

**Bear River ECC
Final Meeting Notes
October 17, 2018
Pocatello, Idaho**

ECC Members Participating		
	Name	Organization
X	Mark Stenberg	PacifiCorp
x	Lynn Van Every	Idaho Department of Environmental Quality
	Jim DeRito	Trout Unlimited
x	Corey Lyman	U.S. Forest Service
x	Cary Myler	U.S. Fish and Wildlife Service
x	Ryan Hillyard	Idaho Department of Fish and Game
x	Allison Michalski, by phone	Greater Yellowstone Coalition
x	Ryan Beatty, by phone	Bureau of Land Management
	Charlie Vincent	American Whitewater
	Hunter Osborne	Shoshone-Bannock Tribes
	Kirk Rich	Idaho Department of Parks and Recreation
	Susan Rosebrough	National Park Service
	Kevin Lewis	Idaho Rivers United

Others Participating		
	Name	Organization
	Eve Davies	PacifiCorp
x	Matt Lucia	Sagebrush Steppe Land Trust
x	Kelly Conde	Sagebrush Steppe Land Trust
x	Greg Mladenka	Idaho Department of Environmental Quality
	Jeremy Jirak	U.S. Fish and Wildlife Service
x	Tom Lucia	Sagebrush Steppe Land Trust
x	Jamie Tsandes, principal environmental	Bowen Collins
x	Tyler Seamons, project engineer	Bowen Collins
	Nick Bouwes, by phone	Anabran Solutions
	Steven Smith	Idaho Department of Environmental Quality
x	Michael Mortenson, by phone	PacifiCorp

Commitments Made during the October 17, 2018 Meeting	
Stenberg	<ul style="list-style-type: none"> • Broodstock ponds - Follow up on stay on algae buildup in pond and water right proof • Updates needed on Mussler, Bitton, Kempton and Screen Tender • Forward temp data from Cirrus to the ECC • Draft joint memo in support of SSLT's reaccreditation for approval at December meeting • Distribute revised Mink Creek project scoping report to ECC for 10-day review • Develop summary of land trust property purchase/resale concept with Lucia and distribute to ECC
Bouwes	<ul style="list-style-type: none"> • Send photos of BDAs installed on Station Creek to Stenberg
Bowen Collins	<ul style="list-style-type: none"> • Prepare tech memo with final recommendations and 30 percent design

Hillyard, Teuscher	<ul style="list-style-type: none"> • Provide spawning habitat criteria to Stenberg/Tsandes
Lyman	<ul style="list-style-type: none"> • Next steps: stream and meadow redesign, water rights summary, habitat enhancement project proposal
Lucia	<ul style="list-style-type: none"> • Send link to news series to ECC members • Summary of day's discussion on Larsen appraisal. With Stenberg. A vote may be called
Action items in blue have been carried over.	

Decisions Made at This Meeting

- None

Email Decisions Made Since the Last ECC Meeting

The ECC made three email decisions by email vote since the last ECC meeting:

- Approved funding in the amount of \$35,000 for operations support for Sagebrush Steppe Land Trust's executive director and staff.
- Approved funding in the amount of \$3,300 for preparation of a water right proof for the Cove Broodstock ponds water right.
- Approved additional funding in the amount of \$8,930 for Bowen Collins to complete work on the Oneida spawning channel through task 3.2.

A record of email voting is included in Attachment 1.

In regard to the water right proof, Stenberg said the water right came back stating that fish propagation was taking place in the ponds, which is not the case—they are holding ponds. This issue is being worked through. He said the proof is going to be very detailed and include a discussion of why an agricultural permit for fish propagation is not needed. This was due October 1, Stenberg said, so PacifiCorp filed for an extension. Stenberg and Van Every both noted that the numbers of fish being held are way below the numbers required for propagation permits. Stenberg said the extension for filing the water right proof is two years.

Agenda Review

Stenberg reviewed the day's agenda and asked whether ECC members had any additional items. A discussion of routine, preapproved maintenance (drawdowns) by PacifiCorp versus things that require approval was added to the agenda by Stenberg.

Myler asked whether there was any new action on Twin Lakes. He said he saw some emails over the summer stating that Twin Lakes was given an extension to obtain a water right. Mladenka said it may be unrelated to the project already denied by FERC. No one present was aware of any further action on the project.

Adaptive Beaver Management Plan for Station Creek - Nick Bouwes

A copy of Bouwes' proposal to prepare an adaptive beaver management plan for Station Creek is included in Attachment 2. Stenberg said the ECC will review the proposal briefly today and have broader discussion at December ECC meeting. (Copy of the form is in email this morning)

Bouwes said the purpose of the plan is to provide a more welcoming atmosphere for beaver on the Westerberg property. Westerberg has said Bonneville cutthroat trout (BCT) disappeared from the area about 20 years ago and they haven't been able to fish for BCT on their property since. Westerberg visited an existing project on Birch Creek and decided to pursue a similar project on his property. Sam Smith has opposed the project due to potential problems with the nearby irrigation canal. There is also concern from IDFG regarding the canal system and adjacent landowner support. The plan would also serve to reduce risk and threats (both real and perceived). Bouwes said Anabranh has talked to some adjacent landowners and the president of the irrigation company and they have said they are not opposed to the reintroduction project. However, he said, there may be others they have not spoken with. He said he was aware IDFG is opposed to beaver on Station Creek, so he is working on this plan with stakeholders. Beaver will ultimately benefit the fisheries, he said. A monitoring plan will be included, with all this documented in the adaptive management plan. He said he believes the beaver dam analogs (BDAs) will show changes in about a 5-year period.

Hillyard asked who will identify and document real vs. perceived threats and monitor. Bouwes said Anabranh. He said monitoring will depend on the actual proposal that follows.

Tom Lucia said he used to be a conservation officer in this area. He said he spoke with the irrigation company president, who said they currently have plans to put the most vulnerable portion of the canal in a pipe. Lucia said as beaver move out, they are going to find that canal. Bouwes said beaver are closer to the Bear River than the canal and its better habitat. He said he thinks it's a real concern but it's going to happen anyway. This will be documented in the adaptive management plan.

Stenberg asked Bouwes for photos of the six BDAs installed in September. The ECC will take up this proposal at the December meeting.

Oneida Spawning Channel – Bowen Collins

Bowen Collins presentation: <https://drive.google.com/open?id=1LolgPr6nDTqVFghJ8iSnk2ZghkTcFxY7>

Tsandes reviewed the alternatives and pilot areas discussed at the August ECC meeting and the costs associated with each. At end of last meeting, she said, it came down to the Cardo Alternative and the channel in the middle of the floodplain. The channel in the middle of the floodplain, or "Channel Concept" was chosen (see presentation). The pilot would be 150 ft. of water, she said.

Lyman asked for profile and location of the spawning area. Tsandes showed the profile and said slope will be 1 to 1.5 percent, which is ideal for the fish.

Tsandes reviewed the floodplain map and slopes (see presentation). Stenberg noted the large flows in the mid 1980s. He said bigger risk comes during high flows in summer with plant outages during irrigation season.

Tsandes said going back to the Cardno Alternative--do you think a dam is needed? Stenberg said he would prefer not having to build a dam. He said he thinks the Channel Alternative is much simpler and will sit on the landscape better than the Cardno Alternative. Also, beaver will probably come in. Stenberg discussed the need for primitive access on the upper end for clean out, etc.

Lyman asked how the channel would look between the structures and asked where the scour is and where spawning would take place. He said he would like to see that portrayed on the drawings (long profile). Tsandes said these details would be fleshed out at the 30 percent stage. Right now, we are looking at concept and location, she said.

Tsandes reviewed projected costs.

- Cardno - \$390,000
- BCA Concept - \$289,000 (does not include an access road on the west)
- Pilot (two vanes) - \$40,000

Lyman said he thinks we are moving in the right direction with a single channel. In regard to design, he suggested looking at where spawning is anticipated and design to that. Maybe include more structures. He asked what the microhabitats would look like.

