical Working Group Report
5. Instream Flows Update (A9, A9b, A9c)
6. Studies: A1a,b, A26a,b, A17
7. Brief status review on all active plans/requests
8. Action Items
9. Update from Solution Team
10. Other issues
11. Set Agenda for January 9, 2003 (USFS Mountlake Terrace)
12. Evaluate Meeting

INTRODUCTIONS
We welcomed Adam Waybright of R2 Consulting. He will provide an update on A09.c -Middle Skagit R. Distribution, Timing & Depth of Redds.

We also welcomed Mark Daily of Meridian Environmental and assigned to the Louis-Berger Team, who are putting together the Preliminary Draft Environmental Assessment (PDEA).

NEW ACTION ITEMS

- ALL: Give Brady feedback on A17 prior to our next meeting.
- ALL: All were asked to review the expanded PME outline (structure, content) and give comments to Arnie by January 15. Note: See PME list PME section below.
- ALL: Let Brady know if you are interested in getting a CD of the USFS *Baker River* Watershed Analysis.
- Dee: Get with Arnie to clean up the October 18 brainstorm list by December 31.
- Lloyd: Check with FERC re: Army Corps of Engineers flood control authority and the law that provides that authority.
- Arnie: Coordinate integration of cleaned-up matrix with the PME list from the Cary/Arnie outline.
- Phil: Set up meeting with Brady, Gene, Mark, PSE, Doug re A38 (soon)
- Bill: Bring poem
- *Nick: Discuss with Brady, Stan, Gary, etc., and decide who will fund and who (USFS/NPS, PSE?) is going to operate the Little Park Creek smolt trap this spring*
- Nick: Talk with Stan re: A29.
- Mark – Get Emily juvenile density for multiple age classes in the Sauk- Completed?

REVIEW RELICENSE SCHEDULE
Arnie walked us through the revised schedule.

SETTLEMENT PROCESS - PMEs
Cary walked us through the new list of possible PMEs for this group. Arnie, as promised has reviewed this expanded list to ensure that each brainstormed suggestion has been captured.

Cary will, as Stan's suggestion, replace references of Skagit System Cooperative (SSC) with the actual names of the three tribes represented by the Cooperative (Swinomish, Sauk-Suattle, and Upper Skagit).

He will also change "stocks" to species.

All were asked to review this list and provide feedback on overall structure, what's missing, etc. They should also consider each PME option according to:

- Measurable Objectives (implementation and effectiveness)
- Advantages/Disadvantages
- Cross Resource Implications
- Conflict/Unresolved Issues

All were asked, as they review the outline, to call out things that were unclear and what standards for success or a desired future condition should look like.

As they review the outline, they should focus on these areas (highlighted from the outline that Cary and Arnie put together):

PME LIST:
Aquatic Species Management Plan
Baker River Coordinating Committee Created (BRCC)
Habitat Enhancement, Restoration, and Conservation Fund (HERC) Created
Fish propagation and enhancement programs and facilities
Non-Native or Invasive Aquatic Animal Species Programs

Fish Passage Management Implementation Plan
Upstream passage continuity for Migratory Fish species (Anadromous and Adfluvial, Fluvial, Resident) Upstream Passage will be provided using Trap, Sorting and Haul facilities located on the Baker River in Concrete. The facilities may use the existing site and some or all existing facilities as agreed by the parties (Reserves Section 18)
Downstream passage Continuity for Migratory salmonid species) (Anadromous, Adfluvial, resident). PSE shall provide passage facilities for downstream migratory fish at the Upper and Lower Baker Developments.

Flow Management Plan for Fish and Other Aquatic
Continuous Instream Flow from the Baker River Project
Ramping Rates associated with the Baker River Project

Amplitude variations associated with the Baker River Project
Frequency of Cycling of flow changes associated with the Baker River Project
Contingencies and Emergencies Related to Flow management associated with the Baker River Project
Water Quality (Spill prevention and response plan in operations section 5.0)

Physical Habitat Management
Fluvial Geomorphic Processes
Large Woody Debris
Water Quality Enhancement
Riparian Modification, Conservation or Restoration
Instream channel modification (In-basin or out of basin)
Invasive/Noxious Aquatic & Riparian Plants

Reservoir Level Management & Operations Plan
Reservoir Stage Management (Reservoir Rule Curve)
Reservoir Water Quality (Spill prevention and response plan in operations section 5.0)

Appendix ____ HERC Project Selection, Implementation, and Evaluation Plan
Appendix ____ Schedule A Instream Flow Compliance parameters for the Baker River to the Skagit River
Appendix ____ Schedule B Water Quality Monitoring Parameters for the Baker River Project

MARCH CROSS-RESOURCE WORKSHOP
Dee discussed with us the proposed schedule and format for this workshop. The purpose of this meeting is to come up with creative solutions to potential PMEs that are in apparent conflict across resource areas. They will also be looking to optimize opportunities to synergize across resource areas.

We discussed having folks arrive at the Baker Lodge on Tuesday night, March 4, and then getting started with the workshop first thing Wednesday morning, March 5. We would finish the workshop by the end of the day on Thursday, March 6.

