From: Blaine Ackley
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:42:28 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Blaine Ackley
655 NW 229th Ave.
Hillsboro, OR 97124

From: anthony anderson
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 4:15:39 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

anthony anderson
4970 ne 65th st
seattle, WA 98115

From: Jordan Anderson
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 3:34:05 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Jordan Anderson
7053 NE 145th St
Kenmore, WA 98028

From: Bev Angel
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:16:17 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Bev Angel
Box 6
Stanley, ID 83278

From: Joe Angevine
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:34:04 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Joe Angevine
26626 164th ave se
Covington, WA 98042

From: Clarice Arakawa
To: John Sirois
Subject: Salmon Restoration support
Date: Wednesday, April 15, 2015 9:04:11 PM

Dear Upper Columbia United Tribes,

Thank you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia. I support UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam. This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 to prepare for Phase 2 of salmon return.

Because salmon offer an important boost for our economy and environment, I encourage you to undertake a robust public process to involve the public of the region. There has never been adequate mitigation for the loss of salmon in the Upper Columbia. It's time we right historic wrongs, repair damage, and restore integrity to our rivers and forests, of which salmon are a part. Thank you again for taking this important step for all of us.

Clarice Arakawa
PO Box 1024
Port Angeles WA 98362

From: Caroline Armon
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:09:37 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Caroline Armon
PO Box 2963
Friday Harbor, WA 98250

From: Bill Arnsberg
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:48:35 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Bill Arnsberg
3404 Hwy 12
Orofino, ID 83544

From: Sigrid Asmus
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 2:34:32 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Sigrid Asmus
4009 24 Ave W
Seattle, WA 98199

From: Geranios, Nick K.
To: John Sirois
Subject: comment
Date: Wednesday, January 28, 2015 10:11:08 AM

Hi John

I'm writing about this proposal to restore salmon above Grand Coulee Dam and could use a quote on why this is important to Native American tribes for my article. Could you send me a couple of sentences on why the tribes are interested in pursuing this study?

Regards
Nick Geranios
AP Spokane

msk dccc60c6d2c3a6438f0cf467d9a4938

From: Bradford Axel
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:38:13 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Bradford Axel
5532 31st Avenue NE
Seattle, WA 98105

From: Justin Bailie
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 7:28:56 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Justin Bailie
PO Box 103
Seaside, OR 97138

From: Norman Baker
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:11:51 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Norman Baker
3789 Lost Mountain Road
Sequim, WA 98382

From: Dale Ballard
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 10:52:43 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,
Dale Ballard

Dale Ballard
802 Toliver Road
Molalla, OR 97038

From: Mary Bandura
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 6:50:52 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Mary Bandura
5135 Indian Rd NE
Olympia, WA 98506

From: Patrick Barry
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:52:40 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Patrick Barry
1840 Worden Avenue
Klamath Falls, OR 97601

From: Ben Basin
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 5:03:18 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Ben Basin
515 SE 19th Ave.
Portland, OR 97214

From: Dean Baxter
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Sunday, March 01, 2015 4:28:26 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Dean Baxter
4698 Symphony Drive
Eugene, OR 97404

From: Michael Beasley
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:46:34 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Michael Beasley
1310 E. Club Ct
Spokane, WA 99203

From: Mary Beck
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 3:29:32 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Mary Beck
3524 Raintree rd.
VaBeach, VA 23452

From: Barbara Bernstein
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 1:33:33 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Barbara Bernstein
1214 SE Flavel
Portland, OR 97202

From: William Blair
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:11:45 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

William Blair
11561 W Colony
Boise, ID 83709

From: Julia Blake
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 4:15:57 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Julia Blake
4408 monkey hill road
oak harbor, WA 98277

From: Joseph Bogaard
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:36:20 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Joseph Bogaard
16530 91st ave sw
Vashon, WA 98070

From: Arthur Bogie
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:19:29 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Arthur Bogie
PO Box 2104
17423 Snee-oosh RD
La Conner, WA 98257

From: Debra Boswell
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:07:12 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Debra Boswell
426 W White Rd
Spokane, WA 99224

From: Justin Boucher
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 6:00:04 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Justin Boucher
1125 NW 12th ave. apt. 1015
Portland, OR 97209

From: Stephen Boyer
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 2:29:28 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Stephen Boyer
10734 Phinney Ave N
Seattle, WA 98133

From: David Bridgeman
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:10:36 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

David Bridgeman
18411 E Burnside St
#29
Portland, OR 97233

From: John Brinkley
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 2:05:04 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

John Brinkley
2582 W 28th Ave
Eugene, OR 97405

From: Ernest Brooks
To: John Sirois
Subject: intro to salmon
Date: Thursday, January 29, 2015 4:05:29 PM

John,

I think this is a great idea ! I for one am all for it. We talked about the fish ladder that would be built in a tube style rise with rest areas in short interfolds. Of course on the Reservation side of Grand Coulee Dam. I understand that most people wouldn't want that because of the control of the ladder. But that could be worked out.

One thing I'd be worried about is the water quality. You and I both know that there is still a lot of waste coming down out of Canada. I know that the fish go passed Tri-Cities and all the contaminates from there. But how much fish could be ate after passing both areas, and who is going to fund something with that much variation in the process. Don't you think that something's need to be fixed first?

Ernest B. Brooks
Langauge Teacher
Language Preservation Program
Nespelem Office
(509) 634-1445

From: Patrick Brown
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:09:08 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Patrick Brown
411-F Deinhard Ln #174
McCall, ID 83638

From: SHARMAYNE BUSHER
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 6:26:14 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

SHARMAYNE BUSHER
9515 NE 80TH AVE
VANCOUVER, WA 98662

From: GALEN
To: John Sirois
Subject: Support for returning salmon home.
Date: Wednesday, February 25, 2015 4:33:11 PM

Dear Upper Columbia United Tribes,

Thank you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia.

I support UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 to prepare for the next step of salmon return: Phase 2.

Because salmon can be an important boost for our economy and environment, I encourage you to undertake a robust public process to involve the public of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia. In this time of climate change and melting glaciers, it's time we right historic wrongs, move to repair damage, and restore integrity to our rivers and forests of which salmon are a part. Thank you again for taking this important step forward for all of us.

Galen Buterbaugh
10128 N. Ridgecrest Dr.
Spokane, WA 99208

From: Phillip Callaway
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:13:08 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Phillip Callaway
PO Bjox 542
Philomath, OR 97370

From: Juan Calvillo
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:57:28 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Juan Calvillo
3438 SE Hill Road
Milwaukie, OR 97267

From: LIz Campbell
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:54:30 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

LIz Campbell
605 n 64th street
Seattle, WA 98103

From: Jenna Scholz
To: John Sirois
Subject: Facilitation support for the Upper Columbia River Basin Fish Passage Phase 1 meetings
Date: Monday, February 23, 2015 11:27:08 AM
Attachments: UCUT from Cardno.pdf

Hello Mr. Sirois,

It was a pleasure speaking with you about the Upper Columbia United Tribes and potential need for facilitation support during the upcoming Phase 1 Collaboration Group and Advisory Group meetings for the Upper Columbia River Basin Fish Passage and Reintroduction Project. As a follow-up to our conversation about a week ago I've prepared the attached information to better acquaint you with our experience and capabilities.

Please feel free to contact me with any questions and I look forward to our next conversation,
Sincerely,

Jenna Scholz
CARDNO

Phone (+1) 206-269-0104 Fax (+1) 206-269-0098 Direct (+1) 206-239-7383 Mobile (+1) 206-817-2889
Address 801 Second Avenue Suite 700, Seattle, WA 98104 USA
Email jenna.scholz@cardno.com Web www.cardno.com - www.cardnoentrix.com

February 23, 2015

John Sirois,
Committee Coordinator
Upper Columbia United Tribes
25 W. Main, Suite 434
Spokane, WA 99201

Cardno

801 Second Avenue
Suite 700
Seattle, WA 98104
USA

Phone: +1 206 269 0104
Fax: +1 206 269 0098

www.cardno.com

Subject: Facilitation Support for the Upper Columbia River Basin Fish Passage and Reintroduction Project

Dear Mr. Sirois:

I'm inspired by the Upper Columbia United Tribes (UCUT) vision to ensure a healthy future for traditional territorial lands. Cardno shares your commitment to protect and restore our river systems for the benefit of all. We are committed to a proactive and collaborative approach to promoting Indian culture, fish, water, wildlife and habitat through science-based and efficient processes that provide a common voice for our region and the river systems that sustain and support life along the Columbia River.

During our recent call you mentioned that UCUT may need an environmental consulting partner who brings facilitation services for your upcoming Phase 1 Collaboration Group and Advisory Group meetings for the Upper Columbia River Basin Fish Passage and Reintroduction Project. Facilitation of planning processes is a core service of Cardno's and is included in many of our salmon recovery planning, compliance, and restoration efforts. We have the ideal qualifications to support UCUT with Phase 1 meetings, including:

- **Demonstrated facilitation excellence in the Upper Columbia:** Our certified, professionally trained and uniquely qualified neutral facilitators successfully combine best available science with professional knowledge to address large-scale, often competing, river issues in the Upper Columbia System.
- **A history of partnership with Tribes in support of salmon recovery:** As a firm, we have a long history of providing support for salmon recovery in the Columbia River system; we are committed to returning runs of native fish to our river systems, and like UCUT, our staff have devoted their careers to habitat recovery.
- **An established framework to facilitate complex, high-visibility, and legally sensitive projects:** Our direct experience with the entities and ongoing efforts in the Upper Columbia combined with our proven data management, record-keeping, and communication logistics ensure an efficient path to project success.

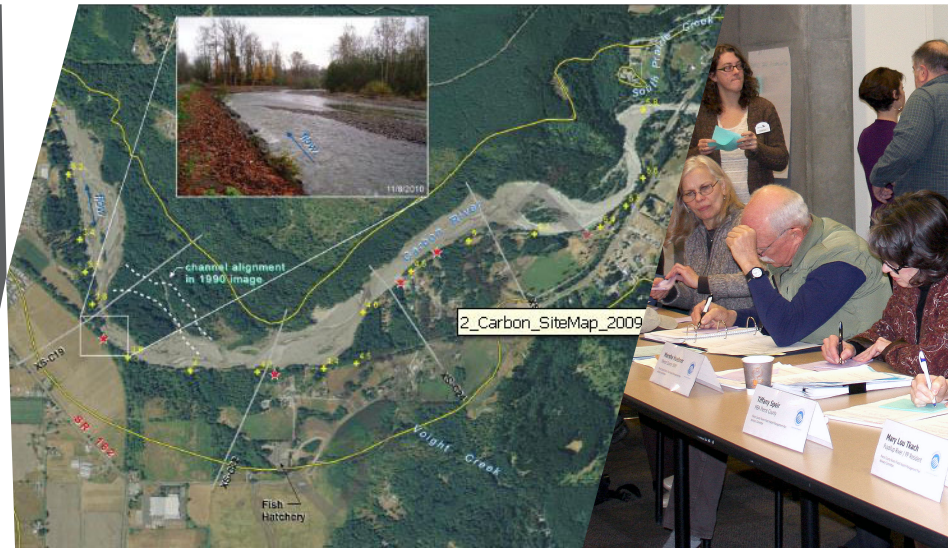
Cardno envisions a vibrant future for the Columbia River. We would be honored to provide UCUT with the facilitation support needed to help attain your communication and process goals for this enormous project. We welcome the opportunity to speak with you further about this.

Sincerely,

Jenna Scholz
Northwest Business Unit Manager
Direct: (206) 239-7383
Email: jenna.scholz@cardno.com

Facilitation & Planning

Facilitation of stakeholder-driven planning and prioritization processes is a typical component of our environmental planning, compliance, and restoration efforts.



Stakeholder Collaboration

Cardno has worked extensively in multi-stakeholder settings to assist water resource managers and basin planning groups in creating workable processes at a variety of scales. Such projects usually address issues that are decades in the making—such as conflicts over flood protection; instream flows; power generation; species recovery; water quality; wetlands and other sensitive habitats; and water and property rights.

Facilitation of stakeholder-driven planning and prioritization processes is a typical component of our environmental planning, compliance, and restoration efforts. We understand that our clients can only be successful in implementing projects with the participation and cooperation of many partners. Therefore, we are committed to a legacy of ecological and human health, public safety, education, and community involvement for each project we perform.

Many of our planning and implementation projects require professional facilitation and outreach services, and we frequently include senior facilitators in our multi-disciplinary projects. We understand the differing perspectives of stakeholders because we have worked on their concerns for several decades. Our training and experience in multi-stakeholder engagement has resulted in project success requiring both technical solutions and adaptive management strategies that facilitate ownership and collaboration.

Framework Development

Our projects are often set within flood planning and salmon recovery frameworks, and almost all require some type of process and public meetings to resolve potential conflicts. We have developed a system for engaging all project partners in the process. We provide coordination and technical sessions to inform advisory committees, expert panels, and other stakeholders on the elements of key planning efforts, design concepts, alternatives analyses, stream habitat improvement actions, flood protection measures, and other important issues.

Cardno's strengths lie in our facilitative listening, accurate recording of group processes, expertise in river management and salmon recovery, and sharp sense for where and how stakeholders can reach consensus. We provide clients with the coordination, data management, and technical skills needed to fully support the development of a roadmap for habitat improvement implementation that addresses limiting factors, meets regulatory compliance and project timelines, and clearly documents decision making.

"Since 1998, I have worked collaboratively with Cardno on numerous habitat restoration projects within the Okanogan River basin directed at the recovery of federally-listed species. The representatives of this company have demonstrated vast expertise in natural resource management which resulted in innovative and effective solutions. During the development of several projects, the representatives of Cardno have clearly communicated complex processes and proposed techniques to landowners, local government municipalities and regulatory agencies which resulted in gaining support of implementing a preferred alternative. In the future, Cardno will continue to be given serious consideration in the development and implementation of aquatic habitat restoration projects pursued by the Colville Confederated Tribes." – Chris Fisher, Fisheries Biologist

Upper Grande Ronde Atlas Process

Technical Support, Stakeholder Coordination, & Facilitation

Client:
U.S. Bureau of Reclamation

Location:
Grande Ronde River, Oregon

Sector:
Environmental

Start and completion dates:
2014 – Ongoing

Key services:
> Multi-stakeholder program development
> Coordination & facilitation
> Planning & prioritizing habitat projects
> Basin-scale data management
> Large geospatial analysis
> Meeting notes & reporting

Overview

Cardno is assisting the U.S. Bureau of Reclamation (Reclamation) and Bonneville Power Administration (BPA) with the Atlas Process to facilitate meeting the requirements of the 2008 Biological Opinion (BiOp) for the Federal Columbia River Power System (FCRPS) for providing fish passage and improving fish habitat in the Grande Ronde River, Catherine Creek, and their tributaries. The Atlas Process is essentially a planning process underway in the Grande Ronde sub-basin spearheaded by BPA and supported by Reclamation. There are two separate processes in progress—the first is for Catherine Creek, which is near completion, and the second is for the Upper Grande Ronde (UGR), which recently began.

Cardno is supporting the development of this strategic restoration planning framework linking limiting factors and prioritizing top-tier projects that maximize ecological return on investment. This project includes prioritization for restoration as well as the consideration of other rehabilitation efforts proposed for the sub-basin. We are currently supporting BPA with a large geospatial analysis and development of a project schedule and facilitation work plan. This project also requires close coordination with Confederated Tribes of the Umatilla Indian Reservation (CTUIR), Grande Ronde Model Watershed (GRMW), Nez Perce Tribe, U.S. Fish & Wildlife Service (USFWS), Reclamation's local planning and design group, BPA, the Union County Soil and Water Conservation District (SWCD), U.S. Forest Service (USFS), National Marine Fisheries Service (NMFS), The Freshwater Trust, local landowners, and others to ensure the project moves forward collaboratively, successfully, and in a timely manner.

Salmon Creek

Rehabilitation and Fish Passage Program

Client:
Confederated Tribes of the Colville Reservation

Location:
Okanogan County, WA

Sector:
Environmental

Start and completion dates:
2001 – ongoing

Key services:
> Geomorphic and fish passage assessments
> Controlled flow release studies
> Restoration design and engineering
> Construction document development
> Construction cost estimate
> Construction management and inspection

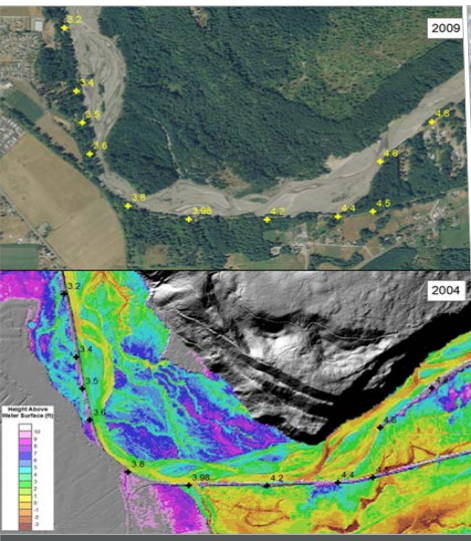
Overview

The lower 4.3 miles of Salmon Creek in Okanogan County, Washington, have experienced a significant degree of habitat degradation and channel instability due to more than 80 years of dewatering from irrigation diversions by Reclamation's Concunully Project. Cardno assisted with nearly 10 years of cooperative study and negotiation between the Confederated Tribes of the Colville Reservation (CTCR) and the Okanogan Irrigation District regarding options to support restoration of a self-sustaining population of steelhead in Salmon Creek.

Our site assessment and water management studies provided a scientific foundation for the negotiated settlement, Cardno designed and oversaw implementation of the stream channel modifications to provide unimpeded passage for steelhead under the agreed upon release of 5 to 10 cubic feet per second (cfs). Several techniques were employed to construct a contiguous migration route. Where a well-defined thalweg already existed little to no channel modification was proposed. Recommended work included removal of abandoned and exposed pipeline crossings, the removal of trash and debris and the repositioning of large rocks. Elsewhere, hand labor and construction equipment was used to define a channel thalweg and construct boulder cascades.

Cardno continues to work with the Tribe to adaptively manage the geomorphic conditions along lower Salmon Creek, since the stream remains subject to periodic uncontrolled flood releases from the dam that cannot be prevented.

Pierce County Rivers Comprehensive Flood Hazard Management Plan



Client:
Pierce County Public Works and Utilities, URS Corporation (Prime)

Location:
Pierce County, WA

Sector:
Environmental

Start and completion dates:
10/2009 – 1/2012

Key services:
- > Stakeholder facilitation program development
- > planning & prioritizing habitat projects
- > Data management & large geospatial analysis
- > Identifying habitat actions
- > Reach-scale geomorphic assessments

Overview

Cardno designed and led the facilitation program to support development of the Pierce County Rivers Comprehensive Flood Hazard Management Plan. Over a 2-year period, Cardno performed the systematic review, prioritization, and ranking of more than 200 capital improvement actions to address a variety of often competing key factors such as public safety and the biological needs of ESA-listed species. The plan addressed river and floodplain management over a large geographic area including the entire mainstems of the Puyallup, White, Carbon, and Nisqually Rivers and lower reaches of the Greenwater River, Mashel River, and South Prairie Creek.

Cardno supported the County in planning, scheduling, coordinating, and facilitating 18 advisory committee meetings, 9 public meetings, and 2 workshops for elected officials. The 27-member advisory committee included representatives from cities, counties, tribes, resource agencies, businesses, environmental interest groups, and floodplain residents and citizens. We drafted agendas, coordinated and arranged materials, and delivered technical presentations relevant to the goals and objectives of each meeting. We also provided large geospatial database management and technical writing for watershed-scale sections of the main planning document and five reach-scale geomorphic assessments.

Jenna G. Scholz

Project Role
Program Manager / Lead Facilitator

Years' Experience
23

Education
> M.S., Forest Engineering & Hydrology, University of Washington, 2001
> B.S., Biology, Concentration in Marine Science, Boston University, 1991

Key Project Skills
> Stakeholder facilitation
> Project management
> River restoration
> Habitat assessment
> ESA compliance
> Agency coordination
> Environmental planning

Certifications
> Interactive Associates: Certification in Essential Facilitation, 2009; Certification in Facilitation Leadership, 2010.
> Whidbey Institute: Group Process Facilitation, 2007; Powers of Leadership 2009.
> PMBOK: Project Management Certification 2010.

Summary of Experience

Jenna Scholz has more than 20 years of technical experience and 10 years of facilitation experience in restoration permitting, planning, monitoring, and assessment in the Pacific Northwest. She currently leads a multi-disciplinary team of biologists, geologists, engineers, economists, cultural resource specialists, and planners. Ms. Scholz regularly serves as lead facilitator for government, tribal, landowner, and other stakeholder processes and meetings involving salmon recovery. For instance, she is currently serving the Bureau of Reclamation (Reclamation) and Bonneville Power Administration (BPA) for the upcoming 2015–2016 Federal Columbia Power System Expert Panel process. Her training and experience in multi-stakeholder engagement has resulted in successful projects that have required both technical solutions and adaptive management strategies to facilitate ownership and collaboration. Ms. Scholz is well respected as a facilitator and known for her process organization and ability to defuse tense situations and build consensus to achieve desired outcomes. She is dedicated to the effective recovery of salmon and other ESA-listed species in the Pacific Northwest, where she has lived and worked since conducting her graduate research in the Upper Columbia River system in 2001.

Relevant Projects

Project Manager/Lead Facilitator – Expert Panel 2015-16 Workshop Technical Support and Coordination, Bureau of Reclamation, Columbia River Basin

Ms. Scholz is the Lead Facilitator supporting the Expert Panel process that evaluates habitat improvement actions funded and assisted by the Bureau of Reclamation and Bonneville Power Administration to meet the requirements of the Federal Columbia River Power System 2008 Biological Opinion for providing habitat improvement in tributaries of the Columbia River system. The process involves extensive coordination between the two Action Agencies and local Expert Panels to compile, organize, and update technical data and information related to the many activities being executed to support salmon recovery. Areas of focus for the expert panel include the Upper Columbia, Upper Salmon, and Grande Ronde Subbasins.

Project Manager/Lead Facilitator – Upper Grande Ronde Atlas Process, Bureau of Reclamation, Upper Grande Ronde River, Oregon

Ms. Scholz is the Senior Facilitator for the Atlas Process for the Bonneville Power Administration (BPA). The Atlas Process is a planning process developed by BPA and supported by the Bureau of Reclamation to strategically plan and manage restoration activities for ESA-listed salmonids within a given geographical area. Ms. Scholz provides lead facilitation for the 20-member Science Technical Advisory Committee (TAC) and the 30-member Stakeholder TAC. Her work includes support for all aspects of the Atlas Process development including coordination; project management; meeting/planning facilitation, setup, scheduling, and material production; risk communication guidance; habitat project ranking and prioritization; and technical support for ESA-listed species protection and regulatory compliance; process documentation and plan writing, and GIS mapping.

Project Manager – Yankee Fork and West Fork River Restorations, Bureau of Reclamation, Upper Salmon River Basin, Idaho

Ms. Scholz and her team are supporting Bureau of Reclamation and their project sponsor, Trout Unlimited, with coordination and support for ESA compliance and permitting of fish habitat improvement projects on the Yankee Fork and Yankee Fork/West Fork Confluence

of the Salmon River. Coordination with in-basin agencies and stakeholders is a key component of the project.

Project Manager – USDA Forest Service/ EPA Region X, Upper Columbia River Temperature Assessment, Washington

Ms. Scholz led a 2-year project characterizing stream temperature and habitat variability in Upper Columbia Rivers. The work was funded by the USEPA Region X, Washington Department of Ecology, and Wenatchee National Forest, and completed in collaboration with the Yakama Nation and Plum Creek Timber Company. This study aimed to better understand stream temperature background conditions in natural systems versus those altered by resource management activities (e.g., grazing, logging). Habitat conditions were studied at >100 sites within the Entiat, Wenatchee, Mad, White, Chiwawa, Naches, and Yakima Rivers. A GIS database was developed linking temperature, climate, and biophysical data with mapping information to identify streams predisposed to warmer water temperatures; a limiting factor for ESA-listed species in the Upper Columbia system.

Project Manager/Lead Facilitator – Pierce County Rivers Comprehensive Flood Hazard Management Plan, Pierce County, Washington

Ms. Scholz supported the creation of a dynamic program to reach the project's goals and objectives of producing a draft plan and associated recommendations within a 2-year timeframe. She facilitated monthly meetings for a 27-member Advisory Committee and nine public meetings as well as two workshops for elected officials. Stakeholders included representatives from cities, counties, tribes, resource agencies, businesses, environmental interest groups, and floodplain residents and citizens. She was responsible for leading/ facilitating monthly meetings, and co-developing the work plan, schedule, agendas, study sessions, and co-implementing public meetings and workshops. Ms. Scholz and her team also provided technical writing, GIS, and project evaluation support for the plan.

Senior Consultant – Sandy River Restorative Flood Response, Sandy River Watershed Council, Oregon

Ms. Scholz assisted the Sandy River Watershed Council in compiling information, conducting field assessments, engaging landowners, and prioritizing restoration activities in the Sandy River Basin. Work entailed mapping watershed conditions including flood hazard and channel migration hazards, identifying restoration actions, educating and involving land owners in flood improvement with restorative value, and prioritizing restoration for improving salmon habitat. She planned and facilitated four community tours and roundtables as well as two public meetings.

Project Manager/Lead Facilitator – Lower Swauk Creek Restoration Project, Yakama Nation, Washington

Ms. Scholz served as Lead Facilitator and Project Manager to the Yakama Nation on the Swauk Creek Restoration Project. She worked collaboratively with Yakama Nation, The Nature Conservancy, and the Swauk Landowners/Partners to identify restoration opportunities along the 3.9 mile reach of Swauk Creek. This project included review of historical aerial photo sets, LiDAR, available data, fish and hydrological studies, a geomorphic assessment and project prioritization of restoration actions all requiring stakeholder approval and buy-in.

From:	Adam Wicks-Arshack
To:	John Sirois
Subject:	Comments
Date:	Friday, February 27, 2015 4:35:57 PM
Attachments:	Bourret et al. 2014 Preprint.pdf Keefer et al. 2010 WIL Chinook prespawn mortality.pdf

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Hello John,

I hope all is well and that you have been receiving helpful comments on the Draft Work Plan.

I think the online launch of the film has gone well. 2500 views. This weekend I will start reaching out to some more online sources to share the film. Next week I will draft a proposal for doing screenings throughout the PNW and will share this with you.

As for comments on the work plan. Unfortunately, my major professor here at the University of Idaho underwent surgery a few weeks ago and is still recovering. Prior to his surgery he expressed much interest in submitting comments and hoped to set up a meeting at a future date.

Attached are two papers, Chris Caudill (my professor) co-authored, which he believes could serve as models for future studies above Chief Joseph and Grand Coulee. These studies were conducted on the Willamette River. The methods are proven and the results can help aid decisions about out planting of adults and juvenile movement through reservoirs.

I hope in the coming weeks when Dr. Caudill recovers we can draft some comments or can set up a phone call or something to discuss how UCUT envisions universities collaborating in the research and implementation of reintroduction. I believe there are many many important studies which can be conducted in concert with the experimental populations.

Anyway, I am sure we will be in touch soon. Take care and thank you for the support, encouragement and the work you do!

Adam Wicks-Arshack

Ecology of Freshwater Fish 2010: 19: 361–372
Printed in Malaysia · All rights reserved

ECOLOGY OF
FRESHWATER FISH

Prespawn mortality in adult spring Chinook salmon outplanted above barrier dams

Keefer ML, Taylor GA, Garletts DF, Gauthier GA, Pierce TM, Caudill CC. Prespawn mortality in adult spring Chinook salmon outplanted above barrier dams.
Ecology of Freshwater Fish 2010: 19: 361–372. © 2010 John Wiley & Sons A/S

Abstract – Dams without fish passage facilities block access to much of the historic spawning habitat of spring Chinook salmon (*Oncorhynchus tshawytscha*) in Oregon's Willamette River basin. Adult salmon are routinely outplanted above the dams to supplement natural production, but many die before spawning despite extensive suitable habitat. In 2004–2007, we examined prespawn mortality patterns using live detection and carcass recovery data for 242 radio-tagged outplants. Total prespawn mortality was 48%, but variability was high, ranging from 0% to 93% for individual release groups. Prespawn mortality was strongly condition dependent, consistently higher for females than males and higher for early release groups. Across years, warm water temperature in the migration corridor and at the collection site was associated with sharply higher mortality. Results highlight a need for better evaluations of the effects of adult mortality on population reintroduction and recovery and relationships among prespawn mortality, dam-related temperature change and salmon life history and behaviour.

M. L. Keefer[1], G. A. Taylor[2], D. F. Garletts[2], G. A. Gauthier[2], T. M. Pierce[2], C. C. Caudill[1],

[1]Idaho Cooperative Fish and Wildlife Research Unit, Department of Fish and Wildlife Resources, University of Idaho, Moscow, ID 83844-1136, USA, [2]US Army Corps of Engineers, 40386 West Boundary Road, Lowell, OR 97452, USA

Key words: *Oncorhynchus;* prespawn mortality; supplementation; temperature; Willamette River

M.L. Keefer, Idaho Cooperative Fish and Wildlife Research Unit, Department of Fish and Wildlife Resources, University of Idaho, Moscow, ID 83844-1136, USA; e-mail: mkeefer@uidaho.edu

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Introduction

Dams without fish passage facilities block access to much of the historic spawning habitat of anadromous salmonids (*Oncorhynchus* spp.) in Oregon's Willamette River basin (Myers et al. 2006; Sheer & Steel 2006). The dams have contributed to population declines or extirpations of seven historically independent spring-run Chinook salmon (*O. tshawytscha* Walbaum) populations and the remaining aggregate population is listed as threatened under the U.S. Endangered Species Act (NMFS 1999). To mitigate for lost natural production, salmon hatcheries were established in most major Willamette River tributaries during the dam construction era (1940s–1960s). These hatcheries have accounted for approximately 90% of Willamette River spring Chinook salmon production in recent years (NFMS 2008).

Adult salmon have relatively good access to historic spawning habitat in the Clackamas and McKenzie River sub-basins, and populations in these rivers are partially self-sustaining. At most other sites, however, spawning in the wild has been limited to small numbers of naturally produced adults mixed with hatchery-origin fish that fail to enter hatchery traps. In recent years, managers have attempted to supplement this natural production by outplanting surplus hatchery adults. Returning adults in excess of broodstock requirements have been released into suitable habitat above and below dams in many major Willamette tributaries, including the North Santiam, South Santiam, McKenzie and Middle Fork Willamette rivers (Firman et al. 2004; Beidler & Knapp 2005; Schroeder et al. 2007). The outplant programme goals include re-establishing locally adapted populations, restoring a source of marine-derived nutrients to ecosystems upstream from barriers, and supplementing the prey base for native resident fish and wildlife (e.g., Schindler et al. 2003; Wipfli et al. 2003).

Prespawn mortality in both outplanted spring Chinook salmon and in mixed aggregations of hatchery and wild-origin fish has been a significant

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management concern in the Willamette River basin. At several sites, including some with relatively limited dam effects, mean annual prespawn mortality rates have been greater than 50%, and individual prespawn mortality estimates have frequently exceeded 90% (e.g., Firman et al. 2004; Schroeder et al. 2007). Prespawn mortality rates of this magnitude have the potential to significantly reduce population growth rates and limit recovery efforts in Willamette River tributaries.

High prespawn mortality in the Willamette basin is presumably unrelated to density dependence (e.g., Quinn et al. 2007) given extensive habitat availability and relatively small numbers of spawners. Alternative explanations include elevated stress (e.g., Cooke et al. 2006), poor physical condition (e.g., Young et al. 2006), premature expression of parasitic or bacterial infections (e.g., Kocan et al. 2004), or environmental factors such as high water temperature or river discharge (e.g., Keefer et al. 2005, 2008a). Dams have also been implicated, both because prespawn mortality rates tend to be lower in tributaries with less restricted passage and because dams have substantially altered hydrologic and thermal regimes throughout the Willamette basin (NFMS 2008). For example, Willamette tributary dams increase river water temperature in late summer and fall, potentially affecting adult maturation rates, disease expression and transmission, energetic status and physical condition. Because spring-run Chinook salmon hold in freshwater for up to several months prior to spawning (Quinn 2005), they may be particularly vulnerable to temperature effects throughout their range. In the relatively warm Willamette system, the risk may be elevated, particularly for salmon that congregate near dam collection facilities downstream from cooler headwater spawning areas.

In this study, we used radiotelemetry to evaluate prespawn mortality and behaviour of adult spring Chinook salmon outplanted above barrier dams in the Middle Fork Willamette River (hereafter referred to as 'Middle Fork'). The study population was considered a good surrogate for several Willamette basin spawning groups that experience high prespawn mortality. We hypothesised that prespawn mortality would be higher for fish in poor physical condition, would be higher in warm and/or low flow years, and would differ between sexes and release groups for behavioural or physiological reasons. We tested these hypotheses by: (i) estimating weekly and seasonal prespawn mortality and survival rates; (ii) examining the relative effects of year, sex, physical condition and outplant timing on prespawn mortality; (iii) testing for associations between river environment and seasonal mortality rates and (iv) assessing salmon movement and distribution after release.

Methods

Study area

The Middle Fork is in west-central Oregon (44° N, 122° W; Fig. 1). It is the largest tributary watershed (~3500 km^2) in the Willamette basin and includes the southern-most headwaters. The Middle Fork historically supported one of the largest populations of spring-run (stream-type, Healey 1991) Chinook salmon in the basin, with estimates of predam run size in the tens of thousands (NFMS 2008). Dexter and Fall Creek dams currently block upstream adult migration in the lower Middle Fork basin, and two additional dams (Lookout Point and Hills Creek) further restrict upstream and downstream passage. Trapping facilities at Dexter and Fall Creek dams allow collection of hatchery broodstock and provide fish for outplanting. The few naturally produced salmon that return to the Middle Fork primarily originate from Fall Creek, and an effort is made to pass these returning adults over the dam.

Fish collection, tagging and monitoring

Study salmon volitionally entered the adult trapping facility below Dexter Dam from May to August, 2004–2007. The trap was operated on 7–11 days and collected ~2100–4600 salmon each year for hatchery broodstock for the Oregon Department of Fish and

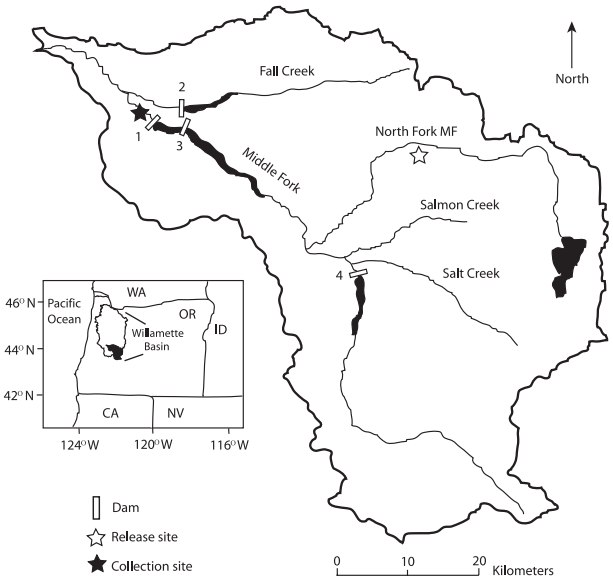

Fig. 1. Map of the Middle Fork Willamette River (Middle Fork) basin showing dam locations (1 = Dexter, 2 = Fall Creek, 3 = Lookout Point, 4 = Hills Creek) and sites where adult Chinook salmon were collected and released in the prespawn mortality study. Inset shows the location of the Middle Fork in the Willamette River basin.

Wildlife (ODFW). Salmon selection for the radiotelemetry study was near random, except that some effort was made to balance sex ratios and available fish were limited to those not diverted for broodstock. As a result, study females likely had slightly poorer physical condition than the run overall. In 2004–2005, salmon were anesthetised with eugenol (25 mg l^{-1}) and a lubricated radio transmitter (model F1840, 17 × 51 mm, 20 g, with a 23-cm antenna; Advanced Telemetry Systems, Inc. [ATF], Asanti, MN, USA) was inserted into the stomach through the oesophagus. A small strip of surgical tubing was placed around the tag to reduce regurgitation (e.g., Keefer et al. 2004). In 2006–2007, transmitters (model F2120, 15 × 50 mm, 17 g, 29-cm antenna; ATF) were attached externally using a suture near the dorsal fin. A 15 mm-wide plastic washer with a crimp was attached to the suture on the opposite side of the dorsal cavity to help hold the transmitter in place. Because some transmitters were shed following release in 2006 (see section 'Results'), a knot was added outside of the crimp in 2007 to improve retention. In all years, transmitters were equipped with a mortality sensor set to 24 h, and each fish received a left opercula punch as a secondary marker.

While salmon were anaesthetised we recorded length (except in 2007), sex and physical condition on a three-tiered scale (0 = poor, 1 = fair, 2 = good). Poor condition fish had open wounds, fungal infections, or other significant injuries. Fair condition fish had minor or healed injuries, and good condition fish had no obvious damage or fungus. In 2006–2007, half the fish were injected with 0.5 ml oxytetracycline and 1.0 ml erythromycin to test if antibiotics reduced prespawn mortality.

Radio-tagged salmon recovered in an aerated transportation tank filled with river water and were transported in the tank from the Dexter facility approximately 60 km upstream to a release site in the North Fork Middle Fork (hereafter, North Fork) (Fig. 1). Releases were at North Fork river kilometer (rkm) 29 and occurred on 3 days in 2004, one day in 2005, and 2 days each in 2006 and 2007 for eight total release groups. Trap-and-haul dates were determined by fish availability and surplus fish outplanting operations conducted by ODFW.

Telemetry surveys in the North Fork were conducted weekly or semi-weekly from the first release date each year through September, contingent on personnel availability. A truck-based mobile receiver was used along the road paralleling the North Fork and additional mobile monitoring occurred on foot. A single fixed-site receiver monitored the North Fork approximately 1 km upstream from the Middle Fork confluence and mobile surveys were conducted outside the North Fork when fish were believed to have re-entered the Middle Fork or entered other secondary tributaries. Carcass surveys at approximately 1-week intervals were on foot in areas where fish concentrated, where transmitters signalled mortalities, and where known individual fish were located.

Data analyses

All telemetry and mortality data were assembled into a single database that included transmitter code, year, date, location and fish status (i.e., live, dead, shed transmitter). These data were used to estimate weekly survival (S), live detection (P), dead recovery (r), and fidelity (F, the likelihood of remaining in the survey area) probabilities with the statistical software MARK (White & Burnham 1999). We used the joint live and dead encounter model described by Szymczak & Rextad (1991) and Burnham (1993) because the study had both dead salmon recoveries and telemetry detections of live fish between tagging and recovery events. The joint model used individual detection and recovery histories, including nondetections (i.e., when fish were neither detected nor recovered during a week), to estimate the above parameters. Multiple detections within a week were combined so that a standard statistical week was the time interval for parameter estimation. In preliminary analyses, we compared models with constrained versus unconstrained parameters. For example, in a constrained model where fidelity = 1 and recovery = 1, it was assumed that salmon never exited the study area and that all dead fish were recovered. For most release groups, however, model comparisons indicated that the data were fit best by models with all variables unconstrained through time. All presented survival (S) estimates are therefore from a fully time-varying model, using a logit link function.

We evaluated seasonal survival patterns with multiple logistic regression. The logistic models used the mortality data through two cutoff dates: 1 August was used to evaluate early-season prespawn mortality and 1 September was used to separate all prespawn from postspawn mortality, as most Middle Fork spawning occurs in September and October. We used an information theoretic approach to compare logistic regression models with all possible combinations of the four variables collected in all years: sex, condition, release date and year. The models were ranked using Akaike's information criteria (AIC) and evaluated with respect to ΔAIC, the change in AIC relative to the most parsimonious model (Burnham & Anderson 2002). We combined poor and fair condition fish to increase statistical power for these comparisons. The four predictor variables were equally represented across models and so we used Akaike weights (w_i) and model averaging to further evaluate the relative

support for each model and the relative effect of each predictor variable (Burnham & Anderson 2002). We separately evaluated survival associations with fish length (3 years) and the antibiotic treatment (2 years) using ANOVA and Pearson Chi-squared tests.

Significant year effects (see section 'Results') suggested that environmental conditions influenced salmon survival. We therefore tested if release group survival was correlated with mean monthly river discharge or water temperature data from a series of USGS gages in the Middle Fork and main stem Willamette River. Middle Fork sites were located downstream from Dexter Dam (USGS site #14150000, Willamette River rkm 324) and below Fall Creek at Jasper (#14152000, rkm 314). Data from these sites were representative of conditions salmon encountered in the lower Middle Fork and while holding near the Dexter trap site. Data from main stem Willamette River sites at Harrisburg (#14166000, rkm 259), Albany (#14174000, rkm 192) and Newburg (#14197900, rkm 80) reflected conditions fish encountered during upstream migration. Water temperature data were collected intermittently in the North Fork and indicated that seasonal warming patterns were similar across years; data gaps precluded use in statistical analyses.

Salmon distributions within the North Fork were summarised using the mobile telemetry data for each of the eight release groups. To standardise across releases, locations were described at 2, 4, 6 and 8 weeks after release until mortality was confirmed.

Results

Sample summary

A total of 242 salmon were radio-tagged and released, including 118 (49%) males and 124 (51%) females (Table 1). Sex ratios did not differ among years ($\chi^2 = 0.2$, $P = 0.975$). The majority (75%) was in good physical condition, with 17% and 8% in fair and poor condition, respectively. Mean fish condition significantly differed among years ($F = 2.7$, $P = 0.046$), with means of 1.75 (2004), 1.80 (2005), 1.66 (2006) and 1.50 (2007). With all years pooled, mean condition was higher for males (mean = 1.75) than females (1.60) ($t = -2.0$, $P = 0.046$). Within year, the condition difference was significant in 2007 only (male mean = 1.77, female mean = 1.23; $t = -2.9$, $P = 0.005$). Sex ratio and condition did not differ among release groups within year ($P > 0.05$), except in 2007 when the second release group included only good condition fish ($\chi^2 = 16.2$, $P < 0.001$).

Mean fork lengths in 2004–2006 were 766 mm (females) and 751 mm (males). Length differences between sexes were significant only in 2005, when females were larger than males ($t = 3.0$, $P = 0.005$). Lengths differed by fish condition in 2006 ($F = 3.5$, $P = 0.036$) when poor condition fish were largest. In the 2006–2007 antibiotic tests, treated and untreated fish were similar in terms of sex ratio ($\chi^2 = 0.1$, $P = 0.821$), condition ($\chi^2 = 1.6$, $P = 0.452$), and length (2006 only; $t = -1.6$, $P = 0.115$).

Table 1. Summary of the numbers of adult Chinook salmon that were collected near Dexter Dam on the Middle Fork, radio-tagged and then released into the North Fork Willamette River in 2004–2007.

Release year	Group (Date)	Sex		Condition			Antibiotic		
		Male	Female	0	1	2	Treated	Untreated	Total
		Sample size (*M*)							
2004	1 (18 June)	17	13	2	7	21	–	30	30
2004	2 (25 June)	10	15	1	3	21	–	25	25
2004	3 (18 Aug.)	13	12	–	4	21	–	25	25
2005	1 (18 May)	19	22	–	8	33	–	41	41
2006	1 (28 June)	13	17	5	3	22	15	15	30
2006	2 (5 July)	16	15	2	4	25	16	15	31
2007	1 (27 June)	20	20	9	12	19	21	19	40
2007	2 (1 Aug.)	10	10	–	–	20	10	10	20
All	All	118	124	19	41	182	62	59	242

Dashes indicate no fish were in the sample category.

Survival patterns

Weekly survival probabilities and mortality varied widely among release groups and years (Fig. 2). Cumulative mortality curves rose steeply in 2004 and 2007, with 50% mortality within 2–5 weeks in four of five release groups. In contrast, mortality in 2005 was relatively gradual and only a single mortality was recorded from the 2006 releases. Excluding the final week in each year (when estimates were statistically unreliable), mean weekly survival probabilities ranged from 0.79 in the 2004–1 release to 1.00 in the 2006–2 release. The 2006 probabilities may have been biased high because 15 fish (25%) shed transmitters. However, we estimated that transmitters were shed 1–10 weeks after release (mean = 6 weeks), so most estimates should have been reliable. The lowest weekly survival probabilities in other years were typically in late July or August, and there was a tendency for decreasing survival probabilities through time. Confidence intervals also widened through time as mortality reduced sample sizes.

With the six pre-August release groups combined, prespawn mortality through 1 August was higher for females (37.1%) than males (26.3%) (Table 2). There was also a strong condition-dependent effect, with mortality for poor (52.6%) and fair (51.2%) condition fish about double that of good condition fish (25.3%). These patterns were consistent across 2004, 2005 and

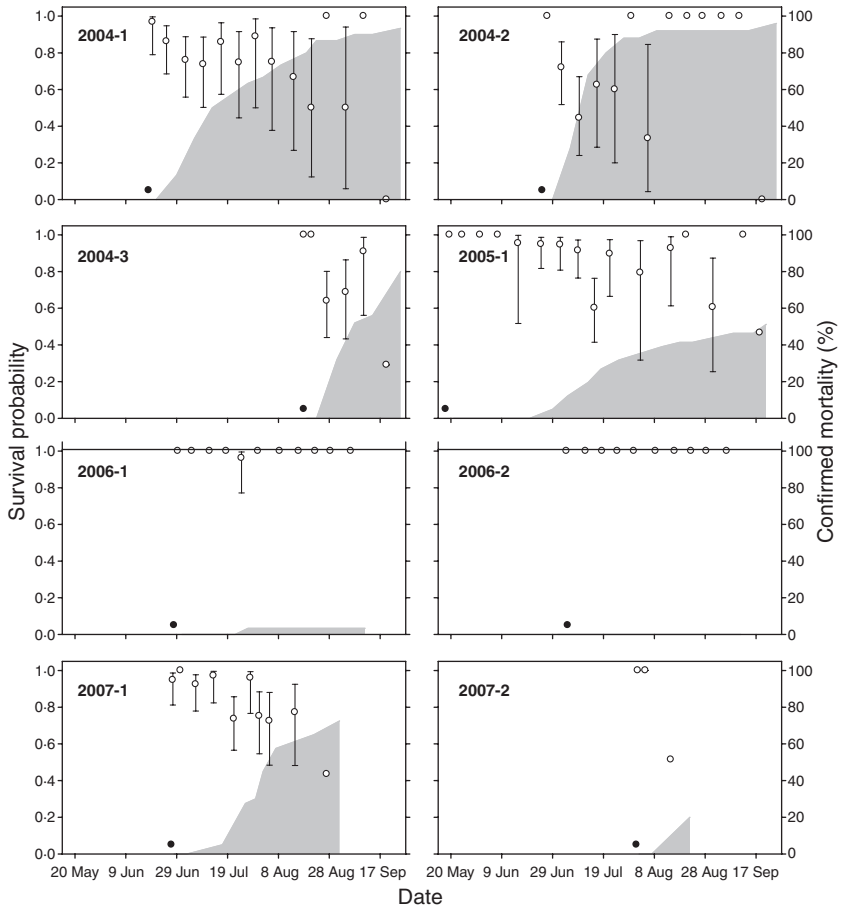

Fig. 2. Weekly Chinook salmon survival probabilities and 95% confidence intervals (open circles and error bars) estimated for eight release groups using a joint live and dead recapture model in programme MARK. Grey areas represent cumulative salmon mortality from recovery data and solid circles indicate release dates. (Note: the final survival estimate in each panel is considered unreliable because recapture probabilities were not estimable for this interval.)

Table 2. Chinook salmon prespawn mortality estimates through 1 August and 1 September based on transmitter recoveries and carcass surveys in the North Fork and nearby Middle Fork and tributary sites. 0 = poor, 1 = fair, 2 = good.

		Group							
Release		Sex		Condition			Antibiotic		
Year	Group	Male	Female	0	1	2	Treated	Untreated	Total
Mortality through 1 August (%)									
2004	1	58.8	76.9	50.0	100.0	57.1	–	63.3	63.3
2004	2	90.0	86.7	100.0	100.0	85.7	–	88.0	88.0
2005	1	26.3	50.0	–	75.0	30.3	–	39.0	39.0
2006	1	0.0	5.9	20.0	0.0	0.0	6.7	0.0	3.3
2006	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	1	35.0	55.0	77.8	41.7	31.6	57.1	31.6	45.0
All	All	26.3	37.1	52.6	51.2	25.3	21.0	10.2	31.4
Mortality through 1 September (%)									
2004	1	88.2	92.3	100.0	100.0	85.7	–	93.3	93.3
2004	2	90.0	93.3	100.0	100.0	90.5	–	92.0	92.0
2004	3	46.2	58.3	–	50.0	52.4	–	52.0	52.0
2005	1	36.8	54.8	–	75.0	39.4	–	46.3	46.3
2006	1	0.0	5.9	20.0	0.0	0.0	6.7	0.0	3.3
2006	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	1	75.0	70.0	100.0	58.3	68.4	71.4	73.7	72.5
2007	2	0.0	40.0	–	–	20.0	20.0	20.0	20.0
All	All	44.1	51.6	68.4	61.0	42.9	29.0	27.1	48.3

Sample sizes in Table 1. Dashes indicate no fish were in the sample category.

2007 release groups. Prespawn mortality through 1 September (all release groups combined) showed similar overall patterns: females and fish in poor or fair condition had higher mortality than their counterparts (Table 2). In 2004 and 2007, the August release groups had lower mortality than earlier releases.

Salmon mortality was not clearly associated with antibiotic treatments or salmon size. In 2006–2007 combined, mortality was 21.0% for treated fish and 10.2% for untreated fish through 1 August ($\chi^2 = 2.7$, $P = 0.101$) and was 29.0% (treated) and 27.1% (untreated) through 1 September ($\chi^2 < 0.1$, $P = 0.979$). Differences within year were also nonsignificant ($P > 0.05$). In 2004–2006 combined, fork length was not associated with mortality through 1 August ($F = 2.6$, $P = 0.116$) or 1 September ($F = 0.1$, $P = 0.747$).

In logistic regression model comparisons, the full model had the most support based on AIC and w_i values in both 1 August ($\Delta AIC = 0$, $w_i = 0.327$) and 1 September ($\Delta AIC = 0$, $w_i = 0.700$) analyses (Table 3). Year ($\chi^2 = 34.53$, $P < 0.001$) and fish condition ($\chi^2 = 9.39$, $P = 0.002$) were significant mortality predictors in the 1 August model, with higher survival for good condition fish and those released in 2006; sex ($\chi^2 = 2.43$, $P = 0.119$) and release date ($\chi^2 = 2.35$, $P = 0.126$) were less explanatory. In the best 1 September model, all predictor variables were significant. Year effects ($\chi^2 = 49.20$, $P < 0.001$) were similar to the 1 August model, early-timed releases had higher mortality than later releases ($\chi^2 = 30.15$, $P < 0.001$), females had higher mortality than males ($\chi^2 = 5.24$, $P = 0.022$), and poor and fair condition fish had higher mortality than good condition fish ($\chi^2 = 4.69$, $P = 0.030$).

Mean model AIC w_i values suggested that year (mean = 0.125) and fish condition (0.123) were more influential than sex (0.074) or release group (0.074) in the 1 August model set. Mean w_i values were more similar for the 1 September models (mean = 0.125 for year and release date, 0.108 for sex and 0.103 for fish condition), indicating that all variables were influential.

River environment

River discharge and temperature patterns varied among years and among sites during the study months. At the two Middle Fork gages, mean monthly flow was relatively low and water temperature was relatively high in 2004 and 2007 (Table 4). Among-year temperature differences were greatest in August, when mean Dexter temperatures were 2.4–3.0 °C higher in 2004 and 2007 than in 2005 and 2006. Middle Fork discharge also tended to be higher in 2004 and 2007. Conditions in the main stem Willamette River were more consistent across years, though 2004 and 2007 were relatively warm. Unlike the Middle Fork, main stem sites had higher discharge in most months in 2005 and 2006 (Table 4).

With all eight release groups included, prespawn mortality through 1 September was consistently positively correlated with water temperature and had mixed correlations with river discharge (Fig. 3). The highest positive correlations were with June water temperatures and July discharge at the Middle Fork sites ($0.79 \le r \le 0.85$). The highest negative correlations were with June discharge across sites. Low $|r|$ values, tended to be for data from the most downstream sites (Albany and Newburg), indicating environmental effects differed spatially and/or temporally. Excluding the two August release groups resulted in higher correlations in most cases, particularly with the temperature data. For example, r was ≥ 0.90 in five of eight Middle Fork and four of 12 main stem temperature correlations for the six early release groups.

Table 3. Selection statistics for logistic regression models of radio-tagged Chinook salmon survival, 2004–2007.

	Survival to 1 August			Survival to 1 September		
Model	AIC	ΔAIC	AIC w_i	AIC	ΔAIC	AIC w_i
Year	188.3	11.7	0.001	252.9	48.2	0.000
Release	264.5	87.9	0.000	327.8	123.1	0.000
Sex	264.4	87.8	0.000	334.4	129.7	0.000
Condition	259.1	82.5	0.000	328.0	123.3	0.000
Year + Release	188.1	11.5	0.001	212.5	7.8	0.013
Year + Sex	184.6	8.0	0.006	249.1	44.4	0.000
Year + Condition	178.2	1.6	0.147	241.1	36.4	0.000
Release + Sex	263.3	86.7	0.000	326.5	121.8	0.000
Release + Condition	256.7	80.1	0.000	321.2	116.5	0.000
Sex + Condition	259.0	82.4	0.000	327.7	123.0	0.000
Year + Release + Sex	184.9	8.3	0.005	207.5	2.8	0.161
Year + Release + Condition	177.1	0.5	0.261	208.0	3.3	0.126
Year + Sex + Condition	177.1	0.5	0.253	239.5	34.8	0.000
Release + Sex + Condition	256.8	80.2	0.000	321.0	116.4	0.000
Year + Release + Sex + Condition	**176.6**	**0.0**	**0.327**	**204.7**	**0.0**	**0.700**

AIC, Akaike information criteria; ΔAIC, $AIC_{current} - AIC_{best}$; AIC w_i Akaike weight. In all models, fish in poor and fair condition were combined to increase statistical power and 'release' = release date. Bold text indicates the models with the most statistical support.

Table 4. Mean monthly water temperature (°C, top rows) and river discharge (m^3 s^{-1}, bottom rows) near Dexter Dam on the Middle Fork (USGS site #14150000) and near Newburg on the main stem Willamette River (USGS site #14197900), 2004–2007.

	Dexter				Newburg			
Year	May	June	July	August	May	June	July	August
2004	10.9	13.7	15.4	17.2	14.9	17.6	22.6	22.1
2005	11.2	12.4	13.7	14.8	14.2	16.4	21.6	21.6
2006	9.8	11.4	13.6	14.3	14.4	17.5	22.2	20.8
2007	10.0	12.9	15.4	17.3	14.5	18.2	22.1	21.2
CV (%)	5	7	6	9	2	4	2	2
2004	123	39	58	76	497	417	199	209
2005	39	47	44	55	689	429	224	198
2006	87	70	40	61	555	461	205	195
2007	108	87	54	60	458	298	185	179
CV (%)	36	31	14	13	16	15	7	5

CV, coefficient of variation.

Salmon behaviour

Almost all radio-tagged salmon remained in the North Fork following release, with no fish recorded exiting in 2004, 2006 or 2007. In 2005, 10 fish (24%) were recorded outside the North Fork, including four in Lookout Point reservoir, three in Salmon Creek, and one each in Salt Creek and at Hills Creek Dam.

Salmon movements differed among years and release groups (Fig. 4). The 2004 and 2007 release groups had net downstream movement or were distributed relatively short distances upstream throughout the postrelease period. In contrast, the 2006 releases had relatively high net upstream movement, with some fish moving more than 20 km. The 2005 release initially had net downstream movement (including the North Fork exits described above) and then moved upstream above the release site as the season progressed.

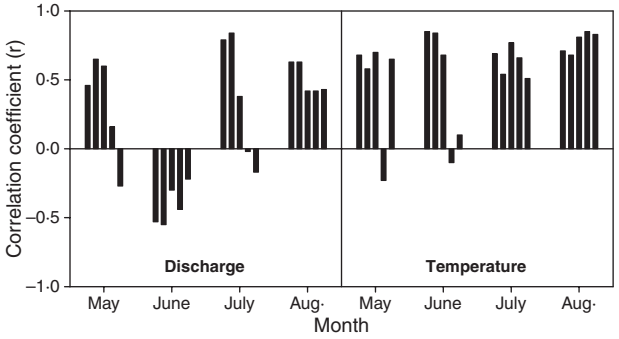

Fig. 3. Correlation coefficients (r) that show the relation between mean monthly discharge and water temperature and estimated radio-tagged Chinook salmon mortality through 1 September ($N = 8$ release groups). Environmental data were from USGS monitoring sites at Dexter, Jasper, Harrisburg, Albany, and Newburg (left to right within month).

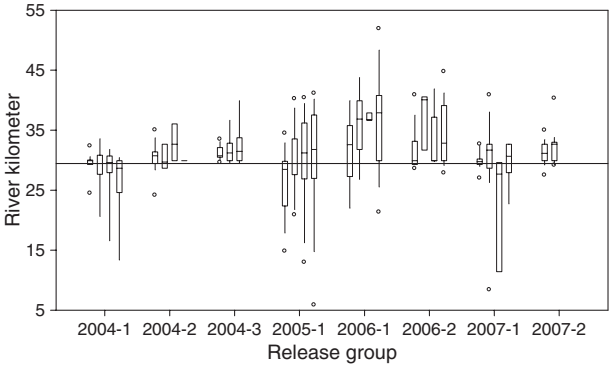

Fig. 4. Radio-tagged Chinook salmon distributions in the North Fork on weeks 2, 4, 6 and 8 postrelease. Location data outside the North Fork were excluded. Box plots show median, quartile, 10th, 90th, 5th and 95th percentiles.

Discussion

Prespawn mortality rates in this study were extremely variable among years, ranging from near zero in 2006 to more than 90% for the early 2004 release groups. This variability parallels results from extensive Chinook salmon carcass surveys in several Willamette River tributaries in the same years described in Schroeder et al. (2007). In the carcass surveys, female prespawn mortality across multiple sites was very low in 2006, was high in 2004, and was mixed in 2005 and 2007. These patterns probably cannot be explained by any single causative factor. Instead, the radiotelemetry study results suggest that a combination of biological and environmental effects were important. These likely include the cumulative effects of ocean and freshwater migration on fish condition and physiology and more local effects related to holding, collection and transport. The apparent importance of in-river environmental conditions – especially the evidence for temperature effects – suggests that extended holding in freshwater during the warmest part of the year may make spring-run life history types particularly vulnerable to prespawn mortality. In light of projected regional climate warming (e.g., Mote et al. 2003), this vulnerability may be a significant concern in many spring Chinook salmon populations.

At the individual fish scale, physical condition was a strong predictor of prespawn mortality, particularly through 1 August. This was an intuitive result because injured or infected fish were presumably more susceptible to eventual mortality agents. Necropsies of 18 Middle Fork prespawn mortalities in 2004 indicated severe fungal infections in most fish, plus a variety of bacterial infections [i.e., *Aeromonas* and *Pseudomonas* sp. (furunculosis) and *Renibacterium* sp. (BKD)], lesions, and parasites (Oregon State University Pathology Laboratory, reported in Beidler & Knapp 2005). Bacterial septicaemia or organ failure

was therefore a probable causal agent in many cases (e.g., Groberg et al. 1978; Murray et al. 1992). Effects of fungal infections and lesions or injuries were more likely indirect, but may have been important given their frequency. The antibiotic experiments in 2006–2007 were inconclusive, perhaps because fewer fish were infected in these years or because the low overall mortality in 2006 reduced inferential power.

Radio-tagged females had consistently higher prespawn mortality than males. In part, this reflected the lower mean condition of females. However, sex was a significant predictor in the logistic regression model comparisons and was statistically significant in models that controlled for the condition effect. This suggests that sex-specific behavioural or physiological differences affected mortality. Behaviourally, prespawn mortality may be related more to female searching and competition for redd sites – which occurs early in the spawning cycle – than to competition for mates, which occurs later and typically has a higher mortality cost for males (e.g., Foote 1990; Fleming & Gross 1994; Keefer et al. 2008b). Females also tend to have a relatively larger investment in reproductive development than males (e.g., Jonsson et al. 1997), which may exact a higher prespawn mortality cost. We did not measure salmon lipid content or reproductive hormone levels, but variability in either could help explain the relative survival difference between sexes, as well as differences among years and among individuals. Bioassays that collect such data may benefit future prespawn mortality evaluations.

Lower mortality was associated with both later release dates and more extensive fish movements. The timing effect may signal reduced opportunity for prespawn mortality (i.e., salmon tagged in August had less time between release and spawn dates). It is also possible that many of the salmon most prone to prespawn mortality died before the August collection dates. Greater salmon movement in 2006 likely resulted from more time for dispersal, although higher survival also may have prompted upstream movement when preferred spawning habitat near the release site became saturated. The substantial downstream movement in 2005, when 10 salmon exited the North Fork, suggests that these fish may not have been physiologically ready for spawning and instead resumed searching for natal sites. This maturation hypothesis remains untested.

We have no conclusive explanation for the substantial inter-annual variation in prespawn mortality, but in-river environmental conditions almost certainly played a role. Years with warm Middle Fork temperatures (2004, 2007) had sharply higher prespawn mortality rates than cooler years. This result is consistent with adult sockeye salmon (*O. nerka* Walbaum) mortality studies from a variety of river systems (e.g., Gilhousen 1990; Naughton et al. 2005; Rand et al. 2006; Keefer et al. 2008a). Temperatures at the lower main stem Willamette monitoring sites (i.e., Newburg and Albany) exceeded 21 °C for 2–8 weeks each year and briefly reached 25 °C in some years. Such warm temperatures during migration and holding can be costly, with elevated metabolic processes and increased stress (Brett 1995; McCullough 1999). They also increase the occurrence and virulence of several salmonid diseases (e.g., Kocan et al. 2004; Wagner et al. 2005; Crossin et al. 2008). Any of these mechanisms may have affected mortality of the North Fork outplants. However, we emphasise that our interpretation is based on correlations over a short time series. We also would have preferred to test associations with North Fork water temperature in addition to the available temperature data near the collection facility and further downstream. While we are confident that North Fork temperatures followed similar inter-annual patterns as the downstream sites, discriminating among temperature effects that occurred during migration, versus during holding below Dexter Dam, versus after outplanting was not possible with this dataset.

Inter-annual prespawn mortality patterns had a somewhat more complex association with river discharge. Mortality was positively correlated with mean May, July and August discharge, suggesting that upstream migration may have been more energetically demanding at high flow. This has the potential to increase eventual prespawn mortality (e.g., Geist et al. 2000; Keefer et al. 2005). However, the flow–mortality correlation was reversed in June, perhaps because low June flow years also had high June water temperatures (i.e., in 2004 and 2007). Separating discharge and temperature effects on migration is difficult in most rivers, and the challenge may be confounded in the highly regulated Willamette system. A Willamette radiotelemetry study in the 1990s, found that Chinook salmon migration speeds and *en route* mortality rates varied widely, and both were associated with a mix of high and low discharge and temperature conditions (Schreck et al. 1994). Our results and those of Schreck et al. (1994) suggest that the relationships between adult mortality and the conditions salmon encounter in the migration corridor remain poorly understood.

An alternative or complementary explanation for the inter-annual prespawn mortality variability is that ocean conditions affected initial Chinook salmon energetic status. Crossin et al. (2004) demonstrated that Fraser River sockeye salmon enter fresh water with greater somatic energy reserves in years with productive ocean conditions. Within these same populations, adult salmon with lower reserves at river

entry are less likely to reach spawning grounds (Rand et al. 2006; Young et al. 2006). Similar responses are likely for Willamette River spring Chinook salmon, and differences in initial condition may explain some of the inter- and intra-annual mortality patterns we recorded. Untangling the relative roles of initial salmon condition from the effects of salmon experiences during migration, collection, holding, and postrelease will be important for prioritizing future management actions.

Management implications

Outplanting hatchery-origin Pacific salmonids has been associated with a variety of ecological, genetic and evolutionary risks to native wild populations throughout their ranges (see reviews: Reisenbichler & Rubin 1999; Mobrand et al. 2005; McClure et al. 2008; Kostow 2009). In the Willamette basin, however, some of these risks are reduced by the past extirpation of wild Chinook salmon upstream from the barrier dams, by the historical use of in-basin stocks as hatchery source fish, and by the genetic similarity among hatchery and wild populations (Myers et al. 1998, 2006; NMFS 1999). At present, managers consider the potential benefits of enhanced natural reproduction and local adaptation to outweigh potential outplant-related risks in this system.

An important management question in the effort to restore natural production by Willamette River spring Chinook salmon is how mortality rates during different life stages affect overall population growth. Because anadromous salmonids generally have high fecundity (Quinn 2005), population growth rates are often most sensitive to mortality during juvenile life stages and are relatively resilient to moderate levels of adult mortality (Kareiva et al. 2000; McClure et al. 2003; Wilson 2003). To help evaluate the population-level effects of prespawn mortality in the North Fork, we applied the matrix population growth model that Kareiva et al. (2000) developed for Snake River spring Chinook salmon. This model uses survival and fecundity parameters across life history stages to estimate discrete per capita replacement rates and to estimate population growth or decline. Such models are useful for examining the relative importance of stage-specific survival using sensitivity analyses, even when parameter values are not well known (e.g., Caswell 2001). In our North Fork model, we held juvenile and ocean survival rates constant and varied prespawn mortality rates across the range we observed in the outplant study (0–93%). The model predicted declining North Fork population growth rates at all prespawn mortality rates. When prespawn mortality was low to moderately high (0–70%), replacement rates decreased approximately 4% for each 10% increase in prespawn mortality. As prespawn mortality increased from 70% to 93% (and higher), estimated replacement rates rapidly decreased towards zero.