Hillyard said he has literature on BCT spawning habitat on file. He noted the more scour behind the structures the better. He also suggested adding more structures. Mladenka said do a pilot study, see what works and what doesn't. Lyman discussed the need to develop more information on cross sections, slopes, and materials.

Tsandes asked if spawning was desired on the side channels, as depicted (see Channel Concept) and asked whether they should they be bubbled out. Stenberg said no, they will fill up with stuff.

Whiteboard notes:

- Add structures
- Scour (additional)
- Don't provide spawning in the side channels
- Keep in the middle

- Keep length
- Gravels upstream would come into the channel
- Pilot down below
- Add land ownership to maps
- Pilot – attraction – how to get past tailrace.

Tsandes asked Hillyard to speak with Teuscher about spawning habitat criteria and pass that information on to Stenberg, Stenberg will provide it to her.

Next Steps: Tsandes said she will develop final recommendations and provide a 30 percent plan. The project is funded through this step, she said. Design would be next stage.

Lyman noted that \$289,000 is the ECC's whole habitat fund for the next year. Tsandes said cost would go up if more structures were added. Lyman agreed.

Stenberg proposed the following timeframe:

2018 – Final recommendations memo

2019 – Plan and specifications

2020 – Project

Mladenka said he believed the ECC would want more time to consider. Tsandes said she could provide a tech memo.

Mortenson said he is concerned about the percent of the budget that is just going into access, not actual improvement. Tsandes asked if PacifiCorp had a contractor who could look at it and give a better number. If so, perhaps cost could go down, she said. Stenberg said only primitive access is needed. Tsandes said that could take down cost.

Van Every asked about the timing of the pilot. In March? Or late winter/early spring for a pilot next spring 2019. He asked whether we want to go that far out. If a pilot is okayed in December, could we start a pilot in March, he asked. Stenberg noted this will depend on the winter.

Lyman noted that a pilot would cost \$40,000 to \$80,000. Mladenka said the project was valuable because it would provide spawning in the Oneida reach. Lyman said he was looking at cost compared to other potential projects. Stenberg said the ECC had very few projects last year and still have \$150,000 left in the fund from last year. He said there has been a lot of talk about BCT not being able to complete their life cycle in the Oneida reach and this project could fix that. Hillyard asked how much production this would give us. Lyman said he is not totally behind it. Hillyard asked whether offspring would return. He noted it would take two more years to find that out. Mladenka said a pilot would inform whether to go to full build. Lyman said he still wants to do a test to see if it works. Mladenka suggested conducting the most rudimentary, inexpensive pilot possible while addressing attraction flow (velocity and temperature).

Beatty requested that landownership be included on maps (he will be looking for BLM land).

Stenberg noted the project was budgeted through the tech memo. To go further (i.e., conduct a pilot), the ECC will have to discuss scope and budget. Tsandes noted that a tech memo won't have details of design.

Bartschi Planning Update – Lyman

Lyman said the first step was to develop project goals and objectives. This was done using the 2018 ECC grant to fund Biota's work. We used \$2,700 of the \$5,000. The project goals and objectives document has been completed and submitted to the ECC (Attachment 3). No additional funding is needed from the ECC for this action and the ECC grant is complete.

Detailed goals and objectives are included in the document. Lyman reviewed these more broadly on the map, "Stauffer Creek Fish Passage, Riparian, Meadow and Stream Channel Improvement Project." He noted that the river was ditched in the 1940s and a diversion was put in. He said the landowner closes the diversion in the spring during runoff and a lake forms. Lyman said the landowner told him he would like to have a trout stream on his property and asked what could be done. This was the starting point, Lyman said. The landowner would also like to restore wet meadow and see the stream reunited. Lyman said a starting point has been identified and he has gotten permission to remove the diversion. The landowner wants to be able to continue his cattle operation, Lyman said, and needs a way to access his water right. There still needs to be a consultation with Idaho Water Resources, he said. That will happen in the near future.

Lyman said this winter he will sit down [with the landowner] and discuss water rights, etc. and will send a summary to the group. He said they have talked about offsite water and fencing but there has been no planning as yet. Lyman said he has advised the landowner that NRCS could help with that aspect.

Lyman said he will bring forward a project to the ECC, probably in two years. The WINTI grant will pay for work thus far and will also cover stream channel design.

Hillyard noted that BCT are keyed into Stauffer Creek. IDFG found them there last year, he said.

Next steps: Lyman will bring stream and meadow redesign to the ECC. He will also meet with Idaho Water Resources for a water rights summary. He will then develop a habitat enhancement project proposal.

Paris Creek Hydro Update – Stenberg

Stenberg said there has been no action on the project by Paris Relief Canal Co. They don't seem to want to miss an opportunity, but they aren't sure there really is one, he said. Stenberg said he has been talking to Paris Hills AgriCom regarding an adjacent underground phosphate mine. There is going to be water discharge from the mine in that area. Getting rid of the water is a problem for them. They could potentially use the water to run Paris year-round at full capacity for 10-15 years, and use the money generated to fund eventual decommissioning. DWR has requested that the mining company pump the water back to Mud Lake but Bear River Bird Refuge (USFWS) does not want the additional infrastructure on the refuge, so PacifiCorp, et al. is considering a split. However, there are a number of complications with year-round water in Paris Creek. Stenberg will keep the ECC informed.

Migratory Bird Study

This report has been delayed until the December ECC meeting. Stenberg said he received the temperature data from Barker on Monday. He will forward it to the group.

Also on Soda Spin – Stenberg said PacifiCorp is currently meeting with Wyoming, Idaho and Utah on their water right filing. It is a large group, he said. They will be building a model of the river to help predict the impacts of future actions. That will take about a year, he said. They would like to increase storage in Bear Lake. Generally, they seem supportive of PacifiCorp's desire to have spinning reserve.

Drawdowns - Stenberg

Stenberg said there is nothing in Bear license about this, but every year all projects get a notice from FERC stating, (Stenberg paraphrasing) "any non-routine drawdown or dewatering will be coordinated with regulatory agencies and FERC will be provided notice for their approval."

Stenberg said he wants to define routine drawdowns for the Bear River. He will develop a table and discuss it with the ECC at the December meeting. He said he will still notify the ECC through our maintenance coordination process, but FERC will not have to approve them. FERC will receive notice. He will also prepare an amendment to the operations and compliance plan to include this information.

The ECC went to closed session to discuss land and water updates.

Next Agenda

- Adaptive Management Plan for Beaver on Station Creek – A vote may be called.
- Migratory Bird Survey – Cirrus
- Land Use mapping - Cirrus

- Oneida Spawning Channel – Tech memo and design review. Decide on pilot. A vote may be called
- Land Trust Letter – Accreditation Support
- Fund Accounting
- ECC Calendar
- Notice a vote on Mink Creek projects

Attachment 1

Record of Email Voting

**Bear River ECC - Record of Email Voting
Sagebrush Steppe Land Trust Funding Request for 2019 Overhead Costs
Voted Called by Stenberg, August 23, 2018**

From: "Stenberg, Mark" <Mark.Stenberg@pacificorp.com>

Date: Thursday, August 23, 2018 at 1:08 PM

To: "Aaron Swift (aswift@RMEF.ORG)" <aswift@RMEF.ORG>, Allison Michalski <amichalski@greateryellowstone.org>, "Beatty, Ryan" <rbeatty@blm.gov>, Bob Zimmer <bzimmer@greateryellowstone.org>, Corey Lyman (clyman@fs.fed.us)" <clyman@fs.fed.us>, "dan_miller@nps.gov" <dan_miller@nps.gov>, Eve Davies <Eve.Davies@pacificorp.com>, Greg Mladenka <Greg.Mladenka@deq.idaho.gov>, "Hillyard, Ryan" <ryan.hillyard@idfg.idaho.gov>, "Jeremy Jirak (jeremy_jirak@fws.gov)" <jeremy_jirak@fws.gov>, 'Kevin Colburn' <kcolburn@amwhitewater.org>, "Michael Kuyper (mkuyper@blm.gov)" <mkuyper@blm.gov>, Warren Colyer <wcolyer@tu.org>, Blaine Newman <blaine_newman@blm.gov>, "cary_myler@fws.gov" <cary_myler@fws.gov>, Charlie Vincent <charliev@xmission.com>, "Hunter Osborne (hosborne@sbtribes.com)" <hosborne@sbtribes.com>, James DeRito <JDeRito@tu.org>, "Kathy Rinaldi (krinaldi@greateryellowstone.org)" <krinaldi@greateryellowstone.org>, Kevin Lewis <kevin@idahorivers.org>, "Kirk Rich (krich@idpr.idaho.gov)" <krich@idpr.idaho.gov>, "Lee W. Mabey (lmabey@fs.fed.us)" <lmabey@fs.fed.us>, Lynn Van Every <Lynn.Vanevery@deq.idaho.gov>, Miriam Hugentobler <miriam.hugentobler@gmail.com>, "Susan_Rosebrough@nps.gov" <Susan_Rosebrough@nps.gov>, "Teuscher, David" <david.teuscher@idfg.idaho.gov>