Prior to the workshop, all resource groups need to become familiar with what other groups are considering for PMEs. We will, in our January meeting, identify which options for PME should be written up and shared with other Resource Groups at our March Workshop.

We also reviewed a proposed list of workshop participants. We agreed to add Ruth Mathews (Nature Conservancy) as the NGO representative for *Aquatic Resources Working Group*. The idea is to get good representation across all the resource areas as well at the various governmental and non-governmental organizations. We would also like the group to remain as small as possible. PSE team leaders as well as the Louis-Berger Group will also participate which bring the total of participants to around 30. All were asked to review the list and get back to Dee on whom they feel should attend.

FISH PASSAGE TECHNICAL WORKING GROUP REPORT

The group met this week and Arnie reported that they have delivered as promised a conceptual design for Upstream Passage at Lower Baker (the eight alternatives have been narrowed to one) as a recommendation to the Aquatics group. Copies of the report will be made available to the working group by January's meeting. This alternative allows for modifications to the existing trap and haul facility at Lower Baker for additional sorting and sampling, water supply, etc.

The Downstream Passage Group has been reviewing the results from the four studies (covering far field and near field migration effects under different reservoir operation and generation scenarios) done this summer. The group will meet again December 13 to finish reviewing these results to see if they can help further narrow alternatives for downstream passage.

The vision for fish passage is to *address all fish species*. The focus has been on migratory salmonids. Concern was expressed for passage of other species as well (e.g., lamprey).

REPORT FROM INSTREAM FLOWS TECHNICAL WORKING GROUP

See A9 in matrix below.

STUDY REQUEST SUBMITTALS/STUDY PLAN DEVELOPMENT

Study # Title	Notes/Next Steps
A01.A Reservoir Tributary Habitat Surveys	Phil shared with us an outline of the "Habitat Conditions and Salmonid Use of Tributaries" report that Emily plans to have completed by January. The report will include summaries for each stream. Phil will distribute the report for our review prior to our meeting February 13 (in time for PDEA). ACTIVE
A01.B Reservoir Tributary Biological Surveys	See report for 101.A. ACTIVE
A01.C Reservoir Tributary Delta Surveys	See report for 101.A. ACTIVE
A02 LB River Habitat Mapping	Sue is working up with results on the physical habitat. This will tie in with A16.The Corps will be invited to a meeting on this topic January 17.
A03 Reservoir Fish Population Characteristics	No action yet. PSE will review existing information for the PDEA. Will get update in January.
A04 LB/Skagit River Flow, Gaging	Phil reported that they downloaded pressure sensors last week and are in the process of collecting data. Links to A9. ACTIVE
A05 Water Quality Sampling	Data collection underway as per Study Plan. This study will be ongoing through Spring, 2004. Hoping to have all requirements fulfilled for Water Quality Certification.
A06 UB Passage Design Baffle Modification	Complete.
A07 Lower Baker Forebay Bathymetry	Complete.
A08 UB Passage System Evaluation	Complete.

A09A Skagit River Flow and Habitat Assessment	Phil reported that they have collected all low and medium flow data. They are still waiting for an opportunity to collect high flow measurements. (waiting on the weather). If we don't get these measurements by year-end, we may have to wait until May. In the meantime, R-2 will be working out the technical details of the Study Plan (criteria curve, etc.)
A09B Salmonid Redd Selection and Maintenance in the Middle Skagit in Response to River Fluctuation from Hydropower Peaking	Adam is researching what type of spike in flow (over what window of time is required to influence spawning behavior. He observed fish moving over formerly shallow water redds after they had become submerged by a higher flow. It would be interesting to discover if fish will establish a redd in an 18-hour time period because that is a typical cycle for Baker Project peaking. Steve observed that as water comes up the fish come in to spawn. R2 will continue to look at this when PSE resumes a regular operating schedule.
A09C Distribution, Timing and Depth of Salmonid Redds	Adam reported on the status of these surveys: Aerial and Jet Boat Surveys were conducted from late August and will continue through mid-January with aerial surveys *only* done in late August and early September and mid January. Adam estimated that roughly 80-95% of chinook redds were found in the main stem channel. Aerial redd counts were found to be necessary to locate redds for subsequent measurement using the jet boat. The data being collected will help us evaluate our assumptions around spawning conditions. Adam and Doug have measured about 1,100 chum redds and over 600 chinook redds. The redd data will allow us to identify flow conditions during this active spawning period. This will help identify spawning and incubation flows and will also help in our analysis of spawning behavior (A9b). As we look at these data, we need to keep in mind this is an atypical year (extremely dry). We should try to evaluate the influence of ambient and water temperatures as well.
A09D Distribution, Timing of Salmonid Fry	As part of collection permit must summarize ESA impacts. Will start juvenile surveys in February or early March depending on weather. Report should be out 2004. ACTIVE