Unless juvenile survival is exceptionally high, the North Fork population model results indicate that the high prespawn mortality rates we recorded in some years are likely to have a significant negative effect on reintroduction efforts and establishment of self-sustaining populations. Currently, smolts produced by outplanted adults are thought to have low outmigration survival because most dams have poor downstream fish passage capability. This suggests that managers should consider the relative costs and benefits of efforts to improve survival in both juvenile and adult life stages. For example, it should be possible to model the relative cost-effectiveness of mitigation strategies that increase adult survival versus those designed to increase juvenile survival (i.e., building facilities that improve outmigration survival at dams). Ultimately, a combination of approaches is likely to be most effective, but refined demographic models in conjunction with a cost-benefit analysis could help prioritise proposed management actions.

Several steps have been or will be taken to reduce prespawn mortality of Chinook salmon outplants in Willamette River tributaries. These include upgraded collection facilities to reduce handling stress, improved handling protocols, reduced density in trapping and holding facilities and routine application of antibiotics. There are also plans to manage dam water releases to more closely resemble natural temperature and discharge patterns. Our results also suggest that outplant mortality could be reduced by selecting fish in good physical condition or by releasing fish closer to spawning time when they may be more physiologically ready. However, there are potentially serious negative effects (i.e., reduced condition, disease transmission) associated with extended holding. Similarly, selection for late arrivals could significantly bias samples and undermine reintroduction and conservation objectives (e.g., McLean et al. 2005) particularly given the historic early run timing for Willamette River salmon (Myers et al. 2006). These factors should be considered in any outplant scenario and are the subject of ongoing evaluation. Managers should also directly evaluate the effects of adult transport given the potential for increased salmon stress or injury rates (e.g., Mazeaud et al. 1977). Lastly, monitoring discharge and water temperature near collection and release sites may be a useful way to identify appropriate outplant timing and to predict prespawn mortality rates within year.

Some caveats related to the radiotelemetry results are needed. First, the evolution in tagging methods from intragastric (2004, 2005) to external (2006) to

modified external (2007) may have introduced bias in inter-annual comparisons. The principal tagging concern was that a portion of the transmitters was shed in 2006 and may have biased survival high. However, the very high survival rates for fish that retained transmitters and the very low prespawn mortality rates in 2006 carcass surveys (Schroeder et al. 2007) suggest this bias was minimal. A second caveat is that release dates varied considerably among years as a result of ODFW trap operation scheduling. The timing somewhat compromised comparisons among years, particularly given the higher survival for August release groups (2004, 2007) and the apparent behavioural difference for the May 2005 release. Third, monitoring effort varied among years as a function of field staff availability. This had the potential to bias weekly and seasonal survival estimates in either direction (i.e., survival may have been over- or under-estimated). However, we statistically controlled for these factors as much as possible and think they were unlikely to seriously bias the estimates presented or compromise the study conclusions.

Chinook salmon outplanted in the North Fork in 2004–2007 produced an estimated 42 to 363 redds each year, with fish:redd ratios ranging from 2.3 in 2006 to 34.1 in 2004 (G. Taylor, unpublished data). Progeny of outplanted adults have survived, initiated downstream outmigration, and been collected in juvenile surveys each year. These results suggest that outplanting can contribute to spring Chinook salmon production and may be a viable method for supplementing at-risk populations in the Willamette River basin. It remains to be seen, however, whether the programme produces significant numbers of returning adults and whether it can establish self-sustaining, locally adapted populations. Importantly, the high prespawn mortality rates observed may hinder establishment of viable free spawning populations, even with improvements in juvenile downstream passage. As in other supplementation efforts, managers are advised to rigorously monitor outplant effects on existing natural populations as well as phenotypic, genetic and life history changes in the target populations as the outplant programme evolves (Bisson et al. 2002; Hulett et al. 2004).

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Using otolith chemical and structural analysis to investigate reservoir habitat use by juvenile Chinook salmon *Oncorhynchus tshawytscha*

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Isotopic composition of ^{87}Sr:^{86}Sr and natural elemental tracers (Sr, Ba, Mg, Mn and Ca) were quantified from otoliths in juvenile and adult Chinook salmon *Oncorhynchus tshawytscha* to assess the ability of otolith microchemistry and microstructure to reconstruct juvenile *O. tshawytscha* rearing habitat and growth. Daily increments were measured to assess relative growth between natal rearing habitats. Otolith microchemistry was able to resolve juvenile habitat use between reservoir and natal tributary rearing habitats (within headwater basins), but not among catchments. Results suggest that 90% ($n = 18$) of sampled non-hatchery adults returning to the Middle Fork Willamette River were reared in a reservoir and 10% ($n = 2$) in natal tributary habitat upstream from the reservoir. Juveniles collected in reservoirs had higher growth rates than juveniles reared in natal streams. The results demonstrate the utility of otolith microchemistry and microstructure to distinguish among rearing habitats, including habitats in highly altered systems.

Key words: dams; growth; life-history variation; migration; rearing.

INTRODUCTION

For migratory species, the occurrence, timing and extent of movements can have a strong influence on the ecological and evolutionary processes of populations (Webster *et al.,* 2002). In particular, the dispersive and directed movements of individuals during early life cycle stages of complex life histories can have implications for population demographics as well as consequences for natural selection (Gross *et al.,* 1988; Gross, 1991; Drent *et al.,* 2003). It is generally accepted that variation in the expression of movement decisions is a combined genotypic and phenotypic response to heterogeneity in the environment and variation in individual responses to factors such as temperature, food availability and density (McNamara & Houston, 1996; Rochet, 2000; Hartson & Kennedy, 2014). For fishes specifically, variation in early life-history behaviours is

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maintained by the fluctuating differences in performance and survival that stochasticity in natal habitats can produce (Quinn & Unwin, 1993; Kennedy *et al.,* 2008; Hartson & Kennedy, 2014). Given low population abundances, the timing and extent of juvenile movements and migratory decisions can be particularly important for the population dynamics of some species, such as Chinook salmon *Oncorhynchus tshawytscha* (Walbaum 1792), where tradeoffs occur between critical size thresholds and timing bottlenecks in significantly modified migratory corridors (Zabel & Achord, 2004; Hegg *et al.*, 2013*a*).

Oncorhynchus tshawytscha exhibit a diverse array of movements, both in terms of dispersal behaviours and migration, which collectively contribute to variability in juvenile freshwater habitat use within populations (Quinn, 2005; Hamann & Kennedy, 2012; Hegg *et al.*, 2013*a*). Anthropogenic alterations (particularly dams and associated reservoirs) affect habitat use among individuals (Williams *et al.*, 2008), and life-history plasticity is hypothesized to provide resilience to anthropogenic as well as natural perturbations (Waples *et al.,* 2008). For example, the lower Snake River autumn run *O. tshawytscha* population (north-west, U.S.A.) was thought to be composed entirely of a sub-yearling life history (*i.e.* juveniles that migrate to sea shortly after emergence), but recent studies have demonstrated the presence of a yearling reservoir life history (*i.e.* juveniles that overwinter in lower Snake River reservoir habitats; Connor *et al.*, 2005; Hegg *et al.*, 2013*a*). Plasticity allows some juveniles to migrate to the ocean in spring, at a larger body size, which may be advantageous for survival to ocean entry and for the adults returning to spawn in fresh water (Zabel & Achord, 2004; Connor *et al.*, 2005). The older age and larger size of individuals exhibiting the reservoir-type life history may be influenced by a combination of restricted opportunities for downstream movement, temperature regimes altered by dams and higher biological productivity, all of which affect growth opportunities (Jonsson, 1985; Connor *et al.*, 2002; Hegg *et al.*, 2013*a*).

In the Willamette Basin (Oregon, U.S.A), *O. tshawytscha* have been blocked from substantial portions of spawning and rearing habitats by the construction of the Willamette Valley Project (WVP), a series of large high-head dams built from 1941 to 1969. The Upper Willamette River *O. tshawytscha* population was listed as threatened under the U.S. Endangered Species Act in 1999 because of habitat loss caused by the WVP (National Marine Fisheries Service, 1999). Few data were collected on juvenile *O. tshawytscha* habitat use prior to dam construction in the Willamette River, but at least three groups of emigrating juvenile *O. tshawytscha* were present: late-spring sub-yearlings (uncommon), late-autumn sub-yearlings (uncommon) and late-spring yearlings (common) (Mattson, 1962). Blocked access to historic rearing sites by the WVP and extensive channelization and habitat degradation in the main-stem river and Columbia River estuary have reduced life-history variability in the catchment (Bottom *et al.*, 2005). In an effort to return marine-derived nutrients to headwater streams and increase natural production, adult *O. tshawytscha* have been collected and transported above high-head dams (outplanted) to historic spawning reaches in some sub-basins since 1997. Although the majority of *O. tshawytscha* escapement is of hatchery origin, the return of unmarked, apparently natural origin adults to collection facilities at dams indicated successful rearing and downstream migration of offspring from outplanted *O. tshawytscha* (Keefer & Caudill, 2011). Subsequent scale analyses from juvenile and adult collections provided qualitative evidence that a portion of offspring from outplanted adults had prolonged juvenile residence in reservoirs while other returning

adults appeared to rear in spawning streams. Prolonged juvenile reservoir residence is thought to result from favourable growth conditions in reservoirs and prolonged periods of restricted downstream passage (Keefer *et al.*, 2012; Hegg *et al.,* 2013*a*).

Understanding how juvenile *O. tshawytscha* use different rearing locations and how rearing location relates to adult production is a critical question in the management of *O. tshawytscha* populations. Geochemical signatures that are stored in fish bony structures can be used to reconstruct individual habitat use and offer several advantages to traditional tagging studies (Kalish, 1990; Thorrold *et al.*, 1997; Campana, 1999). Otoliths are paired mineral structures located within the semicircular canals of the inner ear. Calcium carbonate is accreted daily as thin concentric rings that reflect somatic growth (Neilson & Geen, 1982; Campana & Neilson, 1985). Daily deposition of calcified material reflects the distinct geochemical signature of the aqueous environment, and because otoliths are inert, the signature remains stable after deposition (Kennedy *et al.*, 2000, 2002). The geochemical signature of the water is influenced by variation in the age and composition of the underlying bedrock geology (Kennedy *et al.*, 1997). For example, felsic rocks (*e.g.* granite) lead to higher ^{87}Sr:^{86}Sr and Sr:Ca values compared to mafic rocks (*e.g.* basalt), and the uneven distribution of rocks derived from felsic and mafic sources drives spatial variability in geochemical markers (Hegg *et al.*, 2013*a*). The scale of resolution for reconstructing fish movements is a product of both the heterogeneity of the geochemical signatures (Kennedy *et al.,* 2000; Barnett-Johnson *et al.*, 2010; Hegg *et al.*, 2013*b*) and the spatial and temporal resolution of the geochemical incorporation into the otolith (Hobson *et al.,* 2010). Daily rings can be referenced to both relative somatic growth and changes in the elemental and isotopic composition across the growth axis of the otolith. Together, structure and chemistry can be used to reconstruct movements throughout the life of an individual fish (Kennedy *et al.*, 2002; Hamann & Kennedy, 2012).

The objectives of this study were to (1) quantify the relevant water chemistry in the Willamette River basin to determine if underlying geospatial variation in water chemistry could be useful in otolith microchemistry analyses of fish, (2) determine whether the geochemical composition and growth rate of otoliths differed in juveniles collected from different rearing habitats at two spatial scales and (3) reconstruct the natal rearing habitat in a sample of natural origin returning adult *O. tshawytscha*. For objective (2), it was hypothesized that variation in otolith geochemistry differed among sub-basins (interbasin scale) and could thus identify interbasin strays (*i.e.* adults that use non-natal habitats for spawning; Keefer & Caudill, 2013). Second, within sub-basins, it was hypothesized that geochemical signatures and otolith growth increments were distinct between natal stream and reservoir rearing habitats (within catchment basin scale).

MATERIALS AND METHODS

STUDY AREA

The Willamette River, north-west Oregon, U.S.A., is *c.* 300 km long and located between the Cascade and Coastal mountain ranges. The Willamette River is a tributary of the Columbia River, with the confluence near Portland, Oregon (USEPA, 2000) (Fig. 1). There are hundreds of fish passage barriers in the Willamette River basin (Sheer & Steel, 2006), including 13 multi-purpose U.S. Army Corps of Engineers (USACE) WVP dams with reservoirs that provide flood control, irrigation, recreation, water supply and hydroelectric generation. The WVP dams

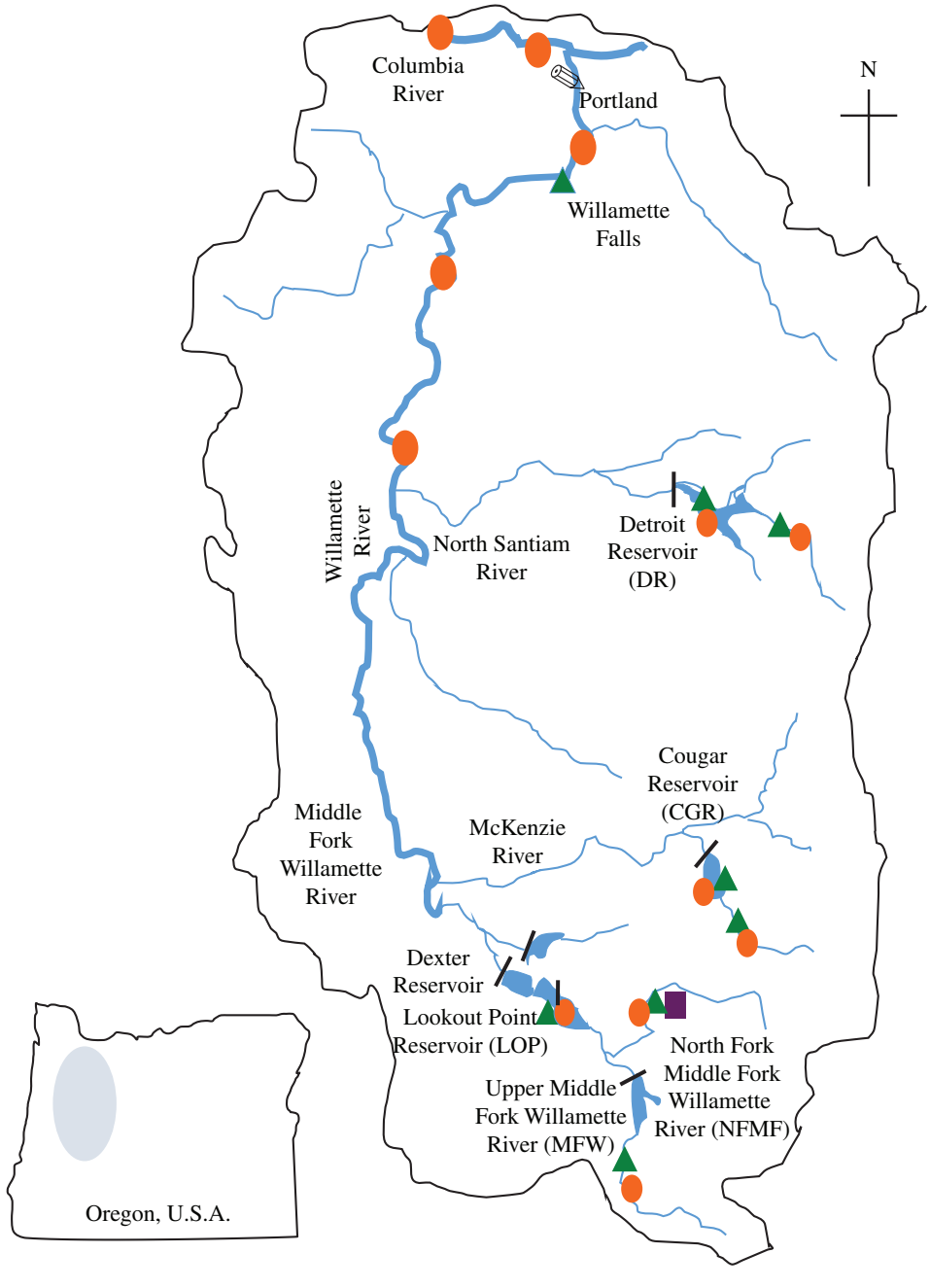

FIG. 1. The Willamette valley with locations of water samples (●), juvenile *Oncorhynchus tshawytscha* samples (▲) and adult *O. tshawytscha* samples (■). ▬, dams.

were constructed from 1941 (Fern Ridge Dam, Long Tom River) to 1969 (Blue Ridge Dam, McKenzie River). The WVP dams in basins studied here lack upstream fish passage facilities and downstream passage for juveniles is lacking or poor (Keefer *et al.,* 2012). Adults were collected at facilities below Detroit (DR), Cougar (CGR) and Dexter (DX) dams and outplanted to tributaries above the reservoirs of Detroit (North Santiam, NS), Cougar (South Fork McKenzie, SFM), Lookout Point (North Fork Middle Fork Willamette, NFMF) and Hill's Creek (Middle Fork Willamette, MFW) dams; DX is a re-regulation dam for Lookout Point Reservoir (LOP) and the short reach between DX and LOP lacks spawning habitat. Adult outplant sites were near juvenile collection sites in tributaries (Fig. 1). Out-migrating juveniles encountered one (CGR or DR), two (LOP-DX) or three (Hill's Creek-LOP-DX) high-head dams.

WATER CHEMISTRY

A total of 26 water samples from juvenile *O. tshawytscha* rearing habitats were collected and analysed. Samples were collected in 2010 during three separate periods: 9–11 July, 18–19 August and 5–7 October with the intention of spanning the juvenile *O. tshawytscha* growing season. Samples were collected in all major sub-basins in natal rearing tributaries, reservoirs, below WVP dams, Willamette River main-stem and lower Columbia (Fig. 1). Samples were collected using established methods (Kennedy *et al.,* 2000). Sr isotope ratios (^{87}Sr:^{86}Sr) were analysed using a Finnigan MAT 262 Multi-Collector Thermal Ionization Mass Spectrometer (TIMS) (www.sisweb.com/ms/finnigan.htm). Elemental concentrations of Ca, Sr, Ba, Mg and Mn were analysed with an inductively-coupled plasma mass spectrometer (ICP-MS – Finnigan-Thermo Element II) using analytical methods and instrument conditions described in Hegg *et al.* (2013*a*).

Non-parametric Wilcoxon signed rank and Kruskal–Wallis rank sum analysis were used for ^{87}Sr:^{86}Sr, Sr:Ca, Ba:Ca, Mn:Ca and Mg:Ca to test for variability in water geochemical samples between sites at each of the two spatial scales. Non-parametric tests were performed due to non-normal distributions and unequal variance, which violate the assumption of parametric tests [analysis of variance (ANOVA), *t*-test].

Analyses were focused on two spatial scales that corresponded to tests for juvenile rearing habitat and adult straying in otolith chemistry: (1) interbasin: water geochemical variability between natal spawning reaches where spawning occurs in NS, SFM, NFMF and MFW Rivers (Fig. 1) and (2) within Headwater Basin: variability in water geochemistry between NS and DR in the North Santiam sub-basin, SFM and CGR in the McKenzie sub-basin and NFMF and LOP reservoir in the Middle Fork sub-basin (Fig. 1).

OTOLITH COLLECTION AND PREPARATION

In order to characterize the microchemistry of juvenile fish, left sagittal otoliths were collected over 3 years (2009–2011) from natural-origin juvenile *O. tshawytscha* ($n = 113$) (Fig. 1). Fish were collected from natal rearing tributaries, project reservoirs and tail-races below project reservoirs. Fish were collected in three seasons (spring, summer and autumn) with rotary screw traps, fyke nets, trap nets and hook and line sampling. All fish were euthanized with a lethal dose of MS-222 under NMFS permit W1-11-UI201 issued under the Endangered Species Act, appropriate Oregon Department of Fish and Wildlife Scientific Collection permits (14601, 15392 and 16525) and University of Idaho Animal Care and Use Committee protocol number 2010-5 09-446.

Adults were examined from a single basin (Middle Fork Willamette). For adult samples, otoliths were collected from adult post-spawning *O. tshawytscha* of presumed natural origin (adipose-fin present) that had been collected at DX and outplanted to the NFMF above LOP (Fig. 1). Left sagittal otoliths ($n = 20$) were collected in 2 years (2009 and 2010).

All otolith samples were analysed for elemental concentrations Sr:Ca, Ba:Ca, Mg:Ca, Mn:Ca, with an ablated transect on the dorsal region from otolith edge to core. The region was chosen based on its clear growth rings and consistently repeatable preparations. Otoliths were prepared for microchemical and growth analysis using established methods (Secor *et al.,* 1991). Elemental ratios were quantified using a Finnigan Element2 high-resolution single collector ICP-MS

(HR-ICP-MS) coupled with a New Wave UP-213 laser ablation system (www.esi.com). The otoliths were ablated with the laser operating at a constant speed (30 μm s^{-1}) and spot size (40 μm). Concentrations of all measured elements were calculated relative to a National Institute of Standards and Technology glass standard (NIST 610) and background intensities were zeroed with a gas blank.

JUVENILE OTOLITH GROWTH ANALYSIS

Fork length (L_F) and mass (M) of juvenile *O. tshawytscha* were measured before removal of the left sagittal otolith. Image Pro software (MediaCybernetics; www.mediacy.com) and a digital camera (Moticam 2300; www.motic.com) were used to measure daily increment width along the dorsal transect perpendicular to the longest longitudinal axis. Total otolith radius was also measured on the same axis. If daily increments were not clear from the otolith core to edge, the transect was shifted slightly, but consistency was maintained by matching common rings. The mean width of five to 10 consecutive daily growth increments at 100, 200, 300, 400, 500, 600 and 700 μm from the primordium was calculated. One caveat in the analysis was that a faster growing fish would be younger at any distance from the core than a slower growing fish. A constant number of 10 increments could not always be measured due to variable visual quality of preparations. Otolith microstructure increment widths were compared with a Welch two sample *t*-test (programme R; www.r-project.org) that did not assume equal variance between reservoir and natal stream sampled otoliths at each measurement from otolith core. A Bonferroni correction (Dunn, 1961) was used to account for tests of differences at multiple locations on the same otolith of individuals.

OTOLITH MICROCHEMISTRY

The geochemical analyses focused on two sections of juvenile otoliths that were assumed to represent: (1) an individual's early growth period in the natal stream (natal origin) and (2) growth in the capture location (capture location). The natal origin chemical signature was quantified by averaging the first chemically stable point in the transect (generally located 110–200 μm from otolith core). The region was selected to estimate the geochemical signature during early growth in the natal stream because it is outside the area where maternal compounds associated with yolk-sac absorption are known to influence natal signatures (Barnett-Johnson *et al.,* 2008), yet not within the area associated with potential early post-emergence downstream movement (Zabel *et al.,* 2010). The capture location chemical signature was quantified by averaging a stable signature located in the 100 μm closest to the otolith edge. The capture location signature was presumed to reflect the location from which an individual was collected near the end of the growth season because most juveniles were collected in late summer-early autumn outside the periods of large downstream movements (Monzyk *et al.*, 2008; Keefer *et al.,* 2012).

The rearing geochemical signature was estimated during the first year of growth in adult samples with mean concentrations on the transect 500–650 μm from the otolith core. The location of the rearing signature was selected based on autumn *O. tshawytscha* in the Snake River where 250–800 μm from otolith core was considered first-year rearing and past 800 μm from otolith core was considered an overwintering signature (Zabel *et al.,* 2010). Qualitative observations of elemental and isotopic profiles from the sampled individuals indicated stable signatures in this region. The rearing geochemical region was also consistent with expected size during first-year rearing based on otolith–body size relationships for these populations (Bourret, 2013), and observed size at outmigration (Keefer *et al.,* 2012).

DATA ANALYSIS: SPATIAL VARIABILITY IN CAPTURE LOCATION

The natal origin otolith geochemical elemental values (Sr:Ca, Ba:Ca, Mn:Ca and Mg:Ca) from juveniles sampled in natal rearing streams were compared between sub-basins to determine if out-of-basin strays could be identified in returning adults. Significance tests using

multivariate analysis of variance (MANOVA) were used to compare the NS, SFM, NFMF and the MFW rivers. Linear discriminate function analysis (LDFA) with equal prior probability and leave-one-out cross validation was used to test classification accuracy in group membership (objective 2).

Within Headwater Basin, ANOVA and MANOVA were used to compare capture location geochemical signatures in otoliths from juveniles collected from natal streams and downstream reservoirs to determine if rearing habitats within basin could be distinguished in juveniles and returning adults. Dependent variables were a suite of otolith element ratios: Sr:Ca, Ba:Ca, Mn:Ca and Mg:Ca. The ^{87}Sr:^{86}Sr were not included in this analysis because results suggested low discriminatory power among water geochemical samples. Sites included as independent variables were NFMF and LOP in the Middle Fork sub-basin and MCK and CGR in the McKenzie sub-basin (objective 2) (Fig. 1).

Rearing habitat during the first year of life in individual adult fish was back-classified with LDFA using juveniles collected from known rearing locations (Wells *et al.,* 2003; Hegg *et al.*, 2013*a*). Juvenile otolith samples from the NFMF and LOP capture location signatures were compared with MANOVA ($\alpha = 0{\cdot}05$) using elemental ratios to calcium (Sr:Ca, Ba:Ca, Mn:Ca and Mg:Ca). The juveniles from known rearing locations were the training set to generate the LDFA, which was used as a model to classify first-year juvenile rearing habitat in returned adult natural origin fish in the NFMF (objective 3) ($n = 20$).

RESULTS

WATER CHEMISTRY

There were no significant differences in ^{87}Sr:^{86}Sr, Sr:Ca, Ba:Ca, Mn:Ca or Mg:Ca in water samples collected among natal stream habitats in each sub-basin and among reservoir and natal stream habitats within each sub-basin. (Table I). Differences between DR (Detroit reservoir) and NS (North Santiam River) were not tested due to small sample sizes, but low variability in water chemistry was observed between habitats.

OTOLITH GROWTH

Lack of an annulus indicated that all sampled juveniles were sub-yearlings. Mean daily growth increment width was significantly wider in fish collected in the reservoirs *v*. natal streams at the 200 and 400 μm measurements (Bonferroni-corrected *t*-tests, $P < 0{\cdot}01$, $\alpha = 0{\cdot}01$) (Fig. 2).

OTOLITH MICROCHEMISTRY

Natal origin elemental ratios (Sr:Ca, Ba:Ca, Mg:Ca and Mn:Ca) exhibited low variability and a large degree of overlap (Fig. 3), but were significantly different (Table II) between natal rearing sub-basins. LDFA with four groups (each sub-basin) was used to build a training set. Although significant differences were found using MANOVA, jack-knife re-sampling with the training set accurately classified only 59% of juvenile samples to the sub-basin of collection.

Capture location multivariate elemental ratios (Sr:Ca, Ba:Ca, Mg:Ca and Mn:Ca) were significantly different (Table II) between reservoir and natal tributary habitats in the North Fork Middle Fork and the McKenzie sub-basins (Figs 4 and 5). LDFA and jack-knife cross-validation indicated that 70% of known-origin juveniles were correctly classified to the location from which they were collected (either NFMF or LOP in

TABLE I. Water sample data for the Willamette Basin. Samples include mean ± S.E. for each site

Sub-basin	Site name	Sample size	$^{87}Sr:^{86}Sr$	Sr:Ca mmol mol^{-1}	Ba:Ca mmol mol^{-1}	Mg:Ca µmol mol^{-1}	Mn:Ca µmol mol^{-1}
North Santiam	NS (Trib)	1	0·7036	2·807	1·629	399·734	2728·982
	DR (Res)	2	0·7036	2·97 ± 0·15	0·14 ± 0·01	453·36 ± 45·64	940·03 ± 221·16
McKenzie	SFM (Trib)	2	0·70370 ± 0·00002	3·19 ± 0·15	1·02 ± 0·79	560·47 ± 19·26	47·1 ± 3·4
	CGR (Res)	3	0·7036	3·93 ± 0·41	0·72 ± 1·02	573·53 ± 96·26	900·56 ± 697·35
Middle Fork	NFMF (Trib)	3	0·70360 ± 0·00006	3·81 ± 0·17	0·7 ± 0·9	512·42 ± 27·77	288·27 ± 166·71
	LOP (Res)	3	0·70370 ± 0·00002	3·59 ± 0·13	0·72 ± 0·68	570·52 ± 39·97	4851·44 ± 575·66
	MFW (Trib)	2	0·7037	3·33 ± 0·13	0·86 ± 0·66	512·61 ± 49·62	676·02 ± 805·20
Main-stem Willamette	Buena Vista, OR	1	0·7041	2·725	1·678	556·928	1710·578
	Willamette Falls	1	0·7045	2·686	1·485	547·785	2142·001
Lower Columbia	St Helens, OR	1	0·7089	2·782	0·997	506·547	1922·881
	Goble, OR	1	0·7104	2·642	1·278	481·18	1856·836

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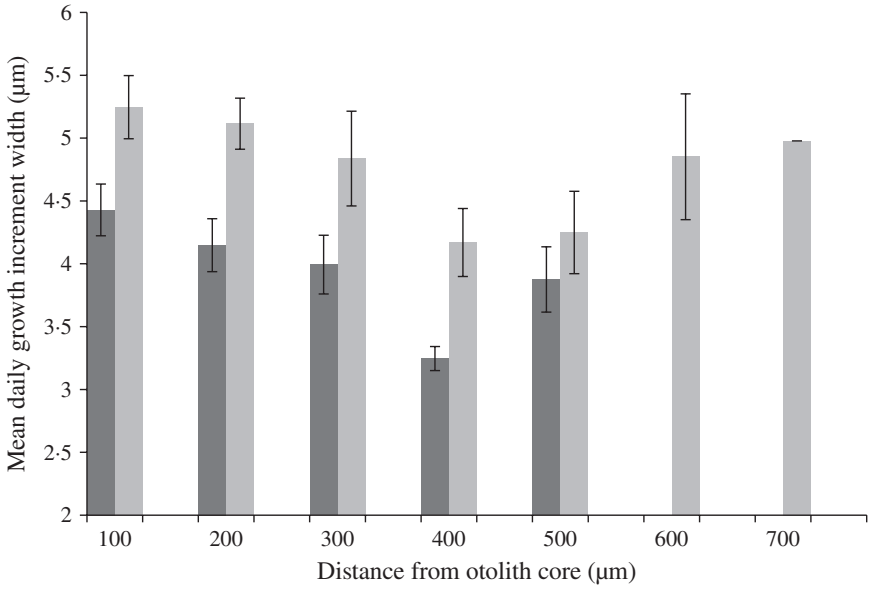

FIG. 2. Mean ± S.E. daily growth increment width in otoliths of juvenile *Oncorhynchus tshawytscha* from natal streams (■) and reservoirs (■) at 100 μ increments from otolith core.

the Middle Fork Willamette Basin) based on otolith elemental concentrations. Ninety per cent of the adults were classified as rearing in LOP ($n = 18$) *v*. 10% rearing in NFMF ($n = 2$) (Fig. 6), when the otolith chemistry of known-origin juveniles was used as a training set to classify rearing location of adults.

DISCUSSION

Otolith microchemistry is receiving increasing interest as a reliable and efficient means to recover individual-based and spatially explicit information over multiple spatial scales (Hobson *et al.,* 2010; Hamann & Kennedy, 2012; Hegg *et al.,* 2013*a*). The overall goal of this study was to use geochemical signatures and microstructure patterns in *O. tshawytscha* otoliths to determine early rearing habitat and growth. The results support the hypothesis that geochemical signatures can be used to distinguish juvenile *O. tshawytscha* that were reared in reservoirs *v*. natal streams in the studied populations, and that portions of some populations were reared in reservoirs. It was not feasible with this data set to distinguish natal origin among sub-basins in returning adults. These findings highlight the utility of otolith microchemistry and microstructure analysis to the reconstruct life histories of fishes in human-altered habitats.

Reconstructing life history using otolith microchemistry requires adequate variability in geochemistry across the landscape in variables unaffected by biological processes (*e.g.* ^{87}Sr:^{86}Sr; Kennedy *et al.,* 2000; Barnett-Johnson *et al.,* 2008; Hegg *et al.,* 2013*a*) and population or habitat-specific element incorporation mechanisms (*e.g.* elemental

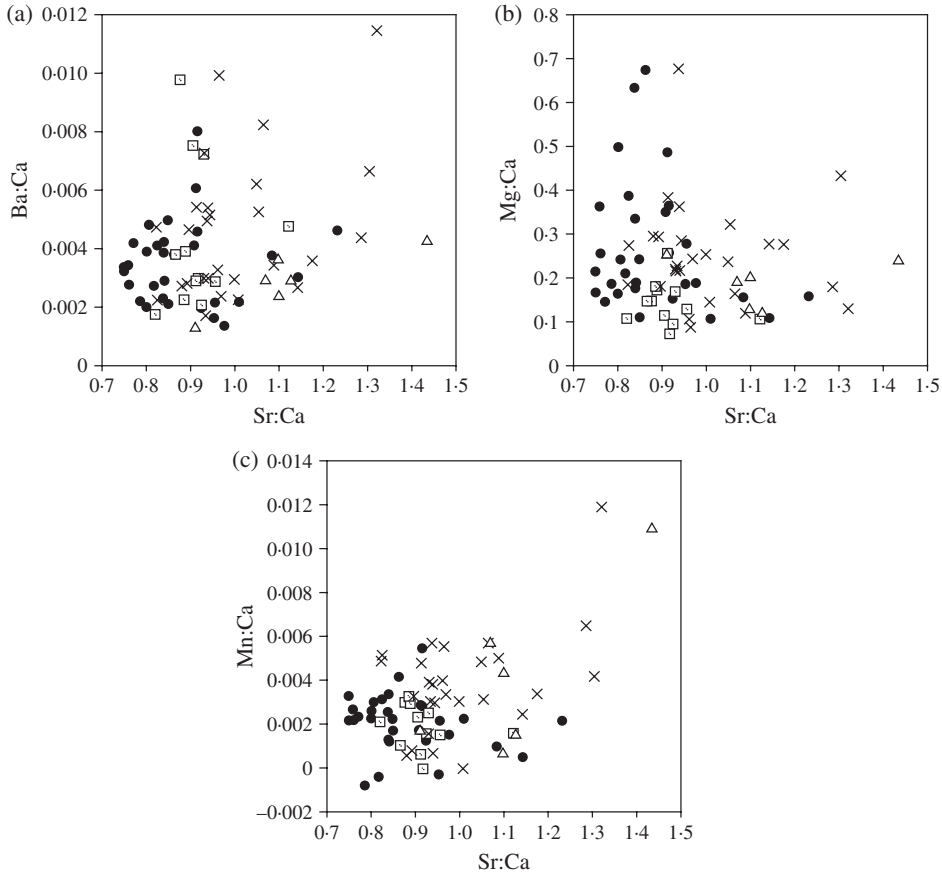

FIG. 3. Relationship between *Oncirhynchus tshawytscha* otolith elemental ratio Sr:Ca and otolith elemental ratios (a) Ba:Ca, (b) Mg:Ca (c) and Mn:Ca grouped by natal origin. MCK (●), MFW (⊡), NFMF (×) and NS (△) natal rearing sub-basin geochemical signatures are represented at the interbasin scale.

ratios; Campana, 1999; Wells *et al.*, 2003). Water chemistry data revealed low variability in ^{87}Sr:^{86}Sr between *O. tshawytscha* sampling locations at both the within headwater and interbasin scales (Objective 1), (Table I). These results were probably due to low geological diversity across the study area, with high concentrations of basalt and andesite formed in the Oligocene to Miocene period (Ludington, 2005). Consequently, ^{87}Sr:^{86}Sr values provided little resolution to reconstruct life-history attributes from otoliths at these scales. In contrast, significant differences were observed in otolith elemental geochemistry during early *O. tshawytscha* growth in reservoirs (Fig. 5). While significant differences were not detected between locations in water elemental ratios, the ratios were probably temporally dynamic and may have differed between locations due to differences in inputs or biogeochemical processes between locations in ways not detected by the point sampling. Chemical uptake of elements into fish otoliths is a multi-stage process with a variety of transitions that regulate and influence the relative uptake rates of elements into the calcium carbonate matrix of the otolith (Campana, 1999; Sturrock *et al.,* 2012). Abiotic factors including temperature,

TABLE II. *Oncirhynchus tshawytscha* otolith microchemistry statistical analysis, including scale and location of analysis

Location	Scale	Analysis	Elements	Statistic
NS, MCK, NFMF, MFW	Interbasin	Multivariate, MANOVA	Sr:Ca, Ba:Ca, Mn:Ca, Mg:Ca	$F_{3,71} = 4{\cdot}16$, $P < 0{\cdot}01$
MFW, MCK	Interbasin	Univariate, Tukey HSD	Sr:Ca	$F_{3,71} = 8{\cdot}96$, $P < 0{\cdot}05$
NS, MCK	Interbasin	Univariate, Tukey HSD	Sr:Ca	$F_{3,71} = 8{\cdot}96$, $P < 0{\cdot}05$
NS, MFW	Interbasin	Univariate, Tukey HSD	Sr:Ca	$F_{3,71} = 8{\cdot}96$, $P < 0{\cdot}05$
MFW, MCK	Interbasin	Univariate, Tukey HSD	Mg:Ca	$F_{3,71} = 3{\cdot}42$, $P < 0{\cdot}05$
NFMF, MCK	Interbasin	Univariate, Tukey HSD	Mn:Ca	$F_{3,71} = 5{\cdot}78$, $P < 0{\cdot}05$
NFMF, MCK	Interbasin	Univariate, Tukey HSD	Mn:Ca	$F_{3,71} = 5{\cdot}78$, $P < 0{\cdot}05$
McKenzie sub-basin	Within headwater basin	Multivariate, MANOVA	Sr:Ca, Ba:Ca, Mn:Ca, Mg:Ca	$F_{4,22} = 5{\cdot}01$, $P < 0{\cdot}01$
CGR, SFM	Within headwater basin	Univariate, ANOVA	Sr:Ca	$F_{1,28} = 9{\cdot}20$, $P < 0{\cdot}01$
CGR, SFM	Within headwater basin	Univariate, ANOVA	Ba:Ca	$F_{1,28} = 5{\cdot}10$, $P < 0{\cdot}05$
Middle Fork Willamette sub-basin	Within headwater basin	Multivariate, MANOVA	Sr:Ca, Ba:Ca, Mn:Ca, Mg:Ca	$F_{4,22} = 4{\cdot}07$, $P < 0{\cdot}05$
LOP, NFM	Within headwater basin	Univariate, ANOVA	Sr:Ca	$F_{1,25} = 18{\cdot}2$, $P < 0{\cdot}01$

pH and dissolved oxygen concentration, as well as biotic factors such as ontogenetic and physiological constraints drive variability in elemental incorporation in fish otoliths (Mayer *et al.,* 1994; Campana, 1999). It was hypothesized that the observed differences in otolith chemistry were produced by differences in chemical incorporation rates between habitats caused by gradients in temperature, growth and physiological regimes in cool, relatively low productivity headwater streams compared to warmer, more productive reservoirs.

Quantifying straying and homing is important in understanding reproductive success in threatened populations of anadromous salmonids, and is difficult using traditional mark–recapture and tagging techniques (Quinn, 2005). Otolith microchemical analysis presented a potential opportunity to investigate *O. tshawytscha* straying and homing behaviour by comparing the natal origin signatures on adult otoliths to the geographic area where the otoliths were collected (objective 2, interbasin scale) (Hamann & Kennedy, 2012). The interbasin analysis sought to collect preliminary data that could be used to investigate straying rates of natural origin adult *O. tshawytscha* in the Willamette basin. This was only possible if sub-basins contained distinct geochemical signatures. The interbasin otolith data using a suite of elemental geochemical signatures showed significant variability between sub-basins, but when using LDFA to build

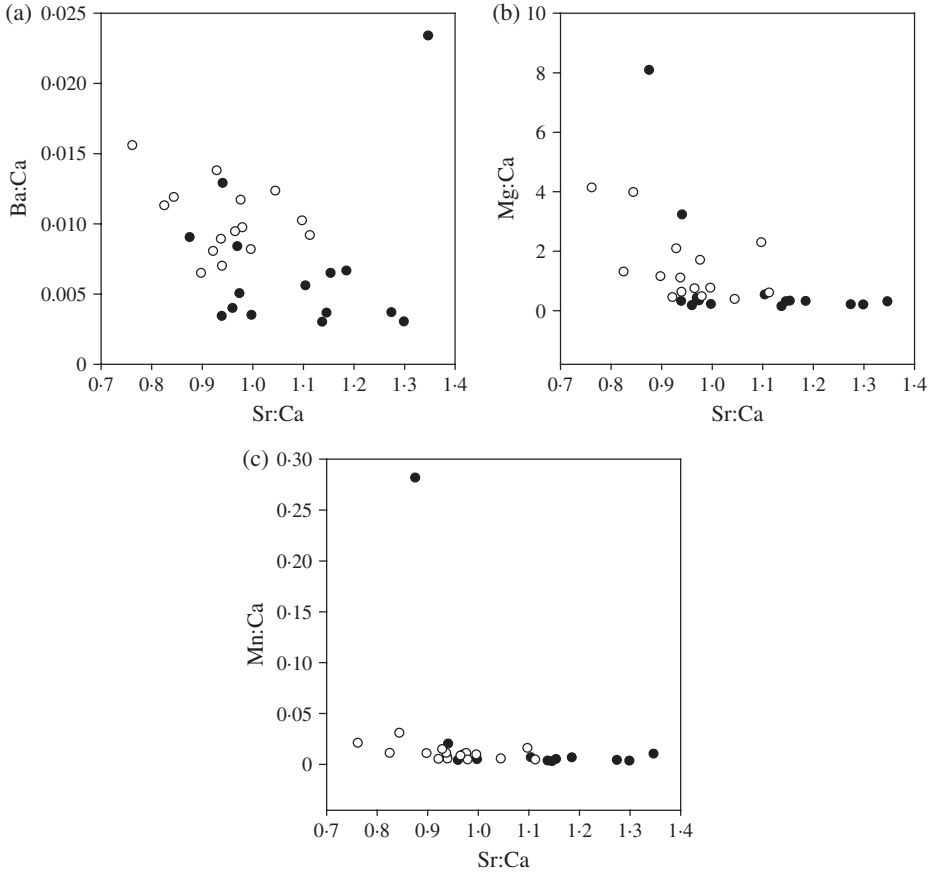

FIG. 4. Relationship between *Oncirhynchus tshawytscha* otolith elemental ratio Sr:Ca and otolith elemental ratios (a) Ba:Ca, (b) Mg:Ca and (c) Mn:Ca grouped by capture location. Reservoir CGR (●) and natal stream SFM (○) geochemical signatures in the McKenzie River sub-basin are represented at the with-in headwater basin scale.

a training set with juvenile samples, jack-knife reclassification found 59% classification accuracy in known-origin samples. Given that stray rates in hatchery *O. tshawytscha* range can vary from near zero to >20% (Quinn & Fresh, 1984; Quinn *et al.*, 1991; Keefer & Caudill, 2013), and natural origin *O. tshawytscha* have demonstrated stray rates on the order of 13% at local geographic scales (Hamann & Kennedy, 2012), the otolith data collected in this study could not be used to accurately estimate straying and homing among the Willamette sub-basins, although this approach has been successfully applied in other basins (Hamann & Kennedy, 2012).

Discriminating fine-scale freshwater habitat use by life-history stage with a multivariate approach and suite of natural chemical signatures has been demonstrated in a variety of fish species (Wells *et al.*, 2003; Clarke *et al.*, 2007; Schaffler & Winkelman, 2008; Hegg *et al.*, 2013*a*). In particular, Clarke *et al.* (2007) found that Arctic grayling *Thymallus arcticus* (Pallas 1776) did not use reservoir habitats in the Peace River catchment, Canada and, Hegg *et al.* (2013*a*) demonstrated reservoir habitat use by

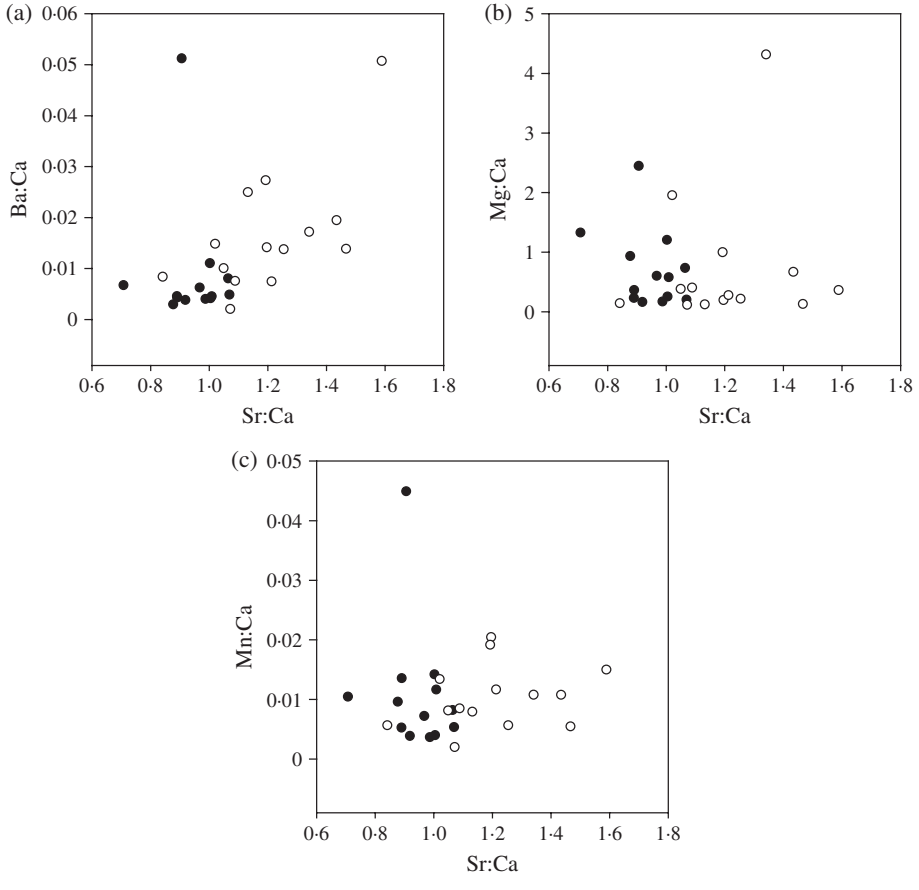

FIG. 5. Relationship between *Oncirhynchus tshawytscha* otolith elemental ratio Sr:Ca and otolith elemental ratios (a) Ba:Ca, (b) Mg:Ca and (c) Mn:Ca grouped by capture location. Reservoir LOP (●) and natal stream NFMF (○) geochemical signatures in the Middle Fork Willamette River sub-basin are represented at the with-in headwater basin scale.

juvenile *O. tshawytscha* in Lower Granite Reservoir (Snake River, U.S.A.). In this study, although sample sizes were not large, a multivariate LDFA of elemental ratios in fish otoliths distinguished juvenile natal tributary and reservoir habitat use within basin, and back-classified 90% of returning adults to reservoir rearing (objective 3). These data present the opportunity to improve management targeted to specific life-history stages. For example, identifying which and to what degree juveniles use alternative habitats can inform dam operations to improve conditions during downstream passage and during critical periods of survival and growth both upstream and downstream of dams. Alternative management scenarios under consideration in the Willamette Basin include structural improvements for juvenile downstream passage, construction of reservoir bypass facilities for juveniles and reservoir draw-downs to improve passage through existing structures. The findings suggest that improving juvenile downstream passage and implementing reservoir draw-downs will increase survival of migrating reservoir reared individuals, as opposed to juvenile reservoir

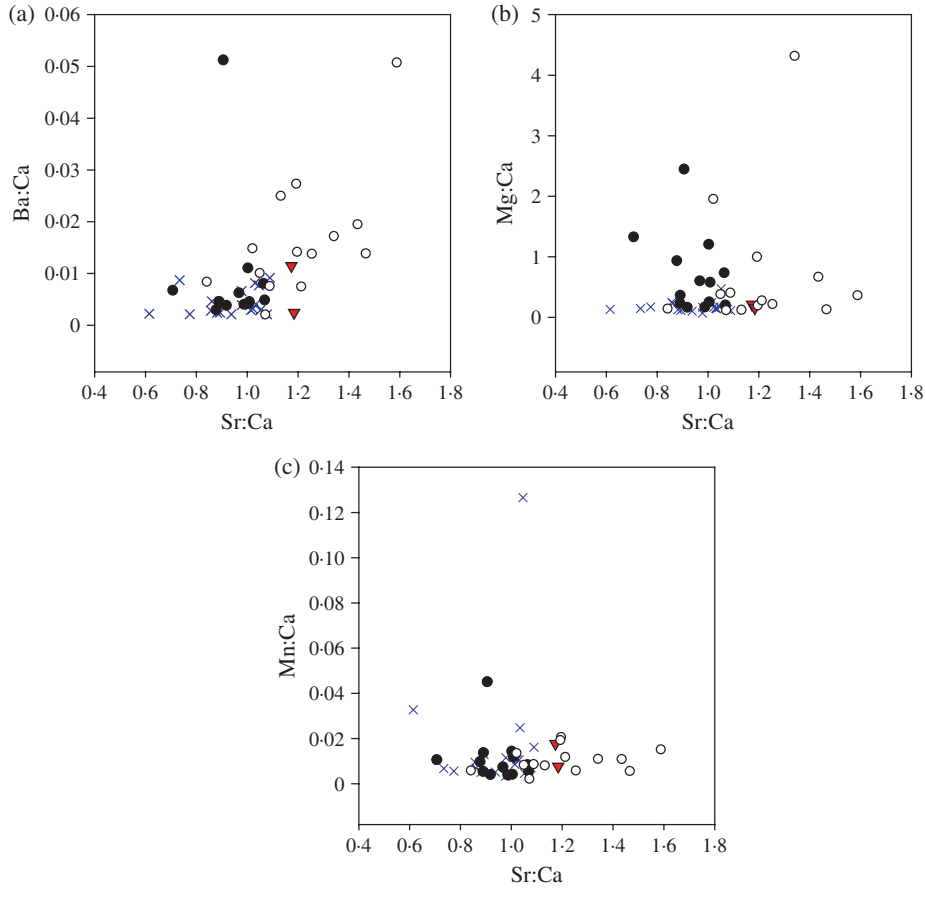

FIG. 6. Results of linear discriminate function analysis (LDFA) back-classification for 20 natural origin adult spring *Oncorhynchus tshawytscha* in the Middle Fork Willamette sub-basin (NFMF, ▼; LOP, ×) and known-origin juvenile *O. tshawytscha* classified by capture location (LOP, ●; NFMF, ○). Bivariate plots with Sr:Ca on *x*-axis compared to (a) Ba:Ca, (b) Mg:Ca and (c) Mn:Ca on *y*-axis.

bypass facilities which could constrain life-history variation. The approach has applications to a number of fish species affected by impoundments, as well as species that demonstrate estuarine or adfluvial life histories. For instance, this methodology could be used to study reservoir and lake habitat use of bull trout *Salvelinus confluentus* (Suckley 1859), a species of concern in the U.S.A. (Rieman & McIntyre, 1995) or anadromous species rearing in a combination of headwater, main-stem and estuarine habitats (Hogan *et al.,* 2007; Volk *et al.,* 2010).

The study results add to a growing literature demonstrating flexibility in early life history of fishes with complex life cycles (Klemetsen *et al.,* 2003; Hegg *et al.*, 2013*a*) and also support the hypothesis that juvenile *O. tshawytscha* can experience increased growth rates in reservoirs, compared to natal streams (objective 2, within headwater basin), (Fig. 2). This pattern has also been indirectly observed in past Willamette basin reservoir sampling (Monzyk *et al.*, 2008). Otolith increment width measured in this study was relatively larger in reservoir individuals throughout the entire growth axis

(Fig. 2), which suggests that juveniles dispersed to project reservoirs soon after hatching; also a result consistent with recent data from screw traps (Monzyk *et al.*, 2008). Juvenile *O. tshawytscha* have shown behavioural thermoregulation in Columbia River reservoirs, and Tiffan *et al.* (2009) suggested that this behaviour could enhance growth opportunity and life-history diversity in *O. tshawytscha* populations. An unknown question in this system and other impounded systems is whether reservoir rearing primarily results from the adaptive exploitation of increased growth opportunity (Limm & Marchetti, 2009) or is a by-product of seasonally constrained downstream passage (Keefer *et al.*, 2012). Further, it is not clear whether increased growth opportunities confer survival benefits over the entire life cycle of the fish.

Downstream movement of sub-yearlings after emergence is fairly common among *O. tshawytscha* populations where growth opportunities are heterogeneous between habitats (Bradford & Taylor, 1997; Connor *et al.,* 2001). Quantifying the relative timing of these movements and habitat use between early rearing habitats in individuals is critical for understanding factors that limit abundance and survival during the freshwater phase (Quinn & Unwin, 1993; Zabel & Achord, 2004; Keefer *et al.,* 2012). Regardless of underlying mechanisms, the differences in early growth between habitats probably influence survival to adulthood and lifetime fitness (Zabel & Achord, 2004; Chittaro *et al.*, 2014). Although neither habitat-specific smolt production nor smolt-to-adult survival were quantified, it is interesting that 90% of the sampled adults reared in LOP, particularly because of reservoir rearing and large size, appear to be associated with a high mortality cost during juvenile downstream passage in this system (Keefer *et al.,* 2012). Understanding juvenile *O. tshawytscha* life history is critical when considering restoration efforts to restore historical disturbance regimes or in-river conditions (Waples *et al.,* 2009) and plasticity in life-history traits such as that observed here may confer resilience and adaption to an altered environment (Schindler *et al.,* 2010). Importantly, reservoir rearing does not present a panacea for declining *O. tshawytscha* populations, but does provide a potential example of the species adaptive plasticity influenced by anthropogenic changes. Ultimately, the degree to which alternative life-history pathways contribute to population size, stability and resilience will depend on the absolute and relative fitness of each pathway.

This study demonstrates the application of natural geochemical signatures to investigate novel life-history attributes at the individual scale, as shown in various studies (Kennedy *et al.,* 1997; Miller *et al.,* 2010; Hegg *et al.*, 2013*a*). Future applications for this research could investigate main-stem Willamette River and Columbia River estuary juvenile habitat use. These data could add spatial resolution to life-history patterns, and could be feasible with samples of juvenile *O. tshawytscha* and water chemistry in main-stem and estuary habitats. Limited research suggests residence and growth of juvenile *O. tshawytscha* in the main-stem Willamette River (Friesen *et al.*, 2007; Schroeder *et al.,* 2007), but qualitative examination of adult Middle Fork Willamette life-history chemical profiles and size at out-migration provided no evidence of main-stem Willamette River or estuary rearing (Bourret, 2013). Thus, growth in main-stem and estuary habitats is unlikely for the sampled populations, suggesting that the degree of estuary use may differ among Willamette Valley sub-basins.

Understanding habitat use of individuals at various spatial scales is challenging in many fishes that frequently use multiple habitats in the expression of complex life cycles. Combining otolith microchemistry and microstructure analysis has been demonstrated in estuary (Volk *et al.*, 2010; Hoem Neher *et al.*, 2013) and pelagic

(Lin *et al.*, 2012) habitats. Further, researchers have compared otolith microchemical analysis with annual marks (Benjamin *et al.*, 2014), and with otolith-size fish-length backcalculation models to estimate fish length at habitat transitions (Miller *et al.*, 2011). As more research reveals complex movement patterns and alternative life histories in anadramous (Connor *et al.,* 2005; Volk *et al.*, 2010; Hegg *et al.*, 2013*a*) and resident (Kennedy *et al.*, 2002; Hogan *et al.,* 2007; Benjamin *et al.*, 2014) fishes, applications using combined otolith techniques can provide detailed life-history information in a variety of habitats to reveal cryptic life-history variation, evidence of unrecognized habitat use and causes of movement behaviours at multiple spatial and temporal scales.

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From: Dan Cenis
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:36:29 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Dan Cenis
7218 S. South Meadows Rd
Spokane, WA 99223

From: Heather Chapin
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:19:04 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Heather Chapin
919 Mason St.
Bellingham, WA 98225

From: John Chappell
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 10:26:56 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

John Chappell
55 Vignito Lane
Chelan, WA 98816

From: Ross Christianson
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:07:59 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Ross Christianson
2322 NE 105th Ave
Vancouver, WA 98664

From: Allison Ciancibelli
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 3:42:42 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Allison Ciancibelli
240 Twisp River Rd.
Twisp, WA 98856

From: smithm69@msu.edu
To: John Sirois
Subject: CCC comments on phase 1 plan
Date: Friday, February 27, 2015 5:50:18 PM
Attachments: UCUT comments.docx

Dear John attached and pasted below are CCC's comments on the work plan. Thanks for all the hard work on this and we hope the comments are helpful. If you have time, please let me know that you received our comments. Sincerely, Mindy Smith

Dear Mr. Sirois,

Below are the comments compiled by Citizens for a Clean Columbia (CCC) on your Phase 1 Work and Coordination Plan for reintroducing salmon and steelhead. We would like to commend these efforts and believe that a phased approach is indeed optimal including information gathering, careful study, and continued outreach/input from all involved parties. Our group would like to support you in any way possible as you move forward.

General comment: Completing these 11 objectives in one and a half years seems overly ambitious. We agree though that it is good to have a completion date in mind. Some justification though for this expectation would be helpful in understanding how the work can be completed in this timeframe.

Specific comments:

The inclusiveness of the executive collaboration group and project management advisory group are to be commended and the composition is appropriate.

The scientific advisory group might be more robust if local university professors in the appropriate disciplines were added; their knowledge and experience in study design and analysis could prove useful and their opinions might be less biased. There are also members of CCC with advanced degrees who might prove useful in reviewing documents.

We have some concern about the outreach team. US Federal and state agencies track record on transparency and inclusiveness is very poor; perhaps representation by an independent group who regularly conduct public surveys and focus groups might be considered. CCC has had good experience with the Washington State Department of Health, especially Liz Carr's work on the fish advisory in creating public information brochures and fliers, and with Carol Bergin from the Washington State Department of Ecology. The named products to be circulated electronically sound appropriate and inclusive.

Happy to see that, in Objective 1, prior research (e.g., studies, reports) will be used as a basis for creating a workable plan. There has been a great deal of study from multiple sources, and synthesizing this information is an excellent first step.

We also commend the consideration of climate change influence on habitat suitability and extent in Objective 2.

Understanding costs involved and past effects of existing fish passage facilities on other project purposes is also critical; this is clearly outlined in Objective 3.

Objective 4 is somewhat vague in that it is not clear what outcomes might be used in evaluating potential donor stocks or where these stocks are currently located. It would be helpful to include a bit more specific information on this, even at this early stage.

Objective 5 sounds interesting but making it clear why the Whooshh system was selected as the one to test (in an appendix perhaps?) would be helpful. This objective is much clearer on outcomes to be assessed.

Objective 6: as fish may pass into Canada, it would seem that Canadian presence on the scientific or outreach advisory panel would be needed. There is mention of coordinating finding with Canadian entities in objective 8 but this could be more specific in earlier objectives.

. Objective 7: The creation and adaptation of a project timeline is excellent; decision trees are also useful but difficult to create.

. Objective 8: The plan to develop a life cycle model is necessary and appropriate to understanding fish survival and to adopt appropriate measures for assessing success of reintroduction.

. Objective 9 is excellent. Starting with key questions is the best place to begin and prioritizing the research plan makes good sense. Assessing alternatives will allow for creativity if you include people who think outside the box.

. Objective 10: Consider some type of public portal as well as a website so that information flow can be two-way and more inclusive.

. Objective 11 seems a bit vague. It seems like historical information or data gathering from existing fish passage sites would be useful here along with more specific information about the range of potential effects to be assessed and how they might be assessed.

Thank you for this opportunity to provide comments. We honor the tribes and your exceptional work on fighting for environmental reparations, pushing for a co-equal ecological arm of a renewed Columbia River Treaty, and creating a viable approach for reintroducing salmon and other fish into the Columbia River Basin.

Mindy Smith, MD, MS

Secretary for CCC

From: James Clark
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:15:47 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

James Clark
2812 116th Ave NE
Lake Stevens, WA 98258

From: Curt clay
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:43:37 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Curt clay
PO Box 822
Coos Bay, OR 97420

From: Claire Cohen
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:52:22 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Claire Cohen
5051F Foothills Dr.
Lake Oswego, OR 97034

From: Lyle Collins
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:21:33 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Lyle Collins
200 N 70th Ave
Apt 4
Yakima, WA 98908

From: Randall Collins
To: John Sirois
Subject: Restore salmon to the upper Columbia River watershed
Date: Thursday, February 26, 2015 9:55:41 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

I am writing to offer my gratitude, as you fight to restore salmon to the the Upper Columbia River system.

I want you to know that I support the Upper Columbia United Tribes' (UCUT) draft that proposes to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Randall Collins
530 4th Ave W #309
Seattle, WA 98119

From:	Columbia Basin Transboundary Youth Network
To:	John Sirois
Subject:	Comments: Draft plan "Upper Columbia River Basin Fish Passage and Reintroduction Project - Phase 1"
Date:	Friday, February 27, 2015 4:03:58 PM
Attachments:	UCUT_letter_final.pdf

Dear Mr. Sirois,

Please accept the attached letter as the official comments being submitted from our group.

Kind regards,

Steering Committee
Columbia Basin Transboundary Youth Network

Columbia Basin Transboundary Youth Network

We are the ones the River is waiting for.

John Sirois
Upper Columbia United Tribe
25 W. Main St. Suite 434
Spokane, WA 99201

February 27, 2015

Dear Mr. Sirois,

Thank you for the opportunity to comment on the draft work and coordination plan for the Upper Columbia River Basin Fish Passage and Reintroduction Project. As members of the newly formed Columbia Basin Transboundary Youth Network, we would like to comment on aspects of the draft plan which are pertinent to our mission "*to engage leaders in a transboundary forum of communication, education, and research, to enact positive change through sharing diverse basin perspectives and values, and to participate in policy dialogue and decision-making in higher capacities within the Columbia River Basin.*"

Comments:

Overall, the phased approach proposed by UCUT is extensive and quite comprehensive. We also recommend:

1) *Include youth in outreach efforts* - In addition to Phase 1 outreach to "agencies, stakeholders, organizations, publics and press," a commitment of outreach to local high schools and universities will promote engagement of indigenous and non-indigenous youth throughout the phased approach.

2) *Utilize graduate students in research* - In order to encourage scientific inquiry and buy-in from local communities, outreach to local college students and graduates to promote graduate level research within the phased approach will encourage local youth to remain engaged within the basin and will invest in the training of future water managers.

3) *Consider mentorship as a way to engage youth* - The Columbia Basin Transboundary Youth Network would like to see a commitment to hiring local field technicians who will aid researchers in their projects. Incorporating some type of mentorship aspect with local youth of either high school or undergraduate students will ensure local engagement, participation and excitement for the reintroduction project both now and in the future.

4) *Engage youth in creative ways throughout the various phases of the project* - In summary, the Youth Network sees an opportunity in incorporating indigenous and non-indigenous youth throughout the phased approach of reintroducing salmon above Chief Joseph and Grand Coulee Dam. Youth can be engaged ceremoniously releasing fry above Grand Coulee to high school students working as research assistants and college or graduate students conducting research

throughout the phased Project. Incorporating youth into this diverse project will also bring diverse cultures into the Project, which will in turn enhance the overall Project.

Engaging youth in such an important transboundary project is pivotal in ensuring that local families, students and diverse cultures remain engaged in the Project. The Columbia Basin Transboundary Youth Network strongly encourages UCUT to consider making a commitment to youth engagement throughout the various phases of the Project.

We thank you for taking such strong steps forward and we hope to be an active collaborator. If you have any questions about implementing our suggestions, please respond via email: ColumbiaYouthNetwork@gmail.com.

Respectfully,

Steering Committee
Columbia Basin Transboundary Youth Network

E-mail: ColumbiaYouthNetwork@gmail.com
Website: https://columbiabasintransboundaryyouthnetwork.wordpress.com/

From:	Jim Heffernan
To:	matt.wynne@spokanetribe.com
Cc:	Stephen Smith; DR Michel; John Sirois; Keith Kutchins
Subject:	Comments on UCUT fish passage work plan
Date:	Friday, February 27, 2015 5:05:01 PM
Attachments:	2015 02 27 Letter to UCUT re fish passage.docx.pdf Jim Heffernan.vcf

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Good afternoon Matt:

I've attached CRITFC's comments on the UCUT Draft work plan on fish passage and reintroduction for your review and use.

Thanks, Jim

Jim Heffernan
Policy Analyst-Columbia River Treaty
Columbia River Inter-Tribal Fish Commission
700 NE Multnomah Street, Suite 1200
Portland, Oregon 97232
Direct dial: 503.731.1303
Cell: 503.381.6408
Email: hefj@critfc.org
Email: j_p_heffernan@hotmail.com

COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

700 NE Multnomah Street, Suite 1200
Portland, Oregon 97232

(503) 238-0667
F (503) 235-4228
www.critfc.org

February 27, 2015

Matt Wynne, Chairman
Upper Columbia United Tribes
25 W. Main Street, Suite 434
Spokane, WA 99201

RE: Upper Columbia River Basin Fish Passage and Reintroduction Project – Phase 1, Draft Project Work and Coordination Plan

Dear Chairman Wynne:

The Columbia River Inter-Tribal Fish Commission (CRITFC) wants to take this opportunity to congratulate the Upper Columbia United Tribes (UCUT) for developing the *Draft Work Plan on Upper Columbia River Basin Fish Passage and Reintroduction Project – Phase 1* (Draft Work Plan) on behalf of the 15 Columbia Basin tribes and other sovereigns and stakeholders in the Columbia River Basin. CRITFC and its member tribes offer our aid and support in reviewing and developing responses to comments you receive on this Draft Work Plan. We look forward to working with you on the refinement and implementation of the Draft Work Plan through the Columbia Basin Tribes Coalition.

Because of your collaborative work through the Columbia River Tribes Coalition, we have only a few comments to offer on the Draft Work Plan. Our comments are consistent with the Northwest Power and Conservation Council's Columbia Basin Fish and Wildlife Program elements specific to this project proposal:

- **Transboundary reintroduction**. The United States should pursue a joint program with Canada, with shared costs, to investigate and, if warranted, implement the reintroduction of anadromous fish on the mainstem Columbia River to Canadian spawning grounds. This joint program would proceed on an incremental basis, comparable to the phased approach described above.