Cc: Kelly Conde <kelly@sagebrushlandtrust.org>, Matt Lucia <matt@sagebrushlandtrust.org>, James Bailey <James@sagebrushlandtrust.org>

Subject: Request for Funding - Email Vote

Dear ECC Members,

Please provide your approval of the attached funding request from Sagebrush Steppe Land Trust for 2019 overhead costs in the amount of \$35,000. This request is consistent with the *2012 Memorandum of Agreement between PacifiCorp and the Sagebrush Steppe Land Trust Regarding the Acquisition and Management of Property, Section 4.1 Funding of Overhead Costs*. Please include Miriam in your reply.

Mark Stenberg, MBA
PacifiCorp – Renewable Resources
Hydro License Program Manager – Idaho
208 547-7305

Bear River ECC - Record of Email Voting Approval of SSLT Funding Request for 2019 Overhead Costs Vote Called by Stenberg, August 23, 2018		
	Name	Organization
	Lyman	USFS
yes	DeRito	Trout Unlimited
yes	Van Every	IDEQ
	Lewis	Idaho Rivers United
	Rich	Idaho Parks and Rec
yes	Teuscher	Idaho Fish and Game
yes	Beatty	BLM
	Osborne	Sho-Ban Tribes
	Rosebrough	National Park Service
	Vincent	American Whitewater
yes	Michalski	Greater Yellowstone
yes	Stenberg	PacifiCorp
yes	Myler	USFWS

Project Proposal Form

Bear River Environmental Coordination Committee

Project Information														
Project Name	Operations Support for Sagebrush Steppe Land Trust Project Name <div>August 9, 2018 Date of Proposal</div>													
Project Location	Throughout the Bear River Watershed in Idaho Please attach a map and photos of the project area. List GPS coordinates, if possible.													
Amount Requested	<table border="1"> <tr> <td>Project funds requested from the ECC</td> <td>\$35,000</td> </tr> <tr> <td>Overhead funds requested from the ECC</td> <td>\$</td> </tr> <tr> <td>Other funding 1</td> <td>\$</td> </tr> <tr> <td>Other funding 2</td> <td>\$</td> </tr> <tr> <td>In-kind match, donated labor, equipment, materials, etc.</td> <td>\$45,000</td> </tr> <tr> <td>Total project cost</td> <td>\$80,000</td> </tr> </table>		Project funds requested from the ECC	\$35,000	Overhead funds requested from the ECC	\$	Other funding 1	\$	Other funding 2	\$	In-kind match, donated labor, equipment, materials, etc.	\$45,000	Total project cost	\$80,000
Project funds requested from the ECC	\$35,000													
Overhead funds requested from the ECC	\$													
Other funding 1	\$													
Other funding 2	\$													
In-kind match, donated labor, equipment, materials, etc.	\$45,000													
Total project cost	\$80,000													
ECC Sponsor														
Applicant Contact Information (Person completing application)														
Applicant Name	Matt Lucia													
Organization	Sagebrush Steppe Land Trust													
Address	P. O. Box 1404													
City, State and Zip	Pocatello, ID 83204													
Area Code and Phone	(208) 241-4662 Day	(208) 390-8985 Evening /Weekend												
Email (optional)	matt@sagebrushlandtrust.org													
Funds Manager (Must be different than ECC sponsor, can be agency or PacifiCorp)														
Applicant Name	Mark Stenberg													
Organization	PacifiCorp													
Address	822 Grace Power Plant RD													
City, State and Zip	Grace, ID 83241													
Area Code and Phone	(208) 547-7305	() Evening /Weekend												
Email (optional)	mark.stenberg@pacificorp.com													
PacifiCorp Vendor?	Do you know if PacifiCorp vendor setup has been completed? Yes													

Landowner Contact Information		
Applicant Name	N/A	
Organization		
Address		
City, State and Zip		
Area Code and Phone	() Day	() Evening /Weekend
Email (optional)		
Proposed Action		
Action to be taken:	<p>We respectfully request funding to help pay the executive director's salary and staff costs associated with advancing conservation actions within the Bear River Watershed. These positions initiate and advance conservation easements and restoration projects that protect and enhance habitat for Bonneville Cutthroat Trout and other conservation priority species.</p>	
<p>What is the purpose of this project? To inform willing landowners within the ECC project area of conservation options, primarily the sale and donation of conservation easements or property and to advance and close conservation easements or land sales prioritized by the ECC.</p>		

Landowner Contact Information		
Applicant Name	N/A	
Organization		
Address		
City, State and Zip		
Area Code and Phone	() Day	() Evening /Weekend
Email (optional)		
Proposed Action		
<p>Methods (How will the project be accomplished?): We meet with landowners to assess their interest in conserving their property, gather information on the property and its conservation values to aid the ECC in making its decision, then work with the landowner, contractors and ECC to negotiate the terms of permanent conservation agreements, clear title, close and monitor the project.</p>		
<p>Time Frame (When would you like the project to be constructed/completed?). Within one year of receiving funds.</p>		
<p>Do we have your permission to provide this project proposal to another group/agency in order to explore potential funding options? Yes</p>		

**Bear River ECC - Record of Email Voting
Funding for Cove Ponds Water Right Proof
Voted Called by Stenberg, August 27, 2018**

From: "Stenberg, Mark" <Mark.Stenberg@pacificorp.com>

Date: Monday, August 27, 2018 at 5:11 PM

To: "Aaron Swift (aswift@RMEF.ORG)" <aswift@RMEF.ORG>, Allison Michalski <amichalski@greateryellowstone.org>, "Beatty, Ryan" <rbeatty@blm.gov>, Bob Zimmer <bzimmer@greateryellowstone.org>, "Corey Lyman (clyman@fs.fed.us)" <clyman@fs.fed.us>, "dan_miller@nps.gov" <dan_miller@nps.gov>, Eve Davies <Eve.Davies@pacificorp.com>, Greg Mladenka <Greg.Mladenka@deq.idaho.gov>, "Hillyard,Ryan" <ryan.hillyard@idfg.idaho.gov>, "Jeremy Jirak (jeremy_jirak@fws.gov)" <jeremy_jirak@fws.gov>, 'Kevin Colburn' <kcolburn@amwhitewater.org>, "Michael Kuyper (mkuyper@blm.gov)" <mkuyper@blm.gov>, Warren Colyer <wcolyer@tu.org>, Blaine Newman <blaine_newman@blm.gov>, "cary_myler@fws.gov" <cary_myler@fws.gov>, Charlie Vincent <charliev@xmission.com>, "Hunter Osborne (hosborne@sbtribes.com)" <hosborne@sbtribes.com>, James DeRito <JDeRito@tu.org>, "Kathy Rinaldi (krinaldi@greateryellowstone.org)" <krinaldi@greateryellowstone.org>, Kevin Lewis <kevin@idahorivers.org>, "Kirk Rich (krich@idpr.idaho.gov)" <krich@idpr.idaho.gov>, "Lee W. Mabey (lmabey@fs.fed.us)" <lmabey@fs.fed.us>, Lynn Van Every <Lynn.Vanever@deq.idaho.gov>, Miriam Hugentobler <miriam.hugentobler@gmail.com>, "Susan_Rosebrough@nps.gov" <Susan_Rosebrough@nps.gov>, "Teuscher,David" <david.teuscher@idfg.idaho.gov>

Subject: Cove Pond Funding Request - Email Vote

Good Afternoon,

Apparently, we need to prepare a water right proof for our water right claim at the Cove Ponds. For background, PacifiCorp staff had prepared and submitted the water right application for the broodstock ponds that included a new non-consumptive right and a transfer of enough of the water banked Cove Hydro storage right to cover the pond storage and evaporation. We received a notice from IDWR that we need to submit a proof document that demonstrates that we have fully developed the water right and that we have the capacity to measure it. Would you please approve \$3,300 from the Land and Water Conservation Fund to cover the consultant cost to prepare this proof? I have an estimate from Rocky Mountain Environmental in Idaho Falls to perform the work.