A10 Baker River Delta Habitat Assessment-Char	Complete. Note: USFW is concerned with impacts to char and indirectly to bald eagles through chum and also to cutthroat.
A11 Nutrient Addition	Tie to A26.
A12 Instream Flows for Bio-diversity	Split between R-A21 & R-A09.
A13A Water Quality Impacts of Human Uses of the Reservoir and Adjacent Shorelines.	Removed from list of studies this group will address, reported by Brady in September. Greta reported the USFS will pursue this in the recreation working group.
A13B Water Quality Impacts on Aquatic Habitat	Removed from list of studies we will address. Tabled for now. Awaiting results of A14a.
A14A Reservoir Shoreline Erosion	Brady distributed notes *taken by Greta at the A14A meeting held on November 12*. The aim of this study is to document existing erosion and deposition features along Baker and Shannon shorelines. They are also working on how to estimate annual bank retreat (acreage lost for high and severe areas). Hoping to complete this work by December. Members were asked to provide input to Jenny on the mapping (i.e., on Draft Report submitted 10/17/02 to the working group). ACTIVE
A15 UB Delta Scour	Field work is complete. Hope to have the report in February 2003.
A16 Lower Baker River Alluvial Fan Assessment	Will be discussing this with the ACOE on Jan. 17, 2003. Next step will be development of a study plan.
A17 Tributaries Surveys Upstream of Barriers	Brady has integrated comments he received with this study request. This study is concerned with understanding resident fish populations and habitat above anadramous fish barriers. A question was raised re: the nexus to the project. We agreed there is a direct project effect on resident fish inside the drawdown zone. We did not agree that there was a project effect (direct or indirect) on resident (native and exotic) fish above the barriers. It seems that Step One (linkage to relicensing) needs to be fleshed out to describe how information gained from this study would help write a license article.
A18 Baker River Survey Upstream of 1 km.	Merged into A01a and A01b. ACTIVE.
A19 Review Limnological Information	This study has been combined with A26.
A20 Large Woody Debris Management	Mike gave report to Phil to review. We hope to review it in February 2003.
A21 Skagit Wild & Scenic River Values	This is being addressed by A9 and A24.

A22 Baker Lake Trout Impacts Evaluation	No longer necessary due to change in management direction in favor of cancellation of non-native trout stocking in the reservoirs. Removed from list of studies we will consider.
A23 Baker River Wild & Scenic River Values	This is being addressed through A15.
A24 Hydrologic and Geomorphic Analysis	Sue will give Phil the (lengthy) report on this to review on December 16th.
A25 Unnatural Predation	Work will start in mid-January as outlined in the Study Plan.
A26A Reservoir Limnology-Production Potential	This has been combined with A19. Arnie reported that the contractor has been selected: Asit Mazumder will be out for a project tour next week. He has completed the water quality analysis and is starting to analyze the fish data now. We hope to have his report by the end of February 2003.
A26B Tributary Production Potential	Emily will complete the report by year-end (2002). This report will include findings for A01a and A01b.
A27 Middle Skagit Incubation Flows	Addressed in A9.
A28 Fish Passage-Reservoir Management	Now addressed in Fish Passage Studies A30 to A34. ACTIVE
A29 Estimate Sockeye Production from Different Incubation Sources	Nick will meet with Stan to discuss.
R-A30 Near-Field Smolt Behavior	Coordinated through Fish Passage Tech. Group. 2002 Field effort completed, data analysis underway- results will be reported at the Fish Passage meeting in December.
R-A31 Fish Passage-Far Field Smolt Migration	Coordinated through Fish Passage Tech. Group. 2002 Field effort completed, data analysis underway- results are being reviewed by the group.
R-A32 Fish Passage-Kelt Radio telemetry	Coordinated through Fish Passage Tech. Group. 2002 Field effort completed, data analysis underway- results are being reviewed by the group.
R-A33 Fish Passage-PIT Tag Migration	Coordinated through Fish Passage Tech. Group. 2002 Field effort completed, data analysis underway- results are being reviewed by the group.
R-A34 Fish Passage-Downstream Run-Timing Correlation	Completed. Coordinated through Fish Passage Tech. Group.
R-A35 Fish Passage-Upstream Run-Timing	Completed. Coordinated through Fish Passage Tech. Group.
R-A36 Native & Wild Inland Fish Population Assessments	Mark will flesh out the details of this study and present them for our review at our January 9 meeting.
R-A37 Without Project Alternative (evaluation	ACTIVE; Will proceed in January.

of Aquatic & Riparian Habitat)	
R-A38 Bull Trout Population Assessment & Risk Analysis	Brady reported that he and Gene have provided comments on this to Mark who is reworking the study request accordingly. Phil reported that FERC has asked PSE to prepare a Biological Assessment on how the proposed chinook measures in the IPP affect bull trout and bald eagles. This Biological Assessment was completed by its due date of December 7, 2002. Phil will set up a meeting with Brady, Mark, Gene and PSE to discuss this in mid January 2003.

REPORT ON OLD ACTION ITEMS

- ALL: Reviewed new list of PMEs and see that your interests are represented. Let Arnie know before December meeting.
- Arnie/Cary: Sent revised version of newly formatted PME list to members to review.
- Arnie: Sent out Terrestrial and Recreation Working Groups early PME attempts (Titles, actions, etc.) for aquatics members to review as examples.