- **Reintroductions above Grand Coulee to mainstem reaches and tributaries in the United States**. Bonneville and the relevant federal action agencies, working in collaboration with state and federal fish and wildlife agencies and tribes, shall investigate and, if warranted, implement passage and reintroduction of anadromous fish into suitable habitats within the United States. This shall include:
    - Funding research associated with critical uncertainties at Chief Joseph and Grand Coulee dams required to inform Phase 1

- Funding work required for Phases 2 and 3 based on Council recommendations

These Council program elements are consistent with the Columbia Basin Tribes Coalition goals outlined in the *Fish Passage and Reintroduction into the U.S. & Canadian Upper Columbia Basin, A Joint Paper of the Columbia Basin Tribes and First Nations* (January 2015). Importantly, these program elements are also consistent with the Regional Recommendation on the Future of the Columbia River Treaty after 2024 submitted by the U.S. Entity to the Department of State in December 2013, with the Council specifically recognizing that it is the United States that should pursue a joint program with Canada regarding transboundary work to return salmon to Canadian spawning grounds.

With the Council's program recognizing the need for the United States to lead discussions regarding passage and reintroduction to Canadian spawning grounds and specifically limiting the scope of their program to the mainstem reaches and tributaries in the United States, the focus and scope of the Draft Work Plan should fall completely within the domestic jurisdiction of the United States. With regard to work that needs to be undertaken and completed in Canada, we encourage the Okanagan Nation Alliance (ONA), the Canadian Columbia River Inter-tribal Fisheries Commission (CCRIFC), Canada and its Department of Fisheries and Oceans (CDFO), the Province of British Columbia and others to develop a complementary work plan for Phase 1 for Canada to be implemented concurrently with that outlined by UCUT.

We offer these specific comments:

Task 2.2 as currently written contemplates work through the transboundary reach, modify this task to be consistent with the Council's Fish and Wildlife Program elements and only include work to the United States border. While we recognize this assessment is important, work in Canada is outside the Council's program element specific to this project. This assessment is important and ONA, CCRIFC, CDFO and others should carry out this assessment in Canada.

Task 5.1 as currently written contemplates work at Okanagan Lake for sockeye in Canada, modify this task to be consistent with the Council's Fish and Wildlife Program elements and only include work in the U.S. While we recognize this assessment is important, work in Canada is outside the Council's program element specific to this project. This assessment is important and ONA, CDFO and others should carry out this assessment in Canada.

In addition to objectives and tasks listed, we encourage you to apply existing analytical tools to explore potential hydropower system operational changes supporting successful upstream and downstream migration of upper Columbia River stocks and the effects of these changes on lower Columbia River stocks. This should include an assessment of water and fish travel time and effects on critical life history metrics such as time of arrival to saltwater. We offer the use of the CRITFC Information System (CIS) model to carry out these assessments. We also encourage you to use other regional tools, such as the Comparative Survival Study (CSS) methods to complete these assessments. It may be useful to employ climate change models that are now in development to assess the benefits of providing salmon passage and reintroduction for future scenarios.

It would be helpful to assess socioeconomic implications of alternative hydropower system scenarios to support fish passage and reintroduction. This assessment would benefit from including estimates of fish passage costs, socio-economic objectives and performance measures for relevant attributes of tribal and recreational fisheries, flood control, power generation, and irrigation. It would also be useful to assess the implications of fish passage and reintroduction options, if any, on FERC license holders, ESA-listed species and regulatory requirements under the Clean Water Act.

In closing, I would note that the CRITFC tribes have an important management role[1] in the Columbia Basin and that through close collaboration and coordination we can contribute to the members of UCUT realizing the dream of restoring salmon to their waters and people. CRITFC is looking forward to working with UCUT, state and federal agencies to develop a coordination framework and work plan for Phases 2 and 3.

CRITFC also offers our support during the review of comments you have received on the Draft Work Plan. Please contact me if you have any questions about our comments.

Sincerely,

Babtist P. Lumley
Executive Director

Cc: Columbia Basin Tribes Coalition
Bill Bradbury, Chairman, Northwest Power and Conservation Council
Elliot Mainzer, Administrator, Bonneville Power Administration

[1] These management authorities are based upon peace treaties with the United States, United States v. Oregon case law and management agreements and the U.S.-Canada Pacific Salmon Treaty. Our experience with the U.S.-Canada Pacific Salmon Treaty is applicable here, where we ensured the inclusion of the coastwide rebuilding program for chinook stocks and harvest ceilings to limit the impact of ocean fisheries on Columbia River stocks. We made this ocean and tributary harvest connection to assure that Council funds dedicated to rebuilding chinook stocks in the basin would not be lost to increased harvest in ocean fisheries.

From: Cindy Pearce
To: John Sirois
Subject: UCUT draft fish passage/reintroduction plan
Date: Thursday, February 19, 2015 8:58:09 AM

Hello John,

Further to my phone messages, thank you for sending the draft plan to the BC CRT Local Governments' Committee for comment.

Congratulations for moving this forward to this stage!

First request is that the Committee is meeting on Feb. 27, when comments are due, so we'd appreciate it if you could accept our comments early the following week.

Second request is to speak with you briefly on the evolution of this plan, and the current absence of consultation and complementary activities in B.C. This will likely be a concern for the Committee.

Would appreciate talking with you if that is possible - my phone number is below and my calendar is quite open these days.

Thanks. All the best,

Cindy Pearce
Executive Director
Columbia River Treaty Local Governments' Committee
250 837-8505
cindypearce@telus.net

From: Joel Coons
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 1:38:06 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Joel Coons
30415 SE 40th ST
Fall City, WA 98024

From: Clivonne Corbett
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:45:06 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Clivonne Corbett
944 Irongate Lane
Roseburg, OR 97471

From: Conor Corkrum
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:02:04 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Conor Corkrum
2230 Yale Ave E
Unit D
Seattle, WA 98102

From: Demelza Costa
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 3:29:18 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Demelza Costa
28626 Ridgeway Rd.
Sweet Home, OR 97386

From:	Taylor Aalvik
To:	DR Michel
Cc:	Keith Kutchins; John Sirois
Subject:	Cowlitz comment on UCUT fish passage investigation proposal
Date:	Friday, February 27, 2015 11:21:45 AM
Attachments:	Cowlitz comments on UCUT fish passage investigation 02_27_2015.pdf
Importance:	High

Hi DR,

Attached is the Cowlitz Indian Tribe's comments regarding the proposed UCUT proposal for fish passage investigation. Hard copy sent via Postal Service today.

Please share as you wish,

Take care

Taylor Aalvik
Cowlitz Indian Tribe
Director of the Natural Resources Dept.
PO Box 2547
Longview, WA
360-575-3306

Cowlitz Indian Tribe

February 27, 2015

Clinton M. Wynne, Chairman
Upper Columbia United Tribes
25 W. Main Street, Suite 434
Spokane, Washington 99201

Dear Chairman Wynne,

I write to you on behalf of the Cowlitz Indian Tribe in support of the investigation towards the re-introduction of anadromous species past Chief Joseph and the Grand Coulee Hydro-projects. We support all efforts to seek all avenues toward obtaining recovery of human caused impediments to aquatic life throughout the Columbia River Basin. Since the onslaught of deleterious activities to our tribal way of life, it has been an arduous uphill battle to regain even small pieces of what our ancestors had. I say ancestors because multiple generations of the first peoples upon this landscape have lived and died since injustices were forced upon us. Today, tribes have made great strides to recover "some" of the lost resources and essential economies that were taken away for so long; but the struggle is not over.

The challenges today for tribes can be characterized as: resistance from private and public business interests and their influences upon the political landscape. Although they would likely never admit it or portray publically, these business interests will do whatever they can to stall, politicize, and do whatever possible to not work in a cooperative manner to seek a solution that may impact their bottom line. This is what we believe will be prominent during your struggle to obtain fish passage in the Upper Columbia Basin. In whatever capacity we are able; we are on board and ready to assist you toward obtaining the ultimate goal toward regaining lost resources that essentially, political forces had taken away from us for the economic benefit of others.

As you well know, tribes have never given up in the arduous struggle to right historic wrongs. We are confident that this case will be no different. Let them know that the issue at hand will not go away, and someday, there will be salmon restored to the Upper Columbia Basin no matter what resistance comes forth. We are on board in support of your proposal to investigate re-introduction efforts through the Northwest Power and Conservation Council's Fish and Wildlife Program. Please contact our Natural Resources Director, Taylor Aalvik at: taylor.a@cowlitz.org for future coordinating efforts.

Sincerely Yours,

William Iyall, P.E.
Chairman of the Cowlitz Indian Tribe

PO Box 2547 • Longview, WA 98632-8594 • (360) 577-8140 • Fax (360) 577-7432 • EMAIL cowlitztribe@cowlitz.org

From: Anne Cranston
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 8:24:39 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Anne Cranston
939 N Maple ST
Colville, WA 99114

From: Howe Crockett
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:33:55 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Howe Crockett
16004 NE 43rd Street
Vancouver, WA 98682

From: Mr. Shelley Dahlgren, PhD
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:45:57 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Mr. Shelley Dahlgren, PhD
4449 242nd Avenue SE
Issaquah, WA 98029

From: Kathleen Dellwo
To: John Sirois
Subject: Fish Passage
Date: Saturday, January 31, 2015 6:56:24 PM

I am representing my large family. We go back 6 generations in Eastern Washington. We have farmed, boated and fished in the waters of the Columbia River for over 125 years. Although initially my grandparents, who were farmers, wanted the dams, our family has, like so many others, come to see the damage these dams have done to this beautiful resource.

We long to see the salmon return to their river bringing life back to the waters, life back to our native people. Life to all of us and our community. Let us finally make a wrong right again and bring back a resource that was gifted to us by Creator. A gift, a way of life, that we need to cherish as the people once did. It has been 75 years and no one has known the greatness and significance of this loss has have our native people. Let them finally teach us how to be prayerful and grateful for the abundant gift of the salmon and all they can bring back to the River and to our lives in the Northwest.

Respectfully yours,

The Robert and Madeline Dellwo family

Sent from my iPad

From:	Caudill, Christopher (caudill@uidaho.edu)
To:	John Sirois
Cc:	Wicks-Arshack, Adam (wick7992@vandals.uidaho.edu)
Subject:	Comments on UCUT reintroduction work and coordination plan
Date:	Friday, February 27, 2015 9:11:03 PM

Dear Mr. Sirois,

I have reviewed the UCUT Reintroduction Work and Coordination Plan. To state the obvious, the document represents an important step towards restoring fish populations to historic habitats and improving ecosystem function. I am currently preparing comments on the Plan in collaboration with Adam Wicks-Arshack. Unfortunately, I have been out of the office nearly full time since 21 January on medical leave and have been thus unable to complete comments within the requested comment period (the good news is I'm well on the way to full recovery). If possible I would like to submit them by the end of next week. Please let me know if comments submitted by then would be useful.

Thanks in advance,
Chris Caudill

Christopher C. Caudill
Assistant Professor
Department of Fish and Wildlife Sciences
University of Idaho
875 Perimeter Drive MS 1136
Moscow ID 83844-1136
208-885-7614 (voice)
208-301-0809 (mobile)
208-885-9080 (fax)

www.uidaho.edu/ferl

From: Jim Dickinson
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:02:29 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Jim Dickinson
910 Lenora Street
1003
Seattle, WA 98121

From: Kathy Dixon
To: John Sirois
Subject: UCUT Proposal
Date: Tuesday, February 24, 2015 10:25:17 AM

Dear Upper Columbia United Tribes,

Thank you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia.

I support UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 to prepare for the next step of salmon return: Phase 2.

Because salmon can be an important boost for our economy and environment, I encourage you to undertake a robust public process to involve the public of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia. In this time of climate change and melting glaciers, it's time we right historic wrongs, move to repair damage, and restore integrity to our rivers and forests of which salmon are a part. Thank you again for taking this important step forward for all of us.

Kathleen Dixon
3111 W. Kiernan Ave.
Spokane, WA 99205

From: Shawn Donnille
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 7:38:25 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Shawn Donnille
PO Box 50220
Eugene, OR 97405

From: Richard Downing
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:15:35 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Richard Downing
327 North Fork Drive
Box 91
Ahsahka, ID 83520

From:	Michael Drais
To:	John Sirois
Subject:	I support restoring salmon to the upper Columbia River watershed!
Date:	Thursday, February 26, 2015 7:45:48 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River. I grew up fishing with my father in the 1950's near Bonneville. He had fished there for a generation before me. My dad lamented the destruction of the magnificent upriver runs of salmon destroyed by Grand Coulée, the June Hogs. We grew up on the stories and marveled with him. I am now becoming an old man with stories of my own of times gone by. I would like nothing more than to see the Tribes' efforts to restore salmon above Grand Coulée succeed. I know my father, and his father before him, would smile thinking that people might actually succeed in getting the salmon upriver again. The very best of luck to you. Persevere. And thanks from my father, my brother and I!

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Michael Drais
28632 HCRH
Troutdale, OR 97060

From: Brian Duffy
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 4:39:02 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Brian Duffy
56308 Crest Drive
Warren, OR 97053

From:	Lisa Dupar
To:	John Sirois
Subject:	I Support UCUT"s draft proposal
Date:	Friday, February 27, 2015 11:26:23 AM
Attachments:	image001.png image002.png image003.png scanner@lisaduparcatering.com_20150227_115200.pdf

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Good luck John!
Lisa

LISA DUPAR | CHIEF CREATIVE OFFICER

Dupar & Company | Lisa Dupar Catering | Pomegranate Bistro
Creating the Complete Experience!

T: 425. 881.3250
E: lisad@duparandcompany.com
W: www.duparandcompany.com

Lisa Dupar Catering on Facebook
@lisaduparandco

From:	LeeAnne Beres
To:	John Sirois
Cc:	Tom Soeldner; john@waterplanet.ws
Subject:	Earth Ministry support letter
Date:	Wednesday, February 25, 2015 11:57:15 AM
Attachments:	Earth Ministry letter in support of UCUT salmon recovery.pdf

Dear John,

Please accept the attached letter from Earth Ministry in support of the Upper Columbia United Tribes' proposal to study returning salmon above Grand Coulee Dam. Earth Ministry represents over 400 congregations and tens of thousands of people of faith across Washington State. We are a glad to lend our voice in support of the first steps necessary in righting this historic wrong.

Yours,
LeeAnne

LeeAnne Beres
Executive Director
Earth Ministry/Washington Interfaith Power & Light
6512 23rd Ave NW, Suite 317
Seattle, WA 98117
(206) 632-2426
LeeAnne@earthministry.org
www.earthministry.org

February 25, 2015

Dear Upper Columbia United Tribes,

Thank you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia. The faith communities associated with Earth Ministry in Washington State stand together with you in taking action for the health of the communities and environment of the Upper Columbia watershed.

For over twenty years Earth Ministry has been the statewide leader in engaging the religious community in environmental stewardship and advocacy. Therefore it is a joy for us to support UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

We look forward to this first phase of the study being accomplished in a timely way, and completed by the end of 2016 to prepare for the next step of salmon return, i.e. Phase 2.

As people of faith, we care about communities and the environment, and salmon can be an important boost for our economy and ecosystems. Therefore, we at Earth Ministry fully support returning salmon to this vital watershed and encourage you to undertake a robust public process to involve the public of the region.

We know that there has never been adequate mitigation for the loss of salmon in the Upper Columbia. That is an injustice we must address so that all communities can share in a just and sustainable future. In this time of climate change and melting glaciers, it's time we right historic wrongs, move to repair damage, and restore integrity to our rivers and forests of which salmon are a part. Thank you again for taking this important step forward for all of us.

Yours,

LeeAnne Beres
Executive Director

Earth Ministry 6512 23rd Ave NW, Suite 317, Seattle, WA 98117
www.earthministry.org (206) 632-2426 emoffice@earthministry.org

From: Barrett Edgar
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 11:42:20 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Barrett Edgar
PO Box 210
Wedderburn, OR 97491

From: Nic Eldridge
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 3:46:22 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Nic Eldridge
9636 N IVANHOE ST
PORTLAND, OR 97203

From: David Ellenberger
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Sunday, March 08, 2015 6:33:28 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

David Ellenberger
303 N 16th Ave
Bozeman, MT 59715

From: Peter Engbretson
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:20:13 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Peter Engbretson
1000 SW Vista Ave Apt 1013
Portland, OR 97205

From: Dianne Ensign
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:58:03 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Dianne Ensign
11600 SW Lancaster Rd
Portland, OR 97219

From: Jeff Lambert
To: John Sirois
Subject: Restoring Salmon Runs in the Upper Columbia
Date: Tuesday, February 24, 2015 7:06:17 AM

Dear Mr. Sirois,

I appreciate the work that the Upper Columbia United Tribes has done in protecting salmon habitat and restoring salmon runs to the Upper Columbia.

There is much interest in mitigation for the destruction of the salmon runs in the Upper Columbia. I encourage you to have a full public comment and hearing process on the first phase of the study to both educate and receive input from the community.

My hope is that we can all work together to correct some of the damage and restore salmon runs to the extent possible. A good start is getting the Spokane community involved and supporting the efforts.

Jeff

Jeff Lambert
EnviroScience
16 E 39th Ave
Spokane, WA 99203
509 999-5100
jlambert@envirosciencegroup.com

From: Herbert Everett
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:48:38 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Herbert Everett
2155 Monroe St.
Eugene, OR 97405

From: Jeff Fagerholm
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 7:29:10 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Jeff Fagerholm
P O Box 4960
Ketchum, ID 83340

From: cathy gumtow farrior
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Wednesday, March 04, 2015 10:19:14 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

cathy gumtow farrior
4033 se tillamook lp
prineville, OR 97754

From: Fauna-June Fauth
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Monday, March 02, 2015 2:19:03 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Fauna-June Fauth
21690 R. Beaver Creek Rd.
Cloverdale, OR 97112

From: Mike Ferguson
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:57:22 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Mike Ferguson
612 Polk
Port Townsend, WA 98368

From: Barry Flamm
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:21:06 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Barry Flamm
295 Montana Landing
Polson, MT 59860

From: Mary Flanagan
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 1:47:04 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Mary Flanagan
18817 SE 11th Way
Vancouver, WA 98683

From: Pamela Fletcher
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 2:18:45 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Pamela Fletcher
4880 Whiteaker St.
Eugene, OR 97405

From: Tom Foster
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 1:39:30 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Tom Foster
325sw devonwood
Beaverton, OR 97006

From:	Larry Franks
To:	John Sirois
Subject:	I support restoring salmon to the upper Columbia River watershed!
Date:	Saturday, February 28, 2015 4:52:07 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Larry Franks
24001 SE 103rd St
Issaquah, WA 98027

From: Grant Trower
To: John Sirois
Subject: resorting salmon
Date: Thursday, February 26, 2015 10:50:01 AM
Attachments: FLR Letter Head - Upper Columbia.docx
ATT00001.txt

February 26th, 2015

Dear Upper Columbia United Tribes,

Thank you for your leadership in returning salmon home to the rivers, lakes and streams of the Upper Columbia. We support UCUT's draft proposal to study returning salmon above the Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 to prepare for the next step of salmon return: Phase 2.

Because salmon can be an important boost for our economy, environment and ecosystems, we encourage you to undertake a robust public process to involve the public of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia. In this time of climate change and melting glaciers, it's time we right historic wrongs, move to repair damage, and restore integrity to our rivers, lakes and forests of which salmon are a part. As you may know, The Kokanee salmon are at historical low numbers in the Lardeau River, Meadow Creek spawning channel and in the Kootenay & Arrow Lakes (Reservoirs).

Thank you again for taking on this initiative as this is an important step forward for all of us, especially the fish.

Grant Trower
Communications Coordinator
Friends of the Lardeau River

Box 1088 Kaslo, BC V0G 1M0 lardeauriver@yahoo.ca

From:	Grant Trower
To:	John Sirois
Subject:	Fwd: resorting salmon
Date:	Thursday, February 26, 2015 10:59:31 AM
Attachments:	FLR Letter Head - Upper Columbia.docx ATT00001.htm

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From: Grant Trower <lardeauriver@yahoo.ca>
Subject: resorting salmon
Date: February 26, 2015 at 10:49:53 AM PST
To: john@ucut-nsn.org

From: RUSSELL FROBE
To: John Sirois
Subject: Upper Columbia
Date: Wednesday, April 22, 2015 3:28:15 PM

Hi John,

I'm not sure if this is the proper format that you prefer, but here is my comments for you to use:

Dear Upper Columbia United Tribes,

Thank you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia. I support UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam. This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 to prepare for Phase 2 of salmon return.

Because salmon offer an important boost for our economy and environment, I encourage you to undertake a robust public process to involve the public of the region. There has never been adequate mitigation for the loss of salmon in the Upper Columbia. It's time we right historic wrongs, repair damage, and restore integrity to our rivers and forests, of which salmon are a part. I have read articles about the historic salmon runs up the Spokane River and would dearly love to see these restored, too, though it probably can't happen in my lifetime. I'm hoping my grandchildren could experience it, though. Thank you again for taking this important step for all of us.

Sincerely,

Marian Frobe
5312 N. Howard St.
Spokane WA 99205

From:	Timothy P. Hanrahan
To:	John Sirois
Subject:	Upper Columbia papers of interest
Date:	Monday, February 02, 2015 12:28:10 PM
Attachments:	Dauble et al. 2003_NAJFM.pdf Hanrahan_etal_CJFAS_2004.pdf

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Hello John,

I'm writing in regard to the draft work plan for fish passage and reintroduction into the Upper Columbia Basin. I've been engaged in research efforts for this topic on-and-off over the past 10 years or so. I thought I would pass along two papers relevant to this subject: one is specific to the reach between Chief Joe and Grand Coulee; the other paper covers the entire Columbia Basin hydroelectric system (mainstem).

I am interested in helping you and others as you develop the proposals for funding through BPA and work your way through the proposed phases of the effort. There are many potential approaches for evaluating habitat quantity and quality – and it will be important to consider how potential future dam operations could affect habitat availability (and how dam operations could be used as a restoration tool).

I think reintroduction to the Upper Columbia is a very worthy endeavor, and I applaud the UCUT in leading this effort.

Please feel free to give me a call if you have any questions about this topic in general, or if you have specific questions about the work contained in these papers.

Best regards,

Tim

Timothy P. Hanrahan, PhD
Senior Fluvial Geomorphologist | GeoEngineers, Inc.
Telephone: 509.209.2821
Mobile: (509) 713.5283
Email: thanrahan@geoengineers.com

1201 Jadwin Avenue, Suite 202
Richland, WA 99352
www.geoengineers.com

From: Kate Gessert
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:38:49 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Kate Gessert
86070 Cougar Lane
Eugene, OR 97402

From: Mike Gibson
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Saturday, February 28, 2015 8:15:37 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Mike Gibson
93691 orca ln
north bend, OR 97459

From: Skip Gibson
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Monday, March 09, 2015 8:06:39 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Skip Gibson
5145 Bigelow Road
Bozeman, MT 59718

From: Bob Gillespie
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 8:49:50 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Bob Gillespie
107 Schafer Street
Condo 8A
Wenatchee, WA 98801

From:	Conor Giorgi
To:	John Sirois
Subject:	Fish Passage and Reintroduction Project
Date:	Friday, February 13, 2015 8:35:13 AM
Attachments:	Giorgi Resume Winter 2014.doc

Hello John,

I am very interested in the Upper Columbia River Basin Fish Passage and Reintroduction Project. The subject of reintroducing anadromous fish to the upper Columbia is a something I have often thought about over the course of my academic and professional careers. I have read through the project plan and would very much like to be a part of this effort.

By trade I am a fisheries biologist and aquatic ecologist. Both my undergraduate and graduate degrees were received at regional schools, Gonzaga and Eastern Washington University, respectively. I have a significant amount of experience conducting aquatic ecology work on both the upper Columbia and Kootenai Rivers. I also have experience with fish bypass systems on large hydroelectric dams, being familiar with how they work (I should be since my dad is an expert in the field) as well as with the other issues regulated rivers pose.

I am not sure what sorts of employment opportunities this project will provide or who will be conducting the study (tribal entities or private consultants), but I would appreciate the chance to sit down and learn more about the work UCUT has planned.

Regards,
Conor Giorgi
509.998.1139

CONOR T. GIORGI

1720 E 12th Ave · Spokane, Washington 99202 · (509) 998-1139 · ctgiorgi@gmail.com

EDUCATION:

BACHELOR OF SCIENCE, BIOLOGY — 2001 - 2006
Gonzaga University — *Spokane, WA*

MASTER OF SCIENCE, BIOLOGY — 2011 - 2014
Eastern Washington University — *Cheney, WA*

RELEVANT RESEARCH & EMPLOYMENT EXPERIENCE:

FISHERIES TECHNICIAN — JUNE- DECEMBER 2014
R2 Resource Consultants, Inc. — *Redmond, WA*
Was a crewmember on several research teams deployed throughout the Susitna River watershed in remote Alaska. Mainstem and tributary habitat assessments included classifying and quantifying stream habitats, recording widths, depths, characterizing substrate, degree of erosion, and identifying riparian vegetation along with various measures of water quality. Fisheries distribution and abundance studies included identification, length and weight measures, collection of genetics samples, and PIT tagging fish sampled by electrofishing from a boat and backpack shocker, using fyke, gill, and seine nets, minnow and hoop traps, as well as snorkeling, and angling. After the field season data were reviewed during a second round of quality control before being imported into a database.

MASTER OF SCIENCE CANDIDATE — 2011 - 2014
Eastern Washington University — *Cheney, WA*
Impacts of spawning sockeye salmon on benthic macroinvertebrate production and community composition in the White River, WA. This research was one component of a broader project, the Wenatchee Nutrient Assessment (WNA). The goals of the WNA were to determine if the oligotrophic nature of four tributaries to the upper Wenatchee River is inhibiting the recruitment of rearing salmon; and if nutrient enhancement may be a viable fisheries restoration tool in these watersheds. The goal of my research was to determine if benthic macroinvertebrate biomass and production are currently low due to low nutrient levels, and if spawning salmon increases macroinvertebrate production. The White River is unique among the four tributaries being studied in that it is the only one with a self-sustaining run of anadromous fish, sockeye salmon. Using methods developed by the Integrated Status and Effectiveness Monitoring Program (ISEMP), benthic macroinvertebrates were regularly sampled above and within a distinct spawning reach for a period of one year. Various metrics gathered from the macroinvertebrate community were calculated using Washington State Department of Ecology bioassessment protocols. In addition to standard measures of biotic integrity I calculated estimates of production for invertebrate taxa deemed critical to rearing salmonids.

FISHERIES TECHNICIAN — AUGUST - OCTOBER 2013
Bioanalysts, Inc. — *Boise, ID*
Conducted snorkel fisheries surveys in streams along the east slope of the Cascade Mountains. River reaches were snorkeled as a means to identify juvenile and adult fish (brook, bull, cutthroat and steelhead trout, coho & chinook salmon, and mountain whitefish) and perform counts which are then used in population estimates. Habitat metrics, width, depth, and type, were also recorded during the surveys. Rafted down the Methow River, WA, to perform chinook salmon carcass and redd surveys as part of a broader population study.

LEAD BIOLOGICAL FIELD AND LABORATORY TECHNICIAN FEBRUARY 2008 - NOVEMBER 2012
TerraGraphics Environmental Engineering, Inc. *Spokane, WA*
Leading sampling teams collecting groundwater and surface water, and soil samples at multiple mine remediation sites throughout the Northwest. Collecting and analyzing pico-cyanobacteria and heterotrophic bacteria densities using epifluorescent microscopy; samples were collected from a reservoir undergoing a nutrient enhancement program. Performing chlorophyll-*a* analysis and nutrient sample collection and processing using fluorometric techniques. Periphyton collection and analysis for large river systems, also aiding in the design and deployment of the artificial substrates used. Assessing macroinvertebrate communities of large river systems using rock baskets as a means of sample collection. Cumulative watershed effects study examining logging roads and their effects on aquatic habitats. Other duties include stream surveys, characterizing bank condition, and calculating discharge.

ADJUNCT INSTRUCTOR JANUARY - MAY 2008
Gonzaga University *Spokane, WA*
This adjunct position was one instructing a lab section of Ecology, Biology 102. Being a class targeting biology majors, topics covered include: population dynamics, competition and niche, island biogeography, as well as data analysis and various field investigation procedures.

NATIVE TROUT CONSERVATION INTERN AUGUST - OCTOBER 2007
Yellowstone Nat'l Park/Student Conservation Association *Yellowstone National Park, WY*
This internship involved field work with the Streams and Gillnetting Crews of Yellowstone National Park's Aquatic Resources Center. Habitat surveys, electro-fishing streams, and gillnetting lake trout were among my duties. During habitat surveys I would aid in assessing substrate, quantifying large woody debris, depth, and bank stability throughout sections of the Upper Yellowstone River. While participating in electro-fishing projects I operated the backpack shocker, clip the caudal fin for genetic samples, and also collect length data and scale samples for aging. The gillnetting operation was an effort to remove invasive Lake Trout from Yellowstone Lake. Tasks required of me were to help bring in the net, remove captured fish, and redeploy the nets. When Yellowstone Cutthroat Trout were accidental mortalities we would collect the typical length, and scale data, but also determine their sex, assign a maturity code, and occasionally harvest their head for Whirling Disease research.

ENVIRONMENTAL EDUCATION FACILITATOR SEPTEMBER 2006 - JULY 2007
Turnbull National Wildlife Refuge / AmeriCorps *Cheney, WA*
I was in charge of presenting classroom programs and guiding field trips for public and private schools (K-12), boy and girl scout troops, and other community groups as well. Curriculum development and participation in other community functions were also included in my responsibilities. When not occupied with the Environmental Education Program I assisted with biological assessments. Migratory waterfowl surveys and population estimates required avian identification from considerable distances with the use of spotting scopes and binoculars. M.A.P.S. surveys (Monitoring Avian Production and Survivorship) were performed in the spring, catching migratory song birds with mist nets and processing them accordingly, followed by applying an identification band. Vegetative surveys such as prescribed burn snag assessments and invasive species transects were also conducted. Wetland monitoring also provided important data such as depth that was then used in management decisions. Working at the wildlife refuge also provided a unique opportunity to handle injured raptors such as Great Horned Owls, Red Tailed Hawks, and even a Bald Eagle.

FISHERIES TECHNICIAN MAY - JULY 2006, MAY - JULY 2002
Bioanalysts, Inc. *Wenatchee, WA*
Identifying and trapping bull trout as they pass through the observation window at the head of the fish ladder was the primary responsibility. The fish were then isolated, anesthetized, and operated upon, inserting a radio tag into their body cavity. I assisted with the surgery and recording associated data, and then with the release upstream of the dam. Also required was monitoring and maintaining the telemetry equipment set up around the hydroelectric dam.

RESEARCH SKILLS AND CERTIFICATIONS:

-SWIFTWATER RESCUE TECHNICIAN 1 -MARINE EMERGENCY DUTIES A3 (CANADIAN CERTIFICATION)
-SMALL VESSEL OPERATOR PROFICIENCY (CANADIAN CERTIFICATION) -FIRST AID/CPR
-FISHERIES SURVEY TECHNIQUES WITH ACTIVE AND PASSIVE PIT AND RADIO TELEMETRY
-GROUND AND SURFACE WATER QUALITY, MULTIPARAMETER INSTRUMENTS (IN-SITU, HYDROLAB, YSI)
-AQUATIC MACROINVERTEBRATE SAMPLING AND IDENTIFICATION
-COMPUTER PROFICIENCY (MS OFFICE SUITE, SYSTAT, SAS, ARCGIS)

RELEVANT COURSEWORK:

-BIOL 511: BIOLOGICAL RESEARCH METHODS – QUANTITATIVE ANALYSIS
-BIOL 505: LIMNOLOGY (LECTURE & LAB) -BIOL 546: RIPARIAN ECOLOGY (LECTURE & LAB)
-BIOL 562: ICHTHYOLOGY (LECTURE & LAB) -BIOL 596: STREAM ECOLOGY (LECTURE & LAB)
-BIOL 581: FRESHWATER INVERTEBRATE ZOOLOGY (LECTURE & LAB)
-GEOG 528: GIS I -GEOG 538: GIS II -GEOG 548: GIS III
-GEOG 523: GIS FOR ENVIRONMENTAL SCIENCE

REFERENCES:

Dr. MaryLou Keefe, Senior Biologist, R2 Resource Consultants, Inc. *(360) 253-3483*
mkeefe@R2USA.com

Dr. Camille McNeely, Associate Professor, Eastern Washington University *(509) 359-7049*
camillemcn@gmail.com

Dr. Tracy Hillman, Senior Ecologist & CEO, Bioanalysts, Inc. *(208) 321-0363*
tracy.hillman@bioanalysts.net

Darren Brandt, Aquatic Ecologist & President, Advanced Eco-Solutions, Inc. *(509) 226-0146*
darren.brandt@adveco-sol.com

From: Martin Glynn
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Tuesday, March 10, 2015 1:31:46 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Martin Glynn
417 W. Spring Creek Dr.
BOZEMAN, MT 59715

From: Steven Goldstein
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 2:10:00 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Steven Goldstein
16601 S Archer Drive
Oregon City, OR 97045

From: Jeffry Gottfried
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 4:33:47 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project. Y

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Thank you again for taking this important step forward for all of us.

Sincerely,

Jeffry Gottfried
7040 SW 84th Ave
Portland, OR 97223

From: Dawn Griffin
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 4:46:00 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Dawn Griffin
1347 NE 47th Ave
Portland, OR 97213

From: Gary Grimm
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 1:25:26 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Gary Grimm
2001 Canal St.
Boise, ID 83705

From: Amanda Grondin
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Tuesday, March 10, 2015 3:28:51 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Amanda Grondin
1450 30th Street
Port Townsend, WA 98368

From: Lindell Haggin
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:34:09 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Lindell Haggin
15418 N. Little Spokane Dr
Spokane, WA 99208

From: Gary Hall
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:51:29 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Gary Hall
3128 W State
Boise, ID 83703

From: Nathan Hall
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:38:30 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Nathan Hall
9050 SE Stark st
Apt.^
Portland, OR 97216

From: Nathan Hall
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 1:08:59 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Nathan Hall
9050 SE stark st
Apt 6
Portland, OR 97216

From: Chad Halsey
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Wednesday, March 11, 2015 4:32:56 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Chad Halsey
4065 Market Street NE
Apartment 21
Salem, OR 97301

From: Bob Hammond
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 12:19:49 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Bob Hammond
4735 18th Place South
Salem, OR 97302

From:	Katherine Hanson
To:	John Sirois
Subject:	I support restoring salmon to the upper Columbia River watershed!
Date:	Thursday, February 26, 2015 10:11:36 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Katherine Hanson
9781 Olympus Beach Rd
Bainbridge Island, WA 98110

From: Randy Harrison
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:32:46 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Randy Harrison
4051 Wagner St
Eugene, OR 97402

From: Colby Hawkinson
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 7:50:44 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Colby Hawkinson
1569 Mica Mountain Road
Deary, ID 83823

From: Bobby Hayden
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:15:51 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Bobby Hayden
66 Lawrence St
Eugene, OR 97401

From: Jill Hein
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:26:34 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Jill Hein
195 Harrington Road
Coupeville, WA 98239

From: Lars Henrikson
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 8:22:44 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Lars Henrikson
7956 34th Ave SW
Seattle, WA 98126

From:	Harrison` HILBERT
To:	John Sirois
Subject:	I support restoring salmon to the upper Columbia River watershed!
Date:	Friday, February 27, 2015 1:25:46 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Harrison` HILBERT
PO Box 714
Pocatello, ID 83204

From: Marilyn Hill
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 8:04:22 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Marilyn Hill
PO Box 160277
Big Sky, MT 59716

From: David Hinds
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:04:47 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

David Hinds
855 Pottery Rd
Bliss, ID 83314

From: Paul Hopfenbeck
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:58:44 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

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Sincerely,

Paul Hopfenbeck
P.O. Box 753
Bellevue, ID 83313

From: Robert House
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:19:31 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Sincerely,

Robert House
1453 N. Ellington Pl.
Eagle, ID 83616

From: Osalyn Houser
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:58:34 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

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Sincerely,

Osalyn Houser
2990 NW Sunny Lane
Albany, OR 97321

From: William Howald
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:58:47 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

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Sincerely,

William Howald
13309 47th Dr NE
Marysville, WA 98271

From: Annette Huenke
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:59:44 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

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Sincerely,

Annette Huenke
box 454
port townsend, WA 98368

From: C. A. Huff
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:12:30 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Sincerely,

C. A. Huff
49460 McKenzie Hwy
Vida, OR 97488

From: Douglas Hunt
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:14:28 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Sincerely,

Douglas Hunt
15186 SW New Plymouth Lane
Beaverton, OR 97007

From: Gary Hunt
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:38:15 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Sincerely,

Gary Hunt
4130 SW Washouga Ave
Portland, OR 97239

From: Jeanne Hyde
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:10:15 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Sincerely,

Jeanne Hyde
PO Box 862
57 B Patti's Place
Friday Harbor, WA 98250

From: Tracy Hyland
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:46:28 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Sincerely,

Tracy Hyland
01680 SW Radcliffe Rd
Portland, OR 97219

From: Robyn Ingram
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 2:20:06 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Robyn Ingram
4370 Willamette
Eugene, OR 97405

From: Sandra Joos
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Sunday, March 01, 2015 8:37:15 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Sandra Joos
4259 SW Patrick Pl
Portland, OR 97239

From: Dorothy Jordan
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 4:56:14 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Dorothy Jordan
1407 Abbott Rd
Lynden, WA 98264

From: Franklin Kapustka
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Saturday, March 07, 2015 8:42:31 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Franklin Kapustka
1539 SW 203rd Avenue
Aloha, OR 97006

From: Adam Kaufman
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:38:12 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Adam Kaufman
PO Box 493
Winthrop, WA 98862

From:	Susan Kaun
To:	John Sirois
Subject:	Fw: Support for Upper Columbia River Basin Fish Passage and Reintroduction -- Phase I
Date:	Wednesday, April 15, 2015 9:40:53 AM

April 15, 2015

John Sirois, Upper Columbia United Tribes
25 West Main Street, Suite 434
Spokane WA 99201

RE: Upper Columbia River Basin Fish Passage and Reintroduction -- Phase 1

Dear Mr. Sirois:

It is most gratifying to learn that a way has been found to re-introduce salmon and other anadromous fish above Grand Coulee Dam. How unfortunate that at the time the dam was constructed there was absolutely no thought or understanding, except by the tribes, of the importance of salmon, and its incredible value in sustaining the environment and people.

We believe the dams along the river have caused great damage to the environment, just to provide cheap electricity and barge passage, or flood control for those who built in a flood plain. The true cost of the dams to the environment has been ignored until now.

Thank you to the Upper Columbia United Tribes for their patient efforts to correct the wrongs of the past.

Kind regards,

Susan and Donald Kaun
613 Donovan Avenue
Bellingham WA 98225
kauns49@msn.com

From: Wayne Kelly
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:19:47 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Wayne Kelly
1257 Siskiyou Blvd, #1133
Ashland, OR 97520

From: John Keys
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 2:18:55 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

John Keys
5944 Bermuda
boise, ID 83709

From: Sara King
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 3:20:25 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Sara King
6647 Montevista Dr SE
Auburn, WA 98092

From:	John
To:	John Sirois
Cc:	John Osborn
Subject:	Restoration of Wild Salmon--letter to the Tribes
Date:	Wednesday, February 25, 2015 11:31:07 AM

February 25, 2015

Dear Upper Columbia United Tribes,

I am writing this letter to you to express my support for your draft proposal to study prospects for bringing wild salmon back to the rivers and streams above Grand Coulee Dam. I understand that restoration of the salmon would help right an historic wrong for the Tribes. I have resided in Spokane, Washington for fourteen years and have become aware that salmon is an important part of your heritage and would also yield economic benefits.

I personally bring an additional perspective to this matter. I am a life-long conservationist/environmentalist. I believe that restoration of wild salmon would benefit all of us in this region--not only the Tribes. As a former U.S. diplomat (retired), I see restoration of America's wild salmon, along with the bison and wolves, as a part of the whole world's heritage.

This is a complex initiative. I appreciate the careful and thorough way you are going about it including your clear objectives, numerous set tasks and the emphasis in Phase I on creating a coordination and communication framework. I look forward to your outreach to stakeholders and to the general public.

Sincerely,

[signed] John Klekas
John Klekas
39 W. Keely Court
Spokane, Washington 99224

email: johnklekas@comcast.net

From: Walt Kloefkorn
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 10:37:57 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I am a small farmer, striving for sustainability in the Tshimikan Creek drainage west of Springdale. I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Walt Kloefkorn
PO Box 181
Loon Lake, WA 99148

From: Tim Knecht
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 8:03:22 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Tim Knecht
1716 SE 49th Ave
Portland, OR 97215

From: Cary Kopczynski
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:06:36 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Cary Kopczynski
4144 187th Ave SE
Issaquah, WA 98027

From: Barb Kruse
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Sunday, March 01, 2015 9:58:57 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Barb Kruse
po box 2011
ketchum, ID 83340

From:	Bill Green
To:	John Sirois; Keith Kutchins
Cc:	Wwarnock@ccrific.org; Dean Allan; Kate Ladell; John A FLNR:EX Krebs; "wbarquin@kootenai.org"; Howie Wright
Subject:	KNC comments on draft UCUT fish passage workplan
Date:	Friday, February 27, 2015 3:48:44 PM
Attachments:	KNC UCUT workplan comments Feb 2015.pdf CCRIFC Memo_UCUT workplan.pdf

Dear John,

Thank you very much for keeping the Canadian Columbia River Inter-tribal Fisheries Commission, the Ktunaxa Nation Council and concerned Secwepemc communities apprised of the development of your workplan in response to the recent amendment of the NWPCC Fish and Wildlife Program. We appreciate the opportunity to review and comment on the workplan.

Please find attached comments from the Ktunaxa Nation Council, supported by technical comments from the Canadian Columbia River Inter-tribal Fisheries Commission.

Take care.

Bill Green
KNC/CCRIFC Director
7468 Mission Rd.,
Cranbrook, B.C. V1C 7E5
NEW DIRECT LINE: 250-420-2744
Fax: 250-417-3475

KTUNAXA NATION

Ktunaxa Nation Council
7468 Mission Road
Cranbrook, BC V1C 7E5
tel: 250-489-2464
fax: 250-489-2438

visit us at:
www.ktunaxa.org

February 26, 2015

John Sirois, Committee Coordinator
Upper Columbia United Tribes
25 W. Main, Suite 434
Spokane, WA 99201

Re: UPPER COLUMBIA RIVER BASIN FISH PASSAGE AND REINTRODUCTION PROJECT-
Phase 1 - UCUT DRAFT PROJECT WORK AND COORDINATION PLAN

Dear Mr. Sirois,

We would like to thank the Upper Columbia United Tribes (UCUT) for taking the lead on fish passage restoration in the U.S .portion of the upper Columbia River and express our strong support for the draft project work plan (herein referred to as the Plan), as an initiative under the Northwest Power and Conservation Council's recently updated Columbia Basin Fish and Wildlife Program. The blocking of fish passage by Grand Coulee, and subsequently Chief Joseph Dam, has resulted in a legacy of harmful ecosystem, socio-economic, cultural and spiritual impacts to all Tribes and First Nations of the Columbia basin and its local residents. The restoration of fish passage at these dams is the essential first step to reversing these impacts, and the plan outlined here represents a rigorous approach which we believe will be successful.

While we recognize that the Plan is a response to a US domestic opportunity and not related to Columbia River Treaty or other transboundary processes, we do note that many of the core concepts presented in the Plan align well with those outlined in the paper "*Fish Passage and Reintroduction into the U.S. & Canadian Upper Columbia River, An Interim Joint Paper of the U.S. Columbia Basin Tribes and Canadian First Nations*." We believe the main strengths of the Plan involve the risk averse and rigorous phased and scientific approach. Many of the concepts in this paper were conceived in initial scoping work provided by fisheries departments from Canadian First Nations and we are pleased that they appear to have been considered in this Plan. We will continue to engage with UCUT and provide our support and expertise as needed through the Phase I workplan.

There is potential for regaining a portion of the historic range of anadromous fish in the U.S. portion of the Columbia River and its tributaries and there are likely to be

ecosystem benefits for providing passage to resident fish species. We support the approach to investigate these in detail as outlined in the Plan. A significant amount of accessible habitat is contiguous with Canada through the Transboundary Reach of the Columbia River. There are legally binding British Columbia Environmental Assessment Certificate provisions pertaining to the Waneta Dam Expansion Powerplant, the Arrow Lakes Generating Station and the Brilliant Dam Expansion facilities that involve various strengths of commitment to provide fish passage if anadromous fish are restored in the Columbia River above Grand Coulee dam. We will explore how this will affect BC domestic processes at these facilities with the experimental release of fish being proposed in the Plan. Passage at any of these three dams would open a much more substantial amount of habitat available for anadromous salmonids, and the suitability of this habitat should persist long into the future with projected climate change scenarios. In essence, we believe that fish passage into all of these headwater environments is critical to the long-term viability of anadromous salmon in the Columbia River basin. Attached are some technical comments and recommendations on the study Plan, as advised by our supporting organization, the Canadian Columbia River Inter-Tribal Fisheries Commission

Yours truly,

William Green
Director

Encl: (1)

Cc: William Barquin, Kootenai Tribe of Idaho
Kate Ladell, Fisheries and Oceans Canada
Dean Allan, Fisheries and Oceans Canada
Howie Wright, Okanagan Nation Alliance
John Krebs, Ministry of Forests, Lands and Natural Resource Operations

Memorandum

DATE: February 26, 2015

FROM: Will Warnock, Ph.D. Aquatic Biologist, Canadian Columbia River Inter-Tribal Fisheries Commission

SUBJECT: ***Technical comments on UCUT draft Phase I workplan for Upper Columbia River Basin fish passage and reintroduction***

Please find attached:

Attachment 1: UPPER COLUMBIA RIVER BASIN FISH PASSAGE AND REINTRODUCTION PROJECT- Phase 1

UCUT DRAFT PROJECT WORK AND COORDINATION PLAN

Preamble

The following information is provided for the information and consideration of governments of Columbia Basin First Nations.

CCRIFC is neither a consultative nor a representative body. The information contained in this memo may assist First Nations' governments in making decisions about endorsing the content of the Upper Columbia United Tribes' Fish Passage and Reintroduction Phase I workplan, and serve as technical recommendations for its improvement.

Background

The Upper Columbia United Tribes have drafted a project workplan for delivering the first phase of the Northwest Power and Conservation Council's priority objective of restoring fish passage and anadromous fish above Grand Coulee and Chief Joeph Dams, as it has recently appeared in the updated Council's Fish and Wildlife Program. The concepts presented in this plan are consistent with those presented in the informational paper, *Fish Passage and Reintroduction into the U.S. & Canadian Upper Columbia River, An Interim Joint Paper of the U.S. Columbia Basin Tribes and Canadian First Nations.* This paper was developed jointly by fisheries departments from all 15 basin tribes and First Nations, including the Canadian Columbia River Inter-Tribal Fisheries Commission; thus, we only have relatively minor comments below. Some of these are recommendations that we hope can strengthen the proposed study plan.

Canadian Columbia River Inter-tribal Fisheries Commission
7468 Mission Rd. Cranbrook, B.C. V1C 7E5
Tel: 250-417-3474; Fax: 250-417-3475 email: wwarnock@ccrifc.org; bill@ccrifc.org

Technical comments and recommendations

While we cannot provide a detailed analysis of the U.S. domestic policy implication of this workplan, nor the organizational structure for project coordination, we can confirm that the scientific merit of this plan is robust for determining initial feasibility, impacts and benefits of reintroduction and fish passage in the U.S. portion of the range. Some specific technical comments and recommendations for UCUT are listed in point form below:

- Objectives are not necessarily presented in order of their logical sequence. In fact, early tasks in Objective 9 should probably be the some of the initial focus of the entire workplan.
- A critical uncertainty of the program should be investigation of juvenile rearing, survival and migration rates through Lake Roosevelt. This could perhaps be stated in Objective 6 to apply to all lifecycle stages of all species for a complete pilot reintroduction program.
- Objective 4 is a focus of study that the Canadian Columbia River Inter-Tribal Fisheries Commission has undertaken a significant amount of research prior to the drafting of this workplan. We are in the process of finalizing a donor stock assessment for chinook salmon in the Canadian portion of the transboundary reach of the Columbia River. We also have some background information that could be useful for steelhead and sockeye. We of course will share reports, methodology used and expertise as needed to support any of the efforts proposed in the US portion of the range. Our findings suggest considering both evolutionary ancestry and life history in selection of the appropriate donor stock. Life history models greatly assist in this process, linking both Objectives 4 and 8.
- For Objective 5, we suggest the addition of steelhead to the list of focus species.
- Chinook salmon can persist entirely in freshwater and occupy the top trophic position in lake ecosystems if a self sustaining population forms. We are very supportive of objective 6 and suggest that the risk of chinook salmon residualization also be explicitly and thoroughly investigated.
- For Objective 11, we would appreciate some more clarity in the language of the assessment of transplanting invasive fish. Is this meant to be a risk assessment of how passage facilities may influence spread of invasive or actually involve experimental invasive fish transplants?

Canadian Columbia River Inter-tribal Fisheries Commission
7468 Mission Rd. Cranbrook, B.C. V1C 7E5
Tel: 250-417-3474; Fax: 250-417-3475 email: wwarnock@ccrifc.org; bill@ccrifc.org

From: Paula Kuttner
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:47:59 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Paula Kuttner
313 East 13th Street
The Dalles, OR 97058

From: elaine lane
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:27:36 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

elaine lane
25380 w valley hwy
sheridan, OR 97378

From: G L LeBlanc
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:20:11 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

G L LeBlanc
2022 S SHASTA LOOP
EUGENE, OR 97405

From: Martin Lecholat
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Wednesday, March 04, 2015 9:41:06 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Martin Lecholat
11227 Stella Blue Drive
Lolo, MT 59847

From: steven lecture
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 8:39:41 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

steven lecture
hwy 25 s.
Kettle falls, WA 99141

From: Kimberly Leeper
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 7:45:18 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Kimberly Leeper
6522 - 43rd Ave. S.
Seattle, WA 98118

From: Laura Leong
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:02:28 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Laura Leong
1115 SW Stopp Pl
Corvallis, OR 97333

From: Mark Lewandowski
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 2:23:32 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Mark Lewandowski
16003 91st Ave NE
Arlington, WA 98223

From: Kathy Lillie
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:49:53 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Kathy Lillie
8629 Ravenna Ave NE
Seattle, WA 98115

From: P Lindsay
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 11:53:17 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

P Lindsay
9842 49 Ave SW
Seattle, WA 98136

From: James Loacker
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:29:29 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

James Loacker
P.O. BOX 1103
8990 Oceancrest Lane
Manzanita, OR 97130

From: Jack Lockhart
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Sunday, March 01, 2015 3:08:59 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Jack Lockhart
424 Morgan Rd
Everett, WA 98203

From: Sara Long
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 4:35:43 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Sara Long
7426 NW Mountain View Dr
Corvallis, OR 97330

From: Ray Lou
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 5:19:09 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Ray Lou
18208 29th Ave NE
Lake Forest Park, WA 98155

From: John MacDonald
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:51:16 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

John MacDonald
8893 NW Savoy Lane
Portland, OR 97229

From: Kristin Mahlen
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Sunday, March 01, 2015 9:34:19 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

I am from Fairbanks Alaska and I have been commercial fishing the coast since 2010. Without getting too sentimental, I would love to see more fish in the Columbia. I can see how salmon enriches people lives, in so many ways. And not just people, everything else too. I would love to see that return everywhere, and am extremely excited for this proposal and that I will be able to follow it and be a part of it! Thank you so much!!

On to business, this first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Kristin Mahlen
6483 Saddle Mountain Way
Deer Park, WA 99006

From: Kevin Malone
To: John Sirois
Subject: FW: Phase I Plan for Upper Columbia River Basin Fish Passage & Reintroduction
Date: Friday, January 30, 2015 2:36:20 PM
Attachments: Comments Grand Coulee.docx

Attached you will find my comments on the Phase 1 Plan

Kevin Malone <<...>>

_____

From: System Administrator
Sent: Friday, January 30, 2015 2:33 PM
To: Kevin Malone
Subject: Undeliverable: Phase I Plan for Upper Columbia River Basin Fish Passage & Reintroduction

Your message did not reach some or all of the intended recipients.

Subject: FW: Phase I Plan for Upper Columbia River Basin Fish Passage & Reintroduction

Sent: 1/30/2015 2:32 PM

The following recipient(s) cannot be reached:

'john@ucut-nsn.org.' on 1/30/2015 2:33 PM

Server error: 'Invalid recipient'

Malone Environmental

Memo

To: John Sirois

From: KEVIN MALONE

cc: Files

Date: January 29, 2015

RE: Phase I Plan for Upper Columbia River Basin Fish Passage & Reintroduction

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Comments on Phase 1 Plan

In this memo I provide informal comments on your Phase 1 Plan for Upper Columbia River Basin Fish Passage and Reintroduction-Phase 1 (Plan) (UCUT 2015). The Plan outlines a structured coordination framework and work plan to implement the first phase of a possible three phased approach for reintroducing salmon and steelhead to habitat upstream of Chief Joseph and Grand Coulee dams on the Columbia River. Comments provided below are focused on the objectives and tasks associated with the work plan.

Thanks for allowing input on the Phase 1 study plan. This Project has the potential to increase salmon and steelhead abundance in the Columbia River basin while at the same time providing native peoples with a resource that was taken away with the construction of the hydrosystem.

Comments on Work Plan

Undefined Goals

The lack of defined goals for the Project at this stage in the process makes it difficult to determine the efficacy of the Phase 1 approach and the need for other phases. The three phases seem to imply that the ultimate goal is to create self-sustaining runs of anadromous fish above these two dams. The document states that to achieve this assumed goal requires extensive analyses of the effectiveness of juvenile and adult fish passage facilities, reservoir survival rates, and the quantity and quality of habitat etc. However, if the goal of the Project on the other hand was to provide fish for tribal harvest lost due to hydrosystem development then an alternative approach wherein a suite of hatcheries are constructed that release juveniles below Chief Joseph dam and returning adults upstream of Grand Coulee[1] may be preferred. These returning adult salmon would help to meet "native peoples' culture, harvest and spiritual values and first foods" quickly. Under this type of scenario juvenile passage facilities would either not be required[2] or could have lower collection efficiency as losses would be made up with hatchery juveniles. Goals will determine what studies are needed.

Program goals and a definition of success should be established prior to proceeding with any other tasks.

In addition, the phased approach infers that there is a set of study outcomes that would lead to a No Go decision in regards to re-establishing salmon above Grand Coulee Dam (otherwise why conduct the studies?). If this is the case, then these outcomes should be described so studies can be focused on obtaining needed information. If not, then there is no need for years of studies to determine Project feasibility. Fish can simply be released as soon as donor stocks are identified.

Phase 1 Costs

It would be helpful if cost estimates were provided for each Task. Knowing the level of effort required to complete the Phase 1 analysis would impact review comments. If the costs are in the millions then a harder look at each task would be required.

Use of ESA Listed Stocks

Objective 4 states that Non-ESA listed stocks would only be considered for use in pilot and permanent reintroductions. This makes sense for pilot studies but not for permanent reintroductions. One of the possible advantages of reintroducing fish to the Upper Columbia is access to cold water streams that may provide some protection to ESA listed fish from climate change effects. This benefit seems to be a focus of task 2.3. The study should consider ESA listed fish for permanent reintroduction.

Add Hatchery Facility Requirements

It is likely that hatchery facilities will be required as part of the reintroduction effort AND to maintain fish production over time[3]. Fish populations below Chief Joseph dam for example experience upwards of 70 percent juvenile mortality migrating through the Columbia River FCRPS; the majority of these populations

[1] This was the approach used on the Cowlitz River after the construction of Mossyrock Dam.
[2] Hatchery facilities could be located above or below Chief Joseph Dam.
[3] Task 9.6 assumes facilities needed for later research. They will be needed for long term production as well.

are ESA listed[4]. Mortality rates for salmon populations above Grand Coulee would be even higher as they would migrate past an additional two dams and reservoirs (unless a trap-and-haul system was initiated at Grand Coulee). In addition, many of the non-listed ESA stocks are harvested at substantial rates (50 percent for summer/fall Chinook) in ocean and freshwater fisheries…reducing returning adult abundance even further. Adult returns will also be targeted for harvest by native peoples' in terminal fisheries which in turn will also reduce spawner abundance. To increase adult returns back to Chief Joseph may require that ocean and freshwater fisheries either reduce catch or that fisheries become selective. Making changes to West Coast salmon fisheries will be challenging.

The possible need for changes in harvest allocations, rates and fishery types should be addressed in Phase 1.

The type of hatchery facilities needed and their possible costs should be included in the Phase 1 analysis.

Overall Approach

Costs and complexities associated with all three phases of the program could be dramatically reduced by prioritizing tasks that would identify fatal flaws (Task 9.2). For this Project, success will be determined primarily by juvenile migration survival rates through the two large reservoirs and the collection efficiency of passage systems[5]. Adult passage is easily accomplished with trap-and-haul systems which can be added to the existing ladder at the Chief Joseph Hatchery.

Initial work should focus on estimating juvenile survival rates through the reservoirs as this can be done quickly and relatively inexpensively using hatchery fish as surrogates for wild fish. If juvenile fish cannot make it to the dam then there is no need for passage facilities at this location[6]. Survival rate information will also help inform decisions regarding whether passage can be volitional or will require trap-and-haul.

To reduce costs associated with the implementation of other studies the juvenile survival study should be implemented no later than the spring of 2016.

Note that if only 30 percent of the juvenile Chinook migrants from the Okanogan River survive to below Bonneville Dam, then the total additional fish mortality from passage past 2 more dams and reservoirs must be substantially less than 30 percent to produce any adult returns.

The current approach emphasizes a phased approach with what appears to be an incredible amount of studies to guide the process. The logic seems to be that to reintroduce fish above a dam requires a very detailed scientific process. An alternative approach would be to simply release surplus adult summer/fall and sockeye upstream each year and monitor resulting behavior and production. The assumption being that the fish, as they have done for millennia, will find suitable habitat if it exists for spawning, rearing etc.

[4] Summer/fall Chinook and sockeye are an exception.
[5] Under the assumption that self-sustainability is the objective.
[6] Sockeye salmon above Chief Joseph Dam may be the exception as they will rear in the lake.

Conducting Pilot Releases

You may want to consider releasing surplus adult summer/fall Chinook and sockeye earlier in the process. These fish would help meet tribal harvest and cultural needs and resulting offspring can be used for testing survival rates through the reservoirs. The agencies have already developed fish transfer protocols so there is little need to do this as part of Task 6.1. These protocols would be included in permits.

Comment on Objectives

> **Objective** 5: Investigate the utility and cost of a .Whoosh fish passage system for interim and pem1anent adult and juvenjle Chinook, sockeye and coho salmon passage at Chief Joseph and Grand Coulee dams to determine if it can be an element of an interim fish passage solution (see also Objective 6).
>
> **Comment:** If WHOOSH is the interim measure, then what is the permanent solution? Ladders? Are you looking at the technical feasibility and costs of providing fish ladders?

Task 5.2: Design and test a Whoosh passage system for juvenile yearling and sub-yearling chinook, sockeye and coho in the upper Columbia watershed over distances up to 500' and elevations up to 150'. Evaluate injury, stress and short term survival relative to controls. Evaluate effects of Whoosh passage on smolt survival and SAR survival through subsequent migration through the Columbia River (consider Chief Joseph Hatchery facilities for chinook and Zosel dam for sockeye). Earl y.

> **Comment:** While survival rates through the system may be possible in a few years…attempting to discern differences in SAR will require 10-years plus for some species. For example, subyearling Chinook will return as adults as many as 5 years after release. Is this information really needed and how would it be used?

Objective 6: Conduct pilot releases of Chinook and sockeye salmon above Chief Joseph and Grand Coulee dams to help determine options and methods for later Phase 2 research on critical uncertainties.

Comment: The document states that Phase 1 will be completed by 2016. Is this sufficient time to conduct this task? Seems like permits etc, need to be in place in the next few month. If this schedule is doable then efforts on investigating disease protocols, risks etc are not really required.

Task 9.5:Evaluate potential effects of optional juvenile and adult fish passage facilities in management of resident fish (including use of floating surface collectors to prevent entrainment of resident fish and to collect and transplant invasive fish), and passage of sturgeon, lamprey and other migratory species. Early.

Comment: Transplant invasive fish? Needs more explanation. Is entrainment referring to turbine passage?

From: Joan Mamanakis
To: John Sirois
Subject: Study of Returning Salmon
Date: Tuesday, February 24, 2015 11:14:19 AM

Mr. Sirois and the Upper Columbia United Tribes,

Through your leadership, salmon are returning home to the rivers and streams of the Upper Columbia. Thank you.

I support the united tribes' draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam. This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 to prepare for the next step of salmon return.

Because salmon can be an important boost for our economy and environment, I encourage you to undertake a robust public process to involve the public of the region. There has never been adequate mitigation for the loss of salmon in the Upper Columbia. In this time of climate change and melting glaciers, it's time we right historic wrongs, move to repair damage, and restore integrity to our rivers and forests of which salmon are a part. Thank you again for taking this important step forward for all of us.

Sincerely,

Joan Mamanakis
1122 Gary Street
Cheney, WA 99004

From: Bob Margulis
To: John Sirois
Subject: Support for proper restoration of upper Columbia River salmon
Date: Friday, February 27, 2015 5:27:06 PM

Dear Mr. Sirois and the People of the Upper Columbia United Tribes,

Thank you so very much for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

But let me be clear about one thing. My support for restoration does not include hatcheries, rehabilitating salmon, or doing anything other than just naturally allowing salmon to return and sp[wan--as well as provide them with quality habitat to do so and harvest regulations that don't interfere with recovery.

Just as a few simple changes to Osoyoos made a HUGH difference in the return of sockeye salmon, we need to stick to what is simple and close to nature. Raising fish in pens, strengthening them after they spawn--these are not natural.

Thank you again for taking this important step forward for all of us.

Sincerely,

Bob Margulis
80 E Roanoke St
Seattle, WA 98102

From: Maria Hines
To: John Sirois
Subject: Thank you
Date: Thursday, February 26, 2015 3:35:32 PM

Hi John,
My sincerest thanks to your efforts on the return of our precious salmon.
Thank you for all your support and leadership on this effort!
Sincerely,
Maria Hines

--
Chef/Owner of Maria Hines Restaurants
Tilth Restaurant : Tilthrestaurant.com
Golden Beetle Restaurant & Bar : Golden-Beetle.com
Agrodolce Restaurant : Agrodolcerestaurant.net
Twitter @mariahines
Instagram @mariahinesrestaurants

From:	melodie martin
To:	John Sirois
Subject:	I support restoring salmon to the upper Columbia River watershed!
Date:	Saturday, March 07, 2015 3:28:34 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

melodie martin
2339 11th ave east
seattle, WA 98102

From: James L Maves
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 7:43:08 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

James L Maves
376 Linville Gulch Rd
Pomeroy, WA 99347

From: Evelyn McChesney
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 4:00:07 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Evelyn McChesney
9223 45th Ave N.E.
Seattle, WA 98115

From: Doyle McClure
To: John Sirois
Subject: Salmon on the Upper Columbia
Date: Wednesday, February 25, 2015 9:56:07 AM

Dear Upper Columbia United Tribes,

Thank you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia.

I support UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 to prepare for the next step of salmon return: Phase 2.

Because salmon can be an important boost for our economy and environment, I encourage you to undertake a robust public process to involve the public of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia. In this time of climate change and melting glaciers, it's time we right historic wrongs, move to repair damage, and restore integrity to our rivers and forests of which salmon are a part. Thank you again for taking this important step forward for all of us.

Doyle McClure
4539 Beachcomber Ct
Boulder, CO 80301
303-408-2785

From: Wendy McGowan
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Sunday, March 01, 2015 9:37:24 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Wendy McGowan
467 SE Ramp St.
Roseburg, OR 97470

From:	Thomas McGrath
To:	John Sirois
Subject:	I support restoring salmon to the upper Columbia River watershed!
Date:	Thursday, February 26, 2015 11:04:40 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Thomas McGrath

Thomas McGrath
3976 Hawthorne Way
Boise, ID 83703

From: Michael McGuire
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:42:06 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Michael McGuire
490 SW Riverbend Drive
West Linn, OR 97068

From: Tim McGuire
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:26:45 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Tim McGuire
4444 44th Ave SW #106
Seattle, WA 98116

From: Mariah McKay
To: John Sirois
Subject: Yes to Salmon!
Date: Tuesday, February 24, 2015 9:33:29 AM

Dear Upper Columbia United Tribes,

Thank you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia.

I support UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 to prepare for the next step of salmon return: Phase 2.

Because salmon can be an important boost for our economy and environment, I encourage you to undertake a robust public process to involve the public of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia. In this time of climate change and melting glaciers, it's time we right historic wrongs, move to repair damage, and restore integrity to our rivers and forests of which salmon are a part. Thank you again for taking this important step forward for all of us.

Mariah McKay
1024 W 11th Ave.
Spokane, WA 99204

--
Mariah Rose McKay
509-939-0015
mariah.mckay@gmail.com

From: Robert McKinney
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 3:11:04 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Robert McKinney
P.O. Box 1622
Eugene, OR 97440

From: Susan McRae
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 8:24:24 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Susan McRae
1231 Miller Ave NE
Olympia, WA 98506

From: Clayton Medeiros
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:47:25 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Clayton Medeiros
749 Coronado av e
Bellingham, WA 98229

From: Nancy Merrick
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:41:12 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Nancy Merrick
3012 NE Lansing Ct.
Bend, OR 97701

From: Joshua Messinger
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:51:27 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Joshua Messinger
1231 S. WALL ST
Spokane, WA 99204

From: Jennifer Lee
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:41:37 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Jennifer Lee
Methow
Wenatchee, WA 98807

From: Maureen Michael
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Sunday, March 01, 2015 9:47:04 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Maureen Michael
4427 Merry Lane, W.
University Place, WA 98466

From: Gerry Milliken
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:02:29 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Gerry Milliken
PO Box 1880
Oroville, WA 98844

From: David Morgan
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:34:20 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

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Thank you again for taking this important step forward for all of us.