Mark Stenberg, MBA
PacifiCorp – Renewable Resources
Hydro License Program Manager – Idaho
208 547-7305

Bear River ECC - Record of Email Voting Funding for Cove Ponds Water Right Proof Vote Called by Stenberg, August 27, 2018		
	Name	Organization
yes	Lyman	USFS
yes	DeRito	Trout Unlimited
yes	Van Every	IDEQ
yes	Lewis	Idaho Rivers United
	Rich	Idaho Parks and Rec
yes	Teuscher	Idaho Fish and Game
yes	Beatty	BLM
yes	Osborne	Sho-Ban Tribes
	Rosebrough	National Park Service
yes	Vincent	American Whitewater
yes	Michalski	Greater Yellowstone
yes	Stenberg	PacifiCorp
yes	Myler	USFWS

Bear River ECC - Record of Email Voting
Funding for Oneida Spawning Channel – Additional Funding Request
Voted Called by Stenberg, September 14, 2018

From: "Stenberg, Mark" <Mark.Stenberg@pacificorp.com>

Date: Friday, September 14, 2018 at 2:35 PM

To: Blaine Newman <blaine_newman@blm.gov>, "cary_myler@fws.gov" <cary_myler@fws.gov>, Charlie Vincent <charliev@xmission.com>, "Hunter Osborne (hosborne@sbtribes.com)" <hosborne@sbtribes.com>, James DeRito <JDeRito@tu.org>, "Kathy Rinaldi (krinaldi@greateryellowstone.org)" <krinaldi@greateryellowstone.org>, Kevin Lewis <kevin@idahorivers.org>, "Kirk Rich (krich@idpr.idaho.gov)" <krich@idpr.idaho.gov>, "Lee W. Mabey (lmabey@fs.fed.us)" <lmabey@fs.fed.us>, Lynn Van Every <Lynn.Vanevery@deq.idaho.gov>, Miriam Hugentobler <miriam.hugentobler@gmail.com>, "Susan_Rosebrough@nps.gov" <Susan_Rosebrough@nps.gov>, "Teuscher,David" <david.teuscher@idfg.idaho.gov>, "Aaron Swift (aswift@RMEF.ORG)" <aswift@RMEF.ORG>, Allison Michalski <amichalski@greateryellowstone.org>, "Beatty, Ryan" <rbeatty@blm.gov>, Bob Zimmer <bzimmer@greateryellowstone.org>, "Corey Lyman (clyman@fs.fed.us)" <clyman@fs.fed.us>, "dan_miller@nps.gov" <dan_miller@nps.gov>, Eve Davies <Eve.Davies@pacificorp.com>, Greg Mladenka <Greg.Mladenka@deq.idaho.gov>, "Hillyard,Ryan" <ryan.hillyard@idfg.idaho.gov>, "Jeremy Jirak (jeremy_jirak@fws.gov)" <jeremy_jirak@fws.gov>, 'Kevin Colburn' <kcolburn@amwhitewater.org>, "Michael Kuyper (mkuyper@blm.gov)" <mkuyper@blm.gov>, Warren Colyer <wcolyer@tu.org>

Subject: Oneida Spawning Channel - Additional Budget Request Email Vote

Hello Everyone,

Jamie and I caught up about the tasks we have completed and what we heard the ECC members at the August meeting indicate they wanted to see at the October meeting.

To recap, we had authorized \$10,337 of funds to work through task 3.2.1. See task list at the end of the email. To date, data gathering, site visit, conceptual design preparation and conceptual design meeting was held with the ECC. Part of the hydraulic modelling was completed to prepare for ECC meeting. The partial look at hydraulic modelling is not in the tasks up to 3.2.1 but was needed to get the most benefit from ECC discussion.

I think the complexity of the project and alternatives, despite our best intentions in the development of a scope of work, has necessitated a more lengthy alternative discussion with an extra ECC discussion being needed. Relevant side note: I found out that our bridge is good to 29 tons not 10 tons as was my understanding. It was rated to 10 tons, but we fixed the decking a few years back and that restored its rating. This change will help immensely with site access.

I am proposing that we authorize funds to cover the remaining tasks in section 3.2 (\$8,930) so the following work items can be completed, and we can have the conceptual plan we are looking for:

- Finalize the hydraulic model

- Prepare a preferred alternative based on the ECC August meeting
- Attend the ECC October meeting to present and discuss the preferred alternative
- Prepare a memorandum with the final recommended alternative

See scope of work task table below. Highlighted tasks are completed, with the exception of the hydraulic model which is partial completed.

Engineering Fee Estimate

PacificCorp Energy

Oneida Fish Spawning Channel Design

Last Updated March 7, 2018

Last Updated March 7, 2018

		Labor							Expenses		Total Cost	
		Office /Support	Tech		Engineers			Subtotal Hours	Subtotal Labor	Mileage		Subtotal Expenses
		Clerical II Production	Tech III CAD	Tech VI Ts andes	Engr. II Seamons	SE V Davis	PIC- Engr. V Jason L			per mi		
Task No.	Task Description											
3-1	Concept Design	0	8	16	24	0	6	54	\$ 6,764	\$ 155	\$ 155	\$ 6,919
	Data Gathering			4	4		2	10	\$ 1,320		\$ -	\$ 1,320
	Alternative Development		8	4	12		4	28	\$ 3,452		\$ -	\$ 3,452
	Site Visit			8	8			16	\$ 1,992	\$ 155	\$ 155	\$ 2,147
3-2	Preliminary Design	2	4	14	68	4	8	100	\$12,150	\$ 198	\$ 198	\$ 12,348
	Design Meeting - Pocatello, ID		4	8	12		2	26	\$ 3,220	\$ 198	\$ 198	\$ 3,418
	Hydraulic Modeling			2	44		2	48	\$ 5,568		\$ -	\$ 5,568
	Preliminary Layout of Recommended Alternative	2		4	12	4	4	26	\$ 3,362		\$ -	\$ 3,362
	Permitting (NIC - By PacificCorp)								\$ -		\$ -	\$ -
3-3	Final Design	8	100	36	84	32	12	272	\$33,480	\$ 155	\$ 155	\$ 33,635
	90% Design Documents and Site Verification Visit	2	60	24	52	24	8	170	\$21,270	\$ 155	\$ 155	\$ 21,425
	Final Design Documents	6	40	12	32	8	4	102	\$12,210		\$ -	\$ 12,210
	TOTAL	10	112	66	176	36	26	426	\$52,394	\$508	\$508	\$52,902

Budgetary Assumptions:

1. Services provided in accordance with PacificCorp Scope of Work (attached).

Standard Expenses:

Expenses in accordance with BC&A Master Professional Services

Contract No. 4600002824

Bear River ECC - Record of Email Voting Oneida Spawning Channel – Additional Funding Request Vote Called by Stenberg, September 14, 2018		
	Name	Organization
	Lyman	USFS
	DeRito	Trout Unlimited
	Van Every	IDEQ
	Lewis	Idaho Rivers United
	Rich	Idaho Parks and Rec
	Teuscher	Idaho Fish and Game
	Beatty	BLM
	Osborne	Sho-Ban Tribes
	Rosebrough	National Park Service
	Vincent	American Whitewater
	Michalski	Greater Yellowstone
x	Stenberg	PacifiCorp
	Myler	USFWS