SOLUTION TEAM UPDATE

They have requested that Bruce Freet draft an approach to adaptive management. They have also requested that each Working Group share with them a Study Summary in the same fashion that the lists of "What's Hot?" are now being shared.

ADDITIONAL ISSUES?

Brady announced that CDs of the *USFS Baker River Watershed Analysis* are available upon request.

Brady also mentioned the importance of meeting to discuss plans to operate the smolt trap at Little Park Creek.

MEETING HANDOUTS (bolded handouts will be posted on website)

- **A-09c Middle Skagit River Spawning Surveys, December 2002 Interim Report**
- Agenda, November 14, 2002 meeting notes, updated mail list, revised study/study request index.
- Habitat conditions and Salmonid Use of Tributary Reaches Accessible to Anadromous Salmonids: Baker River Basin, December 2002
- Long-Term Planning Schedule, December 12, 2002
- Baker Project Cross Resource PME Workshop March 5,6, and 7, 2002, Items to Review with Working Group Members
- Draft Protection, Mitigation and Enhancement Measures Scoping – Baker River Relicense Aquatic Resources Working Group
- Study Request for Study A-17 Distribution of Native and Wild Inland Trout and Habitat Conditions Above Fish Barriers in the Baker River Basin.

PARKING LOT

- State agency presentations re: mandates (agency direction)
- Create a master list of possible studies across all working groups and share with all
- Access to the Baker River Project hourly operational model (Charles Howard)
- Participate in Lower Skagit Work Group for native char
- Create Overall "Study Plan" for Studies that will drive the Relicensing Process
- Address Trap & Haul – other species
- *Do we continue to operate the Little Park Creek smolt trap? If so, who will fund this? Who will operate the trap? Needs resolution ASAP before spring outmigration starts!*
-

EVALUATION OF MEETING

Well-Dones

- Great food
- Bill's poem
- Nice participation
- Arnie/Cary's efforts
- Adam's spawning presentation
- Welcome Mark *Daily*
- Comprehensive study review
- Margaret on the phone
- Adam's spawning presentation

Opportunities to Improve

- Missed Gene Stagner and Mark *Downen*

What's Hot?

- Salmon Spawning Skagit River Behavior
- PME schedule (prior to March workshop)
- No studies dealing with resident non-salmonids
- A17: Trib Surveys Upstream of barriers

Studies Update:

- Fish Passage:
  - Upstream conceptual design is complete.
  - Downstream draft (options being discussed) study reports distributed and being reviewed
- Instream Flows:
  - Still awaiting high flows (behind schedule due to weather)
- Original schedule is behind for PDEA and other relicensing dates.

Tentative January 9, 2003 Agenda

8:30 – 3:00 p.m. at USFS Building in Mountlake Terrace

1. Review Agenda and Minutes
2. Review Relicensing Schedule
3. Settlement Process – PMEs Select PMEs to write up and share at March workshop

4. Fish Passage Technical Working Group Report
5. Instream Flows Update (A9)
6. Studies: A17, *A36, A38,* Arnie --- ADD others here…
7. Action Items
8. Update from Solution Team Meeting
9. Additional Issues?
10. Set agenda for February 13, 2003 meeting
11. Evaluate meeting