Sincerely,

David Morgan
10405 titus rd
leavenworth, WA 98826

From: William Morkill
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 7:05:46 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

William Morkill
12411 N. Hope Ln.
Spokane, WA 99208

From: Brian Morton
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 1:26:22 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Brian Morton
10813 30th Dr SE
Everett, WA 98208

From: eatwildfish@aol.com
To: John Sirois
Subject: salmon letter
Date: Tuesday, February 24, 2015 9:13:33 AM

Dear Upper Columbia United Tribes,

As a former commercial fisherwoman in Washington and Alaska waters, I have deep appreciation for nature's gift of salmon. I am also deeply appreciative of the efforts of so many people to allow salmon safe passage from rivers to oceans and back again. For that reason, like most residents of our region, I support UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 to prepare for the next step of salmon return: Phase 2.

Because salmon can be an important boost for our economy and environment, I encourage you to undertake a robust public process to involve the public of the region.

I believe there has never been adequate mitigation for the loss of salmon in the Upper Columbia. In this time of climate change and melting glaciers, it's time we right historic wrongs, move to repair damage, and restore integrity to our rivers and forests of which salmon are a part. Thank you again for taking this important step forward for all of us.

Sincerely,

Anne Mosness
34 Rcoky Ridge Dr.
Bellingham, Wa. 9822

From: Gary Mueller
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 6:39:48 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Gary Mueller
18390 SW Forest Park Rd.
Hillsboro, OR 97123

From:	R.M. Mulligan
To:	John Sirois
Subject:	I support restoring salmon to the upper Columbia River watershed!
Date:	Thursday, February 26, 2015 10:42:55 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River; however:

STUDY?? WE'VE "STUDIED" THINGS TO DEATH ALREADY. HOW ABOUT INITIATING SOME REAL ACTION. As long as this isn't some pork-barrel "study" for a few people to make money without anything ever really being done!!!!

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

R.M. Mulligan
416 Main Street
Stevensville, MT 59870

From: Donna Myers
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:00:07 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Donna Myers
17914 SE Rose St.
Milwaukie, OR 97267

From: Adam Neff
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 11:22:16 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Adam Neff
35 S Georgia Ave
East Wenatchee, WA 98802

From: jan nelson
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 5:09:19 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

jan nelson
85354 Doane Rd
rural lane, OR 97402

From: David Neumann
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:26:34 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

David Neumann
22425 South Carroll Drive
Worley, ID 83876

From: Steve Noble
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:31:06 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Steve Noble
P.O. Box 327
5650 Osprey Ln.
Freeland, WA 98249

From:	Jim Heffernan
To:	huntersmith@canby.com; Phil Cernera(philc@cdatribe-nsn.gov); Patrick.Tonasket@colvilletribes.com; Sheri Sears; bheinith@comcast.net; JHMarsh@comcast.net; ewhite@cowlitz.org; Taylor Aalvik; Kyle Dittmer; Christine Golightly; Charles Hudson; Rob Lothrop; Paul Lumley; richj@cskt.org; BrentHall@ctuir.org; CarlMerkle@ctuir.org; Ed Sheets; richjcskt@gmail.com; Theodore Knight; Zach Welcker; JWO@karnopp.com; wbarquin@kootenai.org; djc@nezperce.org; tzeilman@qwestoffice.net; DR Michel; John Sirois; Keith Kutchins; Bob Austin; Heather@usrtf.org; scott.hauser@usrtf.org; smlevit@yahoo.com; bgruber@zcvbs.com
Cc:	Sara Thompson; matt.wynne@spokanetribe.com
Subject:	Fwd: Reintroductin of Anadromous Fish above Chief Joseph and Grand Coulee Dams
Date:	Friday, February 20, 2015 7:50:14 AM
Attachments:	Reintroduction NRU Comments.pdf Jim Heffernan.vcf

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Good morning everyone:

I think many of us were probably blind copied on this first, of hopefully not many at all, negative letter(s) on fish passage.

Note especially that this is NOT sent on behalf of CRT Power Group - but we will have to talk with the CRT Power Group about this letter (fish passage and the Canadian Entitlement are part and parcel of the same Regional Recommendation.

I also suggest that we co-write the response to this letter, not let the U.S. Entity respond on their own.

Cheers, Jim

Jim Heffernan
Policy Analyst-Columbia River Treaty
Columbia River Inter-Tribal Fish Commission
700 NE Multnomah Street, Suite 1200
Portland, Oregon 97232
Direct dial: 503.731.1303
Cell: 503.381.6408
Email: hefj@critfc.org
Email: j_p_heffernan@hotmail.com

>>> Sybil Brown <sbrown@nru-nw.com> 2/19/15 4:08 PM >>>

Please find attached NRU's letter from John Saven, CEO to Elliot Mainzer, BPA Administrator and the US Army Corp of Engineers Brigadier General Kem on Reintrodution of Anadromous Fish above Chief Joseph and Grand Coulee Dams. The original letters have also been sent via US Mail.

Please let me know if you have any questions.

Sybil Brown
Northwest Requirements Utilities

NRU

Northwest Requirements Utilities

(503) 233-5823
Fax (503) 233-3076
jsaven@pacifier.com

825 NE Multnomah, Suite 1135
Portland, Oregon 97232

February 19, 2015

Elliot Mainzer, Administrator
Bonneville Power Administration
905 NE 11th Ave.
Portland, OR 97208

Brigadier General John Kem
US Army Corps of Engineers
PO Box 2870
Portland, OR 97208-2870

Re: Reintroduction of Anadromous Fish above Chief Joseph and Grand Coulee Dams

Dear Administrator Mainzer and Brigadier General Kem,

Introduction

I am writing on behalf of Northwest Requirements Utilities (NRU), an association of 53 BPA public power customers that rely on BPA as their primary or exclusive supplier of wholesale energy. NRU is closely aligned with the Columbia River Treaty Power Group ("Power Group") and Northwest RiverPartners. However, we submit our comments on behalf of NRU only. The purpose of this letter is to express our strong concerns with the premature consideration of reintroduction of anadromous fish above Chief Joseph and Grand Coulee dams by the Northwest Power and Conservation Council ("Council"). While we are circulating these comments to the members of the Council, we believe that you, as the members of the U.S. Entity that formulated the Regional Recommendation for the future of the Columbia River Treaty with Canada (Regional Recommendation), have the authority and responsibility to address our concerns.

NRU will not be responding to the January 2015 "Phase I Plan for Upper Columbia River Basin Fish Passage and Reintroduction" submitted for regional comment by the Upper Columbia United Tribes. We recognize the strong interest the regional Tribes have in this issue, and acknowledge the hard work they put into developing and advocating for their proposal. However, we do not believe it is in the region's best interest for NRU to offer policy or technical comments on a proposal that is clearly incongruent with the U.S. Entity's Regional Recommendation for the Columbia River Treaty.

General Background

NRU participated, in conjunction with the Power Group, in the development of the U.S. Entity's December 13, 2013, "Regional Recommendation for the Future of the Columbia River Treaty after 2024." We appreciated the difficult job you had in forging a broad-based regional recommendation that had the support of Northwest Tribes, public power, and members of the Council. NRU members continue to support that recommendation and are anxious for the Federal Government to determine a path forward to achieve your "Regional Goal for the Columbia River Treaty" as stated in the December 13th document.

NRU's support of the Regional Recommendation was predicated on it being advanced to the State Department as a package and in a deliberative and coordinated manner. In other words, as we wait for Washington D.C. to take action, it is imperative that the region not initiate actions that are inconsistent with the Regional Recommendation. The Entity's recommendations addressing the "Ecosystem-based Function" included the following language:

The United States should pursue a joint program with Canada, with shared costs, to investigate and, if warranted, implement restored fish passage for reintroduction of anadromous fish on the main stem of the Columbia River to Canadian spawning grounds. This joint program would proceed on an incremental basis, beginning with reconnaissance-level investigation, and continue with implementation actions. All such federal actions at the Chief Joseph and Grand Coulee projects are subject to congressional authorization and appropriation.

The Regional Recommendation also includes a section on "Domestic Matters to be Addressed Post-2013." There are seven listed topics in this section, none of which address fish passage.

The U.S. Entity's recommendations with regard to consideration of fish passage at Chief Joseph and Grand Coulee are very clear: 1) it should be a joint program with Canada, and 2) all actions should be subject to congressional authorization and appropriation.

Recent Actions of the Northwest Power and Conservation Council

NRU is disappointed by the recent actions of the Council to promote the Upper Columbia United Tribes' three-phased investigation of reintroduction of anadromous fish above Chief Joseph and Grand Coulee dams. We are particularly chagrined that the individual members of the Council that participated in the development of the U.S. Entity's Regional Recommendation, and publicly supported it, are now promoting proposals through the Council's Fish and Wildlife Program amendments, which conflict with the U.S. Entity's Regional Recommendation. Just because the Council and State Department processes are separate, the issue of fish passage above Chief Joseph and Grand Coulee dams is very much linked together in the minds of the NRU members and others in the region. It is a distinction without a difference.

The Council's 2014 Fish and Wildlife Plan amendment process offered a "green light" for parties to advance proposals associated with reintroduction of anadromous fish. As a result, there is a proposal circulating in the region from tribal entities to investigate fish passage and

reintroduction into the U.S. and Canadian Upper Columbia River. While NRU has not directly participated in the discussions between the Tribes and Council on this topic, it is evident from the related documents that the Tribes are using the Council's planning process for seeking financial assistance from BPA to support their "Proposed Phase I Work Plan" related to reintroduction above Grand Coulee and Chief Joseph dams.

NRU's Request to BPA and the Corps of Engineers

NRU continues to support the U.S. Entity's Regional Recommendation for the future of the Columbia River Treaty. All parties closely scrutinized the specific wording in the "Ecosystem-based Function" section, and the meaning is unambiguous. With regard to reintroduction in the upper Columbia, we should pursue a joint program with Canada, where all federal actions are subject to congressional authorization and appropriation. Neither of these criteria is satisfied by the Council's amendment language regarding reintroduction. Therefore, we strongly object to the use of any BPA or Corps funds to support the portion of the Council's Fish and Wildlife Program above Chief Joseph and Grand Coulee dams, including studies, transboundary reintroduction, and mainstem reaches and tributaries in the United States.

We understand that the proponents of such studies may only be seeking limited initial funding, for activities such as project coordination and travel. The Council may come up with suggestions as to how other Fish and Wildlife funds could be reprogrammed to accommodate such initial work without necessarily increasing the overall fish and wildlife budget. This issue for us is not how many dollars are needed to launch the first steps of a long-term initiative, but rather whether the initiative itself is congruent with a regional plan and appropriate for BPA ratepayer funding. The argument that the initial studies are relatively less expensive than later phases, and funds might be reprogrammed from other activities, is not a sufficient justification for initiating the Phase I study.

NRU supports the FCRPS Biological Opinion so that our carbon free hydroelectric resources meet their obligations for environmental stewardship as set forth in the implementation of the Endangered Species Act and Clean Water Act. NRU did not object to BPA's offering of the Columbia Basin Fish Accords with various Tribes and States. BPA's Integrated Program Review shows $299 M in FY 2016 and $307 M in FY 2017 for Fish and Wildlife and Lower Snake River Comprehensive Plan spending, representing about 17% of Power Services projected expenses. This is prior to consideration of foregone power sales revenues tied to mitigation measures, such as August spill, which cause BPA power rates to be higher than otherwise needed. For three of the next four years, BPA's projected Tier 1 rates for FY 2016 – FY 2019 are higher than market prices. We support environmental stewardship, but are sensitive to the economic impact in our communities of a projected 6.7% BPA wholesale power rate increase.

Grand Coulee and Chief Joseph dams are the workhorses of the FCRPS. The U.S. Entity was able to garner regional support with the understanding that the anticipated financial benefits from renegotiating the Columbia River Treaty with Canada would more than offset any costs of the

items listed in the Ecosystem-based Function. The Council's amendments relating to consideration of reintroduction undermines the regional recommendation because:

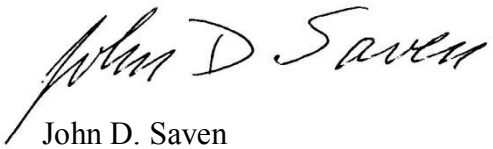
1. It is contrary to the stated language of the U.S. Entity's Regional Recommendation.
2. It is based on a questionable premise that reintroduced fish will respect international boundaries.
3. It doesn't address how reintroduction could impact the operation of the FCRPS facilities under the Biological Opinion.
4. It presumes commitments from federal agencies for activities that are out of the scope of BPA's obligations.
5. It fails to recognize the interests of power customers and the balance between hydro production and ecosystem-based functions carefully crafted in the Entity's Regional Recommendation.

Closing Comments

We are disappointed that a majority of the members of the Council have put NRU in a position where we have to press the members of the U.S. Entity to apply the brakes to an untimely Council initiative. No BPA ratepayer funding should be spent on the Council's reintroduction-related initiatives above Grand Coulee and Chief Joseph dams unless it aligns with the region's recommendations for the Treaty. This is particularly important as the U.S. Entity in the midst of working with the State Department and a number of other federal agencies to develop a U.S. position for potential negotiations with Canada about the Columbia River Treaty. The potential impacts on power supply and the cost of BPA Tier 1 service are too important for us to ignore or simply defer to the approach the majority of Council members have currently charted.

Thank you for the opportunity to comment. We look forward to working with you and offer our support in pursuing a modernized Columbia River Treaty with Canada. If you have questions, please let me know.

Best Regards,



John D. Saven
Chief Executive Officer

CC: Members of Northwest Requirements Utilities
Members of the Northwest Power and Conservation Council
Matt Wynne, Chairman, Upper Columbia United Tribes
Paul Lumley, Executive Director, CRITFC
Members of the Power Group

From:	Richelle Beck
To:	John Sirois
Cc:	Phil Rockefeller (prockefeller@nwcouncil.org); Tom Karier; Bill Bradbury (bbradbury@nwcouncil.org); Henry Lorenzen (hlorenzen@nwcouncil.org); Pat Smith (psmith@nwcouncil.org); Jennifer Anders (janders@nwcouncil.org); Bill Booth; Jim Yost (jyost@nwcouncil.org); Jim Litchfield; Tony Grover; Steve Crow (scrow@nwcouncil.org); Mark Walker (mwalker@nwcouncil.org); eemainzer@bpa.gov; Lorri Bodi (flbodi@bpa.gov); Bill Maslen; Peter Cogswell (ptcogswell@bpa.gov); John S Kem (john.s.kem@usace.army.mil); Rock Peters ; Dave Ponganis (david.j.ponganis@usace.army.mil); Paul Lumley; Terry Flores
Subject:	NW RiverPartners" comments on UCUT Reintroduction Work Plan
Date:	Friday, February 20, 2015 3:35:47 PM
Attachments:	NWRP Comments on UCUT Reintro Paper.docx

Thank you for the opportunity to provide comments on the UCUT Reintroduction Work Plan. Attached are the NWRP comments. Please let me know if you have trouble downloading the attachment.

Have a wonderful weekend!

Richelle Beck

Richelle Beck
NW RiverPartners
Communications and Technical Specialist
503-274-7792 Office
503-867-5587 Cell
rbeck@nwriverpartners.org

Northwest RiverPartners
For salmon, our economy and quality of life

February 27, 2015

Clinton M. Wynne, Chairman
Upper Columbia United Tribes
25 W. Main Street, Suite 434
Spokane, Washington 99201

Dear Mr. Wynne:

NW RiverPartners is an alliance of public and private electric utilities, ports, agricultural organizations and businesses that promote the Northwest's clean hydro energy and salmon restoration policies based in sound science and cost effectiveness. This letter also reflects the views of PNGC Power, a Portland-based electric generation and transmission (G & T) cooperative owned by 14 Northwest electric distribution cooperative utilities with service territory in seven western states. We are empathetic to the Upper Columbia United Tribes' (UCUT) desire to reintroduce salmon above Chief Joseph and Grand Coulee dams with a goal of harvesting them for cultural and other purposes and appreciate the opportunity to provide our views on the paper. However, because the approach outlined in the paper diverges from the Regional Recommendation on the U.S./Canadian Treaty, and for other reasons as articulated below, we do not support the effort to seek funding through the Northwest Power and Conservation Council's Fish and Wildlife Program.

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NWRP's further understanding is that the UCUT is seeking funds from the Bonneville Power Administration (BPA) for coordination and outreach to assist in implementation of the Phase 1 effort described in the paper. NWRP does not support BPA funding for actions associated with passage and reintroduction at Army Corps (Corps) and Bureau of Reclamation (BOR) projects irrespective of whether it is in the NW Power and Conservation Council's Fish and Wildlife Program. Passage and reintroduction go far beyond the scope of the NW Power Act and the Council's Program. Further, the region currently has its plate full implementing the existing regional Fish and Wildlife Program, including the state and tribal Fish Accords in support of the Biological Opinion (BiOp) over federal hydropower operations. It is premature to contemplate another major undertaking, such as passage and reintroduction, when the outcome of the litigation is still uncertain.

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The concept of jointly investigating reintroduction with Canada was included in the Regional Recommendation that was forwarded by the U.S. Entity to the State Department. Therefore, NWRP believes the "go-it-alone" proposal without Canadian involvement and supposing funding by the Bonneville Power Administration is premature since the Treaty discussions have yet to begin and the prospect of reintroducing anadromous fish into Canadian waters is clearly an action with international consequences.

Indeed, in our comments on the Council's draft Fish and Wildlife Program submitted July 25, 2104 we stated:

> "NWRP urges the Council to ensure that its recommendation on this issue is fully consistent with the Regional Recommendation. To that end, the Fish and Wildlife Program should include ONLY the following statement: "The United States should pursue a joint program with Canada, with shared costs, to investigate and, if warranted, implement restored fish passage and reintroduction of anadromous fish on the main stem Columbia River to Canadian spawning grounds. This joint program would proceed on an incremental basis, beginning with a reconnaissance-level investigation, and continue with implementation actions. All such federal actions at the Chief Joseph and Grand Coulee projects are subject to congressional authorization and appropriation."

We stand behind this statement. Without this collaborative, jointly funded approach, the current UCUT paper lacks a solid international foundation. The concept of reintroduction obviously affects Canadian interests and therefore must be incorporated into revisions to the Columbia River Treaty requiring bilateral discussions with Canada. The UCUT clearly understand this because previous versions of the paper anticipated such an approach, and there are references throughout the current paper recognizing the need to involve Canadian interests. The paper (page 2) states: "The scope and scale of this project is immense. The Project could affect many federal, state, tribal and local governments and agencies along with shareholder interests. The Project could affect similar interests in Canada" (emphasis added).

NWRP further believes that passage and reintroduction cannot be achieved through the limited scope of the Council Fish and Wildlife Program and its statutory underpinnings in the NW Power Act. The sheer scope of such a proposal requires Congressional action to help establish a regional consensus on how reintroduction should proceed and who will pay for it.

More specifically, the addition of passage facilities at Corps and BOR dams goes far beyond the mandates of the NW Power Act. Proceeding with a project that could fundamentally change

current authorized project purposes for these dams requires Congress to agree on how the authorized purposes should be modified. This cannot be accomplished with the unilateral UCUT approach.

BPA is not responsible for funding passage studies - These are Corps and BOR projects and therefore these agencies are responsible for passage studies and research. This also means that the need for Congressional authorization and appropriations is triggered. And, as BPA itself has indicated consistently, even if it were responsible, there are no additional dollars within its fish and wildlife budget to implement this proposal.

Currently, nearly $300 million is being spent annually in the regional direct Fish and Wildlife Program. Fully $100 million a year was added to the direct Program (nearly doubling the costs) with the advent of the state and tribal Fish Accords in 2008 in support of the federal hydro system BiOp. This does not include system operational changes, which adds several hundred millions more to annual Program costs, all paid for by BPA's customers. As part of their Accords, states and tribes agreed that they would not seek added measures through the term of the BiOp or submit recommendations to the Council during its Program amendment process.

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The paper is ambitious but lacks necessary detail – Finally, the paper itself is long on vision and short on detail. It is difficult to evaluate the proposal on its technical and scientific merits because it lacks information on the timing of actions, costs and overall scope. The lack of meaningful involvement of all affected stakeholders, beyond sovereigns, through attempts to use the Northwest Power and Conservation Council process while ignoring the Regional Recommendation on the future of the Columbia River Treaty will likely foster acrimonious debates and result in grid lock after large amounts of funds have been expended. The appropriate approach to this issue is to implement the agreement reached in the Regional Recommendation and involve Canada, Congress, and other key stakeholders in the process.

Sincerely,

Terry Flores, Executive Director

Cc: NPCC members and staff
BPA Administrator Mainzer and staff
General John Kem and staff
Power Group members
Paul Lumley, CRITFC

From:	Stephen H.Smith
To:	DR Michel; Keith Kutchins; John Sirois
Subject:	FW: NW RiverPartners" comments on UCUT Reintroduction Work Plan
Date:	Monday, February 23, 2015 8:01:51 AM
Attachments:	NWRP Comments on UCUT Reintro Paper.docx

In case these had not reached you yet. I have not read yet.

From: Richelle Beck [mailto:rbeck@nwriverpartners.org]
Sent: Friday, February 20, 2015 3:36 PM
To: john@ucut-nsn.org
Cc: Phil Rockefeller (prockefeller@nwcouncil.org); Tom Karier; Bill Bradbury (bbradbury@nwcouncil.org); Henry Lorenzen (hlorenzen@nwcouncil.org); Pat Smith (psmith@nwcouncil.org); Jennifer Anders (janders@nwcouncil.org); Bill Booth; Jim Yost (jyost@nwcouncil.org); Jim Litchfield; Tony Grover; Steve Crow (scrow@nwcouncil.org); Mark Walker (mwalker@nwcouncil.org); eemainzer@bpa.gov; Lorri Bodi (flbodi@bpa.gov); Bill Maslen; Peter Cogswell (ptcogswell@bpa.gov); John S Kem (john.s.kem@usace.army.mil); Rock Peters ; Dave Ponganis (david.j.ponganis@usace.army.mil); Paul Lumley; Terry Flores
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Richelle Beck

Richelle Beck
NW RiverPartners
Communications and Technical Specialist
503-274-7792 Office
503-867-5587 Cell
rbeck@nwriverpartners.org

From:	Jim Heffernan
To:	huntersmith@canby.com; Phil Cernera(philc@cdatribe-nsn.gov); Patrick.Tonasket@colvilletribes.com; Sheri Sears; bheinith@comcast.net; JHMarsh@comcast.net; ewhite@cowlitz.org; Taylor Aalvik; Kyle Dittmer; Christine Golightly; Charles Hudson; Rob Lothrop; Paul Lumley; Sara Thompson; richj@cskt.org; BrentHall@ctuir.org; CarlMerkle@ctuir.org; Ed Sheets; Brian Lipscomb; richjcskt@gmail.com; Theodore Knight; Zach Welcker; JWO@karnopp.com; wbarquin@kootenai.org; djc@nezperce.org; tzeilman@qwestoffice.net; DR Michel; John Sirois; Keith Kutchins; Bob Austin; Heather@usrtf.org; scott.hauser@usrtf.org; smlevit@yahoo.com; bgruber@zcvbs.com
Cc:	Joel Moffett
Subject:	Fwd: NW RiverPartners" comments on UCUT Reintroduction Work Plan
Date:	Wednesday, February 25, 2015 4:20:46 PM
Attachments:	TEXT.htm NWRP Comments on UCUT Reintro Paper.docx Jim Heffernan.vcf

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Northwest RiverPartners
For salmon, our economy and quality of life

February 27, 2015

Clinton M. Wynne, Chairman
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25 W. Main Street, Suite 434
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Sincerely,

Terry Flores, Executive Director

Cc: NPCC members and staff
BPA Administrator Mainzer and staff
General John Kem and staff
Power Group members
Paul Lumley, CRITFC

From: Cathy Whims
To: John Sirois
Subject: Upper Columbia United Tribes
Date: Thursday, February 26, 2015 3:44:56 PM

Dear Upper Columbia United Tribes,

Thank you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia.

I support UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 to prepare for the next step of salmon return: Phase 2.

Because salmon can be an important boost for our economy and environment, I encourage you to undertake a robust public process to involve the public of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia. In this time of climate change and melting glaciers, it's time we right historic wrongs, move to repair damage, and restore integrity to our rivers and forests of which salmon are a part. Thank you again for taking this important step forward for all of us.

--
Salute,

Cathy Whims , Chef/Owner

Nostrana
1401 Se Morrison Street
Portland, Ore. 97214
--
Salute,

Cathy

From: Kay Novak
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 2:42:21 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Kay Novak
4941 SW Hollyhock Circle
Corvallis, OR 97333

From: William O"Brien
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 1:35:21 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

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Thank you again for taking this important step forward for all of us.

Sincerely,

William O'Brien
12520 SW Gem Lane #202
Beaverton, OR 97005

From: carmen o"connor
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 5:33:06 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

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Thank you again for taking this important step forward for all of us.

Sincerely,

carmen o'connor
1976 Knightmare Dr.
Corvallis, MT 59828

From: Barbara O"Steen
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:34:54 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

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Sincerely,

Barbara O'Steen
4364 SW Cloverdale St
Seattle, WA 98136

From: Stephen Oder
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:26:22 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

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Sincerely,

Stephen Oder
1865 1/2 NE Seavy Ave
Corvallis, OR 97330

From:	West Cascade
To:	hwright@syilx.org; rolyrussell@gmail.com
Cc:	lotr@critfc.org; prockefeller@nwcouncil.org; briddell@psf.ca; joriorda@shaw.ca; andrew_gage@wcel.org; sam@wildsalmon.org; HEFJ@critfc.org; DR Michel; Keith Kutchins; linda.larson.mla@leg.bc.ca; george.pess@noaa.gov; Rick.Gustafson@noaa.gov; Jim.Myers@noaa.gov; robin.waples@noaa.gov; monksend@fidalgo.net; Eileen Delehanty Pearkes; tim.beechie@gmail.com; hiroo@angeli.org; mzimmer@syilx.org; mhume@globeandmail.com; Kim.hyatt@dfo-mpo.gc.ca; rtbouchard@shaw.ca; John Sirois; t.pitcher@fisheries.ubc.ca; marwan.hassan@geog.ubc.ca
Subject:	Salmon in the Kettle
Date:	Friday, February 13, 2015 3:37:53 PM
Attachments:	CascadeCulturalHeritage2004.pdf Okanagan Nation Alliance.docx

---

I am pleased to enclose my submission in support of the goal of returning anodromous salmonids to the Kettle River system. Please take the time to read this work, share and discuss the issue with colleagues and should you decide to do so, lend your support and wealth of knowledge with the entities involved to bring the salmon back.

I will follow up in due course in a bid to sustain the process of coordinating the entities involved and initiating the studies required to bring this undertaking to eventual fruition.

Sincerely,

Jonathan Oldroyd

CASCADE BORDER CROSSING

PROJECT: CULTURAL HERITAGE

RESOURCES ASSESSMENT

Conducted under:
British Columbia Heritage
Inspection Permit #2004-325

For
Submission to the Archaeology &
Registry Services Branch
Victoria

Prepared by:

ARCAS CONSULTING
ARCHEOLOGISTS LTD.
55A Fawcett Road
Coquitlam, BC V3K 6V2

6 October 2004

CREDITS

PRINCIPLE INVESTIGATOR	Arnoud H. Stryd, Ph.D., RPCA
PROJECT MANAGER	Richard P. Brolly, B.A., RPCA
RESEARCHERS	Richard Brolly Arnoud H. Stryd
FIELDWORK	Arnoud Stryd Robert Watt (Sinixt Nation)
REPORT AUTHOR	Richard Brolly Arnoud H. Stryd
REPORT DRAFTING	Ann O'Sullivan, M.A.

MANAGEMENT SUMMARY

This report presents the results of a cultural heritage resources assessment by Arcas Consulting Archeologists Ltd for the proposed Cascade Border Crossing Project on the Canada-U.S. International Boundary at Cascade, B.C. The assessment evaluated the potential effect of the Project on cultural heritage resources as part of an Environmental Assessment Screening Report by Hemmera Envirochem Inc. for the Project for Public Works and Government Services Canada.

The Project includes the decommissioning of existing facilities at the border crossing, a realignment of Highway 395 at the crossing, and construction of new facilities. About 30 m of highway realignment will take place across the International Boundary in the United States.

The assessment is intended to fulfill Federal (Canada and U.S.) and Provincial regulatory requirements under the *Canadian Environmental Assessment Act*, Section 106 of the U.S. *National Historic Preservation Act of 1966*, and the B.C. *Heritage Conservation Act*.

The assessment had the following objectives:

(1) To identify cultural heritage resources for the Cascade Border Crossing Project development area;
(2) To evaluate the significance of any cultural heritage resources within the development area;
(3) To assess potential conflicts between cultural heritage resources and the proposed Project; and
(4) To make recommendations for follow-up impact management studies, if required.

The assessment included background research, a search of government site records in both Washington and British Columbia for information on previously recorded cultural heritage sites, a field survey of the Project area to search for undocumented cultural heritage resources, an evaluation of information, and preparation of two reports describing the results of the assessment, one to meet US regulatory requirements and the other to meet Canadian and B.C. regulatory requirements.

Lands on the Canadian side of the Cascade Border Crossing are within the asserted traditional territories of the Osoyoos Indian Band and the Sinixt Nation, while the Colville Confederated Tribes assert a comparable claim to lands on the U.S. side of the border. The Sinixt Nation is not recognized as an independent First Nation by the governments of Canada or British Columbia. Appendix 1 presents a detailed account of the traditional aboriginal peoples on both sides of the International Boundary in this area.

The results of the assessment are:

(1) There are no cultural heritage resources on the lands to be impacted by the Cascade Border Crossing Project, including historic places or properties as defined in the US *National Historic Preservation Act of 1966*, cultural heritage resources as defined in the *Canadian Environmental Assessment Act*, and archaeological sites as defined in the BC *Heritage Conservation Act*.

(2) The proposed Project will not impact (effect) any known cultural heritage resources and it seems highly unlikely that the Project area contains as yet unidentified cultural heritage resources, or is the subject of unidentified current traditional uses by aboriginal people.

Based on these findings we recommend that no further cultural heritage studies be required for the Cascade Border Crossing Project.

ACKNOWLEDGEMENTS

Arcas Consulting Archeologists Ltd. would like to thank Hemmera Envirochem Inc. for the opportunity to conduct this study. In particular, we would like to acknowledge the assistance and support of Michelle Lachmann and Garry Hamilton, for their assistance and support during this project.

We also wish to thank Marilyn James (Spokesperson for the Sinixt Nation), for her interest in this project, and to Robert Watt (Sinixt Nation), for participating in the fieldwork.

Trent de Boer (WSDOT archaeologist) and Rob Whitlam (Office of Archaeological and Historic Preservation) are thanked for providing useful advice about standards of practise for that aspect of the project that took place on the U.S. side of the border at Laurier.

The professional opinions expressed in this study are exclusively those of Arcas Consulting Archeologists Ltd., and not those of any other individuals, groups, or institutions involved in the study. Arcas is solely responsible for the content of this report, including any errors, omissions, or other shortcomings.

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1.0 INTRODUCTION

This report presents the results of a cultural heritage resources assessment undertaken by Arcas Consulting Archeologists Ltd (Arcas) for the proposed Cascade Border Crossing Project on the Canada-U.S. International Boundary at Cascade, British Columbia. The assessment was carried out at the request of Hemmera Envirochem Inc. as part of their Environmental Assessment Screening Report for Public Works and Government Services Canada (PWGSC).

1.1 Scope of Work

(1) To prepare a report on cultural heritage resources for the Environmental Assessment Screening Report for the Cascade Border Crossing Project as per the requirements of the Canadian Environmental Assessment Agency (CEAA*)*, and

(2) To prepare a cultural resources survey report addressing the requirements outlined in the Washington State Department of Transportation (WSDOT) Cultural Resources Discipline Report Checklist.

This report has been prepared to meet CEAA requirements. A separate report has been prepared addressing WSDOT requirements.

1.2 Project Location and Site Description

The Cascade Border Crossing is located on the Canada-U.S. International Boundary in the Kettle River valley approximately 5 km south of Christina Lake, British Columbia, and approximately 15 km north of Orient, Washington, on Highway 395 (Figures 1 and 2). The geo-reference is: 118º 13’ 26” W, 49º 0’0” N.

The landowner is the Government of British Columbia. The legal description for the border crossing property is: Parcel “H”, (D.D. 125602F and Plan M175), District Lot 312, Group 1, Similkameen (formerly Osoyoos) Division, Yale District (Title 125602F).

The U.S. portion of the Project is located is Section 3, Township 40 North, Range 36 East, USGS Laurier Quadrangle. Landowners are WSDOT (highway-right-of-way) and a Mr. Slagle (land adjacent to the highway right-of-way).

Existing site facilities include a Canada Customs office (now closed) with a large canopied vehicle examination area, a temporary Canada Customs office, a two-car garage, storage shed, vehicle compound, well-house and the concrete foundation from a former residence (Figure 3). A Burlington Northern Sante Fe Railroad right-of-way is present west of the existing highway, and a grass airstrip (Avey Field) is east of the site. There is a vegetated septic system to the north of the site. The U.S. Laurier Border Crossing facilities are located approximately 40 m south of the Canadian site.

Figure 1. Location of Cascade Border Crossing (Province of British Columbia, Relief Map, 1991; scale 1:2,000,000).

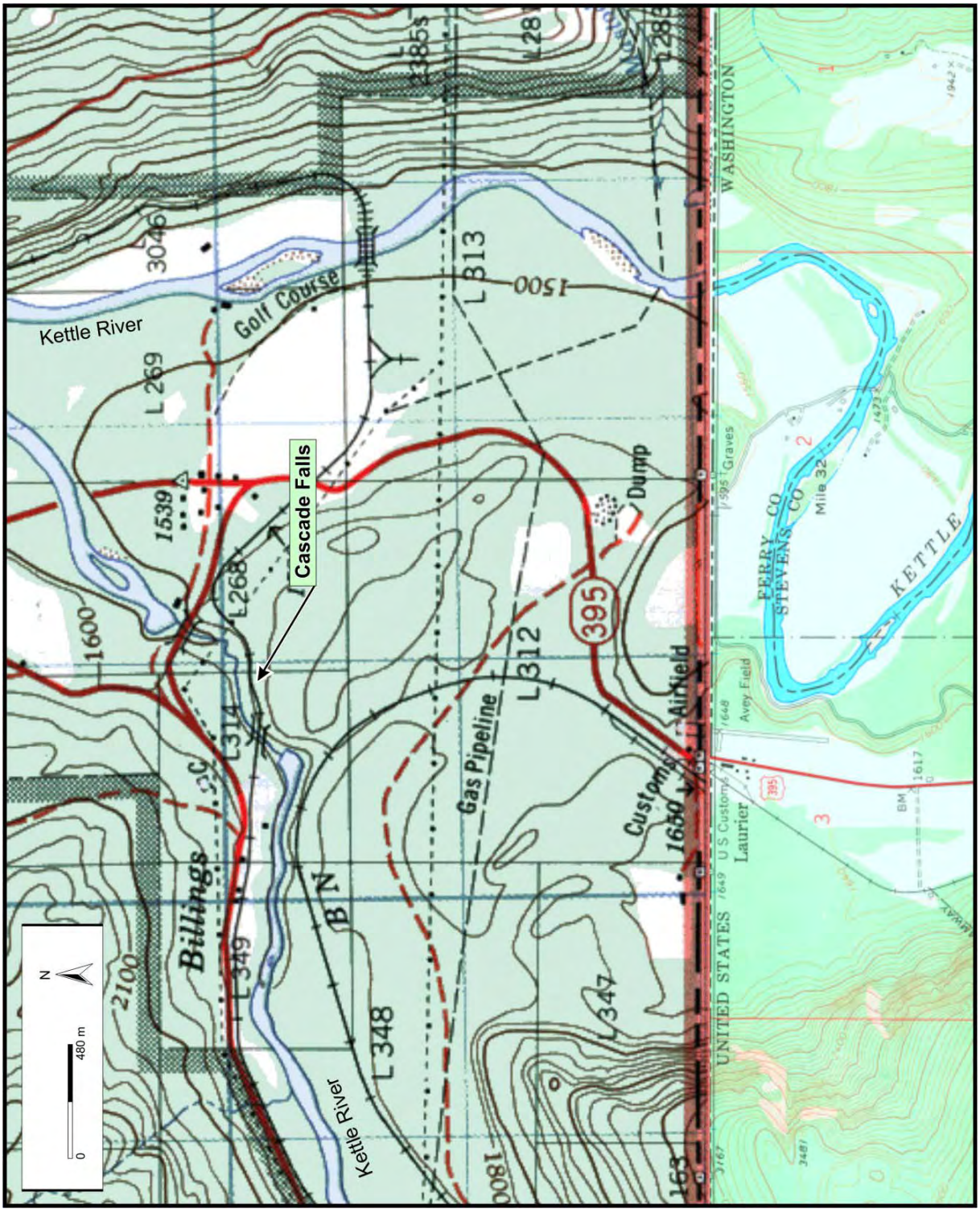

Figure 1. Location of Cascade Border Crossing (NTS 82 E/1 and USGS Laurier Washington, 1969; scale 1:24,000).

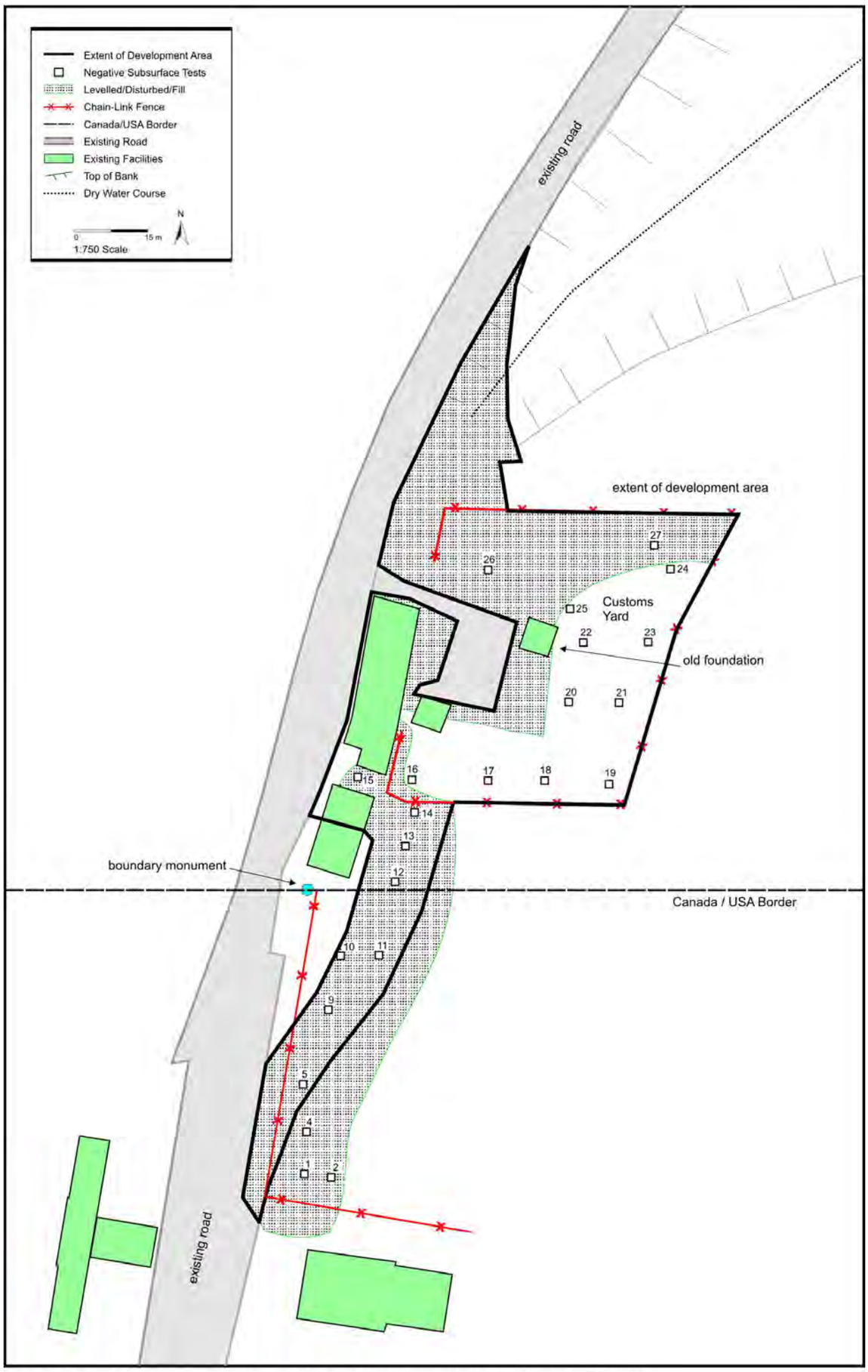

Figure 3. Outline of development showing location of subsurface tests, existing roads and facilities (1:750 scale).

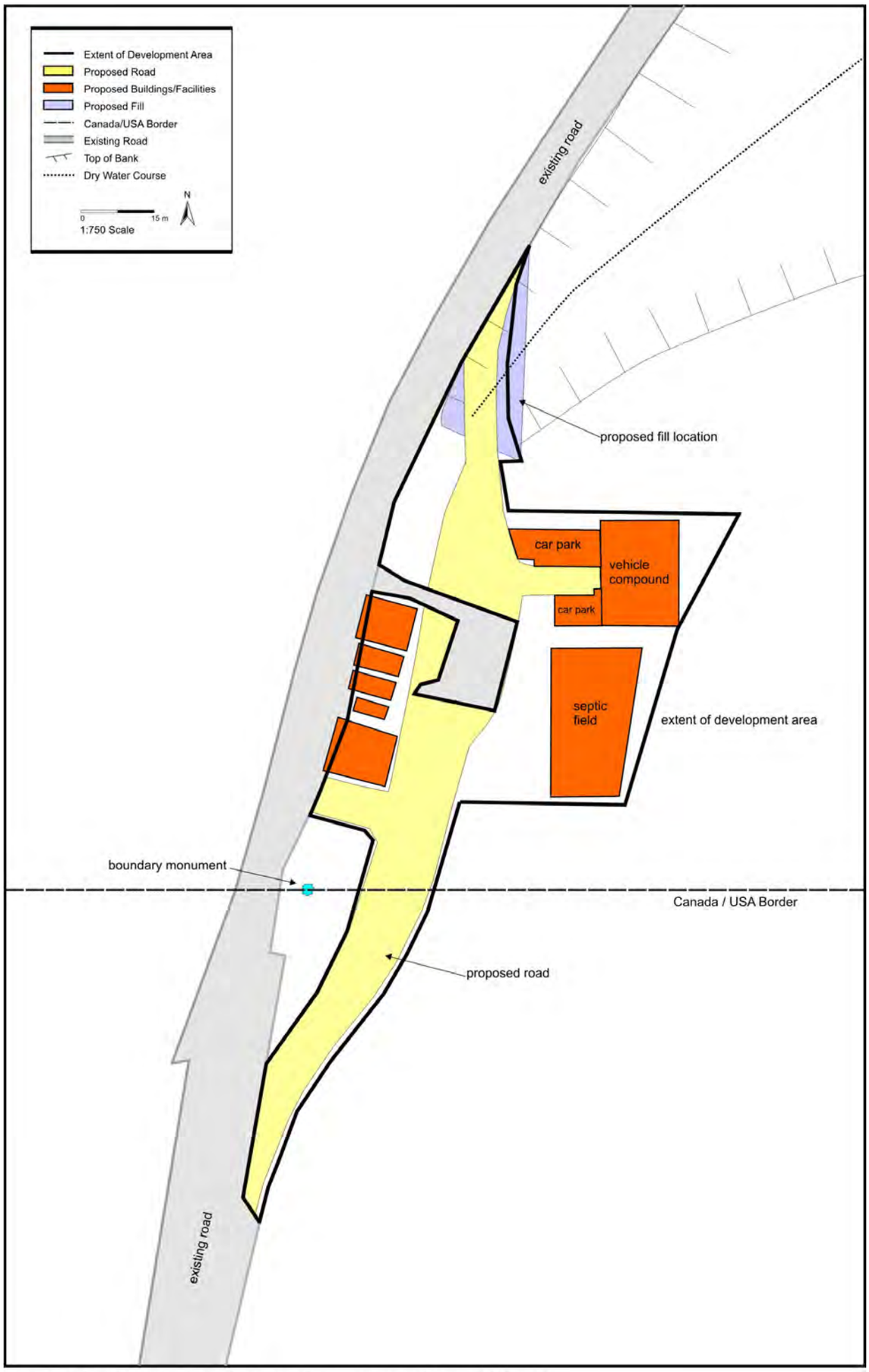

Figure 4. Outline of development showing location of proposed road and facilities (1:750 scale).

1.3 Project Description

PWGSC plans to redevelop existing facilities at the Cascade border crossing (Port of Entry). This Project will involve (Figure 4):

- Decommissioning of existing facilities, including the traffic office, secondary inspection canopy, garage, a small storage shed, and associated facilities on the property, as well as removal of trees growing within the development area;
- Construction of temporary and new permanent roadways to accommodate traffic during redevelopment of the Border Crossing;
- Installation of temporary Border Crossing facilities while the new structures are being constructed; and
- Construction of new facilities, including a new traffic office, secondary and tertiary inspection canopies, roadways, parking and impoundment lots, a septic-disposal field, utilities, and other works.

Engineering designs and studies required for project approval are nearly completed, and it is expected that construction could commence in the spring of 2005.

1.4 Regulatory Requirements

Because the proposed Project is a Federal Government undertaking, PWGSC is required under the *Canadian Environmental Assessment Act* to consider the effects of the Project on cultural heritage resources. Furthermore, the Provincial Government owns the Project property, and required an assessment of potential impacts on archaeological resources in accordance with the Provincial *Heritage Conservation Act*. In addition, the Project south of the International Boundary involves a Federal Highway, and will requires an assessment of potential effect on cultural resources in accordance with Section 106 of the U.S. *National Historic Preservation Act of 1966*.

1.4.1 Canadian Environmental Assessment Act

The *Canadian Environmental Assessment Act* is administered by CEAA, and requires that development proponents identify and assess project effects on cultural heritage resources, including paleontological, archaeological, historical sites, and contemporary traditional land use by aboriginal people. The *Reference Guide on Physical and Cultural Heritage Resources* (CEAA 1996) recommends that cultural heritage resources be "assessed in relation to the mandates, objectives and intents of existing legislation and policies on heritage found at various government levels (federal, provincial, municipal, territorial)." Project report produced under the CEAA guidelines can also serve as the report submitted to provincial regulatory authorities. In this case, the relevant provincial legislation is the B.C. *Heritage Conservation Act.*

1.4.2 B.C. Heritage Conservation Act

The *Heritage Conservation Act* (HCA) is the Provincial legislation governing cultural heritage resources. The HCA provides automatic protection to archaeological and historical sites that pre-date 1846 regardless of whether they are recorded in the Provincial Heritage Register

database, as well as to some other kinds of cultural heritage sites such as burial places and aboriginal rock art locations of historical or archaeological value that post-date 1846. Paleontological sites are not currently protected by any provincial legislation.

The Archaeology & Registry Services Branch of the Ministry of Sustainable Resource Management can require studies under the HCA to identify, evaluate and mitigate potential impacts to sites protected under the HCA. The *British Columbia Archaeological Impact Assessment Guidelines* (Archaeology Branch 1998) describe the requirements and procedures for studies under the HCA. The present study includes the requirements of a Provincial archaeological impact assessment (AIA) as defined in these Guidelines. An AIA is intended to:

- Identify and evaluate archaeological sites located within a development area,
- Assess potential impacts by the proposed development on archaeological sites, and
- Recommend appropriate impact management measures where necessary.

The actions undertaken for an AIA study customarily involve or have the potential to involve disturbance of archaeological remains by field procedures such as subsurface testing. For this reason, an AIA must be conducted under a Heritage Inspection Permit issued pursuant to section 14 of the HCA.

1.4.3 National Historic Preservation Act of 1966

The U.S. *National Historic Preservation Act of 1966* (NHPA) authorizes a National Register of Historic Places composed of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture. The National Register of Historic Places is the Nation's official list of cultural resources worthy of preservation. It is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect historic and archaeological resources. "Historic Places" or "Historic Properties" are terms more or less equivalent to "Cultural Heritage Resources" used in CEAA.

Section 106 of the NHPA requires U.S. Federal agencies to take into account the effects of their undertakings on historic properties. Potential impacts by Federal highway projects are assessed in accordance with Section 106 of the NHPA. The Washington State Department of Transportation (WSDOT) is the responsible agency for Federal Highway Projects in Washington State.

Under Section 106, a responsible agency first determines if the proposed project could affect historic properties. Historic properties are properties that are included in the National Register of Historic Places or that meet the criteria for the National Register. If so, the agency determines the scope of appropriate identification efforts and then proceeds to identify historic properties in the area of potential effects.

If the agency finds that no historic properties are present or affected, it provides documentation and proceeds with its undertaking. If the agency finds that historic properties are present, it proceeds to assess possible adverse effects. If adverse effects are present, means of avoiding, minimizing, or mitigating the effects are identified and implemented.

1.5 Objectives

This study combines the regulatory requirements under the above legislation into a single study (with two reports). This study has the following objectives:

- Identify cultural heritage resources for the Cascade Border Crossing Project development area;
- Evaluate the significance of any cultural heritage resources within the development area;
- Assess potential conflicts between cultural heritage resources and the proposed Project; and
- Make recommendations for follow-up impact management studies, if required.

This study was carried out under Heritage Inspection Permit #2004-325 issued on 14 September 2004, to Richard P. Brolly of Arcas.

2.0 RESEARCH METHODS

The research for the cultural heritage assessment consisted of:

(1) Background research in the form of:
- A review of archaeological, ethnographic, and historical documents for the Cascade Border Crossing locality,
- A review of mapped biophysical data and an orthophoto of the development location, and
- A search of government site records in both Washington and British Columbia for information on previously recorded cultural heritage sites in the Project locality;

(2) A field survey of the Cascade Border Crossing Project development area, to search for undocumented cultural heritage resources;

(3) An evaluation of information and preparation of two reports describing the results of the research.

2.1 Background Research

Background research included an in-office literature review covering the relevant ethnographic, historical and archaeological literature for this part of southeast BC and adjoining lands in Ferry and Stevens Counties, Washington. Most documents were already available in the Arcas library, supplemented as necessary by manuscripts or reports in the possession of the B.C. Indian Language Project in Victoria, and the Archaeology & Registry Services Branch in Victoria. Hemmera Envirochem Inc. provided maps and documents specific to the Cascade Border Crossing Project. These reports included photographs of the Project property and facilities.

Mapped biophysical data was reviewed for information pertinent to this study, including terrain, surficial geology and vegetation associations. The results of an environmental impact assessment study for the proposed development (Golder Associates 2001) were also reviewed. A digitized archaeological potential map and an orthophoto of the project locality were downloaded from the Provincial Heritage Register using the Remote Access to Archaeological Data (RAAD) system.

The B.C. Provincial Heritage Register was searched using RAAD to determine if there were any archaeological or historical sites protected under the HCA already recorded on the Project property. The Register also was searched for sites in the nearby Kettle River valley to establish the distribution and kinds of archaeological sites present in the immediate area.

The site files at the Washington State Office of Archaeology (OAHP) in Olympia, Washington, also were searched to determine if any recorded archaeological sites, historical sites or traditional cultural properties ("traditional use sites" in Canada) were located on the Project property or in the immediate vicinity. The search was restricted to Section 3, Township 40 North, Range 36 East, USGS Laurier Quadrangle. The files also were searched for any previous cultural resource surveys in the vicinity.

2.2 Archaeological Field Survey

Arnoud Stryd (Arcas) and Robert Watt (Sinixt Nation) carried out a field survey of the proposed Cascade Border Crossing Project development area. The primary focus of the field survey was to identify archaeological and historic heritage remains within the development location, focusing as far as possible on undisturbed or minimally disturbed settings.

Field procedures consisted of an initial systematic visual inspection of the ground surface of the entire development area. The entire area was traversed with Stryd and Watt spaced less than 5 m apart. The surface was inspected for artifacts, cultural features such as depressions, faunal remains (that is, bone fragments), fire-altered rocks and historic objects. The property also was examined for plants and evidence of animals that could be used by aboriginal people.

Subsurface shovel testing was used to search for buried archaeological remains. The shovel tests were excavated through overlying fill (where present) and the underlying A-horizon into unmodified B-horizon soils. The shovel tests ranged in area from 25 x 25 cm to 40 x 40 cm in size, with depth ranging from 20 to 55 cm below surface. Material excavated from the tests was screened through 6 mm mesh or carefully examined with a trowel. Information about the sediments encountered in shovel tests and other observations were recorded in fieldnotes. All shovel tests were backfilled upon completion. Due to a camera malfunction no photographic record of the field survey was obtained.

2.3 Evaluation and Reporting

Two reports on the results of the cultural heritage assessment were prepared, one to address CEAA requirements, the other to address WSDOT requirements.

Both reports follow the format in the B.C. *Archaeological Impact Assessment Guidelines* (Archaeology Branch 1998). An example of a cultural resources survey report successfully submitted to WSDOT was reviewed to ensure that our report for WSDOT would meet the requirements of that agency.

Because of the lack of evidence for the presence of cultural heritage resources on the Project property, no assessment of resource significance and potential project impacts was necessary.

One result of the cultural heritage assessment was a comprehensive compilation of anthropological and historical information from both archival and literature sources on the aboriginal use of the Cascade Border Crossing general area. Dr. Dorothy Kennedy and Randy Bouchard of Bouchard & Kennedy Research Consultants in Victoria undertook this research. This information has, to the best of our knowledge, not been compiled before, and is included in its entirely as Appendix 1 to this report.

The field survey confirmed the preliminary conclusion from an examination of Project maps and photographs, that the Project property has no potential for current traditional use by aboriginal people (see below). As a result, aboriginal groups (bands, tribes, First Nations) with an interest in the general area were not contacted to discuss current traditional use of the property.

3.0 BIOPHYSICAL SETTING

3.1 Terrain And Geology

The Cascade Border Crossing Project location is situated in the valley of the Kettle River, which cuts through the Christina Range of the Monashee Mountains, 50 km above its junction with the Columbia River at Kettle Falls in Washington. This locality is on the approximate boundary between the Southern Okanogan Highland ecosection of the Thompson-Okanagan Plateau Ecoregion (to the west) and the Selkirk Foothills ecosection of the Selkirk-Bitterroot Foothills Ecoregion (to the east) (Demarchi 1996; Nesser *et al*. 1997). The border crossing stands at an elevation of 503 m (1650 feet) above sea level, about 65 m higher than the Kettle River.

The Kettle River itself crosses the International Boundary 2.0 km east of the Border Crossing facility, though a meander bend in the river brings it within 0.3 km of the development location on the American side. From the border crossing, the land drops off toward the river on a series of broad, level to gently sloping fluvial terraces. The border crossing is on the highest terrace. To the west, the terrain rises into low hilly terrain to the north and northwest, though steep bedrock bluffs are present a short distance west of the border crossing. Aside from the Kettle River, no streams are present in the vicinity of the Border Crossing, though headward erosion of unconsolidated valley sediments has cut a steep-sided gully about 30 m north of the existing facilities (Figure 2).

The bedrock geology of this locality is described by Tempelman-Kluit (1989a). In the immediate vicinity of the border crossing bedrock is characterized by very ancient (Proterozoic to Paleozoic) metamorphic rocks including gneiss, amphibolite, schist, and quartzite. The lower slopes of the Rossland Range on the east side of the valley are characterized by Ordovician-Devonian aged metamorphic rocks, Upper Triassic-Lower Jurassic igneous rocks, and Middle Jurassic aged plutonic rocks. None of these rocks would have been favoured as lithic raw materials by aboriginal people for manufacturing stone tools in pre-Contact times. Further, none of these formations would be suitable for the preservation of organisms as fossils, and no fossil localities are reported from the Cascade Border Crossing locality (Tempelman-Kluit 1989b).

Soils and surficial geology of the Kettle Valley area is described by Sprout and Kelley (1964), who characterize soils in the Cascade locality as Spion loamy sand, an orthic grey wooded soil derived from sandy outwash and fluvial deposits on river terraces.

3.2 Modern Vegetation

The Cascade locality lies within the Boundary variant of the Very Dry Hot subzone of the Interior Douglas-fir Zone (IDFxh4) (Ministry of Forests 2003; Hope *et al.* 1991). The climate of this subzone is characterized by hot, dry summers and cool winters with little snow accumulation (Braumandl and Curran 1992). Dry settings in the IDFxh4 are distinguished by open stands of Douglas-fir and ponderosa pine, with western larch and lodgepole pine also present in mesic habitats, while the dominant shrubs are soopolallie, saskatoon berry, wild roses, Oregon-grape, and kinnickinnick (Braumandl and Curran 1992; Sprout and Kelley 1964).

During the field survey, it was observed that the native vegetation within the development location had been profoundly altered by modern settlement and land use, leaving a few remnant young ponderosa pines in association with imported weeds and agricultural crops. Flowerbeds and ornamental shrubs are found amongst the lawns around the existing facilities.

3.3 Ancient Environments

Significant environmental changes have taken place in the Interior of British Columbia and Washington in the millennia since the last glaciation. These changes altered the availability of food and other resources, and played an important role in the lives of the ancient inhabitants of the region. The Quaternary geology of southeastern B.C. and adjoining parts of Washington and Idaho are summarized in Baker *et al.* (1991), Clague (1991), and Fulton and Smith (1978). Paleoclimatic and ecological summaries for the region can be found in Hebda (1995), Barnosky *et al.* (1987), and Mathewes (1985).

Geologists believe that the final advance of glacial ice in the valleys occurred between about 25,000 and 12,000 years ago. Deglaciation began around 12,000 years ago and had been largely completed by 10,000 years ago. Stagnant ice emerging from tributary valleys (like that now occupied by Christina Lake) obstructed meltwater runoff, producing short-lived glacial lakes much larger and deeper than their modern equivalents. Up to 150 m of fine-textured sediments were deposited at the bottom of these lakes, and were quickly downcut by rivers when the lakes drained by about 8000-9000 years ago. Rivers throughout this region probably reached their modern elevations some time after 5000 years ago.

Awareness of the ancient landscapes in this locality is crucial for understanding the distribution of archaeological sites. Many of the sites known from the Kettle River valley are located on the lowest terraces above the modern river channel. Since the river probably did not achieve this elevation before about 5000 years ago, it follows that any sites situated on the lowest terraces cannot exceed 5000 years in age. Sites post-dating 5000 years ago can be expected on any suitable landform, reflecting traditional land use by First Nations people throughout their ancient landscape. Conversely, sites older than 5000 years in age will only be found on more-ancient landforms. Moreover, older sites throughout this region are frequently associated with deposits of aeolian sediments, which ceased to be deposited in significant amounts after about 3000 BP.

4.0 CULTURAL SETTING

4.1 Ethnographic Background

Lands on the Canadian side of the Cascade Border Crossing are within the asserted traditional territories of the Osoyoos Indian Band and the Sinixt Nation, while the Colville Confederated Tribes assert a comparable claim to lands on the U.S. side of the border. The Sinixt Nation is not recognized as an independent First Nation by the governments of Canada or British Columbia.

Appendix 1 presents a detailed account of the traditional aboriginal peoples of the Kettle River valley. Prepared by Randy Bouchard and Dorothy Kennedy, this account summarizes First Nations' settlement and land use in the Kettle Valley. Of note, Bouchard and Kennedy do not use the anglicized, modern term "Sinixt Nation" in their report, instead using the linguistic transcription *sngaystkstx*. The two terms are synonymous for our purpose.

We want to note that not all aspects of the traditional cultures of First Nations/Native American Tribes are recorded in the anthropological and ethnohistoric literature. Additional knowledge of traditional culture and lifeways still exists in many contemporary aboriginal communities. Furthermore, aboriginal societies underwent significant changes as a result of their contact with Europeans, and some cultural aspects reported in the literature may not accurately reflect that culture prior to contact

4.2 Previous Archaeological Research

The Kettle River valley in the vicinity of the Cascade Border Crossing was first explored archaeologically in the 1960s by historian and avocational archaeologist Bill Barlee. He identified a number of sites, but these were not formally recorded until 1978-1979 when Mike Freisinger surveyed much of the accessible land along the Kettle River between Rock Creek and Christina Lake. Freisinger (1979) recorded a number of archaeological sites, but it is not clear if he examined the river downstream from Christina Creek, including the Cascade locality.

At about the same time Gerry Roberts (1976) recorded a number of archaeological sites for a proposed powerline in the Kettle Valley north of the Cascade Border Crossing.

Archaeological impact assessments in the late 1980s and early 1990s for road developments (Wilson 1989) and a hydroelectric development at Cascade Falls on the Kettle River upstream of Christina Creek (Wilson 1993, Choquette 1993) locating six archaeological sites and resulted in a small scale excavation at DgRn-40. More recently, impact assessment and mitigation work for the BC Gas Southern Crossing Pipeline identified several archaeological sites along the Kettle River upstream of Christina Creek (Bussey and Choquette 1997, Lackowicz 1999, Bussey 2000)

On the American side of the International border, archaeologists have focused their efforts for several many years on the extensive archaeological remains along the mid Columbia River, and especially around the confluence of the Kettle and Columbia Rivers, approximately 50 km south of the International Boundary (e.g., Chance and Chance 1977, 1982, 1985; Chance, Chance and

Fagan 1977). The only cultural resource survey conducted in the vicinity of the Cascade Border Crossing Project was for Highway SR 395 (Holstine 1997).

At present the nearest recorded archaeological sites are located approximately 2 km from the Cascade Border Crossing on the Kettle River at Cascade Falls. On the U.S. side of the International Boundary the nearest archaeological sites are located about 3 km from the crossing.

A total of 24 archaeological sites are located within 5 km of the crossing north and south of the International Boundary. Most of the recorded sites are surface scatters of stone artifacts. They range in size from very small (2 x 2 m) scatters to larger sites in excess of 200 m long. Some also have fire-cracked rock and fragmented faunal remains, and probably are the remains of fishing and other types of camps. Isolated cultural depressions (probably cache pits) are reported at a few sites. A group of three mat lodge depressions are recorded near Cascade Falls, and one site along the Canadian section of the Kettle River has reported but unconfirmed rock cairns and human remains. Several aboriginal trails or possible trails (possibly also serving as historic wagon roads) have been identified in the area, and a dugout canoe was retrieved from the Kettle River in Canada.

Other sites recorded in the area include the Dewdney Trail on the east side of the Kettle River northeast of the Cascade Border Crossing, which may follow in parts an earlier aboriginal trail, and four scatters of historic debris in the vicinity of the Cascade Falls power plant. These historic scatters are probably associated with the construction of the power plant in the early part of the 20th century.

4.3 Regional Prehistory

The archaeology of Sinixt traditional territory in general, and of the Kettle Valley specifically, is poorly understood. It seems likely, based on the available data, that the prehistory of Sinixt territory will be best described in reference to the many years of archaeological research carried out around Kettle Falls on the Columbia River at the confluence of the Kettle and Columbia Rivers, 50 km southeast of the Cascade Border Crossing (Chance and Chance 1977, 1982, 1985; Chance, Chance and Fagan 1977). The Kettle Falls research has established an almost 10,000 year archaeological sequence divided into a number of named periods. This sequence begins around 9550 years ago with initial use of the area and continues, with intervals of little or no use, until modern times. The ethnic Salish appear to first use this area during the Takumakst Period between 2750 and 1650 years ago (Chance and Chance 1985). The subsequent Sinaikst Period represents the most intensive occupation of Kettle Falls and the origins of the modern Colville-Sinixt Nations can be traced to this period according to Chance and Chance (1985). The immediate ancestors of Colville and Sinixt people were living at Kettle Falls when the first European traders arrived in 1811.

4.4 Historic Settlement And Land Use

Sandner (1994) presents the most recent local history of the Christina Lake-Cascade locality, while Lakin (1976) provides an American perspective on the Kettle River area, including the

Cascade locality. European fur traders are known to have passed through the Kettle Valley on their way to and from Fort Colvile near Kettle Falls, but construction of the Dewdney Trail between the Coast and Wildhorse Creek in the East Kootenays marked the first evidence of a European presence in the region. More sustained settlement began when prospectors worked their way into the Kettle River valley from Colville in the south and Rossland in the east. A number of mines were staked in the vicinity of the Cascade Border Crossing, including the Mastodon property on the east side of the river immediately north of the border, and the Talisman mine, on the west side of the valley about 1.7 km south of Laurier.

The Canadian Pacific Railway constructed a line from the Columbia River at Castlegar to the Kettle River valley in 1896, in order to access new mineral discoveries in the Boundary Mining District between Grand Forks and Greenwood. By 1915, this line had been connected to the CPR's mainline at Hope, B.C., providing a second route across the province known colloquially as the Kettle Valley Railway. Likewise, the Great Northern Railway built a route into the Boundary District to access the mines. The GNR line (now Burlington Northern-Santa Fe) line is still extant, but the CPR's southern mainline was abandoned during the 1980s and the rails removed by about 1995.

Agricultural settlement began to provide locally-grown supplies to local mining operations, and at the turn of the 20th century the town of Cascade was development as a regional transportation centre. Located about 2.0 km from the border crossing, the town of Cascade has practically disappeared due to recurring fires through the years. Today, much of the original townsite is covered by a golf and country club.

A customs Border Crossing is said to have existed at Cascade since before 1900, though the existing customs facilities were apparently constructed in 1932 (Golder Associates 2001). The original route of Highway 395 must have been constructed at that time, though a land-status map published by the provincial government (Department of Lands 1932) does not show such a route. Prior to 1948, the property upon which the border crossing facilities is situated was owned by the Cascade Development Company, passing to the federal Crown in 1948. At present, title to this property is held by the Provincial Crown (Golder Associates 2001).

5.0 FIELD SURVEY RESULTS

Fieldwork for the Cascade Border Crossing Project took place on 16 September 2004. The field procedures used are described above.

The initial systematic examination of the ground surface failed to identify any archaeological features such as pits or cairns, or any archaeological material such as artifacts, fire-cracked rock scatters, or butchered animal bones. Grass and fill obscured the ground surface in many places. As a result, subsurface shovel testing was necessary to search for buried archaeological remains. The shovel tests were principally excavated along the proposed highway realignment south of the border crossing, and in a reasonably undisturbed setting in the southern two thirds of development area. A total of 23 shovel tests were excavated during the field survey. Figure 3 shows the location of the tests. The results of the subsurface testing are summarized in Table 1.