Attachment 2

Project Application Form: Station Creek Beaver Adaptive Management Plan

Project Application Form

Bear River Environmental Coordination Committee (ECC)

Project Information		
Project Name	Project Name: Station Creek Adaptive Beaver Management Plan Date of Application 10/1/2018	
Project Location Description	<p>Please attach a map and photos of the project area. List GPS coordinates.</p> <p>See figures 1 and 2 below for watershed and project. 42.1708, -111.7328</p>	
Amount Requested	Project funds requested from the ECC	\$18113
	Overhead funds requested from the ECC	\$4529
	Other funding 1	\$
	Other funding 2	\$
	In-kind match, donated labor, equipment, materials, etc.	\$2,058 (AS in-kind)
	Total project cost	\$24,700
ECC Sponsor	James DeRito	

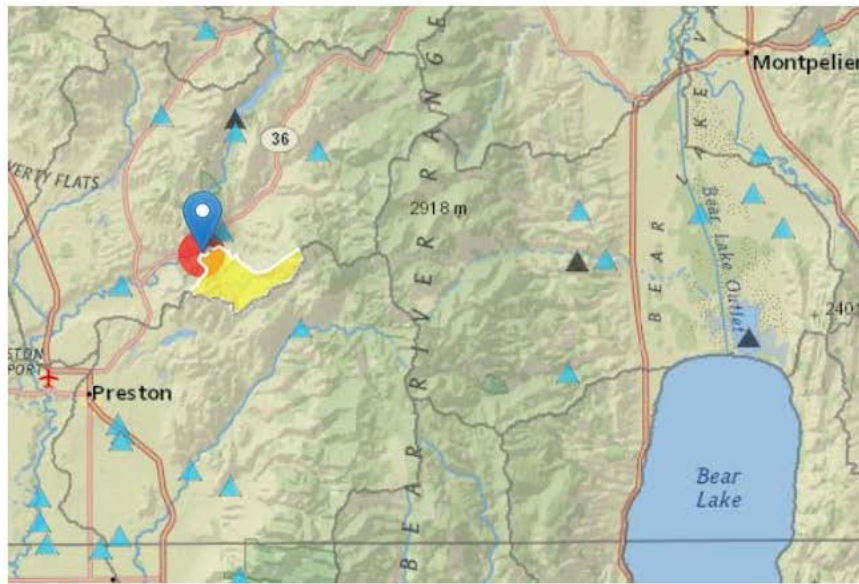


Figure 1. Station Creek adaptive beaver management project area (yellow fill) in the Bear River Range, tributary to the Bear River.

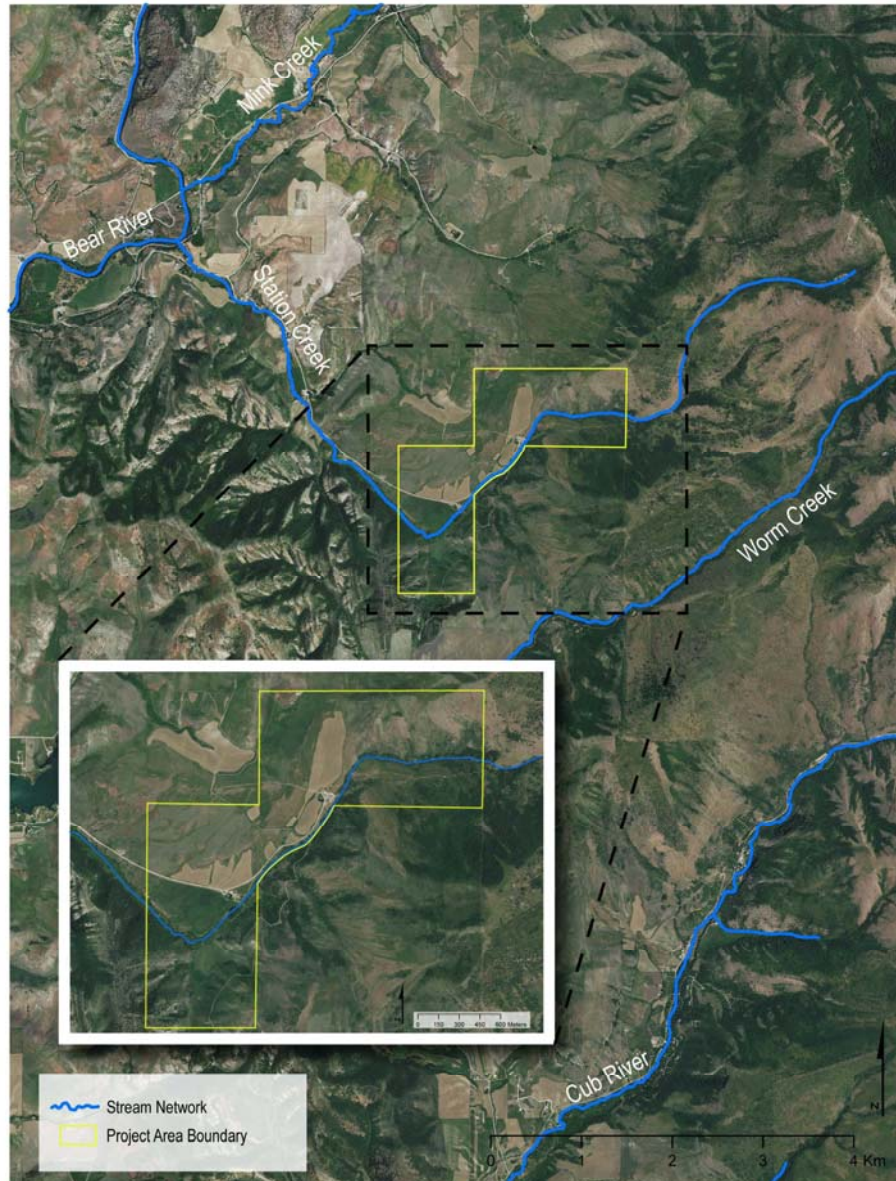


Figure 2 . Westerberg property within Station Creek (highlighted in yellow).