Baker River Project Relicensing Hydrology and Aquatic Resources Working Group

A-09c Middle Skagit River Spawning Surveys

December 2002 Interim Report

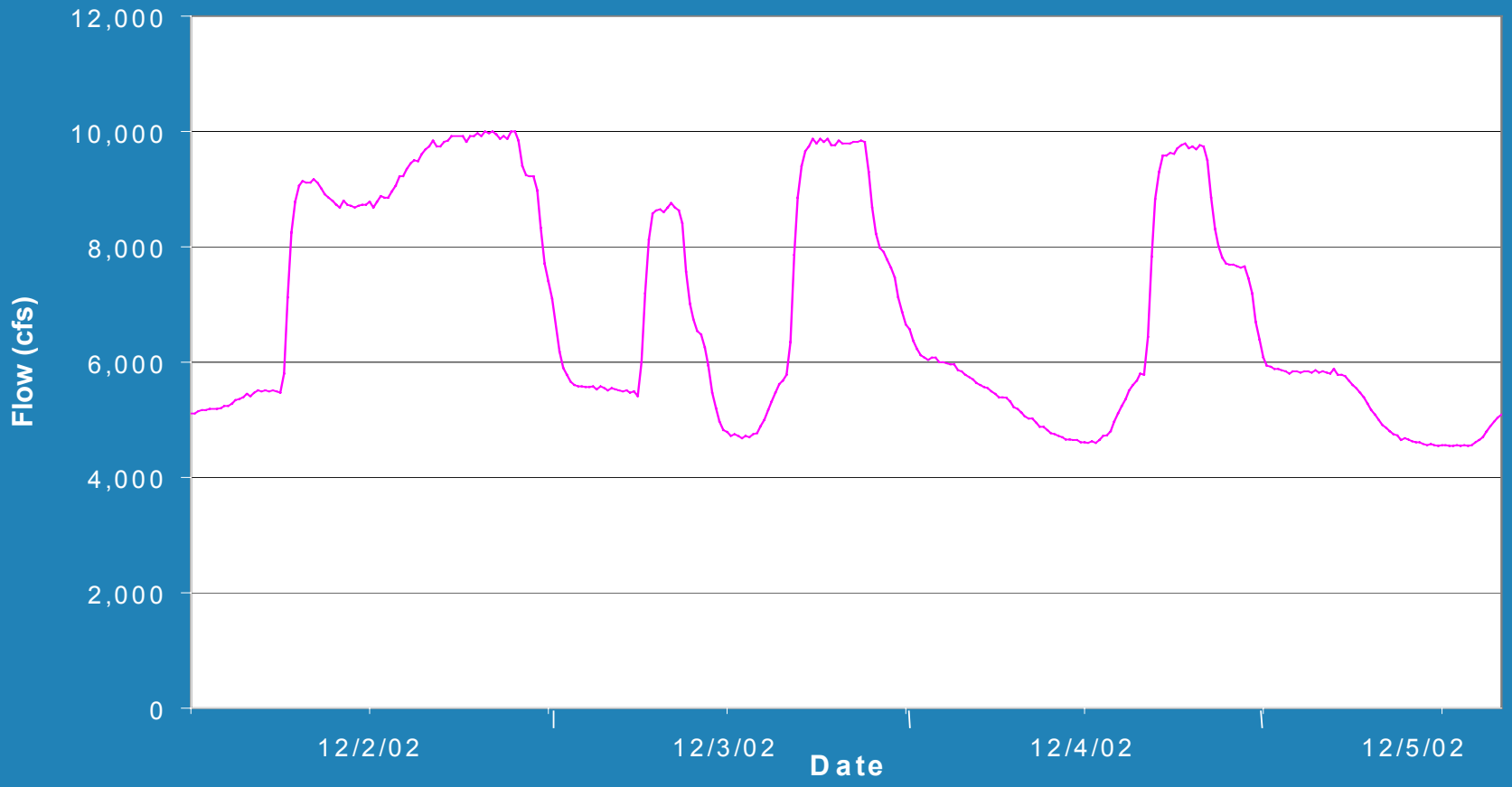
Proposed fall 2002 middle Skagit River salmon spawning survey effort

Survey Date	Survey Type
Late August/Early September	Aerial
Late September	Aerial and Jet Boat
Early October	Aerial and Jet Boat
Mid October	Aerial and Jet Boat
Late October	Aerial and Jet Boat
Early November	Aerial and Jet Boat
Late November	Aerial and Jet Boat
Early December	Aerial and Jet Boat
Late December	Aerial and Jet Boat
Early January	Aerial and Jet Boat
Mid January	Aerial