The shovel tests revealed that much of the ground on the Project property not already built on is disturbed. Land south of the International Boundary has been levelled and filled with gravel, removing the original upper soil deposits in places. Immediate north of the Boundary there is a buried former paved surface, below which we did not test. Within the fenced custom yard disturbance was widespread but sometimes difficult to identify with certainty. The old cement foundation appears to be part of a garage or similar structure associated with a house that probably stood in the location of the paved parking area. Gardening disturbed much of northern part of the yard, and the area around the paved parking area has been levelled. The only deposits that are more or less intact are in the south part of the yard, and along the east fence. Even here there are pockets of obvious disturbance.

The head of a deep ravine will be crossed by the proposed highway realignment north of the custom yard. The existing highway crosses this ravine on fill, which will be extended slightly to accommodate the realignment. This area has no archaeological potential, and was not tested.

Sediments throughout the Project location were quite consistent, being comprised of silty sand and sand with the occasional rounded pebble. These findings are entirely consistent with the results of the soil tests undertaken during the geotechnical assessment of the property (Levelton Engineering Ltd 2003). A well-defined A_H horizon was evident in all shovel tests except in the northern third of the fenced custom yard and along the right-of-way from Highway 395 south of the International Boundary, where ground disturbance had removed or dispersed the upper part of the soil profile. The A_H horizon varied in organic content, with small pieces of charcoal in several tests. These charcoal pieces occurred in tests that also had recent refuse and should not be taken as indicators of aboriginal occupation. No bone was encountered, and nothing resembling fire-cracked rock was observed.

No archaeological objects or deposits were observed during the shovel testing. This result is consistent with the results of the initial surface examination. No evidence was encountered to suggest that archaeological remains ever existed, or still might exist, on Project property on both sides of the International Boundary.

These results are not surprising as the border crossing property has, in our opinion, overall low archaeological potential based on the location of the property at the “back” of a large fluvial

terrace about 200 m from the terrace edge and approximately 65 m above the current valley of the Kettle River. The steep-sided gully located about 30 m north of the property could have provided aboriginal people on the terrace with limited access to water, but the gully is hard to access and probably did not make the terrace a desirable place to camp in the past.

Table 1. Results of subsurface testing, Cascade Border Crossing, September 2004.

Shovel Test #	Area (cm)	Depth (cm)	Comments
ST1	25x25	40	Scraped, no AH horizon, fine sand fluvium, disturbed to 10 cm below surface
ST2	30x30	48	Scraped, no AH horizon, fine sand fluvium, disturbed to 10 cm below surface
ST3	Not dug	--	--
ST4	25x25	20	Scraped, no AH horizon, sand with river cobbles
ST5	25x25	20	Fill comprised of yellow sand with pea gravel, no cobbles
ST6-8	Not dug	--	--
ST9	30x30	35	Sand and pebble fill to 18 cm below surface, AH horizon 18-28 cm below surface
ST10	30x30	35	Same as ST9
ST11	25x25	35	Sand fill, with chunks of pavement, to 20 cm below surface, Ah horizon
ST12	30x30	30	Same as ST11
ST13	25x25	5	Pavement present under 5 cm of gravely fill
ST14	30x30	55	Sand fill.
ST15	25x20	30	In lawn. Turf with sand and pea gravel fill to 23 cm below surface, AH horizon 23-28 cm below surface
ST16	30x30	50	Probably disturbed silty sand with occasional piece of pea gravel to 12 cm below surface, undisturbed reddish brown sand below 12 cm. No evidence of AH horizon.
ST17	30x30	20	Dark silty sand AH horizon to 15 cm below surface with grey sand beneath
ST18	30x30	30	Same as ST17 with Ah horizon to 18 cm below surface
ST19	30x30	40	Aeolian (/) silt to 18 cm below surface, possibly disturbed, dark silty sand AH horizon 18-34 cm below surface, grey sand beneath
ST20	35x30	25	Dark loamy sand AH horizon to 18 cm below surface, scattered charcoal flecks, hard silty sand B horizon beneath
ST21	30x30	26	Dark silty sand AH horizon to 16 cm below surface, yellow grey sand beneath
ST22	40x40	28	Humic grey black silty sandy AH horizon to 16 cm below surface, yellow grey silty sand beneath
ST23	35x30	25	Same as ST22, somewhat more humic AH horizon, with scattered charcoal flecks
ST24	40x40	28	Same as ST22 and ST23
ST25	20x20	15	Same as ST22, with AH horizon to 12 cm below surface
ST26	20x20	20	No AH horizon, disturbed, course yellow brown sand with scattered pea gravel
ST27	30x20	20	Dark brown silty sand, somewhat humic AH horizon to 17 cm below surface, disturbed, with orangey brown silty sand beneath

6.0 RESULTS

Figure 4 represents a survey plan for the proposed new Cascade border Crossing, including realignments of Highway 395 on both sides of the International Boundary. As envisioned, PWGSC will remove the existing Border Crossing structures, and then build new facilities as shown on the plan.

The realigned highway north of the Border Crossing will be built on imported fill where it crosses the head of the ravine. Other construction for this project will take place within the existing Border Crossing property.

6.1 Archaeological Resources

The results of the field survey indicate that no archaeological sites are present within the proposed highway realignment right-of-way on both sides of the International Boundary, as well as within the existing border crossing property. Given the thorough field examination of the development area, the extensive existing ground disturbance, the long-standing and ongoing use of the area, and the location of the property at the "back" of the upper fluvial terrace more than 200 m from the terrace edge and more than 300 m from the Kettle River, it seems reasonable to conclude that the Project will not effect archaeological resources.

6.2 Historical Resources

The existing Port of Entry structure at Cascade was reportedly built in 1932, qualifying it as an historic heritage resource in accordance with CEAA guidelines. The redevelopment plans as currently envisioned require demolition of this structure, which is considered to be an unavoidable direct impact. However, the existing facility is a small institutional structure with no outstanding architectural features, and it is not considered to represent an important heritage resource.

6.3 Current Traditional Use by Aboriginal People

Highway 395 passes through private lands in a developed agricultural landscape. On the U.S. side of the International Boundary, the proposed realignment of US 395 will cut across the north-west corner of a levelled private field. The Border Crossing facility is completely built-up and fenced.

The research by Bouchard and Kennedy (Appendix 1) did not establish that any kinds of traditional land use within the immediate vicinity of the border crossing, and the search of the site files at OAHP failed to identify any traditional cultural properties on the American side of the border. In our view it would be difficult to carry out any kind of traditional activity within the Project property. The property is small in area, fenced, almost completely built up, and subject to ongoing noise and human presence. No evidence of berries or plants of interest to aboriginal people were observed on the property during the field survey, even though a member

of the Sinixt Nation participated on the survey. Also, no evidence of deer, rabbits, or other animals of possible interest to aboriginal people were observed on the property or in the immediate vicinity. For these reasons, it is concluded that no kinds of contemporary, traditional land use would be affected by the proposed development.

6.4 Palaeontology

Because there are no bedrock outcrops present within the proposed development location, and because geological mapping of surrounding lands indicates that only igneous/plutonic and/or strongly metamorphosed rocks are present in this locality, it is concluded that no bedrock fossil occurrences will be affected by this Project.

There are no records of the fluvial sediments along this part of the Kettle River having yielded fossils of Pleistocene (Ice-Age) or Holocene age. Given the minor ground disturbance that will take place as a result of this Project, we anticipate that the Project will not impact non-bedrock fossil occurrences.

7.0 CONCLUSIONS AND RECOMMENDATIONS

It is the conclusion of this assessment that there are no cultural heritage resources present on the lands to be impacted by the Cascade Border Crossing Project, including historic places or properties as defined in the US *National Historic Preservation Act of 1966*, cultural heritage resources as defined in the *Canadian Environmental Assessment Act*, and archaeological sites as defined in the BC *Heritage Conservation Act*. Furthermore, given the thorough field examination of the development area, the extensive existing ground disturbance, the long-standing and ongoing use of the area, it seems highly unlikely that the development area contains cultural heritage resources, or is the subject of current traditional uses by aboriginal people, that the assessment failed to identify.

Based on these findings we recommend that no further cultural heritage studies be required for this Project.

This study was conducted without prejudice to First Nations'/Native American Tribes' treaty negotiations, Aboriginal rights, or Aboriginal title.

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APPENDIX 1

FIRST NATIONS' ABORIGINAL INTERESTS AND TRADITIONAL USE IN THE CASCADE BORDER CROSSING AREA

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16 August 2004

1.0 INTRODUCTION

In July 2004, Arcas Consulting Archeologists Ltd. requested Randy Bouchard and Dr. Dorothy Kennedy to compile a report summarizing and analysing the known and available information concerning First Nations' aboriginal interests and traditional land use in the environs of the Cascade Port of Entry facility, situated near the Kettle River east of Grand Forks, British Columbia. The report was to be supplemented by data on the non-aboriginal history of this same area.

1.1 REPORT OBJECTIVES

The objectives of this report are to summarize and analyse the known and available ethnographic, ethnohistoric, and linguistic documentation pertinent to First Nations' aboriginal interests and traditional land use in the environs of the Cascade International Border Station, and to supplement this with data relating to the non-aboriginal history of this same area.

Due to the very brief time available to complete this report, no new research has been undertaken. Rather, the report relies on voluminous documentation already on file, especially the published and unpublished results of the present authors' more than 30 years of research in this region, including the following: Bouchard and Kennedy (1979; 1984a; 1984b; 1985; 2000); Kennedy and Bouchard (1975; 1998); and Turner, Bouchard and Kennedy (1980).

1.2 STUDY AREA

The study area is the general vicinity of the Cascade International Border Station, for which there are proposed site redevelopment plans.

1.3 REPORT STRUCTURE

This report is divided into seven sections. Section 1.0 sets out the report's context, lists the objectives, identifies the First Nations with contemporary claims to the study area, and discusses places of cultural significance to aboriginal people.

Section 2.0 discusses the Okanagan-Colville, beginning with the identification of its component groups; this is followed by a discussion of the two groups with the greatest aboriginal interests in the Cascade area, the *sx̱weyı̓lhp*[1] or Colville and the *sngaytskstx* or Lakes, followed by a description of the aboriginal use and occupation of the Kettle River valley and Cascade areas.

[1] The Okanagan-Colville terms appearing in the present report are transcribed by Bouchard in the practical writing system he developed for this language in the early 1970s, with the assistance of the late Larry Pierre of Penticton (Bouchard and Pierre 1973). A description of this writing system is published in Turner, Bouchard and Kennedy (1980:158-160) and in Bouchard and Kennedy (1984b:95-97). Indigenous terms not transcribed by Bouchard are indicated with double quotation marks; English translations are indicated with single quotation marks.

Section 3 is comprised of a cultural summary of the Okanagan-Colville and presents information about those aspects of Okanagan-Colville society (especially with reference to the Colville and Lakes) that are important when considering traditional land use in the Cascade area.

Section 4 discusses specific places of cultural significance in the Cascade area, including considerable original data recorded by the present authors in the 1970s-1980s. It also includes a discussion of some of the aboriginal trails linking the First Nation groups by way of the present study area.

Section 5 is a brief non-aboriginal history of the Cascade area, Section 6 presents conclusions, and Section 7 lists the references cited in this report.

1.4 FIRST NATIONS' CONTEMPORARY CLAIMS TO THE CASCADE AREA

The Okanagan Nation Alliance (ONA), formerly the Okanagan Tribal Council, which represents the Lower Similkameen, Upper Similkameen, Osoyoos, Penticton, Westbank, Okanagan (Head of the Lake) and Upper Nicola Bands/First Nations, claims aboriginal rights and title over a large area of south-central British Columbia, including the area of Cascade and the drainages of the Kettle and Granby rivers in Canada, as well as Christina Lake (Bouchard and Kennedy 2000:18).

It is the position of the Business Council of the Colville Confederated Tribes in Washington State, however, that they alone represent the Lakes (*sngaytskstx*) and Colville (*sxweyɪ7lhp*) Tribes' interests, including issues pertaining to Aboriginal title and rights, on both sides of the U.S./Canada border (Bouchard and Kennedy 2000:18).

Since the 1980s, a small group of *sngaytskstx* (Lakes) people from the Colville Confederated Tribes has taken up residence in the Slocan Valley to assert more clearly their aboriginal interests in the upper Columbia region. Their asserted claims include the Cascade area (Sinixt/Arrow Lakes Nation 1999).

1.5 PLACES OF CULTURAL SIGNIFICANCE

One of the purposes of this study is to document locations in the vicinity of the study area that are of cultural significance to the aboriginal group(s) who traditionally used this area, and to present the known and available ethnographic, ethnohistoric and linguistic data indicating what made (makes) these sites culturally significant.

It has been the present authors' experience over many years, just as it has been the experience of other researchers who have been actively engaged in compiling land and resource use data, that place names are a good indicator of locations imprinted with cultural significance.

Because this report is written in WORD which does not have the ability to overstrike symbols, certain of the Bouchard practical orthographic symbols representing glottalization are written here with a raised apostrophe beside the symbol, rather than above it, as follows: m' n' l' w' y'

While place names are not the *only* indicator of lands considered culturally significant by aboriginal people, place names do reflect cultural principles that illustrate a people's cognitive relationship with these broader surroundings. Tilley (1994:18) clearly notes this when he says: "without a name, culturally significant sites would not exist, but only as a raw void, a natural environment." Thus, the accurate rendition of place names, together with data indicating the salience of a place's traditional use(s), enhances understanding of indigenous peoples' perceptions and experience of place and their broader environmental relationship to the surrounding areas.

Culturally-significant First Nations' sites have for the past decade been referred to in British Columbia as "Traditional Use Sites," identified by the acronym "TUS" which also refers to "Traditional Use Studies." The various agencies of the British Columbia Government that facilitate Traditional Use Studies recognize the significance of named places as a measure of identifying aboriginal people's use of specific areas.

In Washington State and throughout the United States, culturally-significant places have been referred to since about 1990 as "Traditional Cultural Properties." The U.S. National Park Service's *Guidelines for Evaluating and Documenting Traditional Cultural Properties* defines Traditional Cultural Properties as places having significance to a community on the basis of the role the place or property plays in that community's historically-rooted beliefs, customs and practices. Places or properties deemed to qualify as traditional cultural properties in the United States can be registered and accorded protection by legislation (Kennedy 2002:12).

It should also be noted, however, that First Nations have a relationship with much broader territories than the specific sites identified by name. They used and occupied lands commonly referred to as their "traditional territory." Their use of such territory was not necessarily to the exclusion of other indigenous people, but this territory did contain a particular group's winter villages and customarily-used resource-harvesting sites.

In the present study, when a specific area is identified as being within the "traditional territory" of a certain people, it means the area was used primarily by this aboriginal group and that they and other First Nations regarded it as their territory. Indigenous people associated with other tribes may have used the same area, provided they made their presence and amicable intentions known, or travelled there as guests of the resident First Nation. While incursion into a neighbouring First Nation's territory and exploitation of their resources was not uncommon, when done without permission it often resulted in forceful retaliation.

2.0 OKANAGAN-COLVILLE

The term "Okanagan-Colville" is used to describe the language known by these aboriginal people as *nsilxtsín*, which means 'people's speech.' Okanagan-Colville is one of the languages comprising the Interior Salish division of the Salishan language family. The hyphenated name is derived from the identification of this same language both as "Okanagan" – spelled "Okanogan" in the United States – and as "Colville" (Bouchard and Kennedy 1979:7; 1984a:39-40; 1985: Kennedy and Bouchard 1998:238; Turner, Bouchard and Kennedy 1980:1-2).

One of the first written references to the term "Okanagan" is contained in an 1811 account written by fur trader Alexander Ross. He identified "Oakinacken" [*ukwnak̓ín* or "Okanagan"] as one of the twelve "tribes" of the "great Oakinacken nation." Ross noted that the "Oakinacken tribe" resided "nearly in the centre" of the overall territory of the "Oakinacken nation" but gave no further information as to where this "tribe" was actually living (Ross 1849:286-290). Additional spellings from various sources can be found in the synonymy sections of articles prepared for the Plateau volume of the Smithsonian Institution's *Handbook of North American Indians* (Kennedy and Bouchard 1998:251; Miller 1998:269) and elsewhere (Bouchard and Kennedy 2000:7-9).

Seven dialects of Okanagan-Colville have been distinguished: Northern Okanagan, spoken by people living in villages along Okanagan Lake and the Okanagan River drainage; Similkameen Okanagan, spoken, at least since the early 1700s, by people residing along the Similkameen River drainage system; Southern Okanogan, along the lower Okanogon River in the United States; Methow, spoken by people living along the Methow River, who are interrelated with speakers of the Columbian language; Sanpoil-Nespelem, spoken by those whose villages extended along the Columbia River from Grand Coulee to Rogers Bar and along the Sanpoil River and lower Spokane River; Colville, along the Columbia River from near Northport south to Rogers Bar, and in the Colville Valley; and Lakes, spoken by people residing along the Columbia River from Northport to Revelstoke, including the Arrow Lakes and Slocan Lake areas. The only significant dialect difference is between the "Colville" dialect continuum (Sanpoil-Nespelem, Colville, and Lakes)[2] and the "Okanagan" dialect continuum (Northern, Southern and Similkameen Okanagan, and Methow) (Bouchard and Kennedy 1979:6-7; 1984a:39; Turner, Bouchard and Kennedy 1980:1-2) (for a map of overall Okanagan-Colville territory, see Bouchard and Kennedy 1979:xv, subsequently published in Turner, Bouchard and Kennedy 1980:x).

In Canada, speakers of the Okanagan dialect belong to seven British Columbia "bands" or First Nations living on Indian Reserves located from as far south as the International Boundary to as far north as Douglas Lake.

In the United States, the Okanogan, Methow, Nespelem, Sanpoil, Colville or *sx̌weyí7lhp*, and Lakes or *sngaytskstx* comprise five of the twelve "tribes" identified collectively as the "Colville

[2] The Lakes dialect was very similar to the Colville dialect spoken by the people living to the south of the Lakes. James Teit recorded that in the late 19th century, the Lakes and Colville dialects were very similar, with Lakes being distinguished by the "exceedingly slow and measured" manner in which it was spoken (Teit 1909).

Confederated Tribes," and who reside on the Colville Indian Reservation in northeastern Washington State.

The Okanagan Nation Alliance asserts their interests, for purposes of aboriginal rights and title claims, in all lands used and occupied aboriginally by members of the Okanagan-Colville speech community. Thus, the ONA claims interests in areas formerly occupied by groups now living in the United States who aboriginally used and occupied lands now encompassed within the boundaries of Canada. Consequently, this present report summarizes the land use of groups now mostly resident in the United States, but who are represented by aboriginal organizations on both sides of the International Boundary.

A review of the available literature indicates that the area of the Cascade border crossing facility falls within lands traditionally used by Okanagan-Colville-speaking people, more specifically the *sxweyí7lhp* or Colville and the *sngaytskstx* or Lakes. To the west of these groups are the Okanagan, some of whose villages are around Oliver and Osoyoos Lake. A leading ethnography for the area, *The Sinkaietk or Southern Okanagon of Washington* (Spier 1938) places the boundary between the Okanagan and the Lakes (*sngaytskstx*) considerably west of the Cascade border crossing. However, this work does states that the Inkamip, the people of the Oliver/Osoyoos Lake area, travelled to Kettle Falls on the Columbia River to dig camas and trade for fish (Spier 1938:77).

2.1 THE S*xweyí7lhp* OR COLVILLE

The term s*xweyí7lhp* refers to the indigenous people known commonly in English as "Colville" who lived primarily in the general vicinity of Kettle Falls, Washington. The meaning of this ethnonym is not clearly understood, although it likely is related linguistically to the term *sxwenítkw*, the name applied to Kettle Falls, and *nxwiya7lhpítkw*, the name for the Kettle River (Bouchard and Kennedy 1984a:45).

The ethnographic literature lacks agreement on what territory was used by the s*xweyí7lhp* aboriginally. One s*xweyí7lhp* man interviewed by the present authors in the 1970s stated that his people were focussed at Kettle Falls yet their territory extended northwest from the Falls along the Kettle River and north to "the headwater areas of the West Kettle River, Kettle River, and Granby River" (Kennedy and Bouchard 1975). Thus, the USA/Canada border, set by the Treaty of Oregon in 1846, intersected aboriginal s*xweyí7lhp* territory. The other boundaries of aboriginal s*xweyí7lhp* territory are not pertinent to this report, and consequently will not be discussed here.

Several s*xweyí7lhp* subgroups have been identified, including the *snxwiya7lhpítkwx*, the people of the Kettle River (derived from the indigenous name for the Kettle River, itself). An historical account compiled by Ross Cox in 1813-1814 mentions his meeting with a family who belonged to a small branch of "Les Chaudieres" [Kettle Falls people] who lived "in the interior about a day and a half's march to the northward" (Cox 1957:189). Presumably these people came from the Kettle River Valley and not from up the Columbia, for Cox then ascended the Columbia until he came to "a small tribe on the upper lakes," meaning the Arrow Lakes. Hudson's Bay Company Factor George Simpson also recognized the Kettle River people as the "Sinwhoyelpetook" [his

transcription for *snxwiya7lhpítkwx*] (Merk 1968:42). Ethnographer James Teit (1930:199) subsequently referred to these people as "the leading band" of the s*x*weyi7lhp and reported that they were situated at Kettle Falls or near the mouth of the Kettle River.

2.2 THE *Sngaytskstx* OR LAKES

In the 18th century, the core territory of the *sngaytskstx* or "Lakes" people extended along the Columbia River between Revelstoke and the vicinity of Northport, Washington [located about 11-12 Km (7 miles) south of the Canada/U.S. border]. Aboriginal Lakes territory included the Arrow Lakes and Slocan Lake areas (Bouchard and Kennedy 1985a; Kennedy and Bouchard 1998:238-240). The *sngaytskstx* acquired this English name "Lakes" from the fur traders who reached this area of the Upper Columbia in the early 1800s. The name was bestowed because the group's territory, defined by the waterways on which they travelled, was centred in the Arrow Lakes region.

The Lakes people's own name for themselves, in the Okanagan-Colville language, is *sngaytskstx*, which translates as 'Dolly Varden people.' This term, *sngaytskstx*, is derived from the word *gaytskst*, which is the Okanagan-Colville name for the Dolly Varden char (*Salvelinus malma*), a fish for which the Arrow Lakes region was noted (Bouchard and Kennedy 1985:6; Kennedy and Bouchard 1998:251) [this same fish has recently been reclassified as *Salvelinus confluentus*, known commonly as the "bull trout" (Hildebrand 1999:pers.comm.)].

Numerous transcriptions of the term *sngaytskstx* appear in the ethnohistoric and ethnographic record to identify the Lakes people. The fur trader Alexander Ross, who worked for the Northwest Company, seems to have been the first person to record an identification of the Lakes people by a transcription of their indigenous name. In September 1821, Ross compiled a map of the overall Columbia Basin region that identified the Lakes people as the "*Sin natch eggs"* (Ross 1821; Wheat 1958:107). George Simpson, the Governor of the Hudson's Bay Company, referred to them as "*Sinachicks*" when he travelled through the Arrow Lakes in 1824 (Merk 1968). Additional synonymy of this indigenous term appears in Bouchard and Kennedy (2000:6).

2.3 ABORIGINAL USE AND OCCUPATION OF THE KETTLE RIVER VALLEY

Beginning in the early 1800s, around the time of first contact with non-aboriginal fur traders, some aboriginal groups on the Plateau altered the area they used for intensive use and occupation. Such changes were largely the result of depopulation caused by introduced epidemic diseases that began around 1770-1780, the establishment of Fort Colvile in 1825, the establishment and enforcement of the 1846 International boundary, the movement of the Lakes people south of the border, and the establishment of the Colville Indian Reservation in the early 1870s.

A few years after the Hudson's Bay Company established Fort Colvile, the Lakes people began wintering near the fort. The Hudson's Bay Company journal for 1830-1831 recorded that this actual change in settlement patterns occurred in the winter of 1830. Francis Heron, manager of Fort Colvile at that time, prevailed on the Lakes Indians to return to their traditional wintering grounds further upriver, after they had participated in a winter dance at Kettle Falls. However,

the Columbia River froze, making travel by the Lakes people's bark canoes impossible. Thus they stayed at Fort Colvile, but were ill-prepared to winter there. Apparently this was the first time they had wintered this far south (Heron and Kittson 1830-1831).

From this ill-starred beginning, the Lakes' settlement patterns clearly evolved towards this southern movement, to the point where many were spending winters as well as summers within American territory. By 1861, an officer with the Northwest Boundary Commission reported that the Lakes were spending as much time south of the border as North. Lt.-Col. J.S. Hawkins stated that:

> "the valley of the Columbia north of the Boundary is represented to be very sterile; and it is certain that it has no inhabitants north of the Lake Indians who seem to live as much south as north of the 49th parallel, and who share in the proceeds of the Salmon fishery at the Kettle falls near Fort Colvile, so that they must be considered as much American as British subjects. They do not appear to be in the habit of going far above the parallel, excepting for the purposes of hunting" (Hawkins 1861).

By the early 1870s, the Lakes had expanded southwards into the United States, displacing the Colville or *sxweyɪ7lhp* from the banks of the Columbia north of Kettle Falls, and from portions of the Colville Valley (Work 1830; Heron and Kittson 1830-1831; Winans 1871; Canada, Privy Council, 1881; Bouchard and Kennedy 1984a:64; 1985:15; Kennedy and Bouchard 1998:238-239). Kootenay Indian Agent R.L.T. Galbraith testified in 1914 that "in 1871 I found a small band of Gregoire [Lakes] Indians in this District" but noted that they subsequently "had drifted south of the line" (Galbraith 1914).

After the establishment of the Colville Indian Reservation in 1872, the *sxweyɪ7lhp* people living in the Kettle Valley, who comprised a Colville subgroup known as the *snxwiya7lhpítkwx*, were allotted lands on the Colville Indian Reservation. Their old homesteads up the Kettle River were taken up by the *sngaytskstx* (Lakes) who had moved south from their Arrow Lakes homeland. Eventually, the *sngaytskstx,* too, received allotments on the Colville Reservation (Bouchard and Kennedy 1984a:51-52, 75-100; 1985:22-28).[3]

Several ethnographic maps have identified the entire Kettle River Valley within overall Lakes (*sngaytskstx*) territory, and one map has identified the western Lakes boundary along the east side of the Kettle River. On the basis of ethnographic fieldwork undertaken in 1909, James Teit prepared two maps of Lakes territory. Both his 1909 map and his 1910-1913 map showed *sngaytskstx* territory along the 49th parallel reaching west from the Cascade border crossing area (Teit 1898-1910; 1910-1913; see also Bouchard and Kennedy 1984a:43; 1985:8a).

A slightly-different identification of this western Lakes boundary is provided in U.S. Court of Claim documents prepared in the mid-1920s on behalf of the groups, including the Lakes and Colville (*sxweyɪ7lhp*), who latter became known as the Colville Confederated Tribes. A map comprising "Petitioners' Exhibit 'A'" in this litigation marked the western Lakes boundary along the east side of the Kettle River (from approximately Kettle Falls up to the Canada/U.S. border),

[3] Earlier maps designated the entire Kettle River Valley south of the 49th parallel as land occupied by the Colville. For example, an 1857 map prepared under the direction of Governor I. Stevens shows the "Shwoyelpi [*sxweyí7lhp*] or Colville" occupying a "mountainous country covered with Pine trees" located up the Kettle River Valley and including the area of what later became known as the Cascade Border crossing (Stevens 1857).

and identified the Kettle River, itself, and the rest of the Kettle Valley as part of the territory of the "Colvilles" (*sxweyɪ7lhp*) (Okanogan et al. v. the U.S.A. 1927: Petitioners' Exhibit "A").

The entire Kettle River Valley, on both sides of the U.S./Canada border, is included within overall Lakes (*sngaytskstx*) territory in Verne Ray's (1936:114) map. This map indicated the western boundary of Lakes territory in the vicinity of Rock Creek, a small community situated about 40 Km (25 miles) west of Cascade.

The present authors have also compiled a map of overall Lakes territory. It is based on their review and analysis of the ethnographic, ethnohistoric and linguistic literature and on their own interviews and discussions with both Lakes and Colville people primarily in the 1970s-1980s (see Bouchard and Kennedy 1985:22-28 including the map on p. 22a; see also Kennedy and Bouchard 1998:240, map).

It is the authors' conclusion that in former times, the present study area of the Cascade border crossing was within traditional Colville territory but that since about 1880 this area has come to be within expanded Lakes territory.

3.0 CULTURAL SUMMARY OF THE OKANAGAN-COLVILLE

Section 3.0 presents a cultural or ethnographic summary of those aspects of aboriginal Okanagan-Colville society that are important for the consideration of traditional land use in the Cascade border crossing area. This section contains information on the following: subsistence practises; dwellings; social and political organization; and religion. Wherever possible, the information focuses on the Colville and the Lakes. It is evident from this summary that in former times these aboriginal groups depended upon hunting, fishing and gathering for acquiring food and materials, some of which were obtained along the Kettle River and in the Cascade area.

Available land use data relating to specific sites within the upper Columbia region has been summarized previously in the present authors' following reports and publications, including: *First Nations' Ethnography and Ethnohistory in British Columbia's Lower Kootenay/ Columbia Hydropower Region*, prepared for the Columbia Power Corporation (Bouchard and Kennedy 2000); *Indian Land Use and Occupancy in the Franklin D. Roosevelt Lake Area of Washington State* (Bouchard and Kennedy 1984a), prepared for the Colville Confederated Tribes and the United States Bureau of Reclamation; *Lakes Indian Ethnography and History*, prepared for the British Columbia Heritage Conservation Branch (Bouchard and Kennedy 1985); and, *Ethnobotany of the Okanagan-Colville Indians of British Columbia and Washington*, co-authored with botanist Dr. Nancy Turner and published by the British Columbia Provincial Museum (Turner, Bouchard and Kennedy 1980). Cultural summaries of the various groups comprising the Okanagan-Colville can also be found in the Plateau Volume of the Smithsonian Institution's *Handbook of North American Indians* (Kennedy and Bouchard 1998; Miller 1998). The summary that follows draws upon all of these works.

The detailed studies of aboriginal land use cited above show how the upper Columbia River and its tributary rivers and streams were central to the aboriginal people's sustenance and communications. Waterways, and the trails which followed them, linked the region with Kettle Falls, the second largest salmon fishery on the extensive Columbia River. The locations of numerous villages and camps, as well as specific resource procurement sites were identified throughout this area, indicating the cultural significance of this region to the aboriginal people who lived here, for the wealth of resources it provided. This area included the Kettle River Valley.

Members of other Okanagan-Colville-speaking groups sometimes entered this area, either to visit and trade, to pass through en route to visit another resource site or aboriginal group, or to hunt and fish with the local residents in their territory. As discussed above, these patterns of aboriginal use of the area changed subsequent to epidemic diseases that began around 1770-1780, the establishment of Fort Colvile in 1825, the establishment and enforcement of the 1846 International boundary, the relocation of many Lakes people south of the U.S./Canada border, and the establishment of the Colville Indian Reservation in Washington State in the early 1870s.

3.1 SUBSISTENCE

3.1.1 Fishing

The *sxweyí7lhp* (Colville) relied extensively on salmon, more so than the *sngaytskstx* (Lakes) people who ate more meat than fish, although fish still comprised a significant portion of their diet. The principal traditional fishery of the region, situated at Kettle Falls, was under the control of the *sxweyí7lhp*, while the *sngay*tskstx controlled the fishery on Hayes Island to the north of the main. Each summer the *sngay*tskstx would travel from the Arrow Lakes to the Kettle Falls fishery, and join the *sxweyí7lhp* and several other aboriginal groups from the Plateau region to catch the Chinook and coho salmon which attempted to ascend the falls (Curtis 1911: 64; Teit 1930: 250; Kennedy and Bouchard 1975; 1998:241; Bouchard and Kennedy 1984a).

The most important anadromous species to the Colville and Lakes was the spring or Chinook salmon (*Oncorhynchus gorbuscha*), which ascended the Columbia River in June, and continued its run until August. A "First Salmon Ceremony" for the Chinook salmon was held by the Colville and Lakes, and Chinook occupied a significant position in their mythology (Kennedy and Bouchard 1975:4-5; 1998:242) (no salmon, however, have been able to pass upstream of the Grand Coulee Dam since the completion of its construction circa 1940).

Two species of salmon that ascended the upper Columbia were: the sockeye (*O. nerka*), which came in July; and the coho (*O. kisutch*), which came in October and November. The Colville and Lakes considered both of these species to be of less economic value than the Chinook, and were ancillary to the Chinook fishery (Kennedy and Bouchard 1975:5). Sockeye salmon, however, ascended the Kettle River and was the species targeted at several fisheries along this river.

Other fish of economic importance found in the local waters include six species of suckerfish, two species of whitefish, ling, lamprey, Dolly Varden char or bull trout, sturgeon, steelhead, rainbow, and cutthroat trout. Freshwater shellfish, especially mussels (*Margaritifera margaritifera falcata*) were collected from the riverbeds when other foods were scarce (Kennedy and Bouchard 1975; Bouchard and Kennedy 1984a).

Several places on the Kettle River have been recorded as notable fishing areas. Colville and Lakes interviewed in the 1970s-1980s identified sites in the vicinity of Barstow as noted salmon fishing places. Spring salmon spawned in a section of the Kettle River downstream from Barstow, where the bridge crosses the river; *sngaytskstx* elder Mary Marchand recalled her people using gaffhooks and harpoons to catch them at this place in the early 1900s. The entire area from Barstow downstream to the Kettle River Gorge was where Lakes people fished from canoes for whitefish and suckerfish, using pitch-torches to see the fish, Louise Lemery, another *sngaytskstx* elder, recalled (Bouchard and Kennedy 1984a). Further up the Kettle River, aboriginal fishermen caught sockeye salmon as they tried to leap Cascade Falls (see Section 4.0 below).

3.1.2 Fishing Techniques

The older ethnohistoric sources contain information about the techniques used to take fish at Kettle Falls. It seems that during the early Chinook run, in early and mid-June, there was heavy

reliance upon the spear, likely because the water was still too high to allow for the use of a basket trap. David Thompson observed that during the month of June 1811, despite the scarcity of food in the Indian camp, only one man was employed spearing fish at Kettle Falls and he could catch no more that eleven fish per day (Glover 1962:336). By late June, the water had usually descended enough to allow use of the basket. If it had not, then enough salmon to feed all the aboriginal people who had congregated at the falls could usually not be obtained.

The "J"-shaped basket traps (known as *ts'elɪ7*) used at Kettle Falls and at several other smaller fisheries in the region (see Section 4.0 for a description of use of this trap at Cascade Falls) resulted in massive quantities of fish being harvested for processing by the families gathered at the fisheries. Speaking of the Kettle Falls fishery, Paul Kane wrote in the summer of 1847 that the chief's basket trap would average about 400 fish daily, and the chief told him that he had taken as many as 1,700 salmon, weighing an average of 30 pounds each, in the course of one day (Kane 1974:219).

Charles Wilson of the Northwest Boundary Commission was at Kettle Falls in August 1860. He described the construction and use of the basketry trap there and noted that the trap caught 700 to 1,000 salmon a day (Wilson 1970:113-114).

Salmon could also be taken with hand nets, described in 1847 by Paul Kane as follows:

> "somewhat like our common landing-nets, but ingeniously contrived, so that when a fish is in them, his own struggles loosen a little stick which keeps the mouth of the net open while empty; the weight of the salmon then draws the mouth like a purse, and effectually secures the prey" (Harper 1971:124).

A "Salmon Chief" directed the salmon fishery at Kettle Falls, although his authority was said to be limited to the time that the salmon were running. This Salmon Chief also directed a special "First Salmon Ceremony" (Kennedy and Bouchard 1975:9-11, 41; Ray 1975:133).

Several accounts of the ceremonial eating of the first salmon taken in a basketry trap have been recorded. Elmendorf recorded that the first salmon caught by the Lakes was cooked and eaten by all the men present at the fisheries (Elmendorf 1935-1936:I:7). Ray described a ceremony that was held for the first salmon only, and was performed by the Salmon Chief alone, who sat by the river, watching, singing and praying. Apparently there was no dancing. According to Ray, the first salmon caught in the trap was eviscerated and boiled or roasted and then served to those who were present at the trap. The bones were then collected and thrown back into the river (Ray 1975:133). *Sx̲weyɪ7lhp* consultants interviewed by the present authors in the 1970s described a third version of this ceremony, in which the first male and female salmon taken in the trap were prepared by two women and served to all the people present at the fishery site, beginning with the village leaders. The bones were ceremoniously thrown back into the river (Kennedy and Bouchard 1975:10-11).

While it is not known if a "First Salmon Ceremony" used to be held at Cascade Falls when the first sockeye was retrieved from the basketry trap positioned here, *sx̲weyɪ7lhp* elder Martin Louie recalled in 1975 that a man functioned at Cascade Falls as a "salmon fishing organizer" and managed the trap and the distribution of the catch. This is similar to the role of the "Salmon Chief" who managed the Kettle Falls fishery, and performed the necessary rituals

Several weirs have been recorded ethnohistorically in Lakes territory further up the Columbia from Kettle Falls and also at a location on the Kettle River. Fur trader Alexander Ross, provided one of the best descriptions of a stone weir, which he observed at the mouth of the Kootenay River (where it enters the Columbia) in the spring of 1825:

> "It is rendered still more remarkable by a dike of round stones, which runs up obliquely against the main stream, on the west side for more than one hundred yards in length, resembling the foundation of a wall; it is nearly as high as the surface of the water, and is clearly seen at low water. On the opposite or east side is a similar range, of less extent. These are evidently the work of man, and not destitute of ingenuity; we supposed them to be a contrivance for the purpose of catching fish at low water: they are something similar to those used by the Snakes during the salmon season. At the upper end both ranges incline to the centre of the river, where they nearly meet" (Ross 1855:165).

The most common type of technique used by early Okanagan-Colville fishermen to catch small fish such as trout in streams, was a conical basketry trap. Nancy Wynecoop, a *sngaytskstx* consultant, described this style of trap to Bill Elmendorf who wrote in his field notes that "all the small streams in L.[Lakes] country had one in them." Lakes fishermen also constructed box-type traps; the smaller ones were owned individually while the larger ones were usually the property of several fishermen (Ray 1975:134-135). Throughout Okanagan-Colville territory, line and spear fishing were also practised, in addition to leisters, harpoons, set lines and several styles of nets (Kennedy and Bouchard 1998:242).

3.1.3 Hunting

Okanagan-Colville territory was recorded as being very rich in meat and fur bearing mammals during and before the mid 19th century. Fur traders from Fort Colvile and Fort Okanogan in the 1820s and 1830s reported that aboriginal people brought in the furs and hides of caribou, mountain goat, mountain sheep, beaver, muskrat, marten, lynx, fox, fishers, and rabbits, besides bear and deer.

Considerable information has been recorded about the Okanagan-Colville seasonal hunting round. Teit (1930:247) reported that the Okanagan-Colville had four great hunts: in spring for deer and mountain sheep; in late fall for deer, mountain sheep, elk and bear; in midwinter for deer; and in late winter for mountain sheep.

Ethnohistoric documents record that deer was the most common large ungulate throughout the territory, where they were very plentiful in the early 19th century. They were the most important mammal to the aboriginal economy, and were hunted widely throughout their territory. The earliest records describe the Okanagan-Colville hunting deer in considerable numbers for food, as well as for their hides, bones, fat and horns. The largest deer hunts took place in the fall (Elmendorf 1935-1936:1:7; Teit 1930:243). Both mule deer (*Oedocoileus hemionus*), and white-tail deer (*Odocoileus virginianus*), the latter of which was found at higher elevations, were actively hunted. Hudson's Bay Company trader John Work noted in 1823 that the Lakes hunted a very tasty type of small dark grey deer that they called "Shwua," and which had donkey-like ears (Work 1823). The contemporary scientific identification of this animal is not known. Later, Work reported that both "blacktail and common long tail chiveuax [sic]" were common around

the Arrow Lakes (Work 1830). Botanist David Douglas, who visited the Arrow Lakes in 1827, observed horns and skins of black tailed and "red deer" [white-tailed deer] in the aboriginals' possession (Wilks 1959:249).

Early 19th century observers recorded several deer hunting techniques employed by the Okanagan-Colville. Several indicated the importance of dogs in hunting. The Hudson's Bay Company's William Kittson reported in 1831 that the venison traded by Fort Colvile was of poor quality, and attributed this to the aboriginal hunters' practice of chasing the deer with dogs (Heron and Kittson 1830-1831).

Dogs were also sometimes used to drive the deer down to the water. Sometimes the deer were hunted without dogs, particularly at night. Elmendorf recorded the use of a technique in which some of the *sngaytskstx* hunters themselves would herd the deer towards other hunters, who were positioned where they could shoot the animals as they approached. Sometimes the deer were herded towards the river where men in canoes would be waiting with bows and arrows. Elmendorf (1935-1936:I:2) indicated that this type of hunting was often done around midnight. According to Colville elder Martin Louie, this technique of driving deer towards the water was called *snpelstítkwm*. This was a method used where lakes were too wide for the deer to swim across and escape before they could be killed.

During the deer migration in the autumn, Colville-Okanagan hunters would drive the deer into channels which would force them over bluffs, so that they would all be killed by the fall, The hunters would drive the deer down a runway and towards a bluff. The animals did not leave the runway, because a row of hunters was positioned on one side, and a "barrier" formed by stakes and bent saplings, all of which contained the hunters' scent, was positioned on the other. When the animals reached the end of the runway, the hunters closed in and drove them over the bluff (Ray 1975:137).

Deer were hunted by being driven through narrow passageways where they could be shot more easily, corralled with nets, caught in snares placed on their trails during migration, stalked in snow by hunters on snowshoes, and shot at night by hunters staked out at salt licks (Ray 1975:137, 139, 140; Teit 1930:245).

Deer hunting drives required the cooperation of a large number of men under the direction of one leader, who was chosen by common consent and selected for his hunting ability. Preparation of these hunts lasted several days and included sweatbathing (to remove the hunters' scents) and the eating of certain foods barbecued by the men themselves. During this preparation the hunters remained isolated from all women (Elmendorf 1935-1936:I:79).

Women accompanied the hunters on the hunt itself if the hunters were to be away for more than a few days, as often hunting trips lasted several weeks (Ray 1975:138; Teit 1930:243). Temporary sweathouses would be built at each hunting camp, so that the hunters could bathe and eliminate their human scent. The hunters' clothes and hunting utensils would also be washed in a decoction of herbs (Ray 1975:138-139).

Caribou, like deer, were plentiful in the mountains surrounding the Arrow Lakes region and more plentiful here than in the other areas of Okanagan-Colville territory (Teit 1930:242). The

sngaytskstx hunted caribou differently than deer. Unlike deer, they were not taken in communal hunts, and individual hunters shot them with bow and arrow, or in later years, with guns. David Douglas, who observed caribou meat in Lakes' camps in 1827 (and referred to the animal as "reindeer"), noted that they could easily be killed during periods of deep snow (Wilks 1959:249).

Mountain goat and some mountain sheep were found in the mountains west of the Columbia River. Mountain goat were clearly very important to the *sngaytskst*x people traditionally, as Elmendorf's Lakes consultant told him that the mountain goat was considered to be the Lakes "emblem" and was used for ceremonial purposes (Elmendorf 1935-1936:II:55; 3:6). Very little information has been recorded about the hunting techniques used by the Okanagan-Colville to hunt either mountain goats or mountain sheep, although Ray was told that mountain sheep were taken by being driven over cliffs (Ray 1975:140), and another report indicated goat were hunted in the same manner (A. Smith 1950:240). One particularly-large sheep drive that occurred in the Similkameen Valley was described by Teit (1930:244). Sheep and goat were hunted for food and for the wool their hide provided.

Both the black bear and the grizzly bear were hunted by the Okanagan-Colville. The black bear seems to have been more important economically, although the grizzly bear had greater ceremonial and spiritual importance. Teit recorded that bear used to be more plentiful in the territory of the Lakes than in the territory of any of the other Okanagan-Colville-speaking groups (Teit 1930:242). Ray noted that black bears were hunted particularly in "the regions of the lakes," as well as in mountain meadows where the bears fed. He said that grizzly bears were found in "the mountainous regions above the lakes" where they were hunted as game animals (Ray 1975:II:136). Bear were the specific objects of traditional hunts by the *sngaytskstx*, rather than opportunistic targets which would be picked off if encountered.

The importance of the bear to the Okanagan-Colville was demonstrated by the practice of bear ceremonialism intended to bring further good fortune in bear hunting. Walter Moberly recorded the practice of this ceremonialism among the Lakes in 1865, stating that after the bear was killed:

> "the Indians skinned him, secured all the choice pieces and his head, and returned to the camp, where they had such a gorge that I could not get them away that day. They stuck his head on a pole, decorating it with such white and red cotton rags as they could collect from their tattered clothing telling me that if they did not do so they would have no luck" (Moberly 1885:47).

Similar bear ceremonialism has also been recorded among the Colville and the Northern Okanagan (Teit 1930:291; Kennedy and Bouchard 1998:241). *Sxweyɪ7lhp* (Colville) elder Martin Louie reported that after a black bear was killed, the hunters would immediately sing a traditional song for the bear, and that he had seen some old aboriginal people, including his grandfather, cry when singing the song. Mr. Louie also recalled that many years ago, after the bear's head was skinned to be eaten, charcoal had first to be placed on its forehead, in accordance with the bear's legendary "make-up." The late *sxweyɪ7lhp* elder Albert Louie also also knew of the songs sung while the bear was being butchered, and the practice of the painting of the head with charcoal.

Little information has been recorded concerning the *sngaytskstx* and *sxweyɪ7lhp* hunting of elk or moose. Teit (1930:242) as well as Ray (1975:136) reported that both animals were scarce in *sngaytskstx* territory. John Work recorded in 1830 that at that time, some elk were present in the

region, but neither he nor any other source known to the present authors describes how the *sngaytskstx* hunted them (Work 1830).

Information about where smaller fur-bearing mammals were trapped traditionally is very sketchy. Fur trade journals and ethnographic and government reports indicate that the *sngaytskstx* and *sxweyɪ7lhp* trapped marten, mink, muskrat, fisher, beaver, wolverine and mink[4], but described the location of the trapping only very generally.

The most comprehensive source indicating early trapping, and to a lesser extent, hunting, is the trading statistics kept by the Hudson's Bay Company post at Fort Colvile, where the *sxweyɪ7lhp* and *sngaytskstx* regularly traded. Fort Colvile's records provide comprehensive statistics of the types of animals that were hunted and trapped by the aboriginal groups who traded there. These statistics must be used with some caution as an indication of which animals were obtained traditionally, since the hides obtained were trapped primarily to satisfy the demand of the Hudson's Bay Company. Nevertheless, the returns provide a very good indication of the type and volume of animals available in the territories of identified groups, as well as their facility at hunting certain types of game.

Groundhogs (marmots) may have been the favourite small game hunted by the Okanagan-Colville in aboriginal times. Frequent references to marmots being taken as food in ethnohistoric documents suggest that they were both plentiful and easily obtained. Ray noted that marmots were "taken by drowning out," i.e. flooding them out of their holes (Ray 1975:141). Muskrat, rabbits and marten were also hunted. Snares were made for killing rabbits, although sometimes they were dragged from their holes (Ray 1975-140-141).

3.1.4 Gathering

A comprehensive description of the use of plants for food, technology and medicine by the Okanagan-Colville can be found in the monograph entitled *Ethnobotany of the Okanagan-Colville Indian People of British Columbia and Washington State* (Turner, Bouchard and Kennedy 1980).

Plants were gathered by the Okanagan-Colville throughout their territory, although exact gathering locations were seldom recorded, and plants were also frequently not fully identified in the ethnohistoric literature. The *Okanagan-Colville Ethnobotany*, however, does provide some guidance on the places and areas where cultural-significant plants might be found.

At least five major natural vegetation zones can be distinguished within the territory of the Okanagan-Colville: Steppe Zone; Ponderosa Pine Zone; Interior Douglas-fir Zone; Interior Western Hemlock Zone, and; Subalpine Fir Zone. In any given are, the Okanagan-Colville had easy access to at least one, and, more often, two or three major vegetation zones, and to numerous habitats within these zones.

[4] Coyotes and mountain lions were also identified as being trapped by these Arrow Lakes hunters, but this trapping seems likely to have been done for predator bounties (Rossland Miner 1902).

As noted in the *Ethnobotany*, the last 100 years have seen both subtle and dramatic changes to the landscape and vegetation of the area. The net result has been to change the abundance and distribution of important species used by the Okanagan-Colville, making historical reconstructions of plant availability, key habitats, and original patterns of plant utilization, somewhat speculative. Nevertheless, Okanagan-Colville elders in the 1970s identified and collected over 250 plant species, providing for each one its indigenous name, and their knowledge of its use and habitat (Turner, Bouchard and Kennedy 1980).

Plant foods included black tree lichen, mushrooms, green shoots, tree cambium, roots and other underground parts, seeds, nuts, and berries. Huckleberries were especially important in the territory of the *sngaytskstx*, while Saskatoon berries were common and popular throughout the region. Okanagan-Colville women stored many plant foods for winter consumption: fruits, such as berries, were mashed and dried into cakes; roots were dried, either raw or after being pitcooked; bitterroot and avalanche lily corms were sun-dried, as were mushrooms (Kennedy and Bouchard 1998:242).

3.2 DWELLINGS

The more northerly Plateau peoples such as the Thompson and Shuswap traditionally used semi-subterranean pit houses at permanent dwellings found in winter villages. Their use by the *sngaytskstx* and *sxweyɪ7lhp* has also been recorded, as late as the first part of the 19th century. In 1909, when James Teit recorded his *sngaytskstx* (Lakes) data, none of the oldest living *sngaytskstx* had themselves lived in this type of dwelling. However, Teit's oldest s*ngaytskstx* consultant, Antoinette Christian, recalled that many years earlier her mother had lived for some time in one of these houses, and had heard her mother describe them. Most of these houses were quite small and inhabited by only one or two families. The pit was dug in dry, sandy soil to a depth of one to two metres, and the entranceway was at the top (Teit 1898-1910; 1930:226-227).

By the early 19th century, mat lodges, both circular and oblong, were in wide use among the Okanagan-Colville and appear to have been the most common type of dwelling used by the *sngaytskstx* and *sxweyɪ7lhp* at this time. Both circular and oblong mat lodges were observed and described by John Work when he descended the Arrow Lakes in October 1823:

> "One of the lodges was of oblong form and constructed with poles and the external covering cedar bark, this appeared to be not only a dwelling but also a kind of a store as considerable quantities of dried salmon and other articles were deposited here. The other lodge was of a circular form composed of poles covered with kind of mats made of bullrushes sewed together" (Work 1823).

Mats were used to cover lodges in the summer months. During the winter, for greater warmth, these dwellings could be covered with a layer of poles, brush and large sheets of bark, instead of mats. Cedar bark, peeled in the spring, was the bark most often used (Teit 1930:227-228). The floors of these dwellings were sometimes excavated to as much as half a metre deep, and covered with layers of fir boughs, grasses and rush mats. A long fire pit with logs on either side was built directly on the ground in the centre of the house. The outer door was covered with a coarse, woven grass mat with horizontal supporting slats. An inner door several feet inside the house was hung with a finer grass or buckskin doormat. These square-topped lodges could be

about nine metres long, and could be inhabited by all the families in the village (Elmendorf 1935-36:I:4-5,66).

A circular mat lodge has been identified and described ethnographically (Teit 1930:227; Elmendorf 1935-36:I:5a). Generally, such lodges were small and usually occupied by one or two families. The mats were laid on a circular framework of poles, with three poles usually being used. In the summer only one layer of tule mats would cover the framework, but in the winter, as many as four would be used. When the lodges were well covered, they were warm, and offered good protection from the rain and snow.

In earlier times, the *sn̓gaytskstx* used long or oblong-shaped lean-tos, which could be of considerable length (Teit 1930:227; Elmendorf 1935-36:I:5).

One widely-used small structure was the sweathouse. Apparently, among the sngaytskstx, men and women had separate sweathouses (Elmendorf 1935-1936:I:69-70; Ray 1939:133). They were used both for cleansing and for therapeutic purposes (Elmendorf 1935-36:I:80). Hunters would also construct temporary sweathouses at hunting camps, where they would bathe and rub themselves with certain herbs to rid themselves of their human scent (Elmendorf 1935-36:I:79).

Small separate lodges were also constructed for specific female uses, including childbirth, seclusion of young or menstruating women, and quarters for elderly women chaperoning young people. Teit reported that the menstrual huts were always conical, quite small, and usually made of fir brush, or mats. He noted that many of the *sn̓gaytskstx* huts were covered with bark, and the floors of their huts were covered with cedar or hemlock boughs (Teit 1930:228-229).

3.3 SOCIAL AND POLITICAL ORGANIZATION

Individual villages or clusters of villages were comprised of autonomous households linked to each other by kinship, exchange, association and geographical proximity. The kinship system has been described as bilateral without lineages (Walters 1938; Anastasio 1972) although the existence of nonunilinear descent groups has also been suggested (Ackerman 1994). Membership in these villages was very flexible, and some individuals would move freely between different summer and winter camps (Kennedy and Bouchard 1998:247).

These households formed named communities or "bands" under the direction of a "chief" known in the Okanagan-Colville language as *ilmɨ́xwm*. Ethnographic data on the *sn̓gaytskstx* indicate that the people all recognized a single person among them as head chief. However, no evidence has been recorded which would indicate the existence of separate divisions among the *sn̓gaytskstx*, each with their own head chief.

Teit wrote: “I found no trace of divisions among the Lakes. They were divided in small bands each having a chief and a main headquarters. (Like the bands of the Shus[wap] & Thomp[son])” (Teit 1907-1910). Similarly, little evidence exists that the head chief of the *sn̓gaytskstx* owed a higher allegiance to another leader within a broader confederacy, or that the linguistic commonality of the Okanagan-Colville language was reflected in the existence of a functioning political structure which incorporated the speakers of the language within it. Although Teit

(1930: 263) was told of a Head Chief of all the Okanagan-Colville, he thought that the Lakes might be excluded, due in part to some of *sngaytskstx* families being nomadic.

On the other hand, some contemporary Okanagan-Colville people hold the view that the Lakes were among those groups formerly under the jurisdiction of a Head Chief whose residence was at the head of Okanagan Lake (Maracle *et al.* 1993-1994: 9).

Chieftainship generally lasted for the chief's lifetime. Upon the death of a chief, succession was normally based on patrilineal (i.e., traced through the male line) descent but the people were permitted to select any person of their choice if the qualifications of the deceased chief's sons were not considered to be worthy (Ray 1952:143). Usually, however, the appointee was a son, brother, or even son-in-law of the former chief. The new chief was chosen by a council comprised of all the sub-chiefs (Elmendorf 1935-1936:I:76).

Other types of leadership positions also existed within this society. Carstens (1987) noted that the entire Northern Okanagan authority system involved an elaborate division of both labour and power. As Teit (1930:262) first proposed, the hereditary leadership positions were accompanied by other leadership positions that were task-specific and open to all. The latter category included those leaders known as *xa7tús* (derived from *x7it*, which means 'first; best; most') who were also commonly identified as "chiefs." This included positions like the Salmon Chief and Hunting Chief, to which individuals were appointed based on skill, knowledge, oratory and often an appropriate guardian spirit power (Kennedy and Bouchard 1998:248).

3.4 RELIGION

Dreams, visions, and associated guardian spirits were fundamental to the traditional religious beliefs of Plateau peoples, including the Okanagan-Colville. Essential concepts within this religious tradition include the vision quest, winter spirit dancing, and the sweatlodge (Walker and Schuster 1998:499).

The concept of guardian spirits is based on the belief that individuals can establish contact with supernatural power through a vision experience. Such a vision encounter bestows a song and dance upon its recipient, which are at the same time the visible proof of spirit contact, and the means to mobilize the power of the vision. It would also often be accompanied by a spirit sickness, an illness that indicated that the spirit was present.

Data have been recorded about the religious beliefs of the Okanagan-Colville. Spirit powers, guardian spirits and vision quests were also central to the Okanagan-Colville idea of religion. Both boys and girls were sent out on quests, usually between the ages of seven and thirteen. It was believed to be much easier for a child to have a vision before puberty, because after puberty the child “knew everything” (Spier 1938:136-137).

Although a guardian spirit might come to a child anywhere in the mountains or woods, certain places were thought especially likely to being success. Parents or other older relatives prepared the child’s quest, warning against sleeping, cowardice, failing to concentrate, and bringing back false reports of success. A father would equip his son with his own power emblem, in the belief

that this would make the child more likely to receive the power which it represented (Spier 1938:137-138). The child was expected to keep alert, dive in water, take regular sweatbaths, and fast. Piles of rocks were frequently piled up, not only to prove faithful attendance, but also to keep the mind from wandering (Spier 1938:138, 140).

If a spirit appeared, it would not come in a sleeping dream, but in a vision, when the child was awake or in a trance. The guardian spirit first appeared as a man or a woman, although it might disclose its animal form. Sometimes the spirit was not seen at all, in either human or animal form, and the child only heard its song and its words of advice and command. The spirit would indicate what power it was bestowing, and promise to assist and return later in life (Spier 1938:139). Most men acquired guardian spirits; no more than one man in ten failed in repeated attempts to gain a spirit, and most men had more than one. Fewer women, probably 20 to 30 per cent, acquired a spirit (Ray 1932:182).

The most common guardian spirits among the Okanagan-Colville were animals, birds or insects. A creature's power to be bestowed was generally related to its worldly properties. For instance, the otter gave the power for swimming, the western horned owl gave the power to see clearly at night, and the grizzly bear gave the power to acquire riches (because of the bear's great strength) as well as the power to kill grizzlies (Spier 1938:133-134; Ray 1932:172). Some powers came from mythological characters, or from inanimate objects. The same spirit might confer a weak or a strong power (Spier 1938:135). The place at which a spirit was seen also had some effect on the strength of the power; high mountains were believed to confer the strongest powers, as the spirits'natural powers were combined with the powers of the mountains (Ray 1932:172).

People did not publicly reveal their power except in certain very specified situations, as this might offend the spirit and cause it to leave, or might tempt a shaman to steal the power. If a person lied about the strength of his power, other people with the power would know it, but the person was not punished because his own failures would expose and ruin him. If on the other hand, a person lied about having a spirit when he did not, the spirit itself would kill him (Spier 1938:136; Robinson and Wickwire 1989; 1992).

One way in which a person's power could be revealed was by being expressed in a pictograph. Two men on confidential terms might talk to each other about their guardian spirits, and watch each other paint symbols of them on a large rock in the hills. The friend would tell other people who had painted the pictures (Spier 1938:136,143). These paintings were believed to assist the painter to employ his power, especially to cure sickness, but the cure itself did not have to take place near the paintings. Only people with strong power would paint pictures on rock, and never before singing their power song at their first winter dance. These rock paintings or pictographs would themselves frequently become a destination point for later generations of spirit questers, sometimes many years after the paintings had been done (Spier 1938:143-144).

Another proper way to reveal a power was at the winter dance. The return of a power in adulthood was often manifested by an illness that could be diagnosed by a shaman as "spirit-sickness" (Ray 1932:186-187). This ailment could not be cured physically, but only by giving a dance, singing the newly-acquired spirit song, and distributing gifts. This winter dance is known as *snix^{w}ám*, which means 'take sickness and drop it down.' Its purpose was to cure illness, to express thanks for a successful year, and to ask the guardian spirits for protection and luck in the

coming year (Kennedy and Bouchard 1998:249). Winter dances were held around January and continued until the snow half-disappeared from the mountains. The actual dancing took place from sunset to sunrise. At the dance, a person sang his or her power song, and the audience and other participants would join in the singing, to assist the dancer in controlling the spirit. These dances were sponsored by shamans, who acted as masters of ceremony, assisted by the interpreter, the door-keeper and the host. Traditionally, a winter dance could last as long as two weeks (Spier 1938:146-153).

The winter dance continued to be practised in the early 1990s by about a dozen families throughout Okanagan-Colville territory, although the modern dance lasts for a weekend (Kennedy and Bouchard 1998:249). Apparently some *sngaytskst*x people reintroduced the winter dance at Vallican in the Slocan area in December 1998 (Marilyn James 1999, in, Morran 1999:C2).

The Okanagan-Colville celebrated another type of religious dance which was known as the "prayer dance," directed by one or two chiefs during which the assembled people danced in a circle and offered prayers to the "Chief Above." These dances were held to strengthen the bond between the living and the dead and to hasten the return of the souls of the departed. A distribution of food followed this dance. The touching or marriage dance, by which young people could choose a spouse simply by touching the selected person, was held in conjunction with the prayer dance (Kennedy and Bouchard 1998:250).

“Sweat House” was considered a deity. All parts of the procedure by which the sweathouse was used were accompanied by ritual and spiritual significance. Prayers would be made to Sweat House when the rocks were being heated, and when one dashed water on the hot rocks (Spier 1938:166). Each person had a sweat lodge song that he alone used (Ray 1932:179). Boys apparently did not take sweat baths before the age of twelve or thirteen, when they commenced sweating as part of their training for manhood (Spier 1938:166). The sweat house spirit, along with guardian spirits, the weather and the earth, would be prayed to by hunters when on hunting trips (Teit 1930:291). The construction and use of the sweat lodge continues to have significant spiritual value for some Okanagan-Colville people.

4.0 SPECIFIC PLACES OF CULTURAL SIGNIFICANCE IN THE CASCADE PORT OF ENTRY AREA

Section 3.0 of this report has presented a cultural summary of the Okanagan-Colville, including the *sngaytskstx* and the s*x*w*eyi7lhp*. It is evident from this summary that in former times these aboriginal people depended upon hunting, fishing and gathering for acquiring food and materials, some of which were obtained in the upper Kettle River Valley, including the vicinity of the Cascade Border Crossing. The Colville and Lakes may have been joined in these activities by other bands speaking the same aboriginal language, particularly the Inkamip Band of the Oliver/Osoyoos Lake area who passed through the Cascade area and visited and traded with the local residents there while en route to Kettle Falls.

Aboriginal trails connected the Osoyoos Lake region with the Columbia River. At least one of these trails passed near the present study area, according to the routes as marked on a number of 19th century historical maps. An 1859 John Arrowsmith map, for example, shows a trail, indicated by a dotted line, extending between an area above Osoyoos Lake (identified on this map as "Forks Lake"), and east to Fort Shepherd, the Hudson's Bay Company post established in 1856-1857 on the Columbia River just north of the Canada/U.S. border (Arrowsmith 1859).

A trail that connects Kettle Falls with the 49th parallel, by way of the Kettle River, is shown on an 1872 map. While this trail starts on the south side of the lower Kettle River, it crosses over the lower part of the river several times before following along the Kettle River's east side all the way to the border. This trail crosses the 49th parallel immediately to the east of the Kettle River (United States 1872) (see also the discussion below of the circa 1833 Samuel Black map).

An 1881 map of the "Colville & Columbia Indian Reservations," shows the west-east trail beginning near the south end Osoyoos Lake and proceeding east past Rock Creek, "Boundary Creek" [Granby River], and "En-chahm" Lake [Christina Lake], just below which it intersects with the trail coming up from the Kettle River (United States 1881).

An earlier map prepared under the auspices of the Hudson's Bay Company (McDonald 1827) shows the "Kettle Fall road frequented by Indians" connecting the Osoyoos area with Kettle Falls. However, the scale and details of this map are such that it cannot be said just how this trail connected with Kettle Falls.

A *circa* 1833 map attributed to Samuel Black of the Hudson's Bay Company shows the route of a "track to Kettle Falls" that connects the area of what is now Oroville (near the south end of Osoyoos Lake) with Kettle Falls by way of the Kettle River (referred to on this map as "Dease's River"). From Kettle Falls, this trail proceeds up the southwest side of the Kettle River, crossing it twice. Right at the 49th parallel the trail crosses again to the northeast side of the river, crossing the border on the immediate east side of the Kettle River. Another trail, identified as the "Indian route to avoid River," proceeds in a northwesterly direction at some distance to the west of the Kettle River (Black c. 1833). These same two trails marked by Samuel Black, one up the Kettle River and the other west of it, are also indicated on a map printed in 1861 and entitled "British Columbia. Thompson River District. From a Map in the possession of H.E. Gov. Douglas, C.B., made in 1835 by S. Black Esq. H.B. Company's Service" (Douglas 1861). Clearly the Kettle Falls/Kettle River portion of this 1861 map is based on Samuel Black's earlier map.

Site-specific land use data in the Cascade area was provided to the present authors by the late s*x*weyi7lhp elder Martin Louie during the course of place names fieldwork undertaken in this area in April 1975. Some additional information was provided during subsequent discussions with Mr. Louie in 1977-1978.

The following section (4.1) sets out the available known information relating to specific uses of the Cascade area for aboriginal cultural pursuits, as recalled by Mr. Louie. While Martin Louie did not provide information specific to the site of the border crossing station, itself, his information does permit a view of land use to emerge. Additional information about the Cascade area and the Kettle River region in general was provided in 1977-1978 by Martin Louie's brother, Albert Louie (now deceased), and in 1978 by *sngaytskstx* elders Julia Quintasket, Louise Lemery, Charlie Quintasket and Mary Marchand, all of whom are now deceased (Mrs. Marchand provided still further information about this area in 1985).

4.1 CULTURAL ACTIVITIES IN THE CASCADE - LAURIER LOCALITY

A distinctive waterfall on the Kettle River, known locally as "Cascade Falls," is situated not far from the Cascade border crossing. These falls are located just south of Highway 395 where the bridge crosses the river, south of the Christina Lake junction. In former times there was a significant fishery here at Cascade Falls for catching sockeye salmon, the only salmon species that ascended the Kettle River this far.

Cascade Falls, a natural feature said to have been established in Okanagan-Colville mythological times, blocked the ascent of the salmon. Martin Louie talked about how, at the beginning of time, Coyote travelled around distributing salmon to those people who provided him with a wife. The people of the upper Kettle River refused his request, so he placed a blockage in the river to prevent the fish from passing. The name of this falls in the language of the Okanagan-Colville is *k'lhsáxem*, meaning 'end of fish going up.'