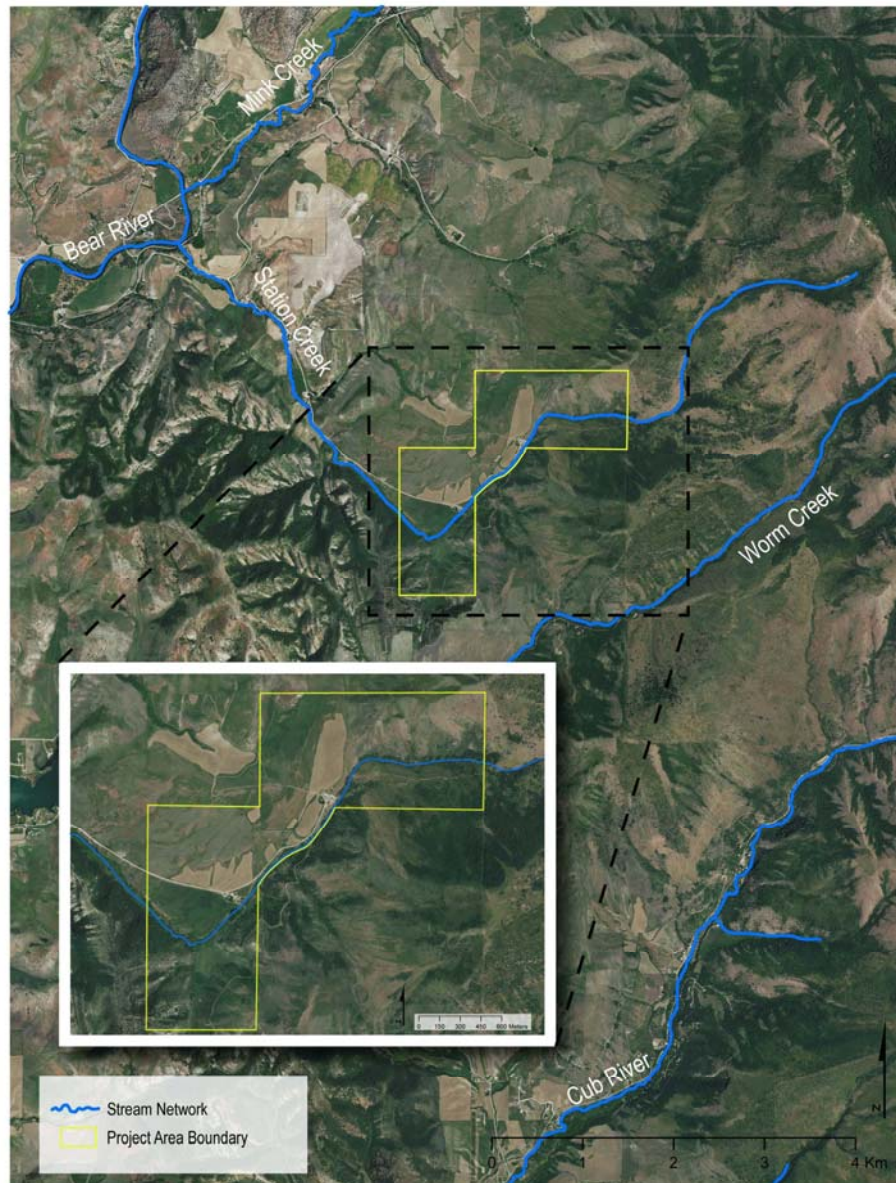


Figure 2 . Westerberg property within Station Creek (highlighted in yellow).

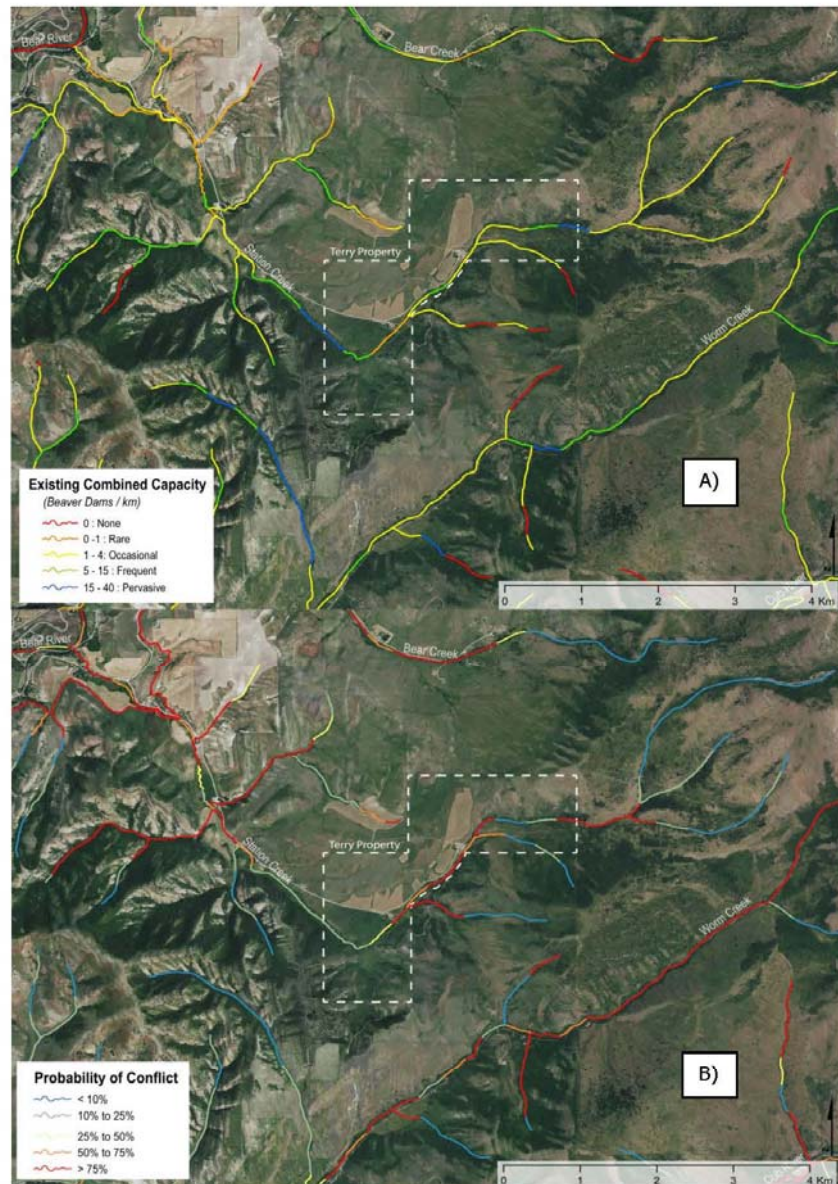


Figure 3. Beaver Restoration Assessment Tool (BRAT) output for Station Creek and surrounding areas for current dam building capacity (based on stream power at base and high flow, and vegetation suitability at 30m and 100m), and potential conflict to roads, canals, culverts and private property.

Applicant Contact Information (Person completing application)	
Name	Nick Bouwes
Organization	Anabranh Solutions
Address	PO BOX 579
City, State and Zip	Newton, UT 84327
Area Code and Phone	(435) 760-0771
Email	nbouwes@gmail.com

Funds Manager (Must be different than ECC Sponsor, can be agency, non-profit or PacifiCorp)	
Name	Mark Stenberg
Organization	PacifiCorp
Address	822 Grace Power Plant Rd
City, State and Zip	Grace, ID 83241
Area Code and Phone	(208) 547-7305 ()
	Day Evening /Weekend
Email	Mark.stenberg@pacificorp.com
PacifiCorp Vendor?	Do you know if PacifiCorp vendor setup has been completed? Not for Anabranh Solutions.

Landowner Contact Information	
Name	Terry Westerberg
Organization	Private landowner
Address	5458 E Station Creek Rd
City, State and Zip	Franklin County, ID 83269
Area Code and Phone	(208) 852-1663
Email	dtwesterberg52@gmail.com

Expected Benefits from the Proposed Action

Action to be taken: Anabran Solutions (AS) is proposing to develop an adaptive beaver management plan for the Station Creek area (Figure 1). Currently, a conflict among multiple parties exists as it relates to potential beaver reintroduction on the Westerberg property (Figure 2), and beavers that naturally already disperse into Station Creek and surrounding canals. The Westerbergs would like to reestablish beavers actively, and, if not, passively on their 2 miles of Station Creek. Approximately 20 years ago, a few beavers were present on this property, and they have noticed that since their disappearance both fish and wildlife have also greatly diminished. However, other landowners within and outside of the watershed have had problems with beavers in the past. At the request of these landowners, the Idaho Department of Fish and Game (IDFG) trapped and moved beavers out of the watershed. For example, some beavers were trapped and moved from a spring source on the Olson property and moved to Birch Creek in 2009. The IDFG is concerned that reintroducing beavers to the Westerberg property will create additional needs for the department to manage beavers in the watershed and beyond.

To address these potential conflicts to bring in beavers to the Westerberg property, the IDFG requested that we meet with potentially affected landowners. On June 19, 2018, we held a field tour with the PacifiCorp Environmental Coordinating Committee on the Westerberg property with other landowners to discuss the proposal to reintroduce beavers and gathered input as to their tolerance to beavers that leave the property. No landowners in the Station Creek watershed voiced objections to the presences of beavers in the stream. One landowner in an adjacent watershed expressed concerns about the possibility of beavers relocating from the project area to a canal that he helps manage in this adjacent watershed. Thus, a conflict exists between the landowner that desires to have beaver to provide direct benefits to their property currently suitable for beaver (Figure 3A) and those that have concerns about the need for mitigation in the event beavers move from the project area to the canal.