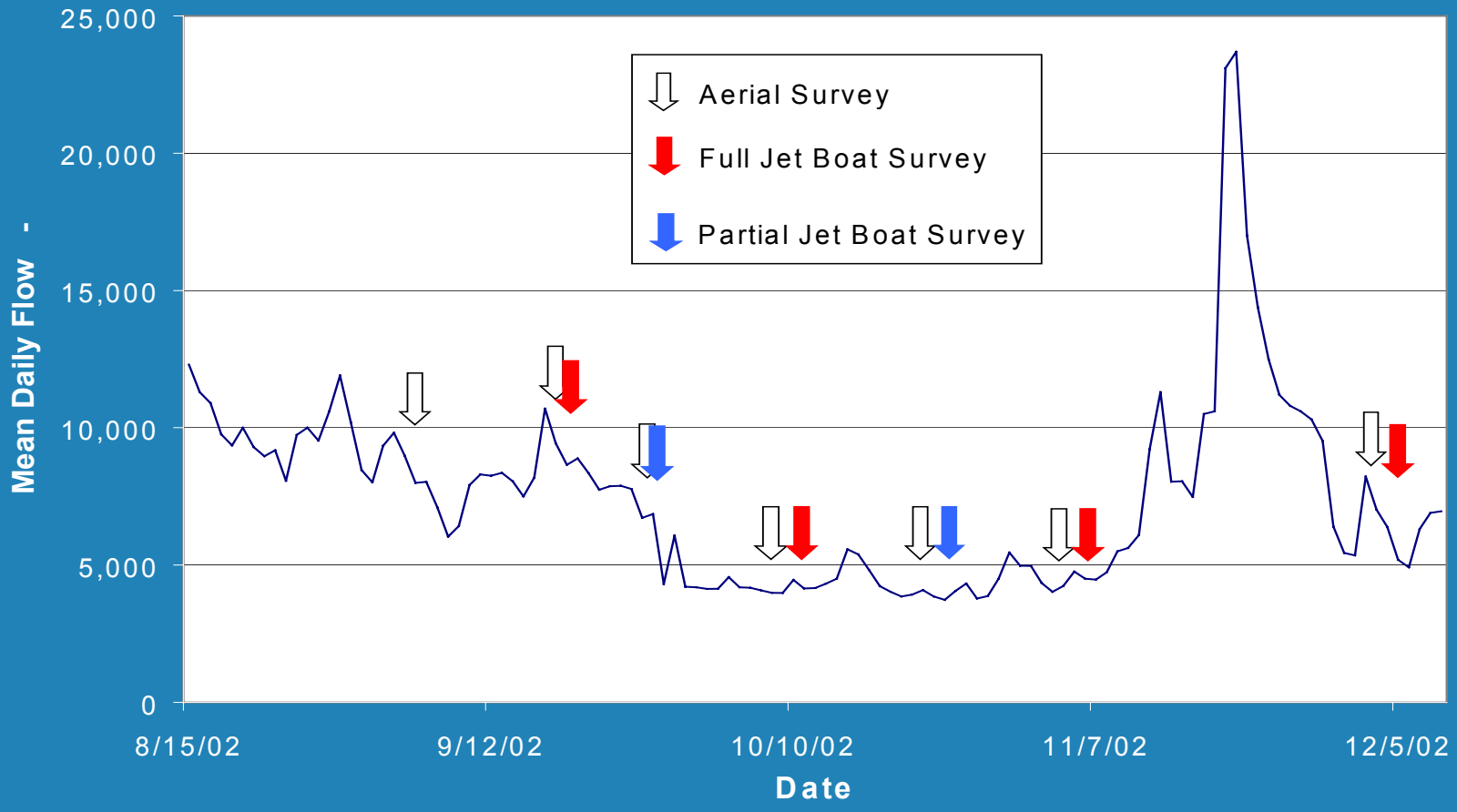
Redd Measurements

- Redd location (River mile)
- Location relative to margin (distances to wetted and bankful margins)
- Redd depth
  - Pit
  - Tailspill
  - Level of undisturbed gravel
- Substrate
- Velocity (at redds with attendant adults)
- Time of measurement

Middle Skagit River flow near Concrete during 12/2/02 survey week (USGS gage #12194000)



Fall 2002 spawning survey dates in relation to flow in the middle Skagit River near Concrete (USGS gage #12194000)