The late Martin Louie, who was born in 1906, recalled fishing here with his family when he was very young, in the month of July, and reported that s*x*weyi7lhp people continued to fish here until about 1920. Mr. Louie did recall that the people travelled to the fishery along a trail that led along the south side of the Kettle River.

The method used to catch the sockeye at the falls was a "J"-shaped trap known as *ts'elɪ7*, made formerly from willow saplings and withes, but made from wire and steel in more recent times. This trap was a smaller version of the traps used at the Kettle Falls fishery that were sketched and described by the well-known Canadian painter, Paul Kane, in 1847. An earlier description of the trap as it was used at Kettle Falls is provided in the 1829 journal of Hudson's Bay Company employee John Work:

> "The baskets are of an oblong form of different sizes according to the situation where they are to be used. Sometimes ten feet long four or five feet wide and as deep; they are suspended in a favourable situation in the falls, where the salmon in attempting to leap the cascade jumps into the basket" (Work 1829).

A very detailed description of this basketry trap as it was used at Kettle Falls prior to 1940 is provided in Kennedy and Bouchard (1975:37-42).

Large quantities of salmon could be caught in these basket traps. The fishery at Cascade Falls received much less salmon than Kettle Falls, which was the second largest fishery on the entire Columbia River. Kettle Falls' productivity is illustrated by the 1830 Fort Colvile journal entry which reported that by July 14th that year, the basketry trap was in place, with the result that "the Indians at the falls get upwards of two hundred salmon some days in their basket, but seldom less than one hundred" (Heron and Kittson 1830-1831). Clearly, this technology efficiently harvested large numbers of salmon. However, the yields of the Cascade fishery are not known.

Martin Louie recalled that when his family fished at Cascade Falls, using both a *ts'elɪ7* and harpoons, they camped with other *sxweyí7lhp* people at a campground on a large flat located about one kilometre south of the fishery. This site is just below the present bridge across from the old brick power-house [that apparently collapsed in 1997] and an older bridge. The late Julia Quintasket gave the name *steten'ám'* for the camping spot below Cascade Falls. Within this area there were about 25 camps, Martin Louie recalled, and they all shared in the proceeds of the *ts'elɪ7* (basketry trap). One person was in charge of this fishery at Cascade Falls, Mr. Louie noted, but this person, whose name he did not recall, was more like an organizer than a Salmon Chief. According to Martin Louie, the Salmon Chief did not have jurisdiction at Cascade Falls.

Teit (1930:208) reported that an "important temporary camp" used by the *sngaytskstx* was located at Christina Lake. He did not provide any additional information to indicate why the *sngaytskstx* were using these camps. Very little information has been recorded about Christina Lake, apart from its indigenous name, which appears on some early maps as "En-chahm," likely the Okanagan-Colville term *ntsam*.

Julia Quintasket provided the names of two other camping places in this region. One of these, situated along the Kettle River east from Grand Forks, was known as *selexwlexwlhtswɨx*. The late Albert Louie also knew this name, and added that his grandfather camped at this location, although neither Julia Quintasket nor Albert Louie knew this site's precise location. Another name identified in this vicinity by Julia Quintasket was *swiyntsútn*, a term also known to Albert Louie. Again, the site's precise location was not known, although it was said to be upriver from as *selexwlexwlhtswɨx*.

The late Mary Marchand recalled that her father's family came from a place somewhere between Grand Forks and Cascade. Mrs. Marchand said this was a good place to winter, as there was little snow in this area. Her father's family was eventually allotted a piece of land near Danville, Washington (southwest from Grand Forks).

The Cascade area had personal significance to Martin Louie; his father was born at a place on the east side of the Kettle River, several miles south of the Cascade border crossing, where in 1975 there was a roadside rest area on the west side of the river. This place is known as *nmtsakwm* meaning 'place of *mtsakw* (blackcaps, *Rubus leucodermis*)' and was an important area for picking these berries, Mr. Louie stated.

At the confluence of the Granby and Kettle rivers at Grand Forks (known as *k'mmtsin* 'mouth of two rivers') is a place that Martin Louie referred to as a "battle-ground." He pointed out that this place was on the north side of the Kettle River, just southeast of the confluence, and was the site where an Okanagan-Colville-speaking man named kts'ats'ákw'a is said to have killed a number of Shuswap warriors during a battle.

An account of another battle in this region has also been documented. This story is centered at the canyon of Cascade Falls and is said to have involved "Okanagan Indians" and "Kootenais." Apparently the Okanagans had been raided by some Kootenais and were trying to escape by canoe down the Kettle River "in an effort to reach their friends the Colville tribe." The Okanagans were able to trick the Kootenais in the Cascade Falls canyon and they killed those Kootenais who were not drowned (Thompson n.d.).

Also of significance in this area is the fact that an intact aboriginal dugout canoe was found here in 1978, submerged in the Kettle River about one kilometre upriver from Cascade Falls. The estimated age of the canoe dates it to about 1875 (Freisinger 1979).

4.2 CULTURALLY-SIGNIFICANT PLANTS IN THE VICINITY OF THE CASCADE PORT OF ENTRY

Recorded information on plant foods used traditionally by aboriginal people in the Kettle River/ upper Columbia River region comes primarily from ethnographic sources. The ethnohistoric records that make occasional specific references to fishing and hunting places are of less use in identifying the use of plants, because few early non-aboriginal observers had any knowledge or appreciation of the role of plants in the indigenous diet. In 1824, for instance, George Simpson remarked that the *sngaytskstx* or Lakes survived on the "few roots they collect in the fall" (Simpson 1824-1825). Ethnographic evidence shows that Simpson's conclusion was mistaken, however, as ethnographic plant foods data clearly shows that the collection of these foods began in the early spring and extended until late in the fall.

While information on *how* plants are used is generally strong, especially for the Okanagan-Colville, information about *where* they were taken is not. Very significant plant gathering areas where people went for important plants like huckleberries and Saskatoon berries (known as "serviceberries" in the U.S.) are recorded in the ethnographic and ethnohistoric literature. Some of these areas have been recorded in the Upper Columbia/ Kettle River region, but none have been reported for the specific site of the Cascade International Border Crossing.

Okanagan-Colville data contained in the following chart of culturally-significant plants likely to be found in the general vicinity of the Cascade border crossing station have been summarized from the known and available ethnographic literature, including: Teit (1930); Elmendorf (1935-1936:I), Lerman (1952-1954); and Ray (1975), but mostly from the *Ethnobotany of the Okanagan-Colville Indians of British Columbia* compiled by Turner, Bouchard and Kennedy (1980). This comprehensive study, in addition to summarizing the extant ethnobotanical information contained in the literature, presents the results of extensive fieldwork conducted with knowledgeable Okanagan-Colville people between 1973 and 1979.

Table 1. Potential culturally-significant plants in the Cascade Port of Entry area.

Plant Species	Okanagan-Colville Uses
Saskatoon berries or serviceberries (*Amelanchier alnifolia)*	Berries either partly dried and pounded or fully dried, then placed in Indian hemp bags for winter storage, or in wooden or bark tubs for summer use. The dried berries are very sweet, and were commonly mixed with other foods or used as a sweetener.
Chokecherry (*Prunus virginiana*)	Fruits eaten fresh, although the Lakes people dried them in cakes. The dried berries could be boiled and drunk as a tea for sick people. The branches were also brewed into a medicinal tea. Wood from this tree used for carving.
Blackcap (*Rubus leucodermis*)	Berries ripen May to July and are popular for eating. Formerly dried and stored for winter use.
Thimbleberry (*Rubus parviflorus*)	The berries were mostly eaten fresh, although the Lakes people partly dried them; leaves used to line steaming pits or to line berry baskets. The roots were boiled to make an acne medicine, while the young leaves were rubbed on the face for adolescent skin problems. A tea made form the roots was drunk for stomach ailments.
Blue elderberries (*Sambucus cerulea*)	Crushed the berries until they were a juice, and discarded the pulp. The juice would be heated in a cooking basket before being used. Used the stems to inflate animal intestines to be used as food containers
Wild ginger (*Asarum caudatum*)	An infusion of the root was drunk for colds and as a laxative.
Yarrow (*Achillea millefolium*)	Burned as a smudge for keeping away mosquitoes; mixed with other plants for a shampoo. The root was mashed for tooth aches, or steeped and the infusion drunk for stomach aches, or colds, or taken in small dopes for diarrhoea, and used externally as an eyewash. A laxative could be made by boiling the roots and leaves mixed together. Bathing in the plant eased the pain of arthritis.
Spreading dogbane (*Apocynum androsaemifolium*)	The plant is similar to Indian hemp, and used as an inferior hemp substitute for making twine. The leaves were chewed as an aphrodisiac, or they were dried and smoked for this same purpose. The roots were boiled in water and the decoction drunk about once a week as a contraceptive.
Kinnikinnick (*Arctostaphylos uva-ursi*)	Berries were eaten, or they were boiled in soups with venison or salmon. The Lakes people dried them into cakes. The leaves could be dried for tobacco. Berries and leaves used to counteract diarrhoea or wash sore eyes, and drunk as a kidney tonic and as a remedy for spitting blood. Also used as a hair wash for dandruff and as a wash for skin sores.
Buckbrush (*Ceanothus sanguineus*)	Wood can be used as fuel for smoking deer meat; The sapwood underneath the bark was dried, pulverized and rubbed on sores. The bark could also be dried, powdered and applied directly as a poultice for burns
Soapberry/soopoalallie *(Shepherdia canadensis*)	The berries were commonly whipped with water into a pinkish-white foam, which was known as "Indian ice cream," and which was usually sweetened with strawberries or saskatoon berries.
Oregon grape (*Berberis acquifolium*)	Inner bark of the stems and roots produces a bright yellow dye, used for colouring basket materials, mountain goat wool, and porcupine quills; roots, bark and branches were variously boiled and used for various medicinal purposes, including an eyewash, a tonic, and a blood purifier
Wild rose (*Rosa woodsii*)	Hips picked and eaten fresh; leaves applied directly to bee stings; protective agents against bad spirits
Willow (*Salix bebbiana*)	Branches used to make fish traps, basket hoops, hide stretchers and canoe frames and twisted into a strong rope; The inner bark was shredded into a cottony substance used for diapers, sanitary napkins and wound dressings; poultice for cuts made from the inner bark
Ocean Spray (*Holodiscus discolor*)	Known as ironwood, it was used to make digging sticks, arrows, heads of fish spears, bows, sticks for gambling games, drum hoops, baby cradle covers and other items. The leaves were dried, then pulverized, and the powder used to heal sores
Waxberry or snowberry (*Symphoricarpos albus*)	Berries used, along with the branches and leaves, by being boiled into a brew which would be drunk as a physic, to clean out the system; also mashed and used as a poultice for children's skin sores, or to relieve itching. The branches were tied together to make brooms
False Box (*Paxistima myrsinites*)	Branches are boiled to make tea for colds, consumption, and kidney problems. Plant could also be used to regulate births.
Red-osier Dog-wood or "red willow" (*Cornus sto*lonifera)	Berries are good eating, especially when mixed with chokecherries, or were boiled and eaten alone. Inner bark was scraped off, dried over a fire, mixed with kinnikinnick or tobacco for smoking. Branches used for making fish traps and spatulas, and larger limbs used for frame poles. Bark twisted into rope. It was an important medicine and tonic used for stomach problems, consumption, poison ivy rash, dandruff, and general good health. The inner bark used as a poultice and as a air for headache and problems associated with childbirth.
Dwarf or creeping juniper (*Juniper*	Needles and bark used as a medicine to make an infusion for colds and consumption, or as a

Table 1. Potential culturally-significant plants in the Cascade Port of Entry area.

Plant Species	Okanagan-Colville Uses
communis)	tonic before entering the sweathouse. Branches boiled for body wash to protect a person from evil influences.
Rocky Mountain juniper (*Juniperus scopulorum*)	Wood sued for making bows and yokes for horses. Also used to make ring for indigenous game. An infusion of the branches used to make a poison for arrows and bullets. Branches mashed and dampened for use as a poultice for skin sores and arthritic joints. Juniper is a powerful medicine for combating evil and misfortune, especially death.
Lodgepole Pine (*Pinus contorta*)	The cambium layer was scraped from the tree, then rolled up and stored to be eaten raw or fresh; also used as a medicine for stomach ulcers and general tonic; poles used for tipi poles.
Ponderosa Pine (*Pinus ponderosa*)	Cambium considered better eating than the cambium from lodgepole pine; Medicinal uses of this plant were similar to that of the lodgepole pine; wood used for poles and general construction.
Western redcedar (*Thuja plicata*)	Used to make planks, canoes, frames for birch-bark canoes, paddles, drum hoops, bows and arrows, dip-net frames, and many other articles. Peeled poles used for grave markers; bark used as covering for sweathouse frame and insulation for teepees; bark used for making raised storage cache, mats, rough baskets. Boughs used with other plants for washing hair and drunk as a sweathouse tonic. People with arthritis and rheumatism could soak in cedar-bough solution.
Black cottonwood (*Populus balsamiferaI*)	Wood used to make light dugout canoes, a fuel for smoking hides, salmon weirs and board for flattening the heads of children; ashes used as a shampoo and a rough soap; resin from the scales was used as glue; and also mixed with other pigments to make paint; the bark made into barrels to store food, and to line food storage pits to keep out gophers.
Paper birch (*Betula papyrifera*)	Used in canoe construction and for making cooking baskets
Douglas-Fir (*Pseudotsuga menziesii*)	Saplings used to make tipi poles, spear shafts and other items; the boughs used as roofing for temporary shelters and for bedding; placed on the floor of sweathouses, and were used to scrub the body during a sweatbath.
Canby's lovage (*Ligusticum canby*i)	Root used for colds and coughs; general internal medicine; used for those who have lost consciousness, especially in ceremonial situations.

5.0 HISTORICAL USE OF THE CASCADE - LAURIER LOCALITY

Records of the 1857-1862 Northwest Boundary Commission indicate that the American survey party established a camp circa 1859 approximately a mile (1.6 Km) east of where the Kettle River, officially identified by the Commission as the "Ne-hoi-al-pit-kwu" [Kettle River, *nxwiya7lhpítkw*], crossed the 49th parallel (Wilson 1970:35; Parker 1860).

However, it was decades later before the Cascade area had any substantial non-aboriginal population. It appears that an American land speculator is responsible for the town of Cascade's inception. Foreseeing the economic benefits that would come with construction of a railway, still ten years away, Aaron Chandler of Dakota, first bought land at Cascade in the late 1880s, and, with his agent George Stocker, began selling lots to would-be entrepreneurs. In 1894-1895, American mining magnate F. Augustus Heinz, under the auspices of his "Columbia & Western Railway", also had a role in the founding of the town that became known as "Cascade", after the cascading falls nearby. A townsite for "Cascade City" was filed at Kamloops in early January 1895, and construction of the first hotel at Cascade was begun in February 1896 (Barlee 1970:21-25; Schroeder 1979:9; Basque 2003:132-133).

Drawn by the hydroelectric power of the kilometre-long series of rapids on the Kettle River, the British company "London and British Columbia Goldfields" dammed the river at the head of Cascade Falls in 1898. The town boomed and as Turnbull (1988:40) describes, "sprang to existence with a dozen frame hotels, stores and livery stables huddled together along a wide street." Using electricity being generated at Cascade Falls on the Kettle River, the town soon possessed a sawmill, local newspaper, church, school and hospital. By 1904, cribbing had been added to the dam and water was channelled by a combination of canal, tunnel and flume to a new state-of-the-art powerhouse at the base of the falls (Anon. 1901:305).

The presence of the town of Cascade was responsible for the founding of a community on the American side of the border. In 1891, Jake Graeber squatted on 160 acres of unsurveyed land near Deep Creek and found employment at Earle's sawmill north of the boundary line. He was soon joined by a man named Russell who foresaw the need for a point of entry on the Kettle River freighting road and a town on the US side for travellers and miners, for the Colville Indian Reservation had just been opened to non-aboriginals prospectors. By 1901, other Americans had settled in the blossoming town, now named Russell after its early founder (Lakin 1976:123).

On the Canadian side, the first train crossed the Kettle River bridge in August 1899 and regular rail service began. On the American side, the Washington and Great Northern Railway laid tracks, and thus the two border towns became bustling centres of commerce. However, in September 1899 a fire swept through the town of Cascade, leaving the core of the community burned to the ground. A second fire blazed in 1901, then reducing the town to one hotel and one store. Cascade survived only as "a hamlet and a customs port" (Turnbull 1988:40).

In 1901, a man named Page became the first Customs Officer at this Cascade/Russell entry point into the Unites States, commuting daily by train from his home in Danville (then called Nelson), Washington. The job was busy, as construction workers and miners camped about the towns on both sides of the international boundary. The following year, the name of the American town was changed to Boawell, after the discovery of Mr. Russell's dishonourable past. Yet the choice

of name was vetoed by one of the older pioneer settlers who preferred the name Laurier, in recognition of Canada's Prime Minister, Sir Wilfrid Laurier, a man whom he greatly admired (Lakin 1976:125).

The first American customs officer at Cascade had a short career when he was caught smuggling Chinese into the country. For a while, the Danville officer did double-duty, checking the lists of names of individuals crossing at both stations (Lakin 1976:125).

Laurier, like Cascade, had its share of problems. The fire that burned Cascade in 1901 did not reach Laurier, but the latter settlement did not escape the cholera epidemic of 1903-1904. After railway construction concluded in 1904, the village almost died, but came to life the following year when former sawmill operator John Earle and a partner opened the Laurier Mine, extracting silver, lead and zinc from the ground. The Ferry County Commissioners' journals report that more settlers came to the County in the nest decade, not for work in the failing mine, but to eke out a living by farming (Lakin 1976:129-130).

Neither the town of Cascade nor Laurier ever again reached the population each had at the turn of the century. One hundred and fifty people and one store remained at Cascade in 1920, but the residents dwindled away and the old buildings came down, leaving behind only a port of entry along the International Boundary Line. Laurier's fortunes have come and gone several times with the ebb and flow of mineral prices. By the 1950s, Laurier possessed the customs' buildings, a small post office, and the derelict mine buildings, surrounded by a handful of houses and a few cattle operations (Turnbull 988:40; Lakin 1976:134).

6.0 CONCLUSIONS

This report has examined First Nations' aboriginal interests and traditional land use in the vicinity of the Cascade International Border Crossing, situated near the upper Kettle River, east of Grand Forks, British Columbia.

Research based on a wide variety of sources, including the present authors' more than three decades of research with Okanagan-Colville, has revealed that the general area of the Kettle Valley that includes the Cascade Border Crossing location is of cultural significance to the sngaystkstx (or Lakes) and the sxweyí7lhp (or Colville) aboriginal people. Both groups are Okanagan-Colville-speaking First Nations people, whose descendants now reside mostly on the Colville Indian Reservation in Washington State. It is the position of the Business Council of the Colville Confederated Tribes that they alone represent the Lakes (sngaytskstx) and Colville (sxweyí7lhp) Tribes' interests, including issues pertaining to aboriginal title and rights, on both sides of the U.S./Canada border. The Okanagan Nation Alliance (ONA) also claims unextinguished rights and title over a large area of southcentral British Columbia including the area of Cascade. As well, the Sinixt/Arrow Lakes Nation asserts claims to an area that includes the Cascade border crossing.

Historical documentation indicates that a network of aboriginal trails connected the upper Kettle River and Cascade area with the Columbia River to the east and southeast, and with the Osoyoos Lake region to the west. Okanagan people from the Oliver/Osoyoos area used this trail on visits to Kettle Falls where they dug camas and traded with other aboriginal visitors.

The Cascade area was well known as a sockeye salmon fishery. Aboriginal people fished here using a "J"-shaped basketry trap and harpoons until about 1920, camping at a site below the falls.

Lakes and Colville people interviewed in the 1970s-1980s also provided the names and/or locations of other campsites in the general vicinity of the Cascade area. In 1978, an aboriginal dugout canoe, said to date to about 1875, was found upstream of Cascade Falls. The area west of Cascade was considered to be a good place to winter due to the lack of snow in that area. Farther east was the location of a battle that occurred between the Okanagan-Colville and the Shuswap. Another fight is said to have occurred in the Cascade area, resulting in many of the Kootenay enemies being drowned in the Cascade Falls or killed.

This report has also identified plant species of cultural-significance to the Okanagan-Colville that are likely to be found in the Cascade area. However, while site-specific harvesting locations have been recorded in the Kettle River/ Upper Columbia region, none have been reported for the site of the proposed border crossing expansion at Cascade.

Also examined in this report has been the non-aboriginal history of the Cascade-Laurier area. At the time of railway construction circa 1900, towns on both sides of the border briefly flourished, although Cascade was reduced to a few buildings when a couple of fires struck the community. On the American side, entrepreneurs brought in people hoping to make a living from the developing mines, but these failed, and the few people left turned to agriculture. Today, little more than the Border Crossing Station and a few other buildings exist on either side of the International Border at Cascade.

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Okanagan Nation Alliance February 12, 2015
101 3535 Old Okanagan Highway
Westbank, B.C. V4T 3L7

Attention: Howie Wright

and

Mr. Roly Russell
Chair, Kettle River Study Steering Committee
Regional District of Boundary Kootenay
202 843 Rossland Avenue
Trail, B.C. V1R 4S8

Re: Salmon in the Kettle

Now, after weeks of reading dozens of published reports, apping, and websites, from legends to ethnographic studies, from geophysical history to hydrometric data; after conversations and email exchanges with fisheries scientists, authors and researchers, I am writing to report my conclusions and seek your informal response.

When you, owie right, replied to my original letter on January 13, 2015 and informed me of the beginnings of your planning with the Colville Tribes and expressing some interest in Cascade Falls, I as very pleased. Since hen I ave arned reat eal ore. I now have a far better understanding but there is so much more to know. Without exception, everyone has been encouraging and I thank each of you who have contributed. Forgive me if I am repeating what has already been done. What I do know is that what follows ought to be done and can be done.

My purpose is to bring together the Syilx and Colville native people, the RDKB and Federal and Provincial agencies to coordinate and fund the necessary studies and present submissions expeditiously and firmly to the appropriate entities currently considering the fish bypass of the Chief Joseph and Grand Coulee dams .

This letter is informal and preliminary and intended to augment what others already know. It ritten with the best of intentions of making a meaningful contribution.

Background

Syilx Nation

The Syilx are the indigenous people from Colville in Washington State in the south, through the lower Okanagan, Osoyoos, nd orth s ar s icola ake. ince 981, he ight ember ands ave een operating under a comprehensive governing model known as the Okanagan Nation Alliance, headquartered in Westbank. http://www.syilx.org/

The Syilx Territory includes 69,000 km2 (1 km2 equals .386 miles2) comprised of the Similkameen, Okanagan, Kettle and Columbia River watershed. http://www.syilx.org/wordpress/wp content/themes/ONA/images/ON_Territory.pdf

The Syilx have been highly successful in the conservation, protection, restoration and enhancement of the Okanagan River in partnership with Fisheries and Ocean Canada which has resulted in the great success story of a healthy migration and spawn of sockeye just north of Osoyoos Lake and Oliver.

RDKB

The Regional District of Kootenay Boundary is headquartered in Trail, British Columbia just above the international oundary n he olumbia iver. http://www.rdkb.com/Default.aspx The communities designated as Areas C, D and E are essentially the lands contained within the watershed of the Kettle River. The western portion of Area B includes the Sheep Creek watershed not in the Kettle which enters the Columbia just below the boundary. http://www.rdkb.com/AboutUs/Communities.aspx

For simplicity, Area E contains those lands of the East and West headwaters; Area D includes a portion of the Kettle at Grand Forks and its confluence with the Granby River and its headwaters; Area C is he land urrounding hristina ake nd ascade alls. The Kettle watershed is 8500 km2 and Christina Lake has a surface area of 25.5 km2. The headwaters of Christina Lake are contained within Gladstone Provincial Wilderness Park (394 km2) and the headwaters of the Granby River and Burrell are contained within Granby Wilderness Park (408 km2). Area E's watershed includes the Graystokes protected Area (119.6 km2) and vast forestlands.

Approximately three years ago the RDKB initiated a comprehensive study of the KettleRiver. http://kettleriver.ca/

The Upper Columbia United Tribes

UCUT provides a common voice for our region through the collaboration of five major area tribes, the Coeur d'Alene Tribe, the Kalispel Tribe of Indians, the Kootenai Tribe of Idaho, the Spokane Tribe of Indians nd he onfederated ribes f he olville eservation. CUT as ormed o nsure ealthy future for the traditional territorial lands of our ancestors and takes a proactive and collaborative approach to promoting Indian culture, fish, water, wildlife and habitat. http://ucut.org/

"In ctober 014, he orthwest ower nd onservation ouncil mended s olumbia iver asin Fish and Wildlife Program to investigate reintroducing anadromous fish back into the main stem Columbia River reaches and tributaries in the U.S. The UCUT have developed a **draft work and coordination plan** to initiate these investigations" ntitled **FISH PASSAGE AND REINTRODUCTION TO THE U.S. & CANADIAN UPPER COLUMBIA BASIN A Joint Paper Of The Columbia Basin Tribes and First Nations**: a) http://ucut.org/UCUT_Work_Coordinating_Plan.pdf and
(b) http://ucut.org/Fish_Passage_and_Reintroduction_into_the_US_And_Canadian_Upper_Columbia_River3.pdf

John Sirois, Committee Coordinator, states " The Columbia Basin tribes and First Nations jointly developed this paper to inform the U.S. and Canadian Entities, federal governments, and other regional sovereigns and stakeholders on how anadromous salmon and resident fish can be reintroduced into the upper Columbia iver asin. eintroduction nd estoration f ish assage ould e chieved hrough variety of mechanisms, including the current effort to modernize the Columbia River Treaty (Treaty). Restoring fish passage and reintroducing anadromous fish should be investigated and implemented as a key element of integrating ecosystem based function into the Treaty. Anadromous fish reintroduction is critical to restoring native peoples' cultural, harvest, and spiritual values, and First Foods taken through bilateral river development for power and flood risk management."

The Syilx Okanagan Nation Alliance is working with UCUT on a plan to bring Sockeye into Christina Lake although there is actually no reference to the restoration of the Kettle in the UCUT plan which focuses on the Upper Columbia.

The policy for restoration of the upper Columbia is also supported by the Columbia River Inter Tribal Fisheries Commission. http://www.critfc.org/tribal treaty fishing rights/policy support/columbia river treaty/restore fish passage/

Columbia River Treaty

The Columbia River Treaty (1964) was an International Agreement to control the flow of the Columbia River in Canada to optimize production of hydroelectric power along the Columbia River in Washington State, irrigate he ashington tate ortion f he olumbia asin nds and control floodwaters. www.**cbt**.org/crt

The B.C. obligation included he uilding f three dams on the Columbia, the Keenlyside at Castlegar which flooded the Arrow Valley, the Revelstoke and the Mica which formed Kinbasket Lake in the Columbia ice fields. Other dams on the Kootenay River and various other works were also required. http://www.bing.com/images/search?q=pacific+northwest+reservoir+system+map+&id=F789726FC25810D640054E1BEF96647D972E86CC&FORM=IQFRBA#view=detail&id=F789726FC25810D640054E1BEF96647D972E86CC&selectedIndex=0

No works were required to be built upon the Kettle River system. The Boundary country was ignored.

The British Columbia has proactively engaged the citizens of B.C. and particularly the people of the CBT, to form the basis of terms for renegotiation of the CRT. Either Canada or the U.S. can unilaterally terminate most of the provisions of the Columbia River Treaty anytime after September 16, 2024, providing at least ten years' notice is given. The latest date to provide termination notice for September 2024 is September 2014. http://blog.gov.bc.ca/columbiarivertreaty/

Columbia Basin Trust

This entity administers the compensation funds paid under the Columbia River Treaty to communities within the Columbia Basin in British Columbia excluding the Kettle River. The communities and citizens of the Kettle watershed do not receive any benefits under the CBT. www.cbt.org

19th Century Kettle History

The history of the Kettle River is entwined with the history of Kettle Falls just below where the Kettle enters the Columbia approximately 39 kilometres south of Christina Lake. http://www.nwcouncil.org/history/KettleFalls

Kettle Falls was one of the most prolific salmon harvesting sites in the continent with Chinook, coho and sockeye migrating far into the Kinbasket country of Big Bend. The former 50 foot drop off of rapids and falls still runs silently at the bottom of Lake Roosevelt which was created with the construction of the Grand Coulee dam just s he elillo alls lie eneath he eservoir f he alles outheast Washington, another historically important fish harvesting site where between 15 and 20 million fish would migrate annually. http://www.critfc.org/salmon_culture/tribal_salmon_culture/celilo_falls/ and http://en.wikipedia.org/wiki/Celilo_Falls

The Coulee was first built in 1933 to a height of 290 feet and then raised to 550 feet with construction begun in the late 30's. By the time of the hearings for the Grand Coulee in 1936 there were probably very few, if any, salmon in the Kettle system much less making it up to Christina Lake and none beyond. Despite the voicing of concern by a Canadian organization in ashington and isolated voices from the Kooetnays, he anadian Federal Fisheries Deputy Minister expressed the official position of the federal government in 1934 by letter stating that there was no loss to the fishery caused by the Columbia as there was no commercial fishery concern within B.C. It ppears hat either he ederal or Provincial governments ever voiced concern about the loss of salmon in the Canadian river systems at the International Joint Commission hearings of 1941. In ny vent, as oot oint s he irst hase never consulted Canadians and there effectively was no fishery after the first Coulee.

By the time the Columbia River Treaty hearings arose, the Kettle was excluded because its waters merged with the Columbia below the border and the Kettle watershed would not be subject to any works in BC. The damage caused to the Kettle by the Coulee in s irst hase nd the subsequent expansion, the subject of the CRT, was not considered to be an impact on the Kettle.

The Columbia river salmon runs in the southern Snake watershed and the northern Columbia watershed had slowly started to decline in he tter alf f he 800's. By the 1880's there were 39 canneries on the lower Columbia and the majestic Chinook runs with fish in the Columbia reaching 90 pounds, was seriously in decline if not close to decimation. The canneries turned to the other salmon species in the late 800's ith he ame rowing onsequences, specially he pper olumbia. The first of the major obstructions on the lower Columbia came on in about the mid 1920's when the overall salmon industry as erious ecline the entire Columbia system.

By 1898, the dam at the top of Cascade Falls had been built to power the sawmill at Billings, the smelter in rand orks, nd he own f ascade n ighway 95 ear he nction f ighway , ms est f Christina Lake. The powerhouse started up in the early 1900's and ran until 1924 and the power dam was at least partially removed. http://www.virtualmuseum.ca/sgc cms/expositions exhibitions/hydro/en/dams/?action=cascade The Granby River canyon dam utilized for the generation of power for the City of Grand Forks and the smelter, was built in 1898 and not removed until 1948.

In hort, he almon eturns to he ettle, ave een eavily pacted or 155 years. There were very few white settlers, if any, non native people at all except trappers, in he oundary ountry in he id 1800's. Some natives from the Colville tribes made seasonal trips into southern "B.C." across the 49th and a few isolated native families lived along the Kettle River until they relocated below the line.

Cascade Cultural Heritage

The best source of consolidated cultural heritage for Cascade is the Resources Assessment for the CASCADE BORDER CROSSING written in 2004 by Arcas Consulting Archeologists with half of the report contributed by well known ethnologists and cultural anthropologists Randy Bouchard and Dorothy Kennedy of Victoria, B.C. That report is attached to the cover email. They also wrote a 1975 report for the Colville Fishing Study and http://www.sinixtnation.org/files/legal resources/traditional use in the waneta dam area report.pdf . The bibliographies in each part of the Arcas report are very useful. Both Arcas and Bouchard & Kennedy stress the lack of archeological and ethnographic evidence prior to 1900 and a dearth of recorded history. It urther tated hat he archeology f he inixt raditional territory and of the Kettle valley specifically, oorly nderstood".

Oral history cited in the Arcas assessment quotes Martin Louie, a Colville elder at the time, that up to two dozen people would camp one kilometre below the falls, which is probably across from the Christina Creek junction. He said that the Cascade area was well known as a sockeye fishery and the fishery was conducted under the control of one person delegated by the Salmon Chief.

There is apparently some history about altercations between aboriginal peoples from the south, east and west in and around Grand Forks. There is some evidence of native presence at much higher elevations in and around Cascade which would seem to support the presence of higher water.

Mary Marchand, randdaughter f reat hief, who was born just west of the falls in 1900, states that Cascade Cove at the foot of the falls was a well known sockeye fishery until they completely disappeared by 1920. Fishing was conducted with basketry traps and spears in he eep aters f he cove and in the canyon as salmon tried to ascend the falls. (Lakin (1976) Kettle River Country)

Mary states that Cascade Falls became known as the place where "fish stop going up". Since Mary and Martin appear to be the only recorded oral history, it is not known how far back this refers. The phrasing is also open to interpretation. But native legends say that coyote would not let the salmon past because the people of Cascade would not give him a wife.
http://www.colvilletribes.com/book_of_legends.php and http://www.firstpeople.us/FP Html Legends/CoyotesSalmon Sanpoils.html

What is also well documented in oral history is that chinook used to spawn in the stretch of the Kettle at Barstow in ugust ith ockeye te uly nd oho ctober/November. Christina Lake, which is 39 kilometres above Kettle Falls, is noted on early maps as "enchalm", meaning the place where waters rise.

Cascade Falls

Cascade Falls consist of a series of varying falls and cascades which drop about 25 metres over 750 metres. No study has ever been conducted on the Falls to determine the height of various drops nor the depth of any pools such as is seen in the Natural Resources Consultants study done for the City of Everett on the Upper Sultan
http://www.snopud.com/Site/Content/Documents/relicensing/Fish/EvalMigration_070106.PDF This study reviewed the ability of various species of salmon to jump dependent upon height, slope, pool depth, water temperature, and salmon condition. All of these factors would contribute to a greater or lesser egree ependin pon he nnual lements, bstructions, enetics, terventions, acific eed and others. The ideal temperature is no greater than 17c or 63f degrees. Studies and estimates of the specie of salmon with the greatest leaping capacity vary with single ascents up to 15 feet.

The photograph which follows is the highest falls in the Cascade Canyon taken in ugust. Other photographs may be seen by going to Google Earth and clicking on the photo icons.

The Falls are contained within a narrow rock canyon dropping approximately 25 metres over 750 metres. There are no historical analyses of geological changes within the canyon including deposits by man, slides, or earthquakes. There is likely some rip rap left in the river at the first fall when the former dam was removed. This was contained within the lower half of the dam cribbing.

Salmon Evolution

It ommonly held view that salmon speciation was complete about 6 million years ago. http://www.snopud.com/Site/Content/Documents/relicensing/Fish/EvalMigration_070106.PDF

Salmon first entered the Columbia system when the ice from the last ice age (11,000 to 14,000 yrs ago) began to recede and as the ice melted northward the salmon entered the system further and further. This is well reviewed in Evolutionary History of Pacific Salmon by Waples, Pess and Beechie http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3352440/

Indigenous people would likely have followed the salmon up the river as they advanced their spawning habitat and as the uplands became available. Archeology determines that Sinixt people in the Kettle Falls area first appeared about 9550 years ago. Ethnic Salish first appear in the Takumakst period between 2750 and 1650 years ago from 2004. The Sinaikst period represents the most intense occupation from and after 1650 years ago. The first written history of salmon at Kettle Falls is by the explorer David Thompson in 1811. These dates are intended to outline the presence of salmon in the river systems only.

Waples, Pess and Beechie from the Northwest Fisheries Science Centre postulate that the presence of salmon in the northwest Columbia basin are divided into hree eneral eriods: oor 4000 ears go ybp (1950); Optimum between 2500 and 4000 years ybp; and Good <1000 years ago. These periods were subject to various factors which impacted the fishery causing "periodic extirpation of local populations" of salmon. Just as all of nature experiences cycles, there were likely prolonged periods of time when salmon diminished and subsequently returned in abundance.

Topography

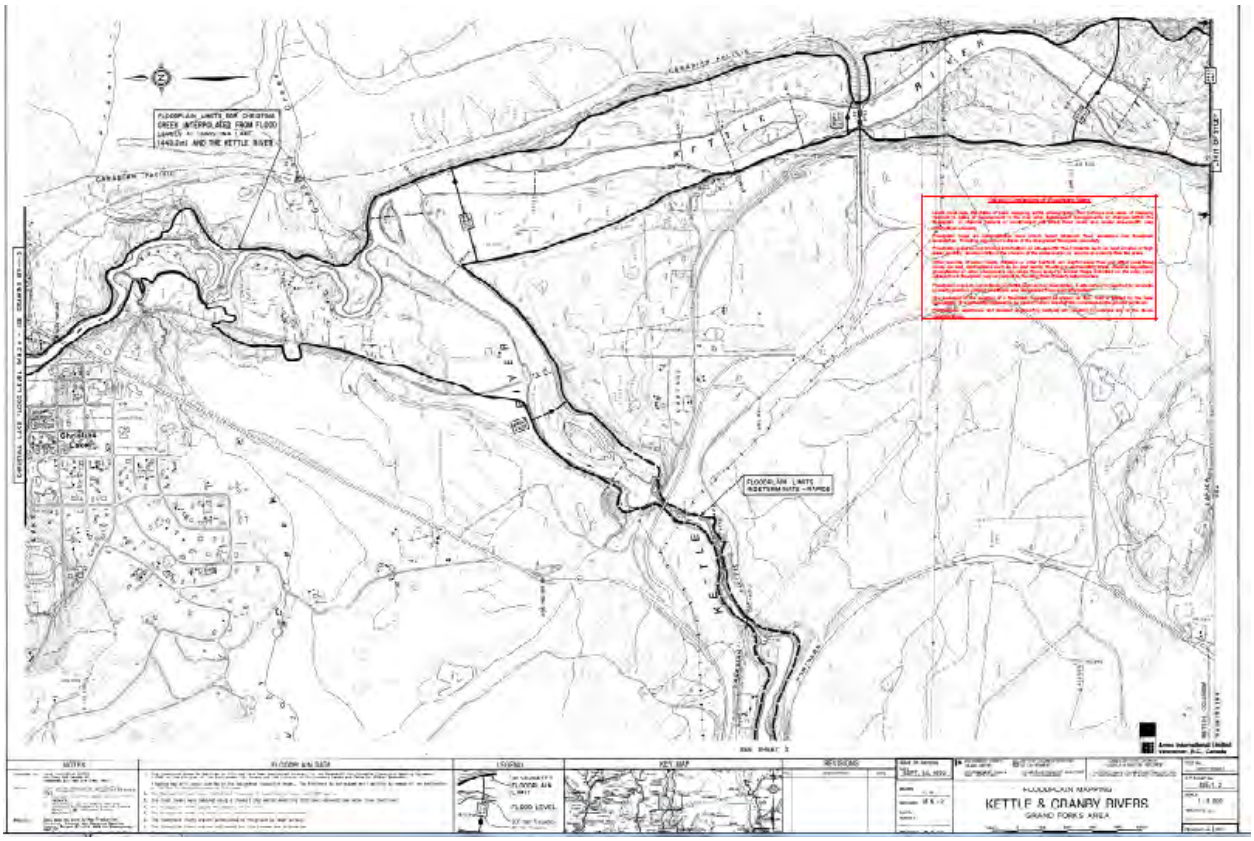
General topographic information may be seen in the Federal Governments Atlas Canada website: http://atlas.nrcan.gc.ca/site/english/toporama/index.html

The image below is the Province f ritish olumbia 00 ear loodplain ap or he ettle iver nd Christina Creek and Cascade Falls. The dark outline is 448.2 metres in elevation or 1470 feet. http://env.gov.bc.ca/wsd/data_searches/fpm/reports/bc floodplain maps/Kettle_Granby_Rivers@GrandForks/2 90 34 1.pdf

This is corroborated in the Atlas Canada recorded data. For reference the water level of Cascade Cove in November is 446 metres or 1463 feet. During a 200 year flood which is based upon accumulated hydrometric measurements data, there is a likelihood of a 200 year flood occurring .5% in any given year. A common misunderstanding exists that a 100 year flood is likely to occur only once in a 100 year period. In fact, there is approximately a 63.4% chance of one or more 100 year floods occurring in any 100 year period. The 200 year flood can be extrapolated accordingly.

Other data in the Kettle watershed may be found at
http://env.gov.bc.ca/wsd/data_searches/fpm/reports/region3.html

The City of Grand Forks shows its 200 year flood level on the following link:
http://www.grandforks.ca/wp content/uploads/reports/sustainability plan/GF_SCP_FINAL_WMAPS.pdf



General observations with respect to this mapping include the following:

(1) The lands on the low silty benches of the river and all of the Christina Creek valley through to the lake re ll overed y 00 ear lood. A 200 year flood impacted well up the canyon and probably eliminated the largest falls.

(2) At 472 m elevation or 1550 feet, the canyon is completely submerged.

(3) At 1700 feet or 487 m elevation, water completely covered all of Cascade through the BNSF rail corridor. It was one big lake or flooded river.

Geology

Studies suggest that by 5000 years ago the habitat and terrain of the region had established itself in its present form. But dynamic ecosystems would bring intermittent change and occasionally permanent change in a localized way.

This was the net result of waves of ice hich radually elted orming kes, nd looded alleys uch like ake oosevelt oks like oday. pparently he e he hristina Lake trough was the last to melt in his egion. As the water receded deposits of granular material and silty material created the benches and valley floors we see along the Kettle River corridor. Each time, the rising and falling of water levels caused by release of glacial lakes and fluctuations in the leading dge f he e, he eposited and and silt would erode and form the slopes between benches much like a beach on the edge of a lake.

The salmon migrated through the system and were likely present in very early periods of time when lower enches ere ompletely ubmerged nd any f he igher enches s ell. almon likely spawned all along these “beaches” just as sockeye would do today in lakes such as would happen in Christina Lake. Albeit, this terrain was unstable and variable at least until 5000 years ago and thereafter in ssening eriods robably ulminating he optimum” eriod or almon etween 500 nd 000 ybp. Beechie& Imaki NWSC.
http://www.nwfsc.noaa.gov/research/divisions/fe/wpg/ecosystem_processes/habitat.cfm

In ll robability, he ater vels f he ettle alley nd pecifically ascade anyon asily llowed passage of salmon during the “optimum” age. The receding highwater of previous centuries altered the penetrability of the Kettle watershed or possibly that was coupled with geomorphological change.

Homing, Straying and Naturalizing

Anadromous salmon generally do not stray from their natal stream by more than a few kilometres. Cascade is about one kilometre upstream from where Christina Creek enters the Kettle and from the Martin Louie encampment. It likely hat his location was a good place to intercept sockeye entering the lake system as well to access the cove for spearing and capturing.

The fascinating and compelling question is: Why were the salmon at the cove and what species were those salmon – sockeye, chinook or coho or even steelhead or all four? It ormal or almon o est deep pools before attempting a climb and the cove still is ne f he est.

The following papers as well as the previous Waples, Pess and Beechie work discuss natal homing instincts, traying nd aturalization r ransmigration:

http://www.nwfsc.noaa.gov/publications/scipubs/techmemos/tm30/quinn.html HOMING, STRAYING, AND COLONIZATION Thomas Quinn U of W School f isheries
and http://jeb.biologists.org/content/199/1/83.full.pdf HOMING IN PACIFIC SALMON: MECHANISMS AND ECOLOGICAL BASIS Dittman and Quinn

These fish were either salmon earch f he atal treams r riven y ome rimordial stinct. ust as Kettle Falls acted as a type of natural selection and survival of the fittest, so too was Cascade Falls. Nobody can determine what salmon pecie hey ere. Firstly, here were probably strayed sockeye from Christina Lake and Creek, r oming ockeye f ockeye pawned n he alance f he ettle r they were sockeye in search of new habitat, commonly called naturalizing instinct. This is the same instinct hich rove he original salmon further and further into the basin and in search of new habitat. Secondly, they were likely to be chinook since there is evidence of chinook spawning a few kilometres south of Christina Lake. Coho, reputedly the best jumpers, are known to be in the Columbia and nothing suggests that they would not have been in the Kettle River. So too, Steelhead.

If, ecent enturies almon ailed o ake he scent Cascade Canyon, t ould e ue o any reasons but what would seem obvious is that if hey ailed o ake he iggest mp, ust ave een by mere inches or a few feet. Their numbers and candidates for success had seriously dwindled.

Oral history confirms the run of salmon in the lower Kettle and science would seem to support salmon in the Kettle watershed beyond Cascade Falls and not “naturally inaccessible”. It s he ettle oesn’t exist. http://www.critfc.org/salmon culture/columbia river salmon/

Christina Lake Sockeye

Christina Creek is the 1.7 km long eandering creek connecting the Lake to the Kettle. It contains good spawning beds and is accessible to salmon every year with no obstructions. Sockeye would spawn along the lake shoreline and the various feeder creek beds just as they do in the Adams, Shuswap, Mabel Lakes and will or have in the Okanagan system.

There are numerous papers available online for this subject and it is discussed by Quinn in an earlier link. The following link is also n excellent summary of the sockeye reintroduction into the Okanagan River. http://www.colvilletribes.com/media/files/Ahabitatbasedevaluationofsockeyesalmonescapementobjectives.pdf

The aquatic health of Christina Lake and relatively cool temperatures, despite being the warmest tree lined ke anada, ake eal or ockeye.

Reintroduction

The reintroduction of salmon into Christina Lake and beyond Cascade Falls naturally encompasses considerations of impacting the present ecosystem.

For example what impact will sockeye fingerlings and smolts have on the food web dynamics and particularly the persisting problem of mysis shrimp populations imported o arious .C. kes. It uite possible that sockeye could be part of the solution and is extensively discussed in the following paper by Ramcharan, McQueen and Cooper. http://www.ecoscience.ulaval.ca/en/paper/trophic triangles and competition among vertebrate oncorhynchus nerka gasterosteus aculeatus and macroinvertebrate neomysis mercedis planktivores in muriel lake british columbia canada

Salmon have proven to have been successfully introduced into the Great Lakes and this is akin to the salmon instinct to colonize and translocate.

Salmon actually will create a food chain or umbrella for many other aquatic and land based animals to flourish. In so doing, they will effectively fertilize the rivers rather than consume and compete with

others. The barren corridors will spring to life. Salmon are the umbrella of nutrient which feeds the entire chain including humans, from creatures of the water to the birds in the air and mammals on the land nd o he rees he orest. It ould ltimately ave he hreatened rizzly opulation f he Granby River corridor.

The Hyatt Rankin summary mentions the great value of ceremonial and a subsistence fishery in the success story of the Okanagan sockeye but does not mention the value and impact f almon n he entire food chain, ecology and habitat.

Is he estoration f atershed evoid f almon or 5 ears ifferent rom estocking r eseeding barren system of 150 years years or perhaps never? Effectively, the return of sockeye to Christina Lake and chinook to the Kettle will occur if the Chief Joseph and Coulee bypass is built. The fish will naturally flood the lower Kettle and Christina Lake and test the accessibility of the Cascade Falls. And the bypass can be built as evidenced by other projects such as the Clackamus bypass in Oregon. The question will then be: Will passive minimal assistance of salmon through the falls be justified and enhance the entire Kettle watershed? Build it and they will come. Unlike the Columbia River at the Keenlyside, when the Coulee bypass is constructed the restoration of the Kettle will have relatively small costs in enhancement and access. The Kettle watershed sits in its natural state without reservoirs burying its native streams.

The cool pristine waters of the Kettle watershed represent the potential for one vast habitat replacement project in keeping with Fisheries and Oceans Canada's policy only on a much larger scale. I am hoping that the foregoing supports the justification for so doing. Often only man can fix the impacts he has caused to nature in the past. The Kettle watershed is relatively pristine and accessible, with little population and hundreds of kilometres of potential spawning terrain. Other watersheds, once home to anadromous salmon may forever be impacted and isolated and lost from the mission to preserve the resource.

And then there is climate change. As UCUT's John Sirois states, "Reintroduction is also an important facet of ecosystem adaptation to climate change as updated research indicates that only the Canadian portion of the basin may be snowmelt dominated in the future, making it a critical refugium for fish as the Columbia River warms over time."

Summary

In 994, he olville dians eceived substantial settlement for the loss of their land and the loss of their ancestral fishery in the flooded valleys above the Coulee in the State of Washington. There are reputedly other actions being considered or underway pertaining to hereditary loss of a wild food fishery in he pper huswap ountry f he olumbia iver.

The Columbia/Okanagan sockeye run, as enhanced by a joint program with the Okanagan Nation Alliance and the Canadian Federal Government and the cooperation of Washington State agencies and equivalents, has returned hundreds of thousands of sockeye into the watershed of the southern interior Okanagan River . This is a great success story and has given great hope to us all. Cooperation and collaboration is the answer.

Speaking of the Okanagan sockeye run, it was the Okanagan Native Alliance, with eight member tribal communities including the Confederated Tribes of the Colville Reservation, that got the breakthrough going, with an invitation to Canadian fisheries officials to work together with them and dam managers to help the run.
“There has been a lot of going to court, and that was an option, but the bottom line has been to take that collaborative approach to restoration, and the leadership, that is what enabled restoration to happen,” said Howie Wright, fisheries program manager for the Native Alliance.

The first and foremost step is o ring ressure pon he .C. nd .S. nd he anadian Federal government to implement a salmon bypass to the Coulee and secondly to bring some recompense to the neglected Boundary for nearly 155 years of lost salmon in the Kettle watershed and its consequent negative impact to its environment and habitat and finally, to approve and support the reintroduction of Salmon into the Kettle.

Although the CRT negotiations are an opportunity to put forward a case for a salmon bypass at the Grand Coulee, the people of the Boundary and the environment of the Kettle Watershed, hold their case against the Canadian Federal government for failing to seek compensation and protection for this region under International Law for the original Coulee dam and the Provincial government for failing to represent and protect the people and environment as guardians of that land, abitat and resource. The native people have their own redress to seek for loss of an ancestral fishery. The common denominator is almon.

We know with certainty that in today's world a bypass of the Coulee can be engineered. The benefits will justify the expense.

The first step is to involve the citizens of the Boundary region in the push to make a bypass to the Coulee. So much knowledge has been gained in the last two decades that this is no longer impracticable. While there are enormous obstacles and challenges for salmon in the upper Columbia system, the Kettle has none. For those who argue that the Kettle had an insignificant indigenous almonid opulation, here ittle uestion hat ypass o he oulee combined with enhancement hatcheries to the Kettle will bring an abundant return of the salmon as the historical obstacle of Kettle Falls will not exist nor the manmade barriers of 1898.

This letter is an expression of my goals and intentions to augment and raise the voice to bypass the Coulee and to pursue the challenge of seeing the salmonids return to the Kettle system and the Columbia north of the 49th. Constructive feedback, contributions and opinions would be most helpful and appreciated.

My personal mission is to take the discussion to the next level of due diligence and persuade the RDKB government to work with ONA and UCUT to formalize a persuasive and strong position with respect to the loss of Salmon in he ettle.

From:	Julie Ashmore
To:	John Sirois
Cc:	David Kliegman
Subject:	Comments: Upper Columbia River Basin Fish Passage and Reintroduction Project - Phase 1
Date:	Friday, February 27, 2015 8:44:11 AM
Attachments:	OHA Comments - UCUT 2015-2-27.pdf

Dear Upper Columbia United Tribes,

Please consider the attached comments related to the Upper Columbia River Basin Fish Passage and Reintroduction Project. Thank you for taking the initiative on this issue.

Sincerely,

Julie Ashmore
Conservation Coordinator
Okanogan Highlands Alliance
www.okanoganhighlands.org
509-476-2432

CONCERNED • INFORMED • EMPOWERED

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Okanogan Highlands Alliance

P.O. Box 163 Tonasket WA 98855
julie@okanoganhighlands.org
www.okanoganhighlands.org

February 27, 015

Dear Upper Columbia United Tribes,

Okanogan Highlands Alliance (OHA) appreciates your leadership in returning salmon home to the rivers and streams of the Upper Columbia. OHA supports UCUT's draft proposal to study the return of salmon to the rivers and streams above Grand Coulee Dam. OHA agrees with the transboundary approach to reintroduction with a focus on adult and juvenile fish passage at critical barriers posed by dams on both the US and Canadian side of the border.

OHA supports the strategy of incremental reintroduction, and the first phase of preliminary planning, research, and experimental pilot studies should be accomplished in a timely fashion, with completion occurring by the end of 2016. These studies will be helpful teering he reintroduction and passage strategies that are developed for Phase 2 and into the future.

Salmon are a key component of the well being of traditional ecosystems in the Upper Columbia, and are an important part of both our economy and the environment. OHA encourages UCUT to develop a solid public process in involve community members in the region.

The loss of salmon in the Upper Columbia has never been adequately mitigated. Now more than ever, in ay nd ge hen he eb f life is oo ften isregarded, it's ime e ight istoric wrongs, move to repair damage, and restore integrity to our rivers and forests of which salmon are an essential part. Thank you again for taking this important step forward, hich ill enefit all of us.

Sincerely,

Julie Ashmore

Julie Ashmore
Conservation Coordinator

From: donna olson
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:58:57 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

donna olson
519 windsor ave.
medford, OR 97504

From: Marlene Olveda
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:40:51 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Marlene Olveda
3713 N. Michigan
Portland, OR 97227

From: Markus Opel
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 6:08:24 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Markus Opel
422 NW Manzanita Ave.
Grants Pass, OR 97526

From: Thomas Osborn
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:45:56 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Thomas Osborn
77595 N Loop Rd
Stanfield, OR 97875

From: Thomas Osborn
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 7:29:35 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Thomas Osborn
77595 N loop Rd
Stanfield, OR 97875

From: Peter Ovington
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 5:30:18 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Peter Ovington
3291 SE Silver Springs Rd
Milwaukie, OR 97222

From:	Greg Haller
To:	John Sirois
Subject:	Support for reintroduction plan
Date:	Friday, February 27, 2015 2:22:11 PM
Attachments:	Letter of support.pdf

Hi John,
Please find attached PRC's letter of support of the reintroduction plan.

Hope all is well with you.

Greg

--

GREG HALLER | CONSERVATION DIRECTOR | PACIFIC RIVERS COUNCIL
317 SW ALDER STREET, SUITE 900
PORTLAND, OREGON 97204

OFFICE: 503.228.3555 | CELL: 208.790.4105

Pacific Rivers Council .org

February 27, 2015

Dear Upper Columbia United Tribes,

I'm writing in strong support of your proposal to return anadromous fish to the Upper Columbia River and its tributaries.

The phased approach that you've proposed is well thought out, comprehensive and inclusive. In particular, Phase 1 will generate appropriate information necessary for making informed decisions in subsequent phases.

Phase 1 of your plan includes developing a communications plan and demonstrating public support. These two objectives will be critical to the overall success of the plan and I strongly encourage a robust effort in these areas.

Fish passage technologies have improved significantly over the years and there is well-justified optimism that these technologies can be implemented successfully at Grand Coulee, Chief Joseph and other dams upriver. Additionally, your efforts to reintroduce salmon in the upper Columbia can serve as a model for others that want to restore salmon above the Hells Canyon Complex and Dworshak Dam.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia. The time to rectify this problem is now and the Tribes are the right people to lead the effort.

Sincerely,

Greg Haller
Conservation Director

317 SW Alder Street, Suite 900 Portland, OR 97204 Tel: 503-228-3555

From: Elaine Packard
To: John Sirois
Subject: Returning salmon to the Upper Columbia River
Date: Tuesday, February 24, 2015 9:40:27 AM

Dear Upper Columbia United Tribes,

Thank you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia.

I support UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 to prepare for the next step of salmon return: Phase 2.

Because salmon can be an important boost for our economy and environment, I encourage you to undertake a robust public process to involve the public of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia. In this time of climate change and melting glaciers, it's time we right historic wrongs, move to repair damage, and restore integrity to our rivers and forests of which salmon are a part. Thank you again for taking this important step forward for all of us.

Elaine Packard
222 31st Ave.
Seattle, WA 98122

From:	Eileen Delehanty Pearkes
To:	John Sirois
Subject:	Re: Upper Columbia River Basin Fish Passage and Reintroduction; Open and Please send us your comments
Date:	Wednesday, January 28, 2015 11:02:55 AM
Attachments:	image004.png

Hi John

What you outline in this document is historic and extremely important. It's my privilege to comment:

1. There is great care, consideration and diligence in UCUT's technical plan related to fish and water. I wish you every success.

2. There may be more opportunities to formulate a communications plan that reaches north with intention, setting a tone of trans-boundary leadership, inclusivity and respect. Moving forward in this way has the potential to dramatically increase the ultimate success of the project. As we discussed a few weeks ago, there is historical precedent for an agency such as yours to take the leadership on salmon restoration, dating back to the presence of a Salmon Chief at the falls.

If you'd like more specific input from me on how to "move upstream into Canada," with your communications plan, I would be happy to offer my professional services to help.

very best regards,

Eileen Delehanty Pearkes

On Tue, Jan 27, 2015 at 12:14 PM, John Sirois <john@ucut-nsn.org> wrote:

> Here is the word document to make it easier!
>
> ***John E. Sirois***
>
> ***Committee Coordinator***
>
> ***25 W. Main, Suite 434***
>
> ***Spokane, WA 99201***
>
> ***Cell 509.953.5272***
>
> ***Office 509.838.1057***
>
> ***Fax 509.209.2421***

john@ucut-nsn.org

www.ucut.org

From: John Sirois
Sent: Tuesday, January 27, 2015 12:04 PM
To: John Sirois
Subject: Upper Columbia River Basin Fish Passage and Reintroduction; Open and Please send us your comments

Greetings Honored Colleagues,

UCUT E-newsletter DRAFT

January 2015

DRAFT 1.27.15

Subject: **Phase I plan for Upper Columbia River Basin Fish Passage & Reintroduction**

Phase I plan for Upper Columbia River Basin Fish Passage &

Reintroduction

The Upper Columbia United Tribes (UCUT) have developed a draft work and coordination plan [link] to initiate investigations into the reintroduction of anadromous fish back into mainstem Columbia River reaches and tributaries in the United States.

Check out the coverage on this topic in The Spokesman-Review.

We want to hear your thoughts!

UCUT's phase 1 work plan proposes 11 objectives and 36 tasks to gather sufficient background information on scientific feasibility, possible cost, and habitat potential. This information will then be reviewed by the Council and region before deciding on whether to construct interim fish passage facilities at Chief Joseph and Grand Coulee dams, test fish reintroductions and pursue additional studies.

Let us know what you think! UCUT would appreciate your review and comment on this draft project work and coordination plan. Email John Sirois, john@ucut-nsn.org.

John E. Sirois

Committee Coordinator

25 W. Main, Suite 434

Spokane, WA 99201

Cell 509.953.5272

Office 509.838.1057

Fax 509.209.2421

john@ucut-nsn.org

www.ucut.org

--
Eileen Delehanty Pearkes
1522 Stanley Street
Nelson, B.C. V1L 1R3 Canada

"It's not possible to know the present and to explore future possibilities without understanding well the terrain of the past." from work-in-progress, *A River Captured*

From: Martha Perez
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 8:02:53 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Martha Perez
920 NW Kearney ST # 110
n/a
Portland, OR 97209

From: Lela Perkins
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 5:58:46 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Lela Perkins
15109 50th Ave SE
Everett, WA 98208

From: Thom Peters
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 1:05:50 PM

"To go fishing is the chance to wash one's soul with pure air, with the rush of the brook, or with the shimmer of sun on blue water. It brings meekness and inspiration from the decency of nature, charity toward tackle makers, patience toward fish, a mockery of profits and egos, a quieting of hate, a rejoicing that you do not have to decide a darned thing until next week. And it is discipline in the equality of men- for all men are equal before fish."

-Hebert Hoover

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Thom Peters
7725 Riverview Road
Snohomish, WA 98290

From: Christine Pimiskern
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:05:40 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Christine Pimiskern
2008 4 Ave NW
Calgary, AB T2N0N3

From:	Doug Pineo
To:	John Sirois
Subject:	restoring salmon to the upper Columbia River.
Date:	Thursday, February 26, 2015 11:30:16 AM

Dear John,

I'm very inspired by the possibility of restoring wild runs of salmon to the upper Columbia, above Grand Coulee Dam. A lot of my fellow inland Northwesterners won't have the vision or heart to share this potential, but don't let that deter us from moving forward toward this goal. It can and must be achieve!

Best regards,

Doug

Doug Pineo
Pineo Ecological Services LLC
4210 S. Dorset Rd.
Spokane, WA 99224
509-624-3427
509-230-3140 cell
dpineo@comcast.net

From: Doug Pineo
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:26:11 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Doug Pineo
4210 S. Dorset Rd.
Spokane, WA 99224

From:	Derek Poon
To:	John Sirois
Cc:	John Osborn; Rachael Osborn; Joan Crooks; Becky Kelley; Environmental Priorities Coalition; Katelyn Kinn
Subject:	UCUT support letter
Date:	Wednesday, February 25, 2015 2:02:54 PM
Attachments:	UCUT support letter, on salmon in the upper Columbia River, 2-25-15.pdf

---

25 February 2015

John Sirois
john@ucut-nsn.org
Upper Columbia United Tribes

Dear John,

Thanks to a recommendation from Dr. John Osborn of the Sierra Club and Center for Environmental Law and Policy (CELP), I am privileged to provide the attached support letter to Upper Columbia United Tribes' (UCUT) efforts to return salmon to the Upper Columbia River.

I am copying the Washington Environmental Council and Katelyn Kinn of the Sierra Club.

All the best to your noble journey.

Derek

--

Derek Poon
400 Boylston Ave E, #2
Seattle, WA 98102
206-729-9378, derekcpoon@gmail.com

"All it takes is for the right people in the right position to take action."
David Lewis, SCIENCE FOR SALE, 2014

From:	Derek Poon
To:	Mike Grayum; John Hollowed; critfe@critfc.org
Cc:	John Sirois; John Osborn; Rachael Osborn; Katelyn Kinn
Subject:	For NWIFC: UCUT support letter
Date:	Wednesday, February 25, 2015 2:22:28 PM
Attachments:	UCUT support letter, on salmon in the upper Columbia River, 2-25-15.pdf

---

Mike Grayum, John Hollowed, and Paul Lumley,

Sorry I didn't copy you.

Best.
Derek
--
Derek Poon
400 Boylston Ave E, #2
Seattle, WA 98102
206-729-9378, derekcpoon@gmail.com

"All it takes is for the right people in the right position to take action."
David Lewis, SCIENCE FOR SALE, 2014

---------- Forwarded message ----------
From: **Derek Poon** <derekcpoon@gmail.com>
Date: Wed, Feb 25, 2015 at 2:02 PM
Subject: UCUT support letter
To: john@ucut-nsn.org
Cc: John Osborn <John@waterplanet.ws>, Rachael Osborn <rdpaschal@earthlink.net>, Joan Crooks <joan@wecprotects.org>, Becky Kelley <becky@wecprotects.org>, Environmental Priorities Coalition <lisa@wecprotects.org>, Katelyn Kinn <katelyn@pugetsoundkeeper.org>

25 February 2015

John Sirois
john@ucut-nsn.org
Upper Columbia United Tribes

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Thanks to a recommendation from Dr. John Osborn of the Sierra Club and Center for Environmental Law and Policy (CELP), I am privileged to provide the attached support letter to Upper Columbia United Tribes' (UCUT) efforts to return salmon to the Upper Columbia River.

I am copying the Washington Environmental Council and Katelyn Kinn of the Sierra Club.

All the best to your noble journey.

Derek
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Derek Poon
400 Boylston Ave E, #2

Seattle, WA 98102
206-729-9378, **derekcpoon@gmail.com**

"All it takes is for the right people in the right position to take action."
David Lewis, SCIENCE FOR SALE, 2014

Sent to: John Sirois **john@ucut-nsn.org** Upper Columbia United Tribes

25 February 2015

Dear Upper Columbia United Tribes,

This is a support letter for your noble efforts to return salmon home to the rivers and streams of the Upper Columbia, and I encourage you to undertake a robust public process to involve the public of the region.

As a recently retired professional biologist; hatchery and natural production expert; a private and public sectors manager in the West Coast; and having worked with Tribes from Alaska to California, particularly in the Columbia Basin; I have a unique understanding and appreciation for your leadership.

My one-page resume is pasted at the end of this letter for your background.

My personal experience includes a very successful salmon lake stocking program and capture of returning salmon adults in Southeast Alaska, and technical review of already sustained wild salmon production using the "truck and haul" system in Skagit River's Baker Lake in Western Washington. This background gives me a healthy respect for how challenging it is to return salmon to the upper Columbia River through the world's largest hydro dams system, particularly when hatcheries have been used to replace habitat.

While there is no denying that Upper Columbia River salmon production requires the "Wisdom of Solomon" to plan and implement, I am absolutely confident that with proper funding, public support, technical guidance and patience, the Tribes can see returning salmon in the upper Columbia within our lifetimes.

The Upper Columbia United Tribes (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam is a fully feasible incremental strategy, and a step worthy of support of the United States and Canada in a bilateral and coordinated program required for long-term success.

I understand this first phase of the study needs to be done in a timely way, and be completed by the end of 2016 to prepare for the next step of salmon return: Phase 2. Having studied your project concepts, including the Columbia Basin Intertribal Fish Commission's (CRITFC) phase-wise project development strategy, we have the fundamentals to commit to getting the job done.

I was profoundly moved by your video "Treaty Talks: A Journey Up the Columbia River for People and Salmon" because I believe it is only morally right that the Tribes be honored given our government's unfulfilled promises. In addition, if properly designed, returning salmon can be an important boost for our economy and environment.

As a former Clean Water Act (CWA) and Endangered Species Act (ESA) specialist, Tribal Treaty rights, Tribal social and cultural salmon dependence, and ESA- listed species are all protected Existing and Designated "uses" (DU) under the CWA. DU protection is a legal part of a CWA water quality standard and fully comports with your goal. In addition, under ESA

Section 7(a)(1), all federal agencies are to use their program authorities to promote ESA species recovery and delisting. Your program is clearly consistent with 7(a)(1).

There has never been adequate mitigation for the loss of salmon in the Upper Columbia. In this time of climate change and melting glaciers, it's time we right historic wrongs, move to repair damage, and restore integrity to our rivers and forests of which salmon are a part.

Thank you again for taking this important step forward for all of us.