Adaptive management is means to learn of the benefits of somewhat novel management or restoration actions (i.e. different than the status quo), while addressing uncertainties and risks inherent with the prescribed approach. Both the expected benefits and risks are articulated *a priori* so that hypotheses are tested rather than using trial and error. An adaptive management plan is meant to identify real (rather than perceived) potential problems, mitigation (alternative) actions, and monitoring strategies to detect whether both benefits or defined triggers have been met to initiate mitigation (Bouwes et al. 2016).

AS has prepared several adaptive beaver management plans for other areas where beavers were or could create conflicts and to maximize learning from these projects (see <http://www.anabranchsolutions.com/adaptive-management.html>). The Station Creek adaptive beaver management plan will describe the benefits and validate potential conflicts (Figure 3B) beavers can provide to the area and allow for disparate concerns (e.g. those that would like to see beavers return to their property and those that do not want to deal with nuisance beavers) to be articulated before issues arise and allow for greater acceptance of controversial restoration and management strategies.

The current risk adverse approach to beaver management in this watershed implies that beaver related problems are a major concern. In order to define accurately, all expectation and concerns about passive and potential active beaver reintroduction on the Westerberg's property, one to three interviews with each stakeholder will be required. Additionally, two or more meetings with all these stakeholders in Preston or Pocatello facilitated by AS will be necessary to allow for a coherent strategy to be documented in the adaptive beaver management plan. AS will use 1-2 people to conduct interviews and facilitate group meetings.

The adaptive beaver management strategy will also describe a monitoring program that should be implemented to evaluate whether structures are operating as predicted; causing the expected geomorphic and hydrological changes. Additionally, a means to assess whether beavers that arrive at the canal or to other landowner property originated from the project area or from the nearby Bear River (where beavers are abundant) where they will always be problematic independent of the Westerberg's actions will be described. Finally, the plan will identify who and how mitigation will be implemented in the event triggers are met. The final adaptive beaver management plan will be completed by March 1, 2019.

Expected Benefits from the Proposed Action

Will Bonneville cutthroat trout or other native fish benefit from the implementation of this project? If so, please explain.

In Bouwes et al. (2016), we summarize the results of a large-scale watershed experiment that demonstrated large increases in the abundance, survival, and production of a closely related species, red band trout (*O. mykiss*), following the introduction of Beaver Dam Analogs (BDAs) that led to large increases in the dam building activities of beaver. Additionally, we observed that beaver ponds help partition niches between native cutthroat, brook trout, and brown trout, in the Logan River drainage (Lokteff et al. 2013). McCaffery (2009) also found the presence of beavers improved cutthroat trout survival and persistence in the presence of brook trout, compared to watersheds without beavers.

Specifically, we hypothesize that beaver-made dams and BDAs slow and increase the surface height of water upstream of the dam. These ponds above, and plunge pools below dams change the plane bed channel to a reach of complex geomorphic units providing resting and efficient foraging opportunities for juveniles. Deep pools allow for temperature stratification (in both winter and summer) and greater hydraulic pressures forcing downwellings to displace cooler ground water to upwell downstream, increasing thermal heterogeneity and refugia. Dams and associated overflow channels produce highly variable hydraulic conditions resulting in a greater diversity of sorted sediment deposits. Gravel bars form near the tail of the pond and just downstream from the scour below the dam, increasing spawning habitat for adults and concealment substrates for juveniles. Complex depositional and erosional patterns cause an increase in channel aggradation, widening, and sinuosity and a decrease in overall gradient, also increasing habitat complexity. Frequent inundation of inset floodplains creates side channels, increased riparian vegetation, and high flow refugia and rearing habitat for young juveniles.

Independent of this proposal, there are plans to install BDAs on the Westerberg's property. Six experimental BDA's or other structures were installed as part of a stream restoration short course on September 12, 2018. Some funding has been provided by NRCS, and USU will bring additional stream restoration classes to the Westerberg's property to do the installations. Stream alteration permits for this work have already been obtained. We do not know if beaver will eventually establish in the project area that has been devoid of beavers for the past 2 decades (beavers were present previously). The scale at which cutthroat trout will benefit from BDAs and potentially beavers is dependent on local support and tolerance to beavers that this adaptive management plan will address.

Expected Benefits from the Proposed Action

What is the geographic extent of this benefit (e.g., watershed-wide, percentage of watershed)?

The Westerberg property is approximately 23% of the stream length, with the property being approximately 16% of the watershed. If beavers become established, the possibility of increasing this footprint is much larger (up to the entire watershed and beyond) depending on other landowner tolerance and lethal trapping pressure (see previous question response). The Station Creek stream channel on properties downstream of the Westerbergs is mostly incised and simplified and could also benefit from beaver dams. The Olsons have had rock and gabion baskets added to their stream channel in an attempt to improve instream habitat. However, these structures have been largely ineffective at addressing the stream problems at any measurable scale (Jim DeRito, personal observation).

Beavers were present on the Westerberg property in the past couple decades, and their property and other locations within Station Creek are suitable for beavers to build dams (Figure 3A). However, beavers have the potential to cause conflicts in the area as well (Figure 3B). This conflict has already occurred in the Mink Creek canal system several times since it was built in 1889 (rebuilt in 1948), and beavers dispersing from Bear River (note that while beavers cannot build dams on the Bear River but rather build bank dens, "bank" beavers can build dams in smaller streams) have the potential to move into these canals and adjacent watersheds. If an adaptive beaver management creates stakeholder acceptance of beaver reintroduction in a location with multiple concerns, then this plan could act as a template for garnering acceptance of this process-based restoration strategy into multiple watersheds that is far more cost effective requiring much less input from managing agencies to greatly improve habitat for fish and wildlife.

Is the intent of the project to benefit stream channel, bank, cover, spawning/rearing habitat, and/or population connectivity?

The intent of the BDA and beaver reintroduction work previously proposed on the Westerberg's property is to benefit all of these and additional responses (see benefits to cutthroat trout). As stated above, the approach is expected to improve floodplain reconnection and cause instream geomorphic changes (e.g. more complex geomorphic units, water depths and velocity). Flows unto the floodplain during high discharge dissipates stream power, and decreasing the likelihood of BDA and bank failures and downstream flooding, and increasing recruitment of riparian vegetation. If beavers reestablish, the increase in pond complexes and riparian vegetation increases refugia for beavers, their food supply and caching locations, resulting in higher survival, and more persistent beaver colonies. Beaver will maintain dams and the associated geomorphic and hydraulic processes that create complex spawning and rearing fish habitat. Many geomorphic and hydrological responses will increase water storage during high flow periods that will be released slowly throughout low flow periods during the summer, increasing summer discharge. In low flow periods, stream depths likely limit fish movement. We have been using this technique to increase water depths and flows in very low or dewatered sections of stream to improve access to temperature and flow refugia for fishes. Beaver dams and BDAs capture fine sediment and nutrients, and can decrease stream temperatures (Weber et al. 2017). Both terrestrial and aquatic exchange of nutrients, carbon, and organism creates more diverse communities in both environments. These are some of the reasons beavers are referred to as ecosystem engineers.

Again, the benefits to the overall population depend on the degree of expansion of the beaver population, which is, in part, due to landowner and agency tolerance to beavers in this system that the adaptive beaver management plan should foster.

Expected Benefits from the Proposed Action

List other native aquatic and/or terrestrial species that would benefit from project implementation. Do any have special state or federal status?

Several fish species benefit from the habitat complexity created by beaver ponds in high gradient stream systems (Kemp et al. 2012, Bouwes et al. 2016, Dauwalter and Walrath 2017). Additionally, mesic terrestrial environments create more wetland and riparian habitat that have disproportionate benefits on amphibian, birds, and other wildlife (McKinstry et al. 2001). Also, beavers and beaver ponds have been shown to increase aspen regeneration (Runyon et al. 2014).

Will the project protect/restore high quality critical/essential habitat for at-risk species or limited habitat important on a landscape scale? If not, will the project protect/restore high quality habitat limited in the local area?