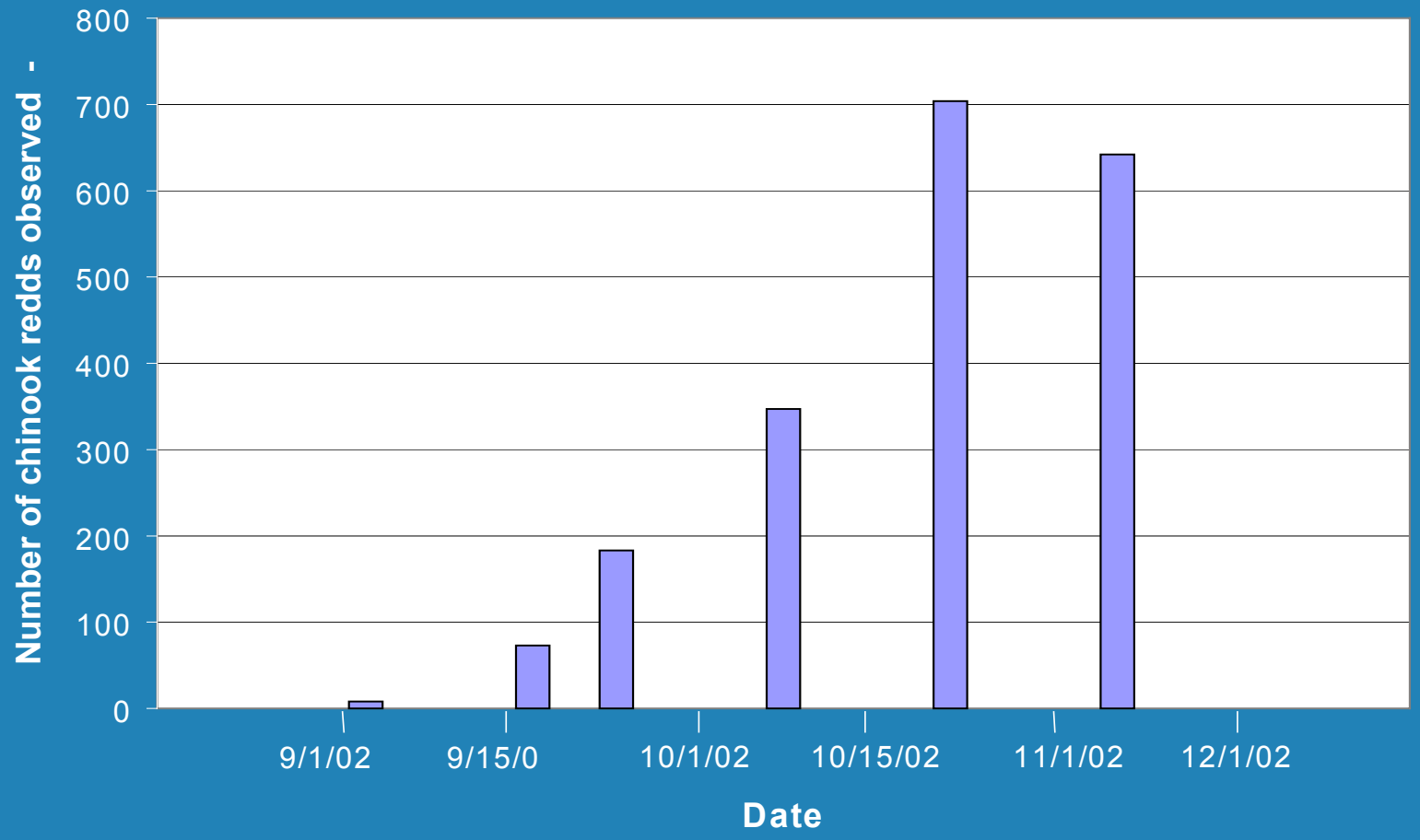


Survey type, survey area, and number of redds observed (aerial) and measured (boat), by survey date in the middle Skagit River, fall 2002.

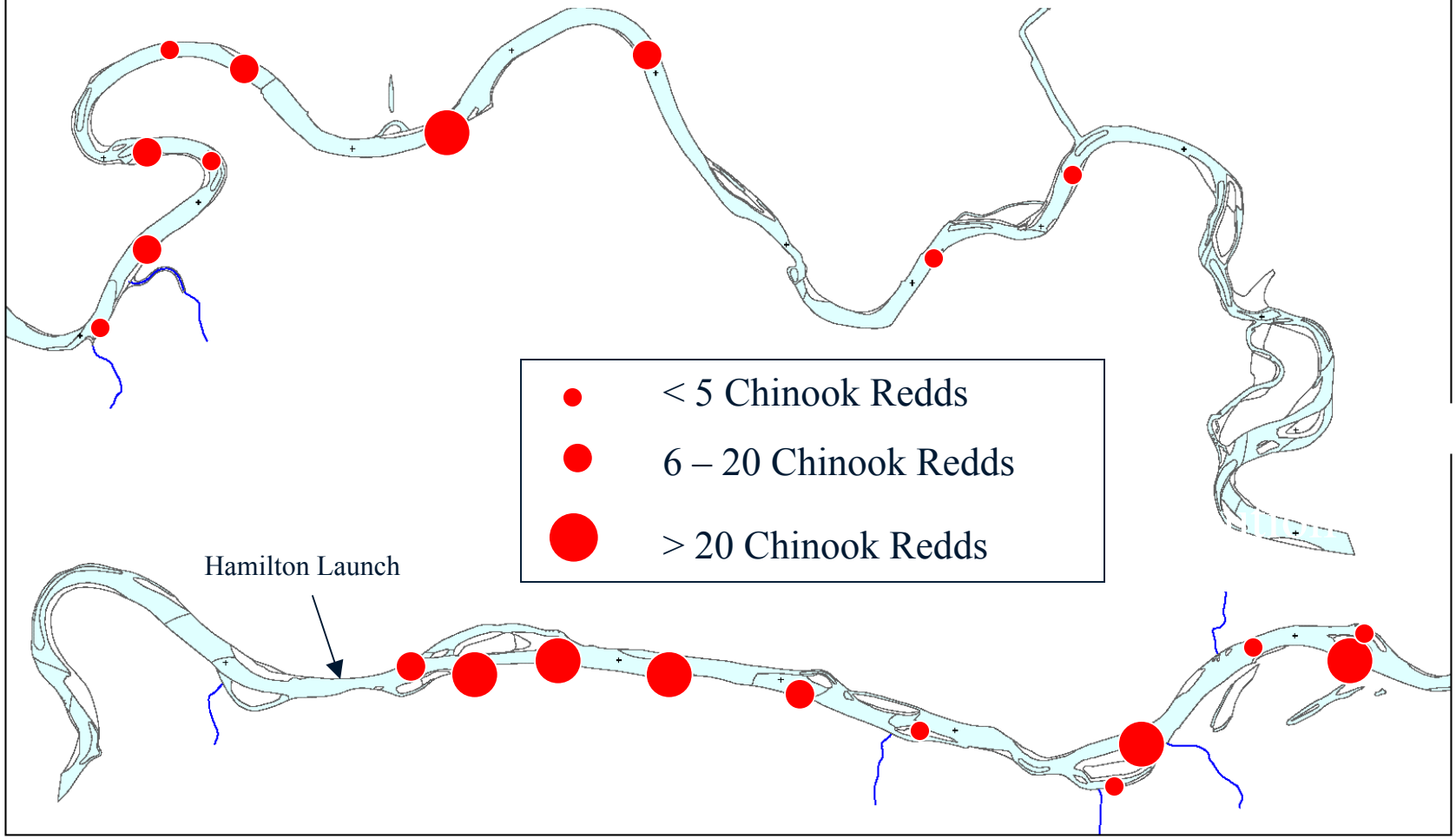
Survey Date	Survey Type	Survey Area	Number of Redds Observed/Measured*			
			Chinook		Chum	
			Aerial	Measured	Aerial	Measured
September 4	Fixed Wing	SW to Sauk	8		0	
September 18	Fixed Wing	SW to Sauk	73		0	
September 18 - 20	Jet Boat	SW to Baker		73		0
September 26	Fixed Wing	SW to Sauk	183		0	
September 27	Jet Boat	SW to Hamilton		35		0
October 7	Fixed Wing	SW to Sauk	347		0	
October 8 - 11	Jet Boat	SW to Baker		304		0
October 22	Helicopter	SW to Sauk	704		128	
October 24 - 25	Jet Boat	Hamilton to Baker		117		133
November 4	Helicopter	SW to Sauk	642		756 est	
November 5 - 8	Jet Boat	SW to Baker		76		354
December 2	Fixed Wing	SW to Sauk	No count		2000+ est	
December 3 - 5	Jet Boat	SW to Baker		0		679