Respectfully submitted,

Derek Poon
400 Boylston Ave E, #2
Seattle, Washington 98102
206-729-9378, derekcpoon@gmail.com

Derek Poon

derekcpoon@gmail.com, 206-729-9378

EDUCATION: Ph.D. Fisheries, Oregon State University, 1977
B.A. Zoology, University of California, Berkeley, 1967

EXPERIENCE:

NATURAL RESOURCE CONSULTANT (Since retirement 12/8/11)
[Current work on Adaptive Management and compliance with Endangered Species Act (ESA) and Clean Water Act (CWA)]

REGIONAL SALMON ECOLOGIST and ESA SPECIALIST
US Environmental Protection Agency, Seattle, Washington (2001-2011)

ENDANGERED SPECIES ACT BIOLOGIST
Sustainable Fisheries Division
National Marine Fisheries Service, Seattle, Washington (1997-2001)

ADMINISTRATOR, Washington State Timber/Fish/Wildlife (TFW) Policy Group
Seattle, Washington, 1996 to 1997

CO-CHAIR, Washington State TFW Policy Group, 1994-1995

CHIEF, King County Natural Resource Planning Section
Seattle, Washington, 1986 to 1995

FACILITATOR, US Section, US/Canada Salmon Treaty Negotiations
Seattle, Washington, 1985

Pacific Northwest Salmon and Steelhead ENHANCEMENT COORDINATOR

Salmon and Steelhead Conservation & Enhancement Act
Portland, Oregon and Seattle, Washington, 1983 to 1986

CONSULTANT, Northwest Power Planning Council
COUNCIL-DESIGNATED REVIEWER, Columbia Basin Fish & Wildlife Program
Portland, Oregon, 1981 to 1983

GENERAL MANAGER, Northern Southeast Regional Aquaculture Association
Sitka, Alaska, 1977 to 1981

PROGRAM AND POLICY MANAGER, Governor's Special Projects Office
Juneau, Alaska, 1977

FISHERIES PROGRAM DIRECTOR, Sheldon Jackson College
Sitka, Alaska, 1973 to 1975

SALMON RESEARCHER
National Marine Fisheries Service (Alaska Region) and Oregon State University
1968 to 1973, 1975 to 1977

Current Interests: Marathon running; news; reading; music.

February 2015

From: Allan Potter
To: John Sirois
Subject: Fish Passage Research Ideas
Date: Sunday, February 08, 2015 5:47:30 AM
Attachments: Fish Passage 101.docx
Fish Passage 102.docx
Figure1withlabels.pdf
Fish passage 103.docx
figure2withlabels.pdf

John: It has come to my attention that you are interested in the passage of anadromous species through Chief Joseph and Grand Coulee dams plus those on the Spokane river in order to get these fish into Canada and the US, west of the Rocky Mountains, to their long abandoned spawning sites. As you know, there are so many different groups active in the area of fish passage through hydro and hydroelectric dams, that little of importance gets done. With electric power generation groups mixed in, it becomes even more difficult to make any headway. I am sending you a write up of some ideas for research on passage systems that I feel could be very useful. My interest in fish passage activities remains on an active level because my son lives on the Spokane river west of the falls where salmon used to roam. The need is for a currently blocking anadromous dam where research on these passage systems could be accomplished. In any case if I can be of help let me know! Best Regards! AGP

Fish Passage Research Ideas

Enclosed re ome ideas n ow o give anadromous spawners and smolts safe passage through hydroelectric or hydro dams. My interest in he development of solutions for fish passage at these particular dams resulted from my fishing for Salmon and Steelhead on the Rogue, Snake, Klickitat, Columbia, Clearwater, and Grand Ronde rivers in the states of Washington, regon, nd daho. These species are also blocked, where my son lives along the Spokane River, nd his ituation as lso erved to increase my interest in new fish passage system designs.

I ealize hat here ave een any ifferent esigns for fish passage systems at hydroelectric and hydro dams in the United States. Even so, I would like to suggest that some experimental testing and research on the new ideas resented ere might have some useful results. If his urns ut o e he case, it might then be possible to consider employing these techniques at some of the dams not having effective fish passage systems.

A project using these ideas will not be without some risk. However, f he teps sed re afe and feasible, hey should be worth testing. Since I am a retired electrical engineering professor, some of the steps in these proposed fish passage ideas may need to be modified. What I would most like to accomplish, is to interest group currently doing fish passage research into oking eriously t hese proposed fish passage ideas.

So far it has become apparent that there are at least two difficult problems to overcome before any research on these proposed fish passage ideas can be accomplished. First, nearly all fish passage research groups have their own ideas about the projects that they are promoting and working on. Second, significant research can only be undertaken at dam sites that block anadromous species. Since the government and electric utilities own almost all of the possible research sites, it is very difficult to find a good location for fish passage research. Another problem involves the securing of long term funding to cover this type of research for up to 6 – 12 years.

In fish passage idea #1, smolts and spawners move through a stalled, vertical axis turbine runner to achieve safe passage. In ea 2 a vacuum lift technique is sed to move fish ver a dam if movement through one of the turbine generators is ot ossible. Providing lighted routes at night for these passage systems may make them more successful than if daylight hours were used. Diagrams for these passage systems are given in figures # 1 and # 2.

Allan Potter, 2019 Taylor Circle, Ames, IA, 0010, agpotter66@yahoo.com, 15 233 4688

IDEA 1

Fish Passage at Hydroelectric Dams

This idea for fish passage research is restricted to hydroelectric dams, like Grand Coulee and others with vertical axis turbines, where ladders and other passage techniques have not been used. The fish involved re pawners nd molts f nadromous pecies. In his ea, ne vertical xis ydroelectric turbine in ach dam is sed at night, during off peak power demand periods to help move spawners and smolts through to better spawning streams or to the ocean. All anadromous species of interest will take the same turbine passage route containing a sluice gate, penstock, wicket gate, stalled runner, and draft tube. For the migrating fish in the turbine and HDPE pipes, there will be underwater lighting and water flowing at a proper speed and depth to ease their passage. A float, positioned in the reservoir above the dam, will contain HDPE pipes for fish collection and lift, along with a vacuum pump and anchor cable system. Also needed is a float to penstock corrugated HDPE pipe, a vacuum delivery tube, an electrical switching device, and a three phase transformer bank. An HDPE corrugated pipe extends from the reservoir float down and through a pipe sluice gate mounted on the penstock side of the main sluice gate. The bottom the penstock input opening matches with that of the pipe sluice gate. During the operations of power generation or fish passage, the pipe sluice gate will keep the penstock open only to the reservoir and the HDPE corrugated fish transfer pipe, as required. To make up for the loss of electrical output from the passage turbine, ll f he ther turbines will be run at slightly igher ower output levels so that power system output, efficiency, and operating costs will essentially e naffected.

IDEA 1

Passage of Anadromous Spawners at Hydroelectric Dams

This process starts in the evening after spawners have arrived at a hydroelectric dam having vertical axis turbines. At this time, ne f he ydroelectric turbines is shut down using a standard procedure. This action results in this turbine generator being disconnected from the electric power grid, the sluice and wicket gates closed, and the runner speed brought to zero. When this activity is completed, the generator is connected to a three phase transformer bank, for later use. The wicket gate is then opened to fill the HDPE with water up to the reservoir level and allow anadromous spawners to pass through into he enstock. Now, the vacuum pump on the float is started and adjusted to provide a controlled flow of water down the corrugated HDPE fish transfer pipe, through the pipe sluice gate and into the penstock. The water flow rate is such that the HDPE pipe is partially full of water all the way through the pipe sluice gate that feeds water into the penstock. Next, the three phase transformer bank is connected to the turbine generator and the phase voltage adjusted to provide a torque that stalls the runner. In ther ords, the generator acting as a motor provides a torque equal and opposite to that produced by the water flowing in he runner. Now, spawners can swim into the reservoir in afety on a continuous basis. As dawn approaches, the turbine generator being used for fish passage is reconnected to the electric power system and started in a normal fashion.

IDEA 1

Passage of Anadromous Smolts at Hydroelectric Dams

This process starts in the evening hen molts re lose to a hydroelectric dam having vertical axis turbines. At this time, the hydroelectric turbine chosen for fish passage is shut down using standard procedure. This action results in the turbine generator being disconnected from the electric power grid, the main sluice and wicket gates closed, and the runner speed brought to zero. When this activity is finished, the pipe sluice gate makes the penstock inlet open only to the corrugated HDPE pipe going up to the float. Now, the wicket gate is opened to let smolts into the runner. At this point, he vacuum pump, on the float, is tarted and adjusted to provide an attractive flow of water for the smolts moving down the HDPE pipe that is open into he enstock via the pipe sluice ate. The three phase transformer bank is then connected to the turbine generator and the per phase voltage adjusted to provide a torque that stalls he unner. In ther ords the generator acting as a motor provides a torque equal and opposite to that produced by the water flowing hrough he unner. ow, smolts in the reservoir can swim safely and continuously through the corrugated HDPE pipe, penstock, stalled runner, and draft tube. From this point the smolts move from the draft tube into he iver. In rder o return to a generation mode the vacuum pump is turned off and the wicket gate closed. Now, one can open the penstock to the reservoir using the sluice gate, start the generator, synchronize it with the power grid, and start supplying energy to electrical loads.

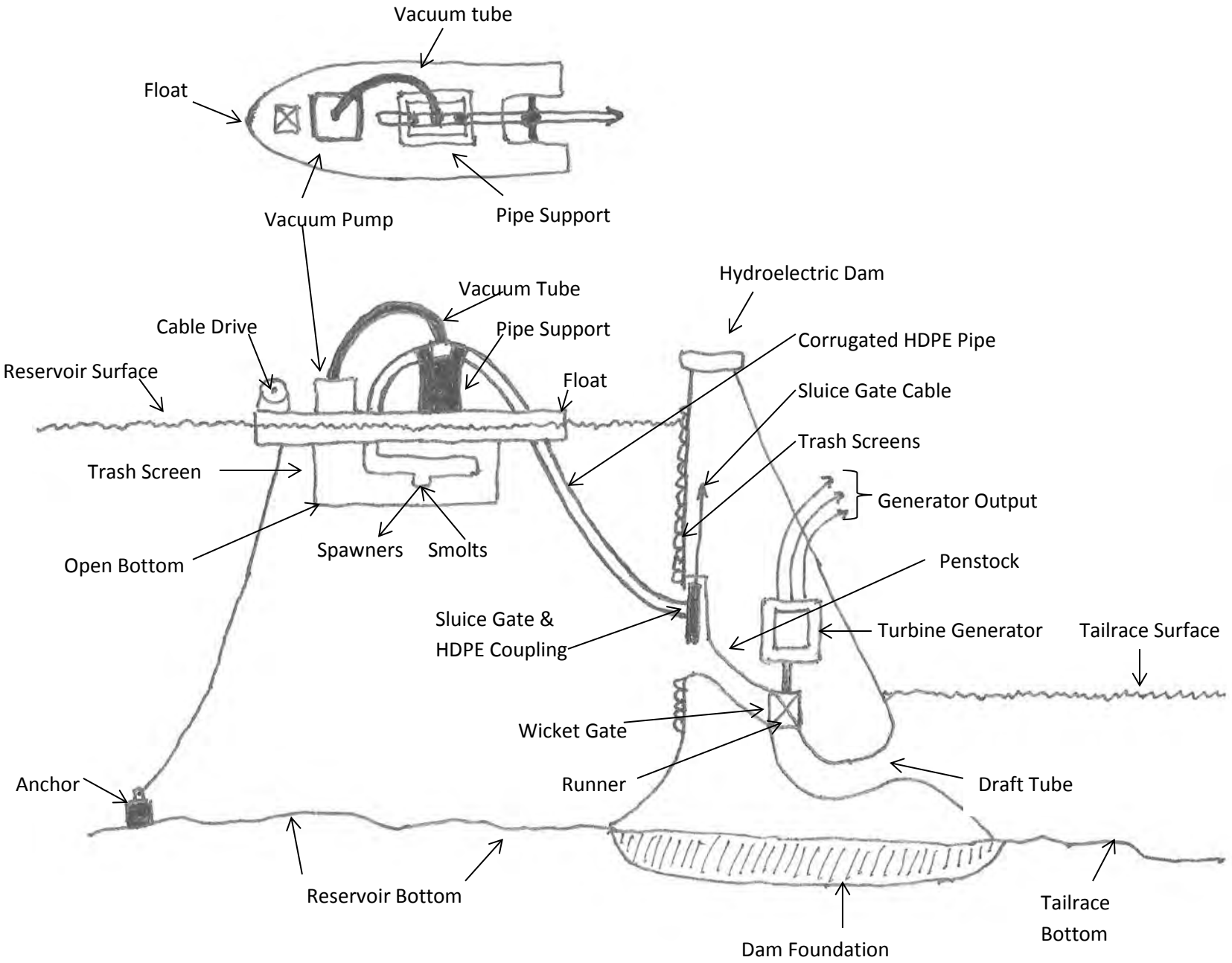

Figure 1: Fish Passage System

IDEA 2

Fish Passage at Hydro Dams

Another method for moving fish over hydro or hydroelectric dams, during spawner and smolt runs going to and from the ocean, involves using a vacuum pump to provide the necessary water lift. The components used in this type of fish passage system include corrugated HDPE pipes, lift tations, rails for physical support, and a reservoir float. To provide physical support, ails re used as mounts for the corrugated HDPE pipes and lift station water tanks. Lift tations are designed so that atmospheric pressure exists on the water surface of each storage tank. Pulling a vacuum in the HDPE fish transfer pipe is hen sed to move water and fish into the next higher lift station tank. This is accomplished by connecting a tube from the vacuum pump to the top of the fish passage tube, where it turns downward into he next higher lift station water tank. It may be necessary for the fish passage tube to be shaped in a spiral between each lift station so that the fish lift height per unit transfer tube length limited. t the point where the transfer tube turns down into the next higher lift tation ank the output must be higher than the surface of the water in he tank being filled. From the highest lift tation nit, smolts are moved over the dam in n HDPE corrugated pipe that runs down into he ailrace and river as shown in ig. . In rder o move spawners over the dam and into the reservoir, he ater low rate and light level at the tailrace entrance must be adjusted to attract them into the inlet of the HDPE fish transfer pipe.

IDEA 2

Passage of Spawning Anadromous at Hydro Dams

With the arrival of anadromous spawners, the vacuum pump in ig. is sed o educe the air pressure in the corrugated HDPE pipes to move fish over the dam. To do this, the fish transfer pipe pressure is reduced until reservoir water flows through the float mounted lift tation. Water will then flow through the other lift stations, over the dam, and down into the tailrace. Spawners can then sense this water flow and proceed over the dam and into the reservoir. Underwater lighting in the fish transfer pipes and lift stations will definitely be necessary at night. As long as anadromous spawners are present at the tailrace entrance, this fish passage process can proceed in a continuous fashion. It assumed here that the vertical distance from the lift tation ater urface o he eak height of an HDPE pipe, here it urns nd oes own to he ext igher lift tation ank, is bout he ame or less than the distance from the reservoir surface to the turning point of the HDPE pipe going into the lowest lift station tank.. When spawners are not present in ufficient umbers, he vacuum pump will be turned off until more fish are available.

Idea 2

Passage of Smolts at Hydro Dams

In order to move anadromous smolts with a vacuum lift, hey must be attracted through or under a fish screen that encloses a fixed volume of water below the float bottom surface as shown in Fig. 2. This particular fence type screen is used to keep trash out from under the float and allow smolts to easily enter the fish transfer pipe. The corrugated HDPE fish transfer pipe with a fish entrance section is hen run from the screened in olume under the float up to a pipe support fixture on the float. This pipe runs along the support fixtures toward the end of the float. It then runs down into the reservoir and later omes p bove he eservoir urface and turns down into the lowest lift station tank. When a sufficiently strong vacuum is applied to the corrugated HDPE fish transfer pipe, flowing reservoir water becomes available. Smolts can now swim into the lowest dam lift station tank, up through the other lift stations, over the dam, and into he ailrace. This process is basically a continuous one as long as smolts are available. Otherwise, the vacuum pump is shut off.

IDEA 2

Additional Comments

1) The word penstock is reserved for the water channel from inlet sluice gate to the wicket gate

2) Sluice gate is reserved for the penstock inlet lift gate

3) Dams proposed as possible fish passage research sites

    a) Iron gate on the Klamath River in California ---------- Pacificorp

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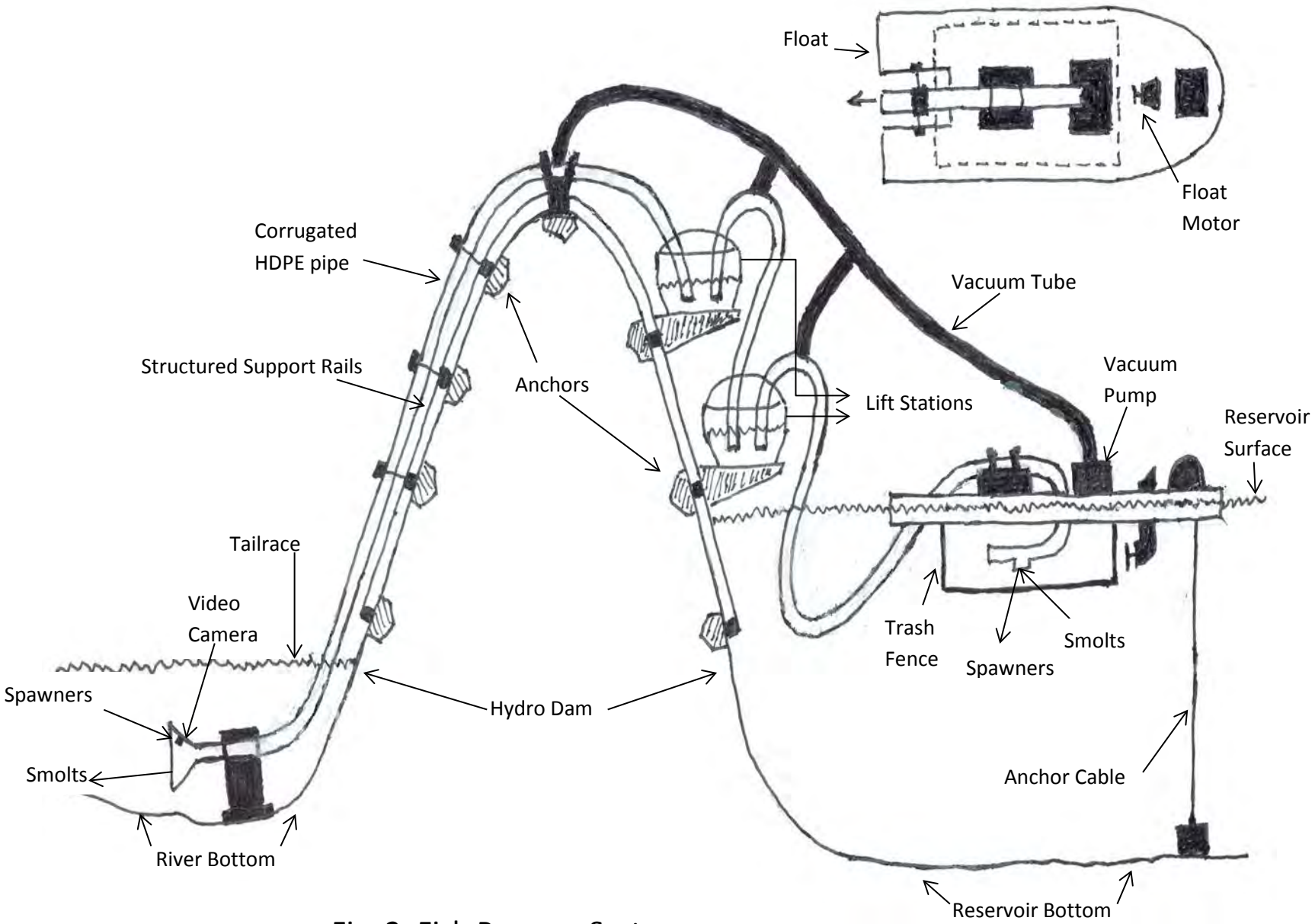

Fig. 2: Fish Passage System

From: Allan Potter
To: John Sirois
Subject: Fish Passage Research Ideas
Date: Tuesday, February 10, 2015 6:37:16 PM

John: Am in the process of trying to find a hydro or hydroelectric dam in the Columbia River watershed that blocks anadromous fish species, has a fish passage system, and is owned or operated by UCUT. Perhaps you know of a dam site where the unit is to be removed in 6-8 years that could be used. I feel it will be very hard to get funding for the fish passage system being proposed if a good test site is not found. Your help would be much appreciated. Best Regards! AGP

From: Allan Potter
To: John Sirois
Subject: Fish Passage Research Ideas
Date: Thursday, February 12, 2015 8:39:32 PM

John: Thanks for your reply to my passage ideas. For three years now I have been trying to find a site where some research could be done on my passage ideas without success. However, I think the successful procurement of a test site, is necessary before the other needs for this aquatic research can be obtained with relative ease. Thus, I am asking if any Canadian tribes in UCUT are owners or operators of anadromous blocking hydro or hydrelectric dams. Whether or not they have a fish passage unit is not important. Another possibility is a government or business owned dam that is scheduled for removal in a few years. Best Regards! AGP

From: Allan Potter
To: John Sirois
Subject: Fish Passage Research Dam
Date: Sunday, February 22, 2015 7:59:00 PM

John: Do you know of any hydroelectric dams that block anadromous fish species in the US or Canada which are owned and operated by Indian Tribes. The name of tribe and it's email address is what I need.
Thanks for your help! AGP

From:	Allan Potter
To:	John Sirois
Subject:	Re: Fish Passage Research Dam
Date:	Saturday, February 28, 2015 2:01:42 PM
Attachments:	Fish Passage 101.docx Fish Passage 102.docx Figure1withlabels.pdf Fish passage 103.docx figure2withlabels.pdf

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John: Have rewritten the first page of my Fish Passage Research Ideas paper and made some other corrections.
Best Regards! AGP

On Monday, February 23, 2015 11:21 AM, John Sirois <john@ucut-nsn.org> wrote:

Allan,

I am not familiar with any, but I will certainly put that question to our Fish Passage Committee to see if they have any further information. Thanks for the question!

Thanks

John E. Sirois
Committee Coordinator
25 W. Main, Suite 434
Spokane, WA 99201
Cell 509.953.5272
Office 509.838.1057
Fax 509.209.2421
john@ucut-nsn.org
www.ucut.org

From: Allan Potter [mailto:agpotter66@yahoo.com]
Sent: Sunday, February 22, 2015 7:59 PM
To: John Sirois
Subject: Fish Passage Research Dam

John: Do you know of any hydroelectric dams that block anadromous fish species in the US or Canada which are owned and operated by Indian Tribes. The name of tribe and it's email address is what I need.
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Fish Passage Research Ideas

Enclosed re ome ideas n ow o give anadromous spawners and smolts safe passage through hydroelectric or hydro dams. My interest in he development of solutions for fish passage at these particular dams resulted from my fishing for Salmon and Steelhead on the Rogue, Snake, Klickitat, Columbia, Clearwater, and Grand Ronde rivers in the states of Washington, regon, nd daho. These species are also blocked, where my son lives along the Spokane River, nd his ituation as lso erved to increase my interest in new fish passage system designs.

I ealize hat here ave een any ifferent esigns for fish passage systems at hydroelectric and hydro dams in the United States. Even so, I would like to suggest that some experimental testing and research on the new ideas resented ere might have some useful results. If his urns ut o e he case, it might then be possible to consider employing these techniques at some of the dams not having effective fish passage systems.

A project using these ideas will not be without some risk. However, f he teps sed re afe and feasible, hey should be worth testing. Since I am a retired electrical engineering professor, some of the steps in these proposed fish passage ideas may need to be modified. What I would most like to accomplish, is to interest group currently doing fish passage research into oking eriously t hese proposed fish passage ideas.

So far it has become apparent that there are at least two difficult problems to overcome before any research on these proposed fish passage ideas can be accomplished. First, nearly all fish passage research groups have their own ideas about the projects that they are promoting and working on. Second, significant research can only be undertaken at dam sites that block anadromous species. Since the government and electric utilities own almost all of the possible research sites, it is very difficult to find a good location for fish passage research. Another problem involves the securing of long term funding to cover this type of research for up to 6 – 12 years.

In fish passage idea #1, smolts and spawners move through a stalled, vertical axis turbine runner to achieve safe passage. In ea 2 a vacuum lift technique is sed to move fish ver a dam if movement through one of the turbine generators is ot ossible. Providing lighted routes at night for these passage systems may make them more successful than if daylight hours were used. Diagrams for these passage systems are given in figures # 1 and # 2.

Allan Potter, 2019 Taylor Circle, Ames, IA, 0010, agpotter66@yahoo.com, 15 233 4688

IDEA 1

Fish Passage at Hydroelectric Dams

This idea for fish passage research is restricted to hydroelectric dams, like Grand Coulee and others with vertical axis turbines, where ladders and other passage techniques are not suitable. The fish involved re pawners nd molts f nadromous pecies. In his ea, ne vertical xis ydroelectric turbine in ach dam is sed at night, during off peak power demand periods to help move spawners and smolts through to better spawning streams or to the ocean. All anadromous species of interest will take the same turbine passage route containing sluice gate, penstock, wicket gate, runner, and draft tube. For the migrating fish in the turbine and HDPE pipes, there will be underwater lighting and water flowing at a proper speed and depth to ease their passage. A float, positioned in the reservoir above the dam, will contain HDPE pipes for fish collection and lift, along with a vacuum pump and anchor cable system. Also needed are corrugated HDPE pipes of 2.0 ft inside diameter or more, a vacuum delivery tube, electrical switching devices, and a three phase transformer bank. An HDPE corrugated pipe extends from the reservoir float down and through a specially designed sluice gate. During operations of power generation or fish passage, the modified sluice gate will keep the penstock open only to the reservoir or to the HDPE corrugated fish transfer pipe, as required. To make up for the loss of electrical output from the passage turbine, ll f he ther turbines will be run at slightly igher ower utput vels o hat power system efficiency and operating costs will essentially e naffected.

IDEA 1

Passage of Anadromous Spawners at Hydroelectric Dams

This process starts in the evening after spawners have arrived at a hydroelectric dam having vertical axis turbines. At this time, ne f he ydroelectric turbines is shut down using a standard procedure. This action results in this turbine generator being disconnected from the electric power grid, the sluice and wicket gates closed, and the runner speed brought to zero. When this activity is completed, the generator is connected to a three phase transformer bank, for later use. Then, the wicket gate is opened enough to allow spawners of all sizes to pass through. Now, the vacuum pump on the float is started and adjusted to provide a controlled flow of water down the corrugated HDPE fish transfer pipe, through the specialized sluice gate and into the penstock. The water flow rate is such that the HDPE pipe is full of water to a position above the specialized sluice gate that feeds water into the penstock. Next, the three phase transformer bank is onnected o he turbine generator and the phase voltage adjusted to provide a torque that stalls the runner. In ther ords, the generator acting as a motor provides a torque equal and opposite to that produced by the water flowing in he runner. Now, spawners can swim into the reservoir in afety on a continuous basis. This fish passage system, shown in Fig. 1, requires a turbine generator with a squirrel cage rotor winding in order to develop the needed motor torque at zero speed. As dawn approaches the generator is disconnected from the transformer bank, the vacuum pump turned off, and the wicket gate closed.

IDEA 1

Passage of Anadromous Smolts at Hydroelectric Dams

This process starts in the evening hen smolts are close to a hydroelectric dam having vertical axis turbines. At this time, the hydroelectric turbine chosen for fish passage is shut down using standard procedure. This action results in the turbine generator being disconnected from the electric power grid, the sluice and wicket gates closed, and the runner speed brought to zero. When this activity is finished, the special sluice gate makes the penstock inlet open only to the corrugated HDPE pipe going up to the float. Now, the wicket gate is pened o t molts to he unner. At this point, he vacuum pump, on the float, is tarted and adjusted to provide an attractive flow of water for the smolts moving down the HDPE pipe that is open into he enstock via the specialized sluice gate. The three phase transformer bank is then connected to the turbine generator and the per phase voltage adjusted to provide a torque that stalls he unner. In ther ords the generator acting as a motor provides a torque equal and opposite to that produced by the water flowing hrough he unner. ow, smolts in the reservoir can swim safely and continuously through the corrugated HDPE pipe, penstock, unner, nd raft ube . From this point the smolts move from the draft tube into he iver. In rder o return to a generation mode the vacuum pump is turned off and the wicket gate closed. Now, one can open the penstock to the reservoir using the sluice gate, start the generator, synchronize it with the power grid, and start supplying energy to electrical loads.

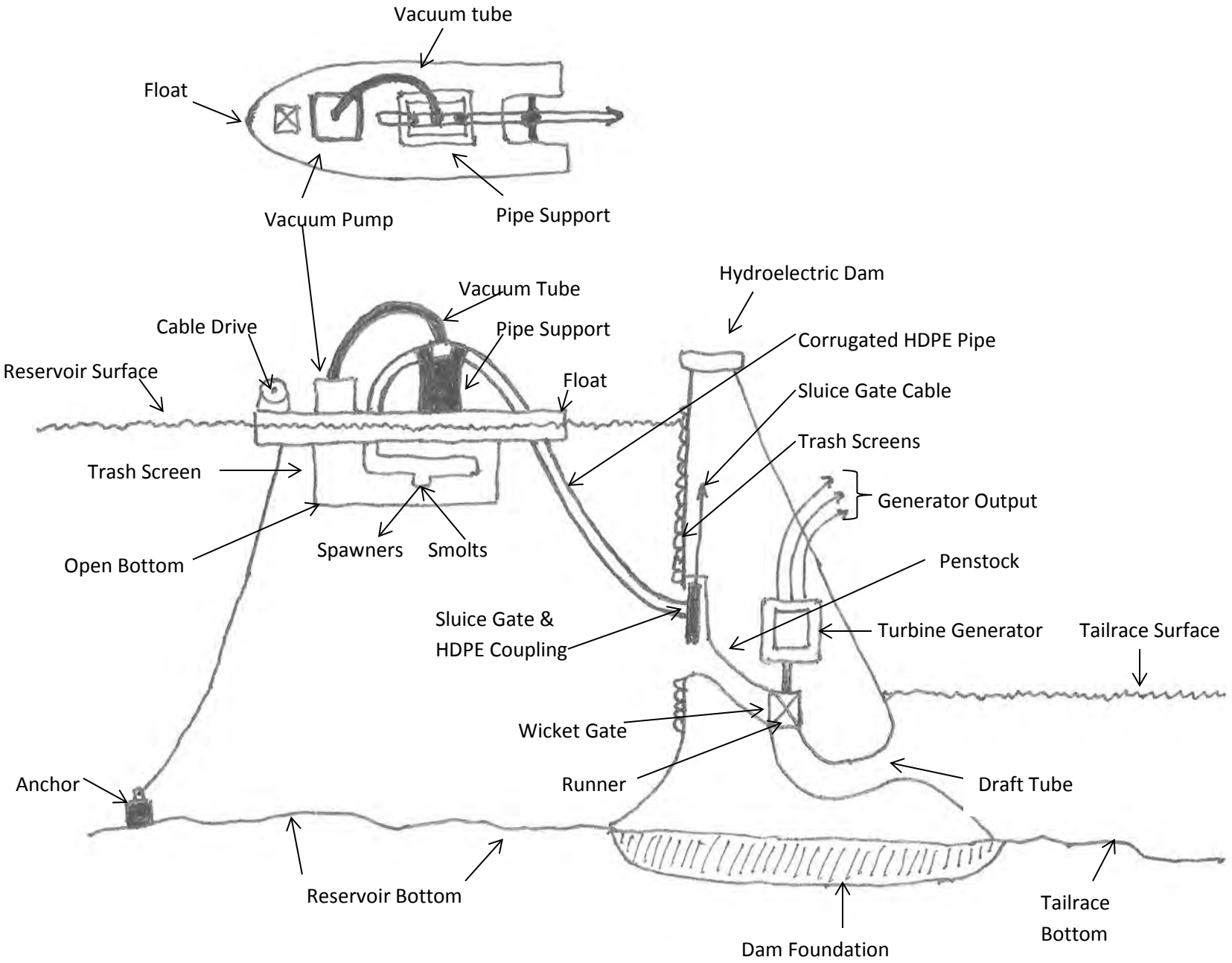

Figure 1: Fish Passage System

IDEA 2

Fish Passage at Hydro Dams

Another method for moving fish over hydro or hydroelectric dams, during spawner and smolt runs going to and from the ocean, involves using a vacuum pump to provide the necessary water lift. The components used in this type of fish passage system include corrugated HDPE pipes, lift tations, rails for physical support, and a reservoir float. To provide physical support, ails re used as mounts for the corrugated HDPE pipes and lift station water tanks. Lift tations are designed so that atmospheric pressure exists on the water surface of each storage tank. Pulling a vacuum in the HDPE fish transfer pipe is hen sed to move water and fish into the next higher lift station tank. This is accomplished by connecting a tube from the vacuum pump to the top of the fish passage tube, where it turns downward into he next higher lift station water tank. It may be necessary for the fish passage tube to be shaped in a spiral between each lift station so that the fish lift height per unit transfer tube length limited. t the point where the transfer tube turns down into the next higher lift tation ank the output must be higher than the surface of the water in he tank being filled. From the highest lift tation nit, smolts are moved over the dam in n HDPE corrugated pipe that runs down into he ailrace and river as shown in ig. . In rder o move spawners over the dam and into the reservoir, he ater low rate and light level at the tailrace entrance must be adjusted to attract them into the inlet of the HDPE fish transfer pipe.

IDEA 2

Passage of Spawning Anadromous at Hydro Dams

With the arrival of anadromous spawners, the vacuum pump in ig. is sed o educe the air pressure in the corrugated HDPE pipes to move fish over the dam. To do this, the fish transfer pipe pressure is reduced until reservoir water flows through the float mounted lift tation. Water will then flow through the other lift stations, over the dam, and down into the tailrace. Spawners can then sense this water flow and proceed over the dam and into the reservoir. Underwater lighting in the fish transfer pipes and lift stations will definitely be necessary at night. As long as anadromous spawners are present at the tailrace entrance, this fish passage process can proceed in a continuous fashion. It assumed here that the vertical distance from the lift tation ater urface o he eak height of an HDPE pipe, here it urns nd oes own to he ext igher lift tation ank, is bout he ame or less than the distance from the reservoir surface to the turning point of the HDPE pipe going into the lowest lift station tank.. When spawners are not present in ufficient umbers, he vacuum pump will be turned off until more fish are available.

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Passage of Smolts at Hydro Dams

In order to move anadromous smolts with a vacuum lift, hey must be attracted through or under a fish screen that encloses a fixed volume of water below the float bottom surface as shown in Fig. 2. This particular fence type screen is used to keep trash out from under the float and allow smolts to easily enter the fish transfer pipe. The corrugated HDPE fish transfer pipe with a fish entrance section is hen run from the screened in olume under the float up to a pipe support fixture on the float. This pipe runs along the support fixtures toward the end of the float. It then runs down into the reservoir and later omes p bove he eservoir urface and turns down into the lowest lift station tank. When a sufficiently strong vacuum is applied to the corrugated HDPE fish transfer pipe, flowing reservoir water becomes available. Smolts can now swim into the lowest dam lift station tank, up through the other lift stations, over the dam, and into he ailrace. This process is basically a continuous one as long as smolts are available. Otherwise, the vacuum pump is shut off.

IDEA 2

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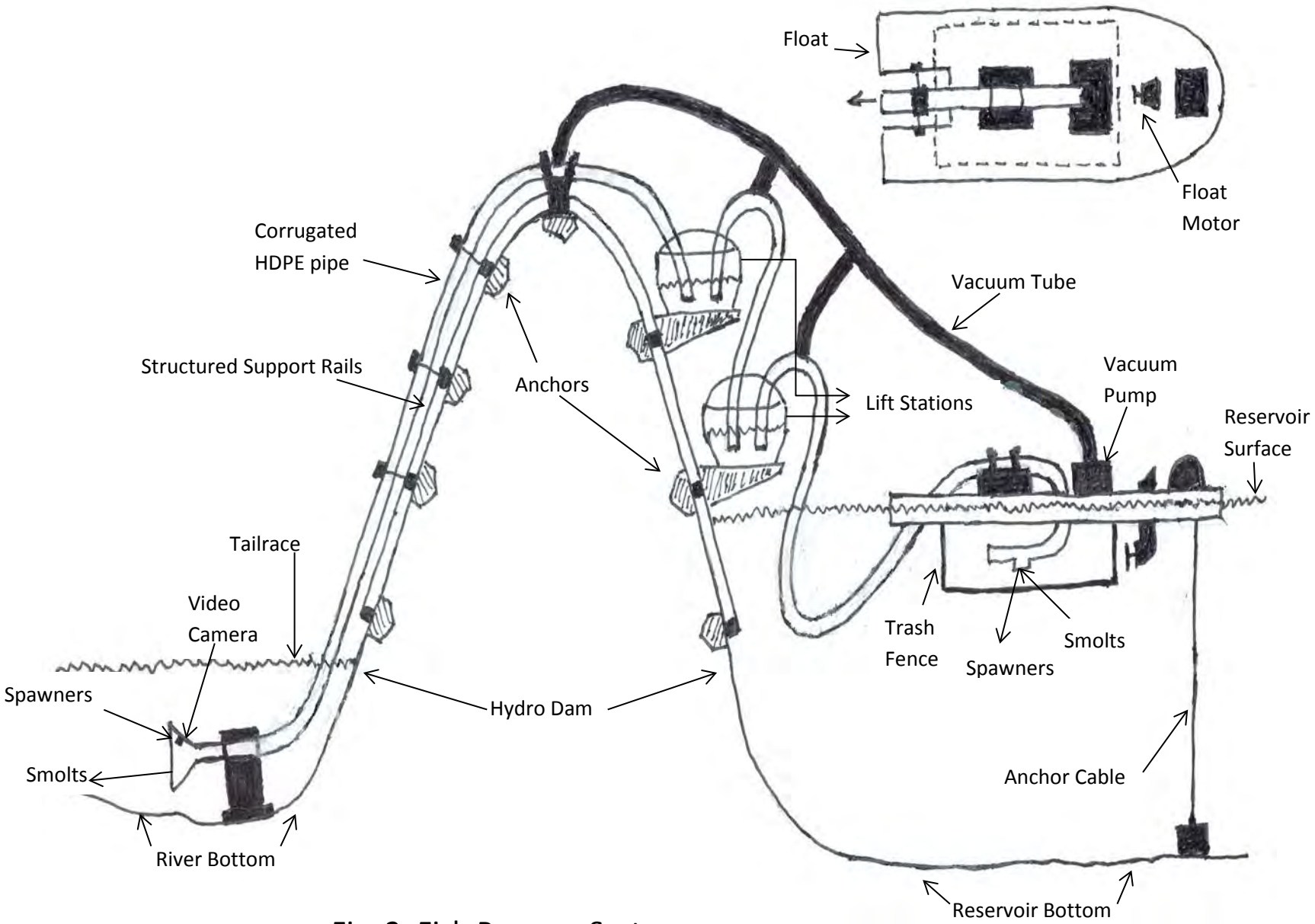

Fig. 2: Fish Passage System

From:	Allan Potter
To:	John Sirois
Subject:	Fish Passage at columbia high head Dams
Date:	Sunday, April 05, 2015 3:16:54 PM
Attachments:	Fish Passage 101.docx Fish Passage 102.docx Figure1withlabels.pdf Fish passage 103.docx figure2withlabels.pdf

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John: I am sending you my latest email write up for the anadromous fish passage at high head dam like those on the Columbia river. In idea #1, I am setting up a water fall situation from reservoir to draft tube water, lifted slightly into the penstock, by the vacuum pump on the float. From the float, water flows down an HDPE pipe to a pipe sluice gate that is mounted on the penstock side of the main sluice gate and near it's bottom. With the runner stalled both spawners and smolts can move safely in their respective directions through the runner. Am looking for a dam in Canada to test these ideas. Let me know if you can think of one that might be available. Best Regards! AGP

Fish Passage Research Ideas

Enclosed re ome ideas n ow o give anadromous spawners and smolts safe passage through hydroelectric or hydro dams. My interest in he development of solutions for fish passage at these particular dams resulted from my fishing for Salmon and Steelhead on the Rogue, Snake, Klickitat, Columbia, Clearwater, and Grand Ronde rivers in the states of Washington, regon, nd daho. These species are also blocked, where my son lives along the Spokane River, nd his ituation as lso erved to increase my interest in new fish passage system designs.

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Allan Potter, 2019 Taylor Circle, Ames, IA, 0010, agpotter66@yahoo.com, 15 233 4688

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IDEA 1

Passage of Anadromous Spawners at Hydroelectric Dams

This process starts in the evening after spawners have arrived at a hydroelectric dam having vertical axis turbines. At this time, ne f he ydroelectric turbines is shut down using a standard procedure. This action results in this turbine generator being disconnected from the electric power grid, the sluice and wicket gates closed, and the runner speed brought to zero. When this activity is completed, the generator is connected to a three phase transformer bank, for later use. The wicket gate is then opened to fill the HDPE with water up to the reservoir level and allow anadromous spawners to pass through into he enstock. Now, the vacuum pump on the float is started and adjusted to provide a controlled flow of water down the corrugated HDPE fish transfer pipe, through the pipe sluice gate and into the penstock. The water flow rate is such that the HDPE pipe is partially full of water all the way through the pipe sluice gate that feeds water into the penstock. Next, the three phase transformer bank is connected to the turbine generator and the phase voltage adjusted to provide a torque that stalls the runner. In ther ords, the generator acting as a motor provides a torque equal and opposite to that produced by the water flowing in he runner. Now, spawners can swim into the reservoir in afety on a continuous basis. As dawn approaches, the turbine generator being used for fish passage is reconnected to the electric power system and started in a normal fashion.

IDEA 1

Passage of Anadromous Smolts at Hydroelectric Dams

This process starts in the evening hen molts re lose to a hydroelectric dam having vertical axis turbines. At this time, the hydroelectric turbine chosen for fish passage is shut down using standard procedure. This action results in the turbine generator being disconnected from the electric power grid, the main sluice and wicket gates closed, and the runner speed brought to zero. When this activity is finished, the pipe sluice gate makes the penstock inlet open only to the corrugated HDPE pipe going up to the float. Now, the wicket gate is opened to let smolts into the runner. At this point, he vacuum pump, on the float, is tarted and adjusted to provide an attractive flow of water for the smolts moving down the HDPE pipe that is open into he enstock via the pipe sluice ate. The three phase transformer bank is then connected to the turbine generator and the per phase voltage adjusted to provide a torque that stalls he unner. In ther ords the generator acting as a motor provides a torque equal and opposite to that produced by the water flowing hrough he unner. ow, smolts in the reservoir can swim safely and continuously through the corrugated HDPE pipe, penstock, stalled runner, and draft tube. From this point the smolts move from the draft tube into he iver. In rder o return to a generation mode the vacuum pump is turned off and the wicket gate closed. Now, one can open the penstock to the reservoir using the sluice gate, start the generator, synchronize it with the power grid, and start supplying energy to electrical loads.

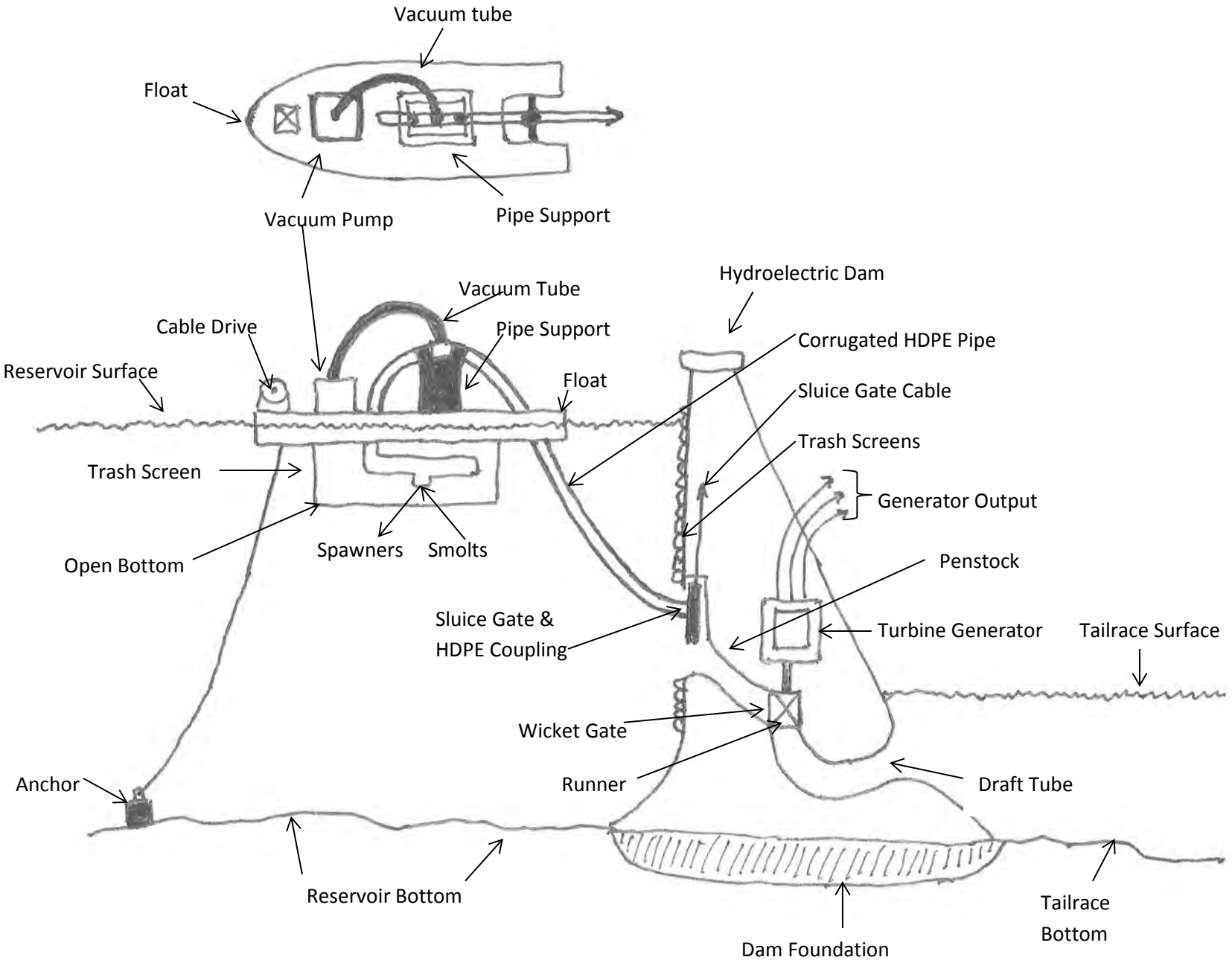

Figure 1: Fish Passage System

IDEA 2

Fish Passage at Hydro Dams

Another method for moving fish over hydro or hydroelectric dams, during spawner and smolt runs going to and from the ocean, involves using a vacuum pump to provide the necessary water lift. The components used in this type of fish passage system include corrugated HDPE pipes, lift tations, rails for physical support, and a reservoir float. To provide physical support, ails re used as mounts for the corrugated HDPE pipes and lift station water tanks. Lift tations are designed so that atmospheric pressure exists on the water surface of each storage tank. Pulling a vacuum in the HDPE fish transfer pipe is hen sed to move water and fish into the next higher lift station tank. This is accomplished by connecting a tube from the vacuum pump to the top of the fish passage tube, where it turns downward into he next higher lift station water tank. It may be necessary for the fish passage tube to be shaped in a spiral between each lift station so that the fish lift height per unit transfer tube length limited. t the point where the transfer tube turns down into the next higher lift tation ank the output must be higher than the surface of the water in he tank being filled. From the highest lift tation nit, smolts are moved over the dam in n HDPE corrugated pipe that runs down into he ailrace and river as shown in ig. . In rder o move spawners over the dam and into the reservoir, he ater low rate and light level at the tailrace entrance must be adjusted to attract them into the inlet of the HDPE fish transfer pipe.

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Passage of Spawning Anadromous at Hydro Dams

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Idea 2

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IDEA 2

Additional Comments

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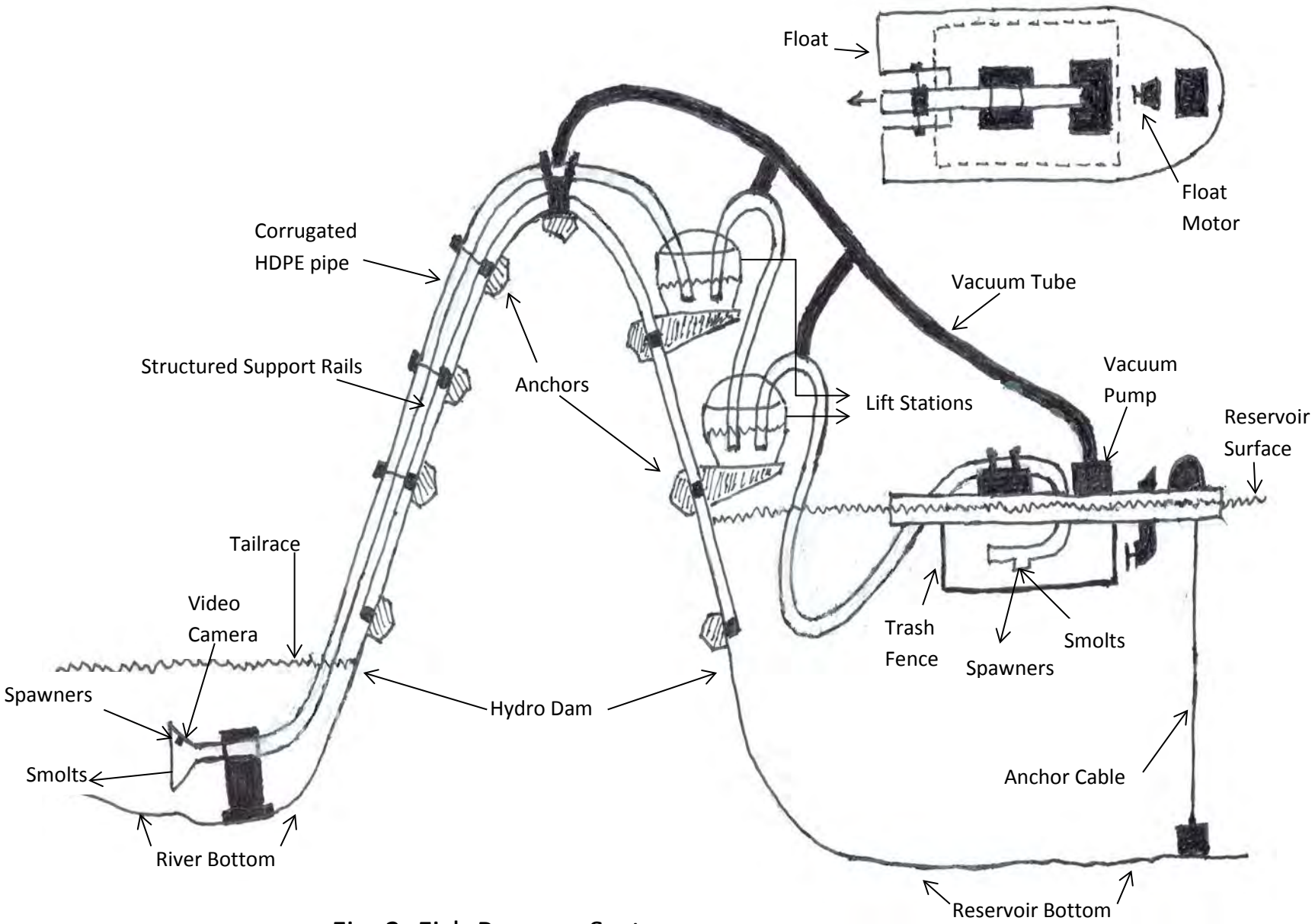

Fig. 2: Fish Passage System

From: Michael Price
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 1:16:07 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Michael Price
PMB 159
25 NW 23rd Place, Suite 6
Portland, OR 97210

From: Ann Pryich
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:08:47 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Ann Pryich
P.O. Box 14363
Mill Creek, WA 98082

From: Sally Purbrick-Illek
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 4:13:02 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Sally Purbrick-Illek
255 West Vista Ave. S.
Salem, OR 97302

From: Antar Pushkara
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 9:05:56 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Antar Pushkara
85091 Larson Rd
Eugene, OR 97405

From: Lora Lea
To: John Sirois
Subject: Letter of gratefulness
Date: Tuesday, February 24, 2015 11:17:19 AM
Attachments: UCUTSalmon.pdf

Thank you for supporting the return of Salmon to the Upper Columbia. What a magnificent day it will be when the Salmon return.

See attached letter

QUILLISASCUT FARM SCHOOL
2409 PLEASANT VALLEY ROAD, RICE, WA 99167· (509) 738-2011 · LORALEA1@CENTURYTEL.NET

Feb. 24, 2015

Dear Upper Columbia United Tribes,

Thank you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia.

I support UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 to prepare for the next step of salmon return: Phase 2.

Because salmon can be an important boost for our economy and environment, I encourage you to undertake a robust public process to involve the public of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia. In this time of climate change and melting glaciers, it's time we right historic wrongs, move to repair damage, and restore integrity to our rivers and forests of which salmon are a part. Thank you again for taking this important step forward for all of us.

Lora Lea Misterly
2409 Pleasant Valley Road Rice, WA 99167

From: Miguel Ramos
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:54:08 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Miguel Ramos
4663 fremont st
Bellingham, WA 98229

From: Leslie Raphael
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:11:07 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Leslie Raphael
7908 47th Ave NW
Tulalip, WA 98271

From: Philip Ratcliff
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 2:05:59 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Philip Ratcliff
4665 Tragen Ct. SE
Salem, OR 97302

From:	Dan Rathmann
To:	John Sirois
Subject:	I support restoring salmon to the upper Columbia River watershed!
Date:	Wednesday, March 25, 2015 10:24:04 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Dan Rathmann
219 N LieuAllen St
Moscow, ID 83843

From: Tarn Ream
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:23:23 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Tarn Ream
1250 Harrison
Missoula, MT 59802

From: Debra Rehn
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 2:20:21 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Debra Rehn
5130 SE 30th Av
#9
Portland, OR 97202

From: Karen Renne
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:44:21 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Karen Renne
221 So. Tracy Ave.
BOZEMAN, MT 59715

From: Jasmine Reppen
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 5:07:15 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Jasmine Reppen
2900 limited lane nw apt a301
Olympia, WA 98502

From:	Francis L. Maltby
To:	John Sirois
Cc:	John Osborn
Subject:	UCUT support
Date:	Friday, February 27, 2015 1:46:35 PM
Attachments:	John Sirois UCUT Salmon reintro support 270215.pdf Certification

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Thanks for your efforts.

flm

Contrarians exist to shine light on contradictions.
221112

John Sirois **john@ucut-nsn.org** Upper Columbia United Tribes

February 27, 2015

John Sirois
Upper Columbia United Tribes
25 West Main, Suite 434
Spokane Washington 99201
U.S.A.

Dear Mr. Sirois;

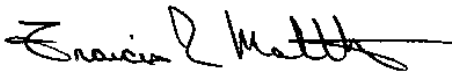
I wish to express my gratitude and support to the Upper Columbia United Tribes in their efforts towards the re-introduction of salmon into their territories in the USA upper Columbia River and north into Canada. I fully support the UCUT Re-introduction Draft Working Plan and the work objectives as stated in the Upper Columbia Basin Fish Passage and Reintroduction Project - Phase 1. Your efforts are an essential element aiding the restoration of the cultural and ecological health of this river. It is hoped that the important guiding work of Phase 1 is started as soon as possible. I encourage you to seek broad support from the public and work with those who support these valuable objectives.

Here in Canada there are many of us that share your hopes and wish to let you know we also share your efforts to improve the health of the river and its non-human residents in the many ways that we are able. This is an issue that is not confined by political ideas or national boundaries. We have all shared the loss, no one people more so than the US Tribes and Canadian First Nations. US Tribes and Canadian First Nations are the leading voices for this effort, may we all share the load, and may we all see these efforts succeed.

Salmon are a spiritual symbol, a cultural and economic resource and an indicator of restoration and improvement. Given the sad cultural and ecological legacy of the original Columbia River Treaty there is no better time than the present to make things better.

Take Good Care.

Sincerely



Francis Lewellyn Maltby
Revelstoke, B.C.
Canada
flm@telus.net

cc John Osborne, Sierra Club, Spokane Washington

From: Daniel Rhiger
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:08:57 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Daniel Rhiger
6628 SE 48th AVE
Portland, OR 97206

From: Nat Rich
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 4:18:18 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Nat Rich
2821 2nd ave #1901
Seattle, WA 98121

From: Tim Rich
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 4:05:59 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Tim Rich
2821 2nd Ave
2104
Seattle, WA 98121

From: Katie Riling
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Tuesday, March 03, 2015 7:08:29 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Katie Riling
2817 Hilltop Court Apt.306
Traverse City, MI 49686

From: Brock Roberts
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:41:34 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Brock Roberts
2268 NW Pettygrove Street
Portland, OR 97210

From: Muriel Roberts
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 10:28:25 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Muriel Roberts
545 1/2 South Nineteenth Avenue
Pocatello, ID 83201

From: Ann Robinson
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 7:15:51 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Ann Robinson
16725 Buckingham Drive
Gladstone, OR 97027

From: John Roskelley
To: John Sirois
Subject: UCUT work plan phase I
Date: Monday, February 23, 2015 2:29:08 PM

John:

Certainly a thorough work plan. I do suggest, though, that you add a Canadian agency/science representative for both the Project Management Advisory Group and the Project Science Advisory Group, if not the Executive Collaboration Group. Under Objectives 6, 8 and 9, you have tasks that should include representatives from the other side of the border, including Tasks 6.1, 6.4, 6.6, 8.2, and Objective 9 heading. You talk about First Nations, as well, and I hope that you've added a representative from the Kootenai and Arrow Lakes region somewhere in the mix of tribes. I know that you will not be trying to get fish over Revelstoke Dam at this point (too high for so little spawning habitat gained), but there is an equal, if not greater potential for salmon spawning habitat along the Arrow Lakes after Keenleyside Dam and this will take the help of the Canadian government, First Nations, and Canadian public. Best to have them represented up front.

Sincerely,

John Roskelley
509-954-5653
10121 E Heron View Lane
Mead, WA 99021
john@johnroskelley.com

From: Richard Rushton
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:48:18 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Richard Rushton
64105 Tanglewood Road
Bend, OR 97701

From: Zandra Saez
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:03:10 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Zandra Saez
1805 E. 34th Ave.
Spokane, WA 99203

From:	Georgeanne Samuelson
To:	John Sirois
Subject:	I support restoring salmon to the upper Columbia River watershed!
Date:	Thursday, February 26, 2015 10:19:56 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Georgeanne Samuelson
47525 Perkins St
Oakidge, OR 97463

From: Anne Savery
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:33:03 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I am a hydrologist and have dedicated my career to working for Native American Tribes to protect their treaty rights to salmon, salmon habitat and water. I work to negotiate instream flows to support the stream ecology of which salmonids are a vital part. Much of my current work load is reviewing new low impact hydro power projects throughout western Washington State. While the projects do not compare in scale or environmental impact to the Grand Coulee dam, there are impacts to salmonids nonetheless.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

The timing of your project seems fairly crucial, given the pending Treaty negotiations with Canada over power production and flood storage. It is time for Native Americans to assert their treaty rights and to be provided adequate funding to address fisheries issues on the Upper Columbia.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,
Anne Savery
Hydrologist
Portland, OR

Anne Savery
2227 NE 14th Ave.
Portland, OR 97212

From: Lisa Schroeder
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 5:03:53 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Lisa Schroeder
212 SW Stark Street
Portland, OR 97204

From: Richard Schubert
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:01:03 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Richard Schubert
7870 SE 13 th Ave
Portland, OR 97202

From: Karen Jurgensen
To: John Sirois
Subject: The return of the salmon to the Upper Columbia
Date: Thursday, February 26, 2015 9:52:00 PM

>>> Dear Upper Columbia United Tribes,
>>>
>>> Thank you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia.
>>>
>>> I support UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

>>> I urge you to set the first phase of the study in a timely way, to be completed by the end of 2016 in order to prepare for the next step of salmon return: Phase 2.

>>> Salmon are an integral part of our economy, culture and environment, I encourage you to undertake a robust public process to involve the public of the region.

>>> There has never been adequate mitigation for the loss of salmon in the Upper Columbia. In this time of climate change and melting glaciers, it's time we right historic wrongs, move to repair damage, and restore integrity to our rivers, the forests and the peoples of which salmon are a part. Thank you again for taking this important step forward for all of us.

Karen Jurgensen, Chef Instructor Seattle Culinary Academy & Quillisascut Farm School
chefkarenj@earthlink.net
rediscover the power of lard & salmon

From: Elsa Sebastian
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:18:23 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Elsa Sebastian
Box 1990
Petersburg, AK 99833

From: Sarah Segal
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:01:28 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Sarah Segal
PO Box 1508
Hood River, OR 97031

From:	Charles Hudson
To:	huntersmith@canby.com; philc@cdatribe-nsn.gov; Patrick.Tonasket@colvilletribes.com; "Sheri Sears"; bheinith@comcast.net; John Marsh; ewhite@cowlitz.org; "Taylor Aalvik"; Kyle Dittmer; Christine Golightly; Jim Heffernan; Rob Lothrop; Paul Lumley; Sara Thompson; richj@cskt.org; BrentHall@ctuir.org; CarlMerkle@ctuir.org; "Ed Sheets"; "Brian Lipscomb"; "Joe Hovenkotter"; richjcskt@gmail.com; "Theodore Knight"; "Zach Welcker"; JWO@karnopp.com; wbarquin@kootenai.org; "Christian Marsh"; djc@nezperce.org; tzeilman@qwestoffice.net; DR Michel; John Sirois; Keith Kutchins; "Bob Austin"; Heather@usrtf.org; scott.hauser@usrtf.org; smlevit@yahoo.com; bgruber@zcvbs.com
Cc:	Front Desk FDSK
Subject:	Senator Murray questions on CRT during FY2016 budget hearings
Date:	Monday, March 02, 2015 9:05:36 AM

Senator Patty Murray submitted the questions below as part of the FY2016 budget oversight hearings.

Senator Patty Murray's Questions for the Record
Energy and Water Development Subcommittee
Subcommittee Hearing, February 11, 2015
"Fiscal Year 2016 funding request and budget justification for the U.S. Army Corps of Engineers and the U.S. Department of the Interior"

U.S. Army Corps of Engineers
The Army Corps, through the Northwest Division, plays an important role implementing the Columbia River Treaty as a member of the U.S. Entity. Together with the Bonneville Power Administration (BPA), the Northwest Division engaged in a multi-year process with domestic stakeholders throughout the Pacific Northwest to reach a regional consensus to modernize the Columbia River Treaty. The "Regional Recommendation for the Future of the Columbia River Treaty after 2024" was presented to the Administration and U.S. Department of State in December 2013. Since then the Army Corps, BPA, and several other federal agencies have been participating in an Interagency Policy Committee (IPC) process to determine the parameters for negotiations with Canada based on the Regional Recommendation.

Assistant Secretary Darcy, as a participant in the IPC process, can you share the timeline for formulating a consensus among the federal partners on these parameters? Furthermore, are there any specific issues preventing the federal partners from reaching consensus, completing the IPC process, and beginning negotiations with Canada?

Department of the Interior
The Department of the Interior, including several agencies within the Department, participated in a multi-year process with the Army Corps, Bonneville Power Administration (BPA), and domestic stakeholders throughout the Pacific Northwest to reach a regional consensus to modernize the Columbia River Treaty. The "Regional Recommendation for the Future of the Columbia River Treaty after 2024" was presented to the Administration and U.S. Department of State in December 2013. Since then Interior, Army Corps, BPA, and several other federal agencies have been participating in an Interagency Policy Committee (IPC) process to determine the parameters for negotiations with Canada based on the Regional Recommendation.

Principle Deputy Assistant Secretary Gimbel, as a participant in the IPC process, can you share the timeline for formulating a consensus among the federal partners on these parameters? Furthermore, are there any specific issues preventing the federal partners from reaching consensus, completing the IPC process, and beginning negotiations with Canada?

From: Steve Sheehy
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:21:27 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Steve Sheehy
4727 Alpine Dr.
Klamath Falls, OR 97603

From: Ian Shelley
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:41:36 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Ian Shelley
50 SW 97th Ave
Portland, OR 97225

From: John Sherwin
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 4:34:39 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

John Sherwin
16650 246th PL SE
Issaquah, WA 98027

From: Dan Sherwood
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:58:14 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Dan Sherwood
1719 Se 35th Ave.
Portland, OR 97214

From: Gary Shilling
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:26:37 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Gary Shilling
P.O.Box 1264
Sisters, OR 97759

From: James Short
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:02:06 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

James Short
445 S.E. Crestview Street
Pullman, WA 99163

From: Michael Shurgot
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:33:07 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Michael Shurgot
6536 31st Ave. NE
Seattle, WA 98115

From:	Rhett Lawrence
To:	John Sirois
Subject:	Upper Columbia Fish Passage and Restoration
Date:	Friday, February 27, 2015 12:37:39 PM
Attachments:	UCUT letter, 2-27-15.pdf

Dear Mr. Sirois and the Upper Columbia United Tribes,

I am writing on behalf of the more than 20,000 members and supporters of the Oregon Chapter of the Sierra Club to thank you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia River. As an organization with a long history of supporting the recovery and restoration of salmon in the Columbia and Snake Rivers, we strongly support UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

We believe that this first phase of the study needs to be done in a timely fashion, preferably completed by the end of 2016 to prepare for the next phase of salmon return. And because salmon are an integral part of the Northwest's economy and environment, we would encourage you to undertake a robust public process to involve interested citizenry in the region in your efforts.

The Upper Columbia United Tribes are only too aware that there has never been adequate mitigation for the loss of salmon in the Upper Columbia. In this time of climate change and melting glaciers, it's long past time that we right historic wrongs, move to repair damage, and restore integrity to our rivers and forests of which salmon are a part.

Thank you for considering our comments and, more importantly, for taking this important step forward for all of us. Please do not hesitate to contact me with any questions or if we can be of further assistance in your efforts.

Sincerely,

Rhett Lawrence

--
Rhett Lawrence
Conservation Director
Oregon Chapter, Sierra Club
1821 SE Ankeny St
Portland OR 97214
503-238-0442, x 304

OREGON CHAPTER SIERRA CLUB
1821 SE ANKENY ST • PORTLAND, OR 97214
PHONE (503) 238-0442 • FAX (503) 238-6281
OREGON.CHAPTER@SIERRACLUB.ORG
WWW.OREGON.SIERRACLUB.ORG

SIERRA CLUB
FOUNDED 1892

February 27, 2015

John irois
Upper Columbia United Tribes
25 W. Main, Suite 434
Spokane, WA 99201

RE: Upper Columbia Fish Passage and Restoration

Dear Mr. Sirois and the Upper Columbia United Tribes,

I am writing on behalf of the more than 20,000 members and supporters of the Oregon Chapter of the Sierra Club to thank you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia River. As an organization with a long history of supporting the recovery and restoration of salmon in the Columbia and Snake Rivers, we strongly support UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

We believe that this first phase of the study needs to be done in a timely fashion, preferably completed by the end of 2016 to prepare for the next phase of salmon return. And because salmon are an integral part of the Northwest's economy and environment, we would encourage you to undertake a robust public process to involve interested citizenry in the region in your efforts.

The Upper Columbia United Tribes are only too aware that there has never been adequate mitigation for the loss of salmon in the Upper Columbia. In this time of climate change and melting glaciers, it's long past time that we right historic wrongs, move to repair damage, and restore integrity to our rivers and forests of which salmon are a part.

Thank you for considering our comments and, more importantly, for taking this important step forward for all of us. Please do not hesitate to contact me with any questions or if we can be of further assistance in your efforts.

Sincerely,

Rhett Lawrence
Conservation Director

From:	John Osborn
To:	John Sirois
Cc:	John Osborn; Keith Kutchins; Tom Soeldner; Trish Rolfe
Subject:	Sierra Club - CELP comment letter
Date:	Friday, February 27, 2015 3:15:31 PM
Attachments:	Sierra Club-CELP Phase 1 comment letter.pdf

John - cc: Keith, Tom, Trish

Attached is the comment letter from Sierra Club's Upper Columbia River Group and the Center for Environmental Law & Policy.

~ John

February 27, 2015

Mr. John irois
Upper Columbia United Tribes
25 West Main Ave #434
Spokane, WA 99201

Dear Mr. Sirois,

These comments are submitted on behalf of the Sierra Club's Upper Columbia River Group and the Center for Environmental Law & Policy.

Thank you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia.

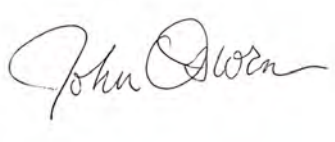
We support UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam. It is important to begin the implementation of Phase 1 now, in order to meet the NPCC directive of completion by the end of 2016 (and prepare for Phase 2).

Because salmon can be an important boost for our economy and environment, we encourage you to undertake a robust public process to involve the public of the region. The Upper Columbia United Tribes include a Coordination Plan that provides a process to build a regional common understanding. We agree this should happen during hase 1, not "before" Phase 1 begins.

Upper Columbia United Tribes have laid out a scientific and well coordinated plan to determine the strategy and viability of different permutations of fish passage and reintroduction at Chief Joseph dam and Grand Coulee dam as part of ecosystem function. We note and support that the plan is not "conceptual" but rather a step forward to reintroduce anadromous fisheries to the Upper Columbia. Decades have passed since the building of Grand Coulee dam without fish ladders, further delay should not occur.

In closing, there has never been adequate mitigation for the loss of salmon in the Upper Columbia. In this period of climate change and melting glaciers, the Phase 1 proposal is

an important step in righting historic wrongs, repairing damage, restoring integrity to our rivers and forests of which salmon are a part.



John Osborn MD
Upper Columbia River Group, Sierra Club
Center for Environmental Law & Policy
Box 9743
Spokane, WA 99209

From:	John Osborn
To:	John Sirois
Cc:	DR Michel; Keith Kutchins; Matt Wynne
Subject:	Phase 1 comment letter: Washington State Chapter, Sierra Club
Date:	Friday, March 06, 2015 7:58:34 AM
Attachments:	Phase 1 Sierra Club WA Chpt comment 3-6-2015.pdf

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John -

attached is the letter from the 25,000 members of Sierra Club's Washington State Chapter in support of UCUT's Phase 1 proposal.

~ John

WASHINGTON TATE HAPTER
180 Nickerson St., Suite 202
Seattle, WA 98109

March 6, 2015

Mr. John irois
Upper Columbia United Tribes
25 W. Main, Suite 434
Spokane, WA 99201

RE: Upper Columbia Fish Passage and Restoration

Dear Mr. Sirois and the Upper Columbia United Tribes,

The Sierra Club Washington State Chapter's 25,000 members thank you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia River. Sierra Club has a long history of supporting recovery and restoration of salmon in the Columbia and Snake Rivers. Our Columbia River advocacy is informed by our Ethics & Treaty Project working with indigenous and religious communities and summarized by four words: One River. Ethics matter.

We strongly support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

From time immemorial millions of salmon returned to natal streams of the Upper Columbia, renewing a great cycle of life. Then, in 1942, 450 years after Christopher Columbus stepped foot in the Americas and less than 140 years after Lewis & Clark and David Thompson stepped foot into the Columbia Basin, the gates closed at Grand Coulee dam: blocking and destroying those great runs of salmon. No passage for salmon was provided for those fish.

While Grand Coulee dam and other Columbia Basin dams have brought benefits, the dam building ra came with catastrophic costs for salmon, people who depended on the river, and wildlife generally. There has never been adequate mitigation for the loss of salmon in the Upper Columbia – until now. This proposal is the first real step forward to returning salmon home to their ancestral spawning waters.

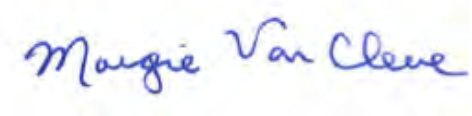
The Upper Columbia United Tribes have laid out a scientific and well coordinated plan to determine the strategy and viability of fish passage and reintroduction at Chief Joseph dam and Grand Coulee dam as part of ecosystem function. With this plan, Sierra Club welcomes that UCUT will implement a process providing full input to develop the sequenced and scientific information required for the Northwest Power and Conservation Council PCC) and the Northwest generally to restore salmon to the Upper Columbia.

Timing is important. Implementation of Phase 1 needs to begin now in order to meet the NPCC directive of completion by the end of 2016.

Because salmon can be an important boost for our economy and environment, we encourage you to undertake a robust public process to involve the public of the region.

We thank you for your leadership on behalf of the common good and the public trust to right historic wrongs, and to promote stewardship for the Columbia River in this time of climate change.

Sincerely,



Margie Van Cleve, Chair
Washington State Chapter

From: Carrie Simpson
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:51:02 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Carrie Simpson
60 Hiatt St
Lebanon, OR 97355

From: Suzanne Skinner
To: John Sirois
Subject: Public comment period on UCUT proposal re: salmon reintroduction north of Chief Jo and Grand Coulee
Date: Tuesday, January 27, 2015 9:25:52 AM

Hi John: I was listening to NPR this morning in Seattle and heard the piece that featured DR Michel on the topic above (great piece). There was an allusion to a public comment period being open now. However I could not tell from the newscast or the cursory research I have done what agency is hosting the comment period. Do you have any information? I would like to submit comments in support of the UCUT proposal.

Thanks for all you are doing. Suzanne Skinner

From: Suzanne Skinner
To: John Sirois
Subject: Comments on Phase 1 Proposal
Date: Thursday, February 26, 2015 2:48:08 PM
Attachments: ucut comments.docx

Dear Mr. Siros: Please see the attached. Thank you. Suzanne Skinner

February 26, 2015

Suzanne Skinner
7601 West Mercer Way
Mercer Island WA 98040

By electronic mail

Mr. John Siros
Upper Columbia River Tribes
john@ucut-nsn.org

Re: Upper Columbia River Fish Passage Restoration Project

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River by preparing a comprehensive Phase 1 Draft Proposal to restore fish passage above Chief Joseph and Grand Coulee dams, in response to the October 2014 amendments of the Northwest Power and Conservation Council to the Columbia River Basin Fish and Wildlife Program.

The eleven goals and tasks of the Phase 1 Draft Proposal are comprehensive and ambitious, but achievable—if fully funded. Moreover, it is imperative that the Phase 1 Draft Proposal be fully funded for several reasons:

> First, as meager recompense for the terrible harm wrought on the Upper Columbia Tribes by decimation of the salmons due to dam construction.
>
> Second, in this era of climate change, to maximize the potential habitat of salmon and steelhead—by returning them to the colder, more plentiful waters above the 49th parallel—to preserve these iconic species that are central to Indian cultures and to the Northwest's environment and economy.

Thank you for undertaking this critical work which will be an essential step on the three phase process to restore salmon and steelhead to the Upper Columbia for the benefit of the entire Northwest region.

Very truly yours,

Suzanne Skinner

From: Craig Smith
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:42:17 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Craig Smith
4130 SW 117Th Ave #274
#274
Beaverton, OR 97005

From: Laurie Smith
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 1:08:20 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Laurie Smith
3561 Avalon Drive
Hood River, OR 97031

From: Bob Snell
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 10:30:04 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Bob Snell
5889 South Shore Road
Anacortes, WA 98221

From: waltsoe@allmail.net
To: John Sirois
Subject: Phase 1 - Returning Salmon to the Upper Columbia
Date: Friday, February 20, 2015 3:54:40 PM

Dear Upper Columbia United Tribes:

I am overjoyed and grateful to you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia, and I fully support UCUT's draft proposal to study the returning of salmon to the Upper Columbia and its tributaries above Grand Coulee Dam.

I trust that this first phase of the study will be completed in a timely way, no later than the end of 2016, as preparation for the next step of salmon restoration as proposed in Phase 2.

Because salmon will clearly be an important encouragement for our economy and environment, I urge you to undertake a robust public process to involve all sectors of the public in the region.

It is clear that there has never been adequate mitigation of the loss of salmon in the Upper Columbia, particularly as concerns Tribes and First Nations citizens. In a time of climate change and melting glaciers, it is past time we right those historic wrongs, move to repair the damage to environment and communities, and restore integrity to our rivers and forests of which salmon are key.

Thank you again for taking this important step forward for all of us.

W. Thomas Soeldner
13613 S Valley Chapel Road
Valleyford, WA 99036-9767

From: crystal spicer
To: John Sirois
Subject: salmon reintroduction
Date: Tuesday, February 24, 2015 2:47:21 PM

Dear Upper Columbia Untied Tribes,

Every Canadian we have spoken with is passionate about the reintroduction of salmon to the Upper Columbia River. Our government does not support this due to cost, but once salmon are reintroduced above Grand Coulee Dam, the salmon will travel into Canada and Canada must support their well being and passage.

The loss of the salmon resulted in widespread ecosystem/environmental/community decline. Salmon contributed in a large way to terrestrial and aquatic health of the Columbia Basin and was a crucial food source for Arrow Lakes Indians and other tribes. The reintroduction of the salmon is essential to save the decline of the remaining fish species in the Upper Columbia that are in drastic decline. The food chain has been broken and Arrow Lakes reservoir (and Kootenay Lake) is suffering a collapse. Millions of dollars have been sunk into artificial nutrient programs that fail.

As mentioned in previous correspondence with Keith Kutchins, I do not recommend forcing the reintroduction of salmon as a CRT issue, but as an issue with Ottawa for allowing this situation to occur back in the 1930's. The Province of BC is rejecting the salmon issue as anything to do with the CRT which is true. Taking the issue up with Ottawa directly as a disastrous error made in the decision of not requesting fish passage by Grand Coulee may be more successful and timely. This was a historic wrong committed of huge proportion and must be corrected.

Thank you for all that you are doing towards this critical endeavor. We support you entirely on it and very much appreciate the draft proposal and its objectives. Please let us know where we may provide assistance.

Sincerely,

Crystal and Janet Spicer (Arrow valley, B.C.)

From:	crystal spicer
To:	John Sirois
Subject:	Fwd: Arrow info
Date:	Tuesday, February 24, 2015 2:49:00 PM

---------- Forwarded message ----------
From: **crystal spicer** <xtal.spicer@gmail.com>
Date: Fri, Feb 20, 2015 at 8:03 AM
Subject: Arrow info
To: Keith Kutchins <keith@ucut-nsn.org>

Hi Keith,

The salmon reintroduction project proposal is so admirable and has the right focus and structure to implement pivotal change for the future. It was a wonderful presentation that you gave yesterday.

Most of the proposal objectives and phases outlined cover fish passage feasibility. I would like to give you as much information as possible beyond that which is the health and habitat of Arrow Lakes reservoir for sockeye that will need the 'lake' for temporary rearing.

a) Biologists do not have a good understanding of what is occurring in either Kootenay Lake or Arrow Lakes reservoirs currently. While I believe Revelstoke reservoir has relatively healthy fish populations (I will attempt to get data soon to confirm that) Rainbow Trout, Bull Trout, and Kokanee stocks are in serious decline - since the CRT and now plummeting just recently. Fish are starved and full of parasites. While I am told there is no lack of nutrients in the system, I find that hard to believe. Either there are insufficient nutrients existing or the nutrients are not in an available form for fish.

There is also a theory that while the tipping point has been a long time in coming, we have reached the time that the reduced genetic diversity due to the restrictions by dams (i.e. the 'river" is segmented into small reaches by the series of obstructions/dams) has resulted in a weakened population.

The dams have altered the temperature of the water, the depth of the water, the nutrient productivity, spawning habitat, phytoplankton habitat and productivity, and other values. The salmon reintroduction is supported by most if not all of the public and we are hoping that this will pressure BC Hydro and BPA into allowing Arrow Lakes reservoir elevations be moderated and stabilized to a level that supports the restoration of riparian area. In turn the riparian area will be a main contributor to nutrient production. Once salmon are reintroduced, they will be a major contributor to a nutrient base for both aquatic and terrestrial life.

b) If salmon are reintroduced above Grand Coulee, Canada must support their passage upstream and also their habitat.

c) Ottawa responded to the U.S. that there was no requirement for salmon passage above Grand Coulee well before the existence of the CRT. I would therefore suggest we take the CRT out of the equation. The Province has already got their argument in place regarding the

CRT. I would recommend we go directly to the Federal Govt in Ottawa to have that unreasonable and devastating decision rescinded.

d) Regarding research required for viability of salmon in Arrow - I cannot see that being supported by the Province of BC or BC Hydro, but more likely by First Nations and NGO's. (There may be support by BC Hydro through the CBT, however.)

The Okanagan sockeye program has been a laudable success, but we must understand that there are no dams between Okanagan Lake to the Columbia River, plus Okanagan Lake is not a reservoir that has extreme elevation fluctuations governed artificially by power groups. It is a far more natural system altogether. However, the Columbia proposal is entirely doable with much greater effort required. Again, if salmon are reintroduced above Grand Coulee, it is my firm belief that Canada must do all to support their well-being upstream. We all hope to see this in our lifetime and this is just so commendable, exciting, and extraordinary.

I will be forwarding any information I can to assist directly and as I acquire it.

All the best. Crystal

From: crystal spicer
To: John Sirois
Subject: a very small detail
Date: Tuesday, March 10, 2015 10:41:13 AM

It might be useful later somewhere in the enormous scheme of salmon reintroduction and you may know this already, but I wanted to pass it along.

While Hugh Keenleyside Dam has locks installed for boat passage (which also does allow some fish passage as observed by my husband), the Duncan Dam has double gates. Operation of these double gates actually allows passage for Bull Trout. I do not know any further detail on this except that BC Hydro operates the gates for the fish. This design may work elsewhere somewhere?

All the best, Crystal

From:	wsabrahamse@comcast.net
To:	John Sirois
Subject:	Support letter
Date:	Saturday, February 28, 2015 11:12:50 AM
Attachments:	UCUT Support Letter.docx

Dear John,
Please find attached a letter of support for the proposal to reintroduce salmon and steelhead above the two barrier dams in the Columbia River. We would also like to let you know that the over 400 members of the Spokane Falls Chapter of Trout Unlimited stand ready to assist in any way that we can.

Sincerely,

Bill Abrahamse
President, Spokane Falls Chapter of Trout Unlimited
509-209-4048

Spokane Falls Chapter of Trout Unlimited
P.O. Box 30185 • Spokane, WA 99223 • www.spokanefallstu.org

February 26, 2015

Upper Columbia United Tribes
25 West Main Street
Suite 434
Spokane, WA 99201

Attn: John Sirois

Dear Upper Columbia United Tribes,

The Spokane Falls Chapter of Trout Unlimited is extremely pleased and in support of UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

We are particularly pleased to see, under Objective 6, that studying the return of Chinook and Sockeye to the Spokane River is a clear objective. Unless there are restraints that are unknown to SFTU, we request that you broaden the tasks under Objective 6 to include steelhead. Many of us believe that some native redband trout of the Spokane River have been out migrating as juveniles but blocked from returning as adult steelhead. Hopefully your studies will prove this to be true.

We appreciate the aggressive time line that you have set to accomplish Phase 1 by the end of 2016. There has never been adequate mitigation for the loss of salmon in the Upper Columbia. It is time to right this historic wrong and restore the salmon to its rightful place in the eco system.

Thanks you for taking leadership in this important endeavor. Know that Trout Unlimited will stand behind you in full support.

Sincerely,

Bill Abrahamse, President
Harvey Morrison, Conservation Chair

From:	Jerry White
To:	John Sirois
Subject:	Comments on the Phase 1 Work Coordination Plan from Spokane Riverkeeper
Date:	Friday, February 27, 2015 3:58:17 PM
Attachments:	2015 comments on Phase 1.docx

Mr. John Sirois,

Please find the attached comments on the *Phase 1 Work and Coordination Plan* from us here at Spokane Riverkeeper. We appreciate the chance to have input and we are excited to be a part of such a historic and positive movement in the Upper Columbia River Watershed. Please let us know if there are other ways in which we become involved in this process.

Best regards,

Jerry White, Jr

Spokane Riverkeeper
Center for Justice

Working for a fishable, swimmable Spokane River

jerry@cforjustice.org
(509) 464 - 7614
Cell (509) 475-1228

Spokane
RIVERKEEPER®

For a Fishable and Swimmable Spokane River

February 27, 2014

Clinton M. Wynn, Chairman
Upper Columbia United Tribes
25 W. Main Street, Suite 434
Spokane WA 99201

Dear Clinton M. Wynn,

Thank you very much for the opportunity to comment on the Phase 1 Work and Coordination Plan for the reintroduction of anadromous fish back into the upper Columbia River Basin.

The Spokane Riverkeeper is a non-profit organization that serves as a public advocate for a clean and healthy Spokane River. Our stated mission is to create a fishable and swimmable river that remains so for generations to come. We closely watch fisheries issues and regard the retention and conservation of native fish in the Spokane River as one of the more important issues we work on.

As such the potential re-introduction of anadromous fish, including Lamprey, steelhead and several species of salmon is very exciting and positive prospect. To start, we feel that this project has a huge potential benefit to both the ecology of the River and to society as a whole. Migrations of native fish will bring huge ecosystem services that will benefit the economics, the social and cultural life of all people who live, work and play in the upper Columbia Basin.

Our comments on the Phase 1 Work and Coordination Plan are as follows:

- **Coordination and Communication – Phase 1**
  The Spokane Riverkeeper proposes that UCUT consider several options to incorporate a robust and functional stakeholder process.

  Option 1 would be the addition of a separate Stakeholder Advisory Group. This could be a standing committee of stakeholders that allow for early input in order to identify issues that could shape Phase 2 implementation. Such a group might make coordination and communication more efficient, help it to avoid the pit falls of omitting significant issues, and/or capture all issues that stakeholders and communities may identify as important as this project proceeds. Additionally, these stakeholders may be able to share some of the outreach work to their diverse constituents and pave the way for and effective and efficient implementation of the work plan and the project with in the larger communities affected.

Option 2 would be to add a standing stakeholder committee to your Public Outreach Team rather than simply have the outreach team identify and communicate with stakeholders separately.

Option 3 would be to incorporate stakeholders and pertinent advisors to each group. For example, the Project Management Advisory Group could have a representative from an NGO such as the Columbia River Keeper. The Science Advisory Group could have Scientists from the academic fisheries programs.

In the absence of creating a stakeholder advisory team or incorporating stakeholders directly into the Groups, the Spokane Riverkeeper feels that there should be a clear, transparent process by which stakeholders are identified, a path by which they can have a voice in this process, and a means by which the implementation of Phase 2 is accountable to diverse stakeholders in the basin.

- **Phase 1 Work Plan:**

Under Objective 4, the evaluation of donor stocks, I would strongly urge UCUT to incorporate the retention and use of naturally occurring and native genetics when considering the future anadromy of redband trout or O. mykis (and their migration as steelhead). Under Task 4.3 we recommend explicit language that prioritizes the recruitment of native genetics prior to the use of donor stocks. This will ensure that native genetics have a chance to regenerate in a watershed such as the Spokane prior to importing stocks that compete with and disrupt the existing recovering O. mykis populations.

Please include the design and testing of the Whooshh system for runs of anadromous O. mykis steelhead.

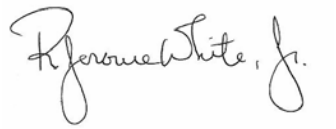
Objective 6: While the Riverkeeper agrees that a survey (Task 6.2) of stakeholder and public perceptions is important, we believe that this should be simply the beginning of forming a standing stakeholder advisory group (as mentioned above in coordination and communication). That way the survey can be more than a simple sample of perceptions and issues and more of an ongoing dialogue that will function to more effectively capture the issues that may emerge through an ongoing process with a diverse public. Having said that, the process should be clear and concise so that it is "*efficient in consideration of work progress and cost effective*", as stated on Page 2 of the document.

In Task 6.1 we feel that evaluating the potential risk posed by non – native, warm water species such as small mouth bass, walleye, northern pike, crappie, yellow perch and largemouth black bass on re-established salmonids should be evaluated. Additionally, protocols for suppression and control should be studied.

Under Objective 3, we recommend that there be a Task 3.3 which documents the value added to both the community and the river ecology within the upper Columbia River Basin should anadromous fish be re-established. This could be accomplished on a species specific basis, a seasonal basis or both.

Thank you very much for the opportunity to comment on this most historic and exciting project. Please let us know if there are other opportunities to comment and be a part of this process. The reintroduction of anadromous fish to the upper Columbia Basin has massive implications for the quality of life and for the future of all people, the economies and cultures of those who have existed for so many years without the runs of fish that were once a part of this landscape and a part of life for all.

Best regards,



Jerry White, Jr., Spokane Riverkeeper
Community Building
35 West Main St Suite 300
Spokane WA, 99201

(509) 464-7614
jerry@cforjustice.org

From: Karen Springer
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:46:25 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Karen Springer
3165 SW 70th Ave
Portland, OR 97225

From: Dr. Robert & Gail Stagman
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 10:06:21 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Dr. Robert & Gail Stagman
7401 92nd Pl SE
Mercer Island, WA 98040

From: Sylvia Stanton
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 3:35:54 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Sylvia Stanton
1818 Noble Circle
Coeur d'Alene, ID 83815

From:	Polly Coleman
To:	John Sirois
Cc:	Wes L. McCart; April Mc Elreath
Subject:	comment letter
Date:	Thursday, February 26, 2015 8:11:35 AM
Attachments:	UCUT Fish Passage & Reintroduction Project Phase 1 comment letter.pdf

Letter from Stevens County Commissioners attached.

Polly Coleman, Clerk of the Board
Stevens County Commissioners
230 E. Birch (physical address)
215 S. Oak (mailing address)
Colville, WA 99114
509.684.3751 Phone
509.684.8310 FAX
pcoleman@co.stevens.wa.us

Stevens County Commissioners
Mailing Address: 215 South Oak Street; Colville, WA 99114-2861
Location Address: 230 East Birch, Colville
Phone: 509-684-3751 Fax 509-684-8310 TTY: 800-833-6388
E-mail: commissioners@co.stevens.wa.us

February 25, 2015

Upper Columbia United Tribes
25 W. Main Street, Suite 434
Spokane, WA 99201

RE: Comments on Upper Columbia River Basin Fish Passage and Reintroduction Project – Phase 1
UCUT Draft Project and Coordination Plan

Chairman Wynne,

The Stevens County Commissioners represent over 43,000 people within the borders of our County and submit these comments on behalf of ourselves and the residents we are elected to represent. County Commissioners are charged with protection of health, safety and welfare and the economic stability of the County and its residents.

We appreciate you visiting with us about this important project and addressing our questions and concerns. While we absolutely agree that continued on-going conversation and communications with local government is critical, we feel and request that one County Commissioner be added to the Project Management Advisory Group.

Realizing that there are several counties, just as there are several Tribes, around The Columbia River behind Chief Joseph, we have a proposal that may circumvent potential problems with multiple county representatives. The Eastern Washington Council of Governments (EWCOG) was formed in 2003. The purpose of forming the EWCOG was in response to human and environmental health concerns surrounding Lake Roosevelt from Tech Cominco and smelter operations and to share and work on issues of mutual concern regarding Lake Roosevelt, the Columbia River and any other issues of mutual concern to the counties enjoined. The EWCOG currently represents all counties surrounding the Columbia River from Chief Joseph to Canada and more. Current counties are Pend Oreille, Stevens, Ferry, Okanogan, Lincoln, Douglas, Grant, Whitman, Columbia, and Adams.

We request that one member of the EWCOG, the Chair or his designee, be added to the Project Management Advisory Group to address local concerns. This will also help in communications and disseminating information.

While we have many concerns regarding this proposal, Stevens County supports Phase 1 of this project providing we will be involved and informed by the preceding suggestion.

Thank you for allowing us to comment and do not hesitate to contact us should you have any questions.

Sincerely,

BOARD OF COUNTY COMMISSIONERS OF STEVENS COUNTY, WASHINGTON

Chairman Steve Parker | Commissioner Don Dashiell | Commissioner Wes McCart

From: Lynn Stiglich
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 7:55:03 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Lynn Stiglich
4214 NE 136th Circle
Vancouver, WA 98686

From: Rob Stonecipher
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 1:17:19 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Rob Stonecipher
105 NE Multnomah St. #612
Portland, OR 97232

From: Brenda S.
To: John Sirois
Subject: Fish Plan
Date: Thursday, April 23, 2015 10:02:14 AM

Dear Upper Columbia United Tribes,

Thank you for your leadership in returning salmon home to the rivers & streams of the Upper Columbia. I support UCUT's draft proposal to study returning salmon to the rivers & streams above Grand Coulee Dam. This first phase of the study needs to be done in a timely way & be completed by the end of 2016 to prepare for Phase 2 of salmon return.

Because salmon offer an important boost for our economy & environment, I encourage you to undertake a robust public process to involve the public of the region. It is time we right historic wrongs, repair damage & restore integrity to our rivers & forests of which salmon are a part.

Thank you for taking this important step for all of us.

Brenda Strange
Spokane, WA

From: dana stroud
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 1:24:56 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

dana stroud
600 nw farris rd
gresham, OR 97030

From: Andrea Sullivan
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:51:06 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Andrea Sullivan

Andrea Sullivan
398 School Drive
Horseshoe Bend, ID 83629

From: Brian Sullivan
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:40:09 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Brian Sullivan
7220 99th Ave SW
Lakewood, WA 98498

From: Rebecca Sundberg
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:51:13 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Rebecca Sundberg
830 Gleason Lane
Langley, WA 98260

From: Heather Susemihl
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 7:28:56 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Heather Susemihl
Box 1171
McCall, ID 83638

From: Aaron Sutter
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:20:20 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Aaron Sutter
2116 N 42nd St
Seattle, WA 98103

From: Rob Switalski
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Tuesday, March 03, 2015 1:23:22 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Rob Switalski
620 5th Ave. South, Apt. C
Edmonds, WA 98020

From: david taylor
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:12:23 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

david taylor
P.O. Box 108
Corvallis, OR 97339

From: Kate Taylor
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Monday, March 02, 2015 9:11:47 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Kate Taylor
1975 NW KINGS PL
UNIT B
CORVALLIS, OR 97330

From: Joe Barreca
To: John Sirois
Subject: Salmon Restoration
Date: Tuesday, February 24, 2015 10:33:12 AM

Dear Upper Columbia United Tribes,

I have read your draft proposal and am encouraged that something can be done to undo the thoughtless damage done by dam builders in the 20th century.

Thank you for your leadership in returning salmon home to the rivers and streams of the Upper Columbia.

I support UCUT's draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 to prepare for the next step of salmon return: Phase 2.

Because salmon can be an important boost for our economy and environment, I encourage you to undertake a robust public process to involve the public of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia. In this time of climate change and melting glaciers, it's time we right historic wrongs, move to repair damage, and restore integrity to our rivers and forests of which salmon are a part. Thank you again for taking this important step forward for all of us.

Joseph Barreca
President, The Heritage Network
2109 Hwy 25 South
Kettle Falls, WA 99141
509-738-6155 office
509-680-6357`cell
Joe.Barreca@gmail.com

From: james thompson
To: John Sirois
Subject: Salmon Belong Above Grand Coulee!
Date: Thursday, February 26, 2015 11:13:46 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam, and encourage completion of the first phase by the end of 2016 and a the start of phase two as soon as possible thereafter.

In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

james thompson
2743 nw thurman street
suite 7
portland, OR 97210

From: Alice Tobias
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 2:35:43 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Alice Tobias
3616 NE 42 Str
Seattle, WA 98105

From: Ellen Todras
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:42:21 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Ellen Todras
1650 Crest Drive
Eugene, OR 97405

From: Kathy Tonegawa
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 2:59:21 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Kathy Tonegawa
7131 S. W. 5th Avenue
Portland, OR 97219

From: Kathy Tonegawa
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 3:04:21 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Kathy Tonegawa
7131 S. W. 5th Avenue
Portland, OR 97219

From: Gregory Topf
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:07:20 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Gregory Topf
2712 Walnut Ave. SW
Seattle, WA 98116

From: Bob Triggs
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 10:27:44 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Bob Triggs
P.O. Box 261
Port Townsend, WA 98368

From: Chuck Trost
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 1:09:17 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Chuck Trost
225 N. Lincoln
Pocatello, ID 83204

From: Bee Tyree
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:19:31 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Bee Tyree
7410 SW Oleson Road #248
Portland, OR 97223

From:	Jerry White
To:	John Sirois
Subject:	Comments on the Phase 1 Work Coordination Plan from Spokane Riverkeeper
Date:	Friday, February 27, 2015 3:58:17 PM
Attachments:	2015 comments on Phase 1.docx

Mr. John Sirois,

Please find the attached comments on the *Phase 1 Work and Coordination Plan* from us here at Spokane Riverkeeper. We appreciate the chance to have input and we are excited to be a part of such a historic and positive movement in the Upper Columbia River Watershed. Please let us know if there are other ways in which we become involved in this process.

Best regards,

Jerry White, Jr

Spokane Riverkeeper
Center for Justice

Working for a fishable, swimmable Spokane River

jerry@cforjustice.org
(509) 464 - 7614
Cell (509) 475-1228

Spokane
RIVERKEEPER®

For a Fishable and Swimmable Spokane River

February 27, 2014

Clinton M. Wynn, Chairman
Upper Columbia United Tribes
25 W. Main Street, Suite 434
Spokane WA 99201

Dear Clinton M. Wynn,

Thank you very much for the opportunity to comment on the Phase 1 Work and Coordination Plan for the reintroduction of anadromous fish back into the upper Columbia River Basin.

The Spokane Riverkeeper is a non-profit organization that serves as a public advocate for a clean and healthy Spokane River. Our stated mission is to create a fishable and swimmable river that remains so for generations to come. We closely watch fisheries issues and regard the retention and conservation of native fish in the Spokane River as one of the more important issues we work on.

As such the potential re-introduction of anadromous fish, including Lamprey, steelhead and several species of salmon is very exciting and positive prospect. To start, we feel that this project has a huge potential benefit to both the ecology of the River and to society as a whole. Migrations of native fish will bring huge ecosystem services that will benefit the economics, the social and cultural life of all people who live, work and play in the upper Columbia Basin.

Our comments on the Phase 1 Work and Coordination Plan are as follows:

- **Coordination and Communication – Phase 1**
  The Spokane Riverkeeper proposes that UCUT consider several options to incorporate a robust and functional stakeholder process.

  Option 1 would be the addition of a separate Stakeholder Advisory Group. This could be a standing committee of stakeholders that allow for early input in order to identify issues that could shape Phase 2 implementation. Such a group might make coordination and communication more efficient, help it to avoid the pit falls of omitting significant issues, and/or capture all issues that stakeholders and communities may identify as important as this project proceeds. Additionally, these stakeholders may be able to share some of the outreach work to their diverse constituents and pave the way for and effective and efficient implementation of the work plan and the project with in the larger communities affected.

Option 2 would be to add a standing stakeholder committee to your Public Outreach Team rather than simply have the outreach team identify and communicate with stakeholders separately.

Option 3 would be to incorporate stakeholders and pertinent advisors to each group. For example, the Project Management Advisory Group could have a representative from an NGO such as the Columbia River Keeper. The Science Advisory Group could have Scientists from the academic fisheries programs.

In the absence of creating a stakeholder advisory team or incorporating stakeholders directly into the Groups, the Spokane Riverkeeper feels that there should be a clear, transparent process by which stakeholders are identified, a path by which they can have a voice in this process, and a means by which the implementation of Phase 2 is accountable to diverse stakeholders in the basin.

- **Phase 1 Work Plan:**

Under Objective 4, the evaluation of donor stocks, I would strongly urge UCUT to incorporate the retention and use of naturally occurring and native genetics when considering the future anadromy of redband trout or O. mykis (and their migration as steelhead). Under Task 4.3 we recommend explicit language that prioritizes the recruitment of native genetics prior to the use of donor stocks. This will ensure that native genetics have a chance to regenerate in a watershed such as the Spokane prior to importing stocks that compete with and disrupt the existing recovering O. mykis populations.

Please include the design and testing of the Whooshh system for runs of anadromous O. mykis steelhead.

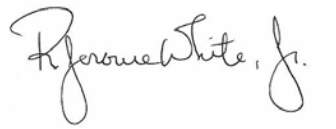
Objective 6: While the Riverkeeper agrees that a survey (Task 6.2) of stakeholder and public perceptions is important, we believe that this should be simply the beginning of forming a standing stakeholder advisory group (as mentioned above in coordination and communication). That way the survey can be more than a simple sample of perceptions and issues and more of an ongoing dialogue that will function to more effectively capture the issues that may emerge through an ongoing process with a diverse public. Having said that, the process should be clear and concise so that it is "*efficient in consideration of work progress and cost effective*", as stated on Page 2 of the document.

In Task 6.1 we feel that evaluating the potential risk posed by non – native, warm water species such as small mouth bass, walleye, northern pike, crappie, yellow perch and largemouth black bass on re-established salmonids should be evaluated. Additionally, protocols for suppression and control should be studied.

Under Objective 3, we recommend that there be a Task 3.3 which documents the value added to both the community and the river ecology within the upper Columbia River Basin should anadromous fish be re-established. This could be accomplished on a species specific basis, a seasonal basis or both.

Thank you very much for the opportunity to comment on this most historic and exciting project. Please let us know if there are other opportunities to comment and be a part of this process. The reintroduction of anadromous fish to the upper Columbia Basin has massive implications for the quality of life and for the future of all people, the economies and cultures of those who have existed for so many years without the runs of fish that were once a part of this landscape and a part of life for all.

Best regards,



Jerry White, Jr., Spokane Riverkeeper
Community Building
35 West Main St Suite 300
Spokane WA, 99201

(509) 464-7614
jerry@cforjustice.org

From:	O"Brien, Allison
To:	John Sirois
Cc:	Brian Milchak; Robert Dach; Susan Camp; Scott Aikin
Subject:	REVISED - Upper Columbia River Basin Fish Passage and Reintroduction Project
Date:	Friday, February 27, 2015 2:01:44 PM
Attachments:	20150227_DOI_UCUT_Final.pdf

Hello again,

We just realized that there was an error in the previous attachment; please disregard it and use this one.

I apologize for any inconvenience.

Have a great weekend!
Allison

On Fri, Feb 27, 2015 at 1:47 PM, O'Brien, Allison <allison_o'brien@ios.doi.gov> wrote:

> Mr. Sirois,
>
> Attached please find the Department of the Interior's response to the January 22, 2015, notice of availability for the “Upper Columbia River Basin Fish Passage and Reintroduction Project – Phase 1, Draft Project Work and Coordination Plan” and request for review and comment.
>
> Please feel free to contact me with any questions or concerns.
>
> Have a great day,
> Allison
>
> --
> Allison O’Brien
> Regional Environmental Officer
> U.S. Department of the Interior
> 620 SW Main St., Ste. 201
> Portland, Oregon 97205
> Phone: 503-326-2489
> Mobile: 503-720-1212

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
620 SW Main Street, Suite 201
Portland, Oregon 97205-3026

IN REPLY REFER TO:
OS 1206

February 27, 2015

Upper Columbia United Tribes
Attn: John Sirois
25 W. Main Street, Suite 434
Spokane, Washington 99201

Dear Mr. Sirois,

The Department of the Interior (Department) has received the January 22, 2015, notice of availability for the "Upper Columbia River Basin Fish Passage and Reintroduction Project – Phase 1, Draft Project Work and Coordination Plan" (Workplan) and request for review and comment.

The Department was an active participant in the Sovereign Review Process for the Columbia River Treaty (Treaty). This process resulted in the development of a regional recommendation for the future of the Treaty, which was provided to the U.S. Department of State on December 13, 2013. The recommendation specifically highlighted the importance of a joint study with Canada focused on the costs, benefits, and other impacts of Pacific salmon reintroduction.

The proposed Workplan is an ambitious domestic reintroduction effort that appears to focus on implementing the Northwest Power and Conservation Council's 2014 Fish and Wildlife Program recommendations. The Department agrees that some domestic reintroduction investigations, such as U.S. territory habitat evaluations, are appropriate and could inform eventual discussions and joint efforts with Canada.

We appreciate the opportunity to review the draft Workplan and recommend that you work with individual bureaus to explore where they can specifically contribute to continued development of the Workplan, including modifying the scope and scale to be realistically achievable during the suggested timeframe (2016) as well as where the bureaus may play individual contributing roles. Questions or comments may be directed to Bob Dach (503-231-6711) with the Bureau of Indian Affairs; Sue Camp (208-378-5030) with the Bureau of Reclamation; or to Scott Aikin (360-604-2531) with the U.S. Fish and Wildlife Service. Please do not hesitate to contact me (503-326-2489) if you need any other assistance.

Sincerely,

Allison O'Brien
Regional Environmental Officer

From: Rose Vallor
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:03:44 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Rose Vallor
601 S 6th
Bozeman, MT 59715

From: Ben Valum
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 6:45:02 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Ben Valum
po box 133
custer, WA 98240

From: Roberta Vandehey
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 6:01:58 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Roberta Vandehey
20481 Winlock Lane
Fossil, OR 97830

From: rebecca vincent
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:41:02 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it’s time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

rebecca vincent
295 w 27th av
eugene, OR 97405

From: Jamie Voss
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:11:56 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Jamie Voss
3211 Bellomy
Boise, ID 83703

From: Barbara Wallesz
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:48:29 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Barbara Wallesz
4915 Samish Way #79
Bellingham, WA 98229

From: Bob
To: John Sirois
Subject: Upper Columbia River Basin Project
Date: Friday, February 27, 2015 10:09:59 AM

Washington State Chapter of Backcountry Hunters and Anglers fully supports the Upper Columbia River Basin Fish Passage and Reintroduction Project- Phase 1 Draft Project Work and Co-ordination Plan.

Bob Mirasole
Wa. Backcountry Hunters and Anglers

Bob Mirasole

Firedg@hotmail.com
509-939-2808

From:	DR Michel
To:	John Sirois; "Steve Smith"; Keith Kutchins
Subject:	FW: WDFW Comments on Upper Columbia River Basin Fish Passage and Reintroduction Project
Date:	Wednesday, February 25, 2015 9:08:08 AM
Attachments:	Michel UCUT 2.24.15.pdf

FYI, a 10 am call works for me.

Thanks,

D.R. Michel
Executive Director
25 W. Main, Suite 434
Spokane, WA 99201
Cell (509) 954-7631
Office (509) 209-2412
Fax (509) 209-2421
dr@ucut-nsn.org
www.ucut.org

From: Director (DFW) [mailto:director@dfw.wa.gov]
Sent: Wednesday, February 25, 2015 9:02 AM
To: DR Michel
Subject: WDFW Comments on Upper Columbia River Basin Fish Passage and Reintroduction Project

Good morning Mr. Michel,

Please see the attached letter from Washington Department of Fish and Wildlife Director Jim Unsworth providing comments on the Upper Columbia River Basin Fish Passage and Reintroduction Project. The original will follow via U.S. mail.

Tina Nisbet

Tina Nisbet
Director's Office
Washington Department of Fish and Wildlife
600 Capitol Way North
Olympia, WA 98501
Phone: (360) 902-2228

State of Washington
Department of Fish and Wildlife
Mailing Address: 600 Capitol Way N, Olympia WA 98501-1091, (360) 902-2200, TDD (360) 902-2207
Main Office Location: Natural Resources Building, 1111 Washington Street SE, Olympia WA

February 24, 2015

D. R. Michel
Executive Director
Upper Columbia United Tribes
25 West Main, Suite 434
Spokane, WA 99201

Dear Mr. Michel:

Thank you for the opportunity to comment on the Upper Columbia River Basin Fish Passage and Reintroduction Project – Phase 1, Draft Work and Coordination Plan developed by the Upper Columbia United Tribes (UCUT). The Work Plan proposes a structured framework to implement Phase 1 of the Northwest Power and Conservation Council's Fish and Wildlife Program element *Reintroduction of anadromous fish above Chief Joseph and Grand Coulee dams to mainstem reaches and tributaries in the United States.* In 2014 the Washington Department of Fish and Wildlife (WDFW) provided comments to the Council's Fish and Wildlife Program in support of a phased science-based approach to evaluate the feasibility of reintroduction of anadromous fishes above Chief Joseph Dam. We continue to support this approach and look forward to working with the Upper Columbia Tribes, the Northwest Power Planning Council, and others in this effort.

WDFW intends to participate in the Phase 1 work plan to the maximum extent that our resources allow; we understand that all of the potential partners in this effort will need additional support in order to produce the work products that the Council and the region will need to make informed decisions about this important proposal. We anticipate working collectively with the other managers to ensure that adequate resources will be available to support all of our work efforts.

The proposed governance structure in the Work Plan of Management, Science, and Outreach groups with oversight provided by an Executive Collaboration Group is a thoughtful approach. This structure appears to reflect the leadership role of the state and the Columbia Basin tribes, which we believe is appropriate, with room to accommodate federal agency support as it develops. However, the proposal is still unfinished in some areas. For instance, it does not describe how decisions by the Executive Collaboration Group dovetail or are communicated to the full Council. We look forward to working with the partner agencies to develop the best approach for ensuring smooth decision making which may include more direct work with the Council through the Executive Collaboration Group to ensure work products and the process meet the Council's and the region's expectations. In addition, we support the development of a clear set of criteria to assist in the development of Phase 1 products and in decision making as listed in Objective 7 in the Work Plan. WDFW would like to be added to the Outreach Group, and we recommend the removal of the word "advisory" from the Management Group.

Assessing the feasibility of anadromous reintroduction into the Upper Columbia River is a large and complex process. We support the Council's Phase 1 guidance, which includes: 1) an evaluation of information from passage studies including previous assessments above Chief Joseph; 2) an assessment of habitat availability, suitability, and survival above Chief Joseph; and 3) the scientific feasibility and cost of passage options for salmon. To implement the organizational structure of this guidance, we suggest the Work Plan be reorganized around the life cycle of salmon with an emphasis on life stages above Chief Joseph Dam. The natural organization around the life cycle of salmon would facilitate a science-based approach, identification of critical uncertainties, development of a reintroduction/research plan, a review of Phase 1 products by the Independent Science Review Panel if needed, and organization of the costs and economic analysis.

As we extend our partnership with the UCUTs into this process, we would like to have open and transparent discussions for funding and outreach strategies along with coordinated communication. This coordinated effort will give us the best chance of building broad support amongst all stakeholders, and we look forward to exploring both these topic areas with you in the near future. Our policy contacts for Phase 1 are Steve Pozzanghera, Region 1 Director (Steve.Pozzanghera@dfw.wa.gov and 509.892.7852) and Bill Tweit, Special Assistant (William.Tweit@dfw.wa.gov and 360.902.2723). Our primary staff contacts are Dan Rawding (Daniel.Rawding@dfw.wa.gov and 360.910.3886) and Amy Windrope (Amy.Windrope@dfw.wa.gov and 360.902.2181). We have additional detailed comments on the draft plan which will be submitted separately by staff.

We acknowledge and are inspired by the vision and leadership of the entire Columbia Basin Tribal community and especially the UCUT in this effort to contemplate restoration of salmon to the Upper Columbia. Thank you for the opportunity to provide comments on the feasibility of reintroduction of anadromous salmon and steelhead above Chief Joseph Dam. We look forward to working with you on this project.

Sincerely,

James Unsworth, Ph.D.
Director

cc: Northwest Power and Conservation Council:
Tom Karier and Phil Rockefeller
Office of the Governor:
JT Austin
Washington Department of Fish and Wildlife:
Steve Pozzanghera, Bill Tweit, Guy Norman, Mike Livingston, Jim Brown, Jim Scott, Jeff Davis, Nate Pamplin, Julie Henning, Dave Price, Kelly Cunningham, Ron Warren, and Erik Neatherlin

From:	DR Michel
To:	John Sirois; "Steve Smith"; Keith Kutchins
Subject:	FW: WDFW Comments on Upper Columbia River Basin Fish Passage and Reintroduction Project
Date:	Friday, February 27, 2015 9:35:54 AM
Attachments:	Michel UCUT 2.24.15.pdf

D.R. Michel
Executive Director
25 W. Main, Suite 434
Spokane, WA 99201
Cell (509) 954-7631
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Fax (509) 209-2421
dr@ucut-nsn.org
www.ucut.org

From: Director (DFW) [mailto:director@dfw.wa.gov]
Sent: Wednesday, February 25, 2015 9:02 AM
To: DR Michel
Subject: WDFW Comments on Upper Columbia River Basin Fish Passage and Reintroduction Project

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Tina Nisbet

Tina Nisbet
Director's Office
Washington Department of Fish and Wildlife
600 Capitol Way North
Olympia, WA 98501
Phone: (360) 902-2228

State of Washington
Department of Fish and Wildlife
Mailing Address: 600 Capitol Way N, Olympia WA 98501-1091, (360) 902-2200, TDD (360) 902-2207
Main Office Location: Natural Resources Building, 1111 Washington Street SE, Olympia WA

February 24, 2015

D. R. Michel
Executive Director
Upper Columbia United Tribes
25 West Main, Suite 434
Spokane, WA 99201

Dear Mr. Michel:

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As we extend our partnership with the UCUTs into this process, we would like to have open and transparent discussions for funding and outreach strategies along with coordinated communication. This coordinated effort will give us the best chance of building broad support amongst all stakeholders, and we look forward to exploring both these topic areas with you in the near future. Our policy contacts for Phase 1 are Steve Pozzanghera, Region 1 Director (Steve.Pozzanghera@dfw.wa.gov and 509.892.7852) and Bill Tweit, Special Assistant (William.Tweit@dfw.wa.gov and 360.902.2723). Our primary staff contacts are Dan Rawding (Daniel.Rawding@dfw.wa.gov and 360.910.3886) and Amy Windrope (Amy.Windrope@dfw.wa.gov and 360.902.2181). We have additional detailed comments on the draft plan which will be submitted separately by staff.

We acknowledge and are inspired by the vision and leadership of the entire Columbia Basin Tribal community and especially the UCUT in this effort to contemplate restoration of salmon to the Upper Columbia. Thank you for the opportunity to provide comments on the feasibility of reintroduction of anadromous salmon and steelhead above Chief Joseph Dam. We look forward to working with you on this project.

Sincerely,

James Unsworth, Ph.D.
Director

cc: Northwest Power and Conservation Council:
Tom Karier and Phil Rockefeller
Office of the Governor:
JT Austin
Washington Department of Fish and Wildlife:
Steve Pozzanghera, Bill Tweit, Guy Norman, Mike Livingston, Jim Brown, Jim Scott, Jeff Davis, Nate Pamplin, Julie Henning, Dave Price, Kelly Cunningham, Ron Warren, and Erik Neatherlin

From:	DR Michel
To:	John Sirois; "Steve Smith"; Keith Kutchins
Subject:	FW: Draft UC Work Plan
Date:	Friday, February 27, 2015 9:36:15 AM
Attachments:	UC_WorkPlan_Final.pdf

D.R. Michel
Executive Director
25 W. Main, Suite 434
Spokane, WA 99201
Cell (509) 954-7631
Office (509) 209-2412
Fax (509) 209-2421
dr@ucut-nsn.org
www.ucut.org

From: Rawding, Daniel J (DFW) [mailto:Daniel.Rawding@dfw.wa.gov]
Sent: Thursday, February 26, 2015 4:54 PM
To: DR Michel
Cc: Windrope, Amy H (DFW)
Subject: Draft UC Work Plan

D.R.,

Attached are the WDFW comments on the draft Upper Columbia Work Plan. It is a great start. We suggested that you consider some changes to improve the work plan flow, aid in the identification of critical uncertainties, and summarize the data based on the life cycle of a salmon, which will all aid in the decision making process. Please contact me of Amy if you have questions and we look forward with you on this project.

Dan and Amy

Dan Rawding
Washington Department of Fish and Wildlife
Science Division, Fish Program
Washington Department of Fish & Wildlife
2108 Grand Boulevard
Vancouver, WA 98661
Phone: 360.910.3886

State of Washington
DEPARTMENT OF FISH AND WILDLIFE
Mailing Address: 2108 Grand Boulevard ≅ Vancouver, WA 98661
(360) 696-6211 ≅ Fax (360) 906-6776

February 26, 2015

D.R. Michel, Executive Director
Upper Columbia United Tribes
25 W Main, Suite 434
Spokane, WA 99201

Dear Mr. Michel,

Thank you for the opportunity to comment on the Upper Columbia River Basin Fish Passage and Reintroduction Project – Phase 1, Draft Work and Coordination Plan developed by the Upper Columbia United Tribes (UCUT). The Washington Department of Fish and Wildlife (WDFW) appreciates your initiative and leadership in developing the draft work plan. We provided our policy comments in a previous correspondence and this letter provides more detailed comments regarding the draft work plan.

We believe the objectives and tasks listed in the plan address the information identified for Phase 1 of the Northwest Power and Conservation Council's Fish and Wildlife Program. We would suggest that you consider reorganization of the document to improve its flow, aid in the identification of critical uncertainties, and summarize the data based on the life cycle of a salmon, which will all aid in the decision making process. We developed the following logic path and reorganized the objectives accordingly: 1) clearly define the purpose, goals, and decision process; 2) finalize work plan; 3) provide a relevant summary of upstream and downstream passage studies; 4) provide a relevant summary of habitat quality and quantity by species and life stage above Chief Joseph Dam; 5) provide a relevant summary of information on interactions between reintroduced anadromous and resident fishes; 6) development of research plan (e.g. prioritized critical uncertainties) from biological objectives three through five, 7) propose implementation of early actions based on the research plan, 8) provide a summary of the costs of fish passage at recently completed passage projects; and 9) outreach to engage interested parties in the process. The reorganization we are proposing captures all of the objectives identified in the work plan and adds a funding strategy which is located in the attachment.

We recognize there are many ways to organize a work plan and our intention is to provide our current thinking for your consideration. We look forward to working with you to evaluate the feasibility of reintroduction of anadromy into the Upper Columbia River.

Please contact us if you have additional concerns or questions.

Sincerely,

Dan Rawding
Environmental Planner 5

Amy Windrope
Environmental Planner 5

cc: Northwest Power and Conservation Council
Tom Karier and Phil Rockefeller
Washington Department of Fish and Wildlife
Bill Tweit, Guy Norman, Steve Pozzanghera, Mike Livingstone, Jim Brown, Jim Scott, Kelly Cunningham, Erik Neatherlin, Jeff Davis, Dave Price, John Whalen, Chris Donley, Jeff Korth, Andrew Murdoch, and John Easterbrooks

ATTACHMENT: PHASE 1 OBJECTIVES

DEFINE PURPOSE, GOALS, AND DECISION PROCESS.

Objective 1. Develop a draft adaptive decision framework and multi-phase project strategic plan for guiding planning, investigation, implementation and evaluation activities (including regional goals and objectives, milestones, decision tree on key uncertainties, and budget needs). The decision framework outlines the purpose of Executive Group, Managers Group, and Science Group and articulates decision making purview of each group and how and when decisions are communicated to Council. The project strategic plan tasks would include: 1) interim and long-term purpose, goals, and policy objectives, 2) create and adapt project timeline for planning, prioritization of work products, and reporting, 3) create project decision tree based on results and critical uncertainties and 4) create a budget to ensure timely delivery of Phase 1 process and products.

Work Product 1: A short report that list the purpose, goals, and decision process for this project and a funding strategy

FINALIZE THE WORK PLAN

Objective 2. The work plan will contain all the objectives tasks and timeline to provide information needed for the Council to evaluate Phase 1 of the Upper Columbia reintroduction project. It is important that the work plan capture these needs. Alternatively, this objective may be included as part of the first objective. The decision framework would show how the information and analytical products inform decision making at the appropriate level.

Work Product 2. Finalize the work plan for Phase 1 and decision framework.

SUMMARIZE RELEVANT PASSAGE INFORMATION

Objective 3. Evaluate and summarize information from previous assessments, workshops, and the operation of high head dam's pertinent adult and juvenile passage studies for anadromous and resident fishes indigenous to the Upper Columbia including previous assessments at Chief Joseph and Grand Coulee dams.

Work Product 3: The passage report which would include: 1) a summarization of strategies, facilities, and operations for adult and juvenile passage and the resulting fish collection efficiencies and survival, 2) critical uncertainties associated with passage, collection, and survival, and 3) a technical/engineering summary including challenges.

SUMMARIZE RELEVANT HABITAT INFORMATION FOR ANADROMOUS FISHES

Objective 4. Evaluate the quantity and quality of accessible habitat available for salmon, steelhead, sturgeon and other migratory species by life stage in historical habitats above Chief Joseph and Grand Coulee dams.

Work Product 4: The habitat report would describe the quantity and quality by life stage including: 1) available adult holding and spawning habitat, 2) incubation habitat, and 3) fry/parr rearing habitat by species and life stage.

SUMMARIZE RELEVANT SPECIES INTERACTIONS BETWEEN RESIDENT AND REINTRODUCED ANADROMOUS FISHES

Objective 5. Summarize relevant information relating to intra- and inter species interactions when anadromous fishes are reintroduced into areas above large reservoirs including the evaluation of potential effects of fish passage and reintroductions on resident fish management and fish culture in Rufus Woods Lake and Lake Roosevelt.

Work Product 5. The interactions report would describe the genetic and ecological interactions between resident fish isolated above Chief Joseph Dam and reintroduced indigenous fishes. More specifically it would address: disease transfer from reintroduction of anadromy, predation in reservoirs, competition between resident fish and anadromous juveniles, addition of marine derived nutrients, and changes to the ecosystem due to passage.

DEVELOP INTERIM RESEARCH PLAN

Objectives 6. Based on the results from previous objectives develop prioritized critical uncertainties by species and life stage. This plan should be extended to include subjects not addressed in objectives 2-4 such as the origin of donor stocks. The natural organization of the research plan around the life cycle of salmon would assist in the decision process, review of Phase 1 products by the Independent Science Review Panel if needed, and provide direct linkage to the costs and economic analysis.

Work Product 6. The interim research plan identifies and prioritizes critical uncertainties regarding reintroduction by species and life stage and identifies early actions to address critical uncertainties.

DEVELOP LIST OF EARLY IMPLEMENTATION ACTIONS TO ADDRESS CRITICAL UNCERATINTIES

Objective 7. Implement high priority actions that address critical certainties from objective 6. These may include testing of new passage technologies (e.g. Whoosh system), pilot releases to performance of donor stock, assess adult survival, post-release adult behavior/movement/ survival, spawning distribution, incubation, intra- and inter-species population effects (competition/predation), disease screening and protocols.

Work Product 7. Report on results of early actions.

DOCUMENT FACILITIES COST

Objective 8. Document the capital and operational costs of existing adult and juvenile fish passage facilities with potential application to Chief Joseph and Grand Coulee dams, including potential for foregone benefits to existing project objectives.

Work Product 8. The facilities cost report would summarize upstream and downstream facilities cost from recent and relevant passage projects.

OUTREACH

Objective 9. Disseminate reintroduction information to agencies, PUDs, stakeholders, organization, and the public.

Work Product 9. This work product would include design and maintenance of a web site, press releases, coordination of pilot salmon releases with first nations, and a survey of stakeholder/public perceptions, needs, and concerns for Phase 2 planning.

From:	jim boyd
To:	John Sirois
Subject:	Fwd: Tribes launch study on restoring salmon runs to the Upper Columbia
Date:	Monday, February 02, 2015 10:11:01 AM
Attachments:	image003.jpg

Sent from my iPhone

Begin forwarded message:

From: Nancy Johnson <Nancy.Johnson@colvilletribes.com>
Date: February 2, 2015 at 9:45:50 AM PST
To: "council@colvilletribes.com" <council@colvilletribes.com>
Subject: FW: Tribes launch study on restoring salmon runs to the Upper Columbia

From: Parlette, Sen. Linda Evans [mailto:Linda.Parlette@leg.wa.gov]
Sent: Sunday, February 01, 2015 1:37 PM
To: Nancy Johnson
Subject: Tribes launch study on restoring salmon runs to the Upper Columbia

Hi Nancy,

I am working from home—prior to the BIG GAME—
I am supportive of the study on restoring salmon runs to the upper Columbia.

Please keep me in the loop.

The 12th Woman!

☺

LINDA EVANS PARLETTE
12th Legislative District
Washington State Senate Majority Coalition Caucus Chair
Phone: (360) 786-7622

cid:image006.jpg@01D0244D.317642A0

From: Michael Wells
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 9:43:31 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

This first phase of the study needs to be done in a timely way, and be completed by the end of 2016 in order to prepare for Phase 2 of this historic salmon restoration project.

Because salmon are so essential to both our Northwest economy and environment, I encourage you to undertake a robust public process that involves the people of the region.

There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

Michael Wells
P.O. Box 2608
645 Fox Ridge Lane
McCall, ID 83638

From: Hank Werner
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:05:53 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Hank Werner
2743 Fairway St.
Woodburn, OR 97071

From: Julie Whitacre
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 11:10:34 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Julie Whitacre
659 E Laurel Rd
Bellingham, WA 98226

From: Maria White
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 7:53:41 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Maria White
18880 SW Hart Rd
Beaverton, OR 97007

From: Karen Wible
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 12:18:56 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Karen Wible
4210 ne 130th circle
vancouver, WA 98686

From: KRISTIN WILDENSEE
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 3:07:23 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

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Thank you again for taking this important step forward for all of us.

Sincerely,

KRISTIN WILDENSEE
8027 SE YAMHILL ST
PORTLAND, OR 97215

From: George Wilhelm
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 8:06:40 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

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There has never been adequate mitigation for the loss of salmon in the Upper Columbia Basin. In this time of declining salmon populations, damaged rivers and habitats, and climate change, it's time we right historic wrongs, move to repair damage, and restore integrity and resilience to our rivers and forests of which salmon are an essential part.

Thank you again for taking this important step forward for all of us.

Sincerely,

George Wilhelm
12747 4th Ave NW
Seattle, WA 98177

From: James Wilkin
To: John Sirois
Subject: Upper Columbia fish passage
Date: Tuesday, April 07, 2015 2:22:36 PM
Attachments: image.jpeg

Living in Kettle Falls and being an avid fisherman I love the idea getting salmon back into the upper columbia. Just out of curiosity how well this idea work with northern pike numbers growing in lake Roosevelt and move ing south? I caught this one near the 395 bridge by kettle last spring. I have buddies who have caught them in the 30+ inch range and I don't see the fry doing well with them. Hopefully I'm wrong tho.

From: Pierre Wolfe
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 6:33:13 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

I support the Upper Columbia United Tribes' (UCUT) draft proposal to study returning salmon to the rivers and streams above Grand Coulee Dam.

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Sincerely,

Pierre Wolfe
198 NW Canyon Drive
Pullman, WA 99163

From: Fritz Wollett
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:22:27 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

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Sincerely,

Fritz Wollett
5815 17th Ave NE
Seattle, WA 98105

From: Annette Woodmark
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 1:11:26 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

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Thank you again for taking this important step forward for all of us.

Sincerely,

Annette Woodmark
86378 Sanford Road
Eugene, OR 97402

From: Deborah Woolston
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 2:34:04 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Sincerely,

Deborah Woolston
1616 N 36th St
Unit A
Seattle, WA 98103

From: Chris Yallup
To: John Sirois
Subject: Salmon
Date: Friday, January 30, 2015 2:19:53 AM

Hey,
That would be an excellent plan. It would give the furture generation a look at what our ancestors lost, in the making of the Dams. I most definitely support the idea of bringing back the salmon above the Chief Joe and above Grand Coulee Dam. Would be such a memorable Moment for our People.

From: Betsy Young
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Friday, February 27, 2015 1:49:15 PM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

Betsy Young
735 Eastridge Pl
Boise, ID 83712

From: MARY ZOTTER
To: John Sirois
Subject: Bring back salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:13:28 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

Thank you for your leadership to restore salmon to the rivers and streams of the Upper Columbia River.

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Thank you again for taking this important step forward for all of us.

Sincerely,

MARY ZOTTER
5403 SW THOMAS ST
PORTLAND, OR 97221

From: Marguery Lee Zucker
To: John Sirois
Subject: I support restoring salmon to the upper Columbia River watershed!
Date: Thursday, February 26, 2015 10:45:47 AM

Dear Mr. Sirois and people of the Upper Columbia United Tribes,

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Thank you again for taking this important step forward for all of us.

Sincerely,

Marguery Lee Zucker
1966 Orchard St.
Eugene, OR 97403

From:	Muriel Roberts
To:	John Sirois
Cc:	Bonnie Douglas; Mary McGown; Betsy McBride
Subject:	LWVID - Support for Plan to Return Salmon to Upper Columbia River
Date:	Friday, February 27, 2015 11:03:09 AM
Attachments:	LWVID SalmonTestimonydoc

Mr. Sirios:

Please find attached a letter of support from the League of Women Voters of Idaho for the plan for reintroduction of salmon to the Upper Columbia River Basin.

--
Muriel R. Roberts
President, LWVID
208-232-5424

From:	crystal spicer
To:	Gerry Nellestijn
Cc:	Mindy Smith; Rachael Osborn; John Osborn; Pat Ford; Sam Mace; Greg Utzig; Jennifer Yeow; Grant Trower; David Reid; Hans Dummerauf; Jody Lownds; Ryan Van Der Marel; Francis Maltby; Ed McGinnis; Greg Haller; John DeVoe; Senator Karen Fraser; Tom Soeldner; Bonnie Douglas; Raelene Gold; Bruce Gage; Eileen Pearkes; Patti Bailey; Martin Carver; Virgil Seymour; Rhett Lawrence; Fred Huette; Jeff Fryer; Bill Arthur; bob peart; Ken Farquharson; Jim Heffernan; Keith Kutchins; DR Michel; Denise Dufault; Ava Waxman; Adam Wicks-Arshack; Xander Demetrios; Heather Ray; Ted Knight; Michael Treleaven; Steve Smith; John Roskelley; Bob Mirasole; Joseph Bogaard; Ken Jones; Jean Mendoza; Wendell Hannigan; Brent Patterson; Melissa Bates; Bill Green; Pauline Terbasket; Trish Rolfe; Allen Hammond; John Sirois
Subject:	Re: Columbia Round Table Logo
Date:	Monday, March 02, 2015 7:53:08 AM

Thanks, Gerry. It was a remarkable evening with so many supporters for an improved ethical future for the Columbia River. Janet and I only accept this award as being shared among everyone there and those who weren't that have worked so hard with us and well before us. It validates all that we are doing and I have great hopes for the times ahead. There has been tremendous leadership in this enormous endeavor. All the best and thanks to everyone, Crystal.

On Sun, Mar 1, 2015 at 2:44 PM, Gerry Nellestijn <gerry@streamkeepers.bc.ca> wrote:

> Hi All,
> Thanks for your feedback on the logo, by far the most consistent recommendation was to alter the wave/fish/infinity graphic to something that may be more indicative of the Columbia, a Salmon graphic. There have been many other single suggestions that we can try to incorporate and I'll be working with the designer to see what we can do to honour that counsel. Designing something like this by group can be very difficult and I don't want to be responsible for hurting anyone's feelings should your suggestions not make the drawing board, your tolerance in advance is appreciated.
>
> There has been a question come up on a couple of occasions that is worth relating; is this logo for the Canadian Caucus or the entire group? I have always thought that it was for the entire Round Table, I will continue to assume this is the case unless I hear otherwise from the American Caucus.
>
> Best! Cheers! Gerry.
>
> As a post script but in no way less important I very much want to thank those who organized Winter Waters for the well deserved recognition of Crystal and Janet Spicer, I wish I had been there as part of that event. I was responsible for taking down and packing up the " Let Them Run, The Salmon Century" Exhibition from the Cranbrook and District Arts Counsel Gallery. FYI the exhibition is temporally 'overwinter in the Salmo(n) Watershed and will we migrating to Golden and to Revelstoke later this summer!
>
> We Are All Downstream
>
> Gerry Nellestijn
> Coordinator
> Salmo Watershed Streamkeepers Society
> Box 718, Salmo, BC V0G 1Z0
> Ph&Fx: (250) 357-2630

2010 Group Award Finalist
Hometown Heroes Earth Day Canada

Recipient 2009
Outstanding Volunteer Service Certificate: Salmo and Area

Recipient 2008
Canadian Environmental Award

2007 Fraser Basin Council
Award for Ecosystem Excellence