We expect the benefits of this adaptive management plan will be to demonstrate how a somewhat controversial restoration action can be broadly accepted if multiple stakeholders are allowed to express their concerns and know that alternative actions can be taken in the event "harm" is occurring. If the restoration strategy is accepted, we expect to improve habitat not only in the project area but downstream in the watershed by altering stream hydrology providing higher flows and cooler water temperatures during low flow periods. We have applied the same technique in a nearby watershed, Birch Creek, and we believe we have some evidence that establishment of beaver colonies has made an ephemeral stream nearly perennial (from months of a dry stream bed to now only days).

An important component of the ability of beaver populations to expand is to demonstrate to other landowners the benefits beavers provide, not only to the native flora and fauna, but to livestock and agriculture by storing water and slowly releasing water to increase flows during the summer. This requires some monitoring of flows and general impacts (temperature, pond and riparian extents) resulting from the project. We have implemented a similar project in a nearby watershed (Birch Creek) on USFS property, to increase summer flows. The rancher involved in the project has been greatly influential in spreading information about the benefits of beavers to streams on their properties. He even arranged a meeting in Preston with 50-70 people from local communities to listen to a presentation we prepared about beavers, that was extremely well received. In fact, the willing landowner in this project, would like to use this approach after personally observing Birch Creek after a tour with the participating rancher. Both the rancher and this landowner speak of fishing for cutthroat trout in beaver ponds when they were young. Apparently beavers were trapped from these areas and they no longer fish for cutthroat trout. Therefore public education, informed with actual data, will greatly increase the footprint of this project by allowing beaver populations to expand, where they modify streams at no costs. We also strongly believe that the success of these projects will be greatly enhanced with participation of willing landowners that directly experience these benefits.

Expected Benefits from the Proposed Action

Does the project address a symptom or a cause? State the original problem. Does the project solve this problem?

The legacy effects of the removal of large structure, such as beaver dams (trapping) and logs (timber harvest) over century ago, are still felt today. Beavers were nearly exterminated in the western US by 1850. Because these impacts occurred before scientist recorded the natural form and function of streams, the presence of large structure was seen as departure of what streams 'looked like' and was often removed for 'the benefit' of fishes and flood control. However, in the last couple decades, a recognition of how important larges structures are on creating fish habitat (afterall, beavers and fish have coevolved for millions of years), and mitigating floods by attenuating peak flows has led to the adoption of techniques to supplement systems with structure to increase stream complexity. Beavers as restoration tool has gained notable recognition with in the last 10 years, in-part based on some of the studies we have published (Pollock et al. 2014, Bouwes et al. 2016, Weber et al. 2017).

We believe that the addition of BDAs will help beavers establish in this watershed if they venture this far upstream. However, while BDAs provide some of the same benefits as natural beaver dams, they require maintenance and thus not as effective as beavers which maintain dams on their own. As we have shown elsewhere, once we can establish beavers with the aid of BDAs, beavers should be able to maintain complexes far more effectively over the long-term than we can.

The acceptance of beavers through an adaptive management plan may allow for active beaver relocation, likely accelerating the benefits they provide than if relying on passive reestablishment.

How long are the expected benefits from the project likely to last?

With suitable management of fur-bearer trapping (likely not a large pressure these days), established beaver populations are persistent and resilient, and should provide these benefits for greater than 25 yrs. But a means to deal with potential conflicts need to be identified.

Are expected project benefits more than project costs?

Yes. We would like this adaptive beaver management plan be an example of how to move status quo approaches to more active approaches that are inexpensive yet effective to restore streams and provide benefits to fish and wildlife. We are simply helping beavers to help us to do most of the heavy lifting to restore stream processes. We expect several miles of stream of to be receive large benefits for a fraction of the cost of typical restoration approaches that rely on heavy machinery and are not processed based.

Is there cost sharing (in-kind or financial) involved with this project? If so, how much?

Some of the overhead for Anabran Solutions is being waived.

Expected Benefits from the Proposed Action
<p>Does the proposed project compliment other projects that have been or are being implemented? If so, how many?</p> <p>BDAs are currently being installed on the Westerberg's property and will provide greatly improved beaver habitat. There also has been instream structures, bank stability work, and fencing in Station Creek, all of which likely improves habitat for beavers. I do not know the specifics of these projects at the moment.</p>
<p>Who will do the project permitting and compliance?</p> <p>No permits will be required to develop an adaptive beaver management plan.</p>
<p>Is there an imminent threat of development on the project property that the proposed action will preclude? If so, please explain.</p> <p>No.</p>

Note: If project has been modified since the project proposal was submitted, please submit an updated proposal form along with this application.

REFERENCES

- Bouwes, N., N. Weber, C. E. Jordan, W. C. Saunders, I. A. Tattam, C. Volk, J. M. Wheaton, and M. M. Pollock. 2016. Ecosystem experiment reveals benefits of natural and simulated beaver dams to a threatened population of steelhead (*Oncorhynchus mykiss*). *Scientific Reports* **6**:28581.
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- Lokteff, R. L., B. B. Roper, and J. M. Wheaton. 2013. Do Beaver Dams Impede the Movement of Trout? *Transactions of the American Fisheries Society* **142**:1114-1125.
- McCaffery, M. 2009. The influence of an ecosystem engineer on nutrient subsidies and fish invasions in southwestern Montana.
- McKinstry, M. C., P. Caffrey, and S. H. Anderson. 2001. The importance of beaver to wetland habitats and waterfowl in Wyoming. *Journal of the American Water Resources Association* **37**:1571-1577.
- Pollock, M. M., T. J. Beechie, J. M. Wheaton, C. E. Jordan, N. Bouwes, N. Weber, and C. Volk. 2014. Using Beaver Dams to Restore Incised Stream Ecosystems. *Bioscience* **64**:279-290.
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- Weber, N., N. Bouwes, M. M. Pollock, C. Volk, J. M. Wheaton, G. Wathen, J. Wirtz, and C. E. Jordan. 2017. Alteration of stream temperature by natural and artificial beaver dams. *Plos One* **12**:e0176313.

Attachment 3

Stauffer Creek Improvement Project

Stauffer Creek Fish Passage, Riparian, Meadow, and Stream Channel Improvement Project

Project Location

Lower Stauffer Creek, Tributary to Bear River, in Bear Lake County, Idaho on property owned by the Bartschi Family.

Latitude-Longitude: 42.471220°, -111.423863°; T11S, R43E, NW ¼ Sec 15 and NE ¼ Sec 16

Project Goal

Develop a collaborative conservation project with the Bartschi Family to improve agricultural operations and aquatic resources on lower Stauffer Creek to benefit resident and migratory Bonneville cutthroat trout (BCT). Aquatic improvements would be integrative and focus on restoring fish passage and stream connectivity in conjunction with restoring stream channel, floodplain, and wet meadow condition and function.

Project Background

Lower Stauffer Creek on the Bartschi Property was ditched in the 1940's to drain a large meadow and orderly move water across the property to make more pasture and hay meadows. In addition a diversion dam was placed for controlled flood irrigation of the meadow. These changes have simplified and degraded aquatic habitat conditions on lower Stauffer Creek and irrigation infrastructure delays or impedes fish passage for the migratory Bear River Bonneville cutthroat trout .The Bartschi Family has expressed interest in developing a conservation project that restores meadow, riparian, and stream channel function and condition on their property while addressing ranch needs such as improvements to irrigation practices, pastureland, and livestock distribution.

Currently there is a need to improve fisheries and aquatic resource values on this important Bonneville cutthroat stream in Idaho. Proposed aquatic restoration actions include fish passage, stream channel and riparian restoration, meadow restoration, stream connectivity, and improvements to water quality. The Management Plan for Conservation of Bonneville cutthroat trout in Idaho (Teuscher and Capurso 2007) lists Stauffer Creek as a Priority 1 stream (highest priorities) for conservation actions in the Nounan Valley Management Unit. Required actions include improving riparian habitat, addressing impacts from irrigation diversions, providing permanent upstream passage at the irrigation dam near the mouth of the stream, and exclusion of livestock from riparian areas.

Multiple agency and NGO partners within the PacifiCorp