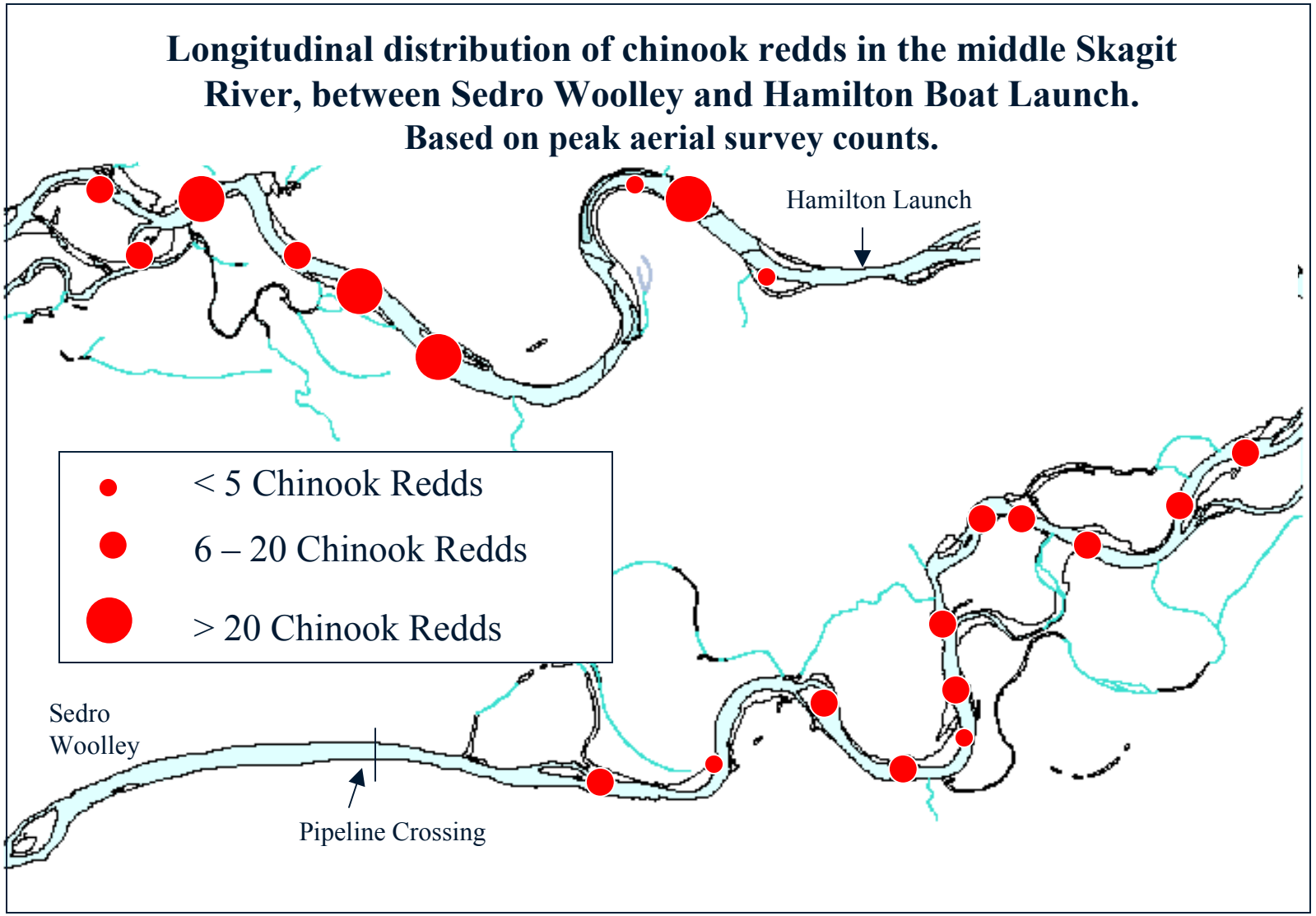
*Aerial counts consist of redds observed between the pipeline crossing at Sedro Woolley and the Baker River confluence

Number of chinook redds observed by survey date (Based on aerial surveys).



Longitudinal distribution of chinook redds in the middle Skagit River, between Hamilton Boat Launch and Baker River Confluence. Based on peak aerial survey counts.





Number of chum redds observed by survey date (Based on aerial surveys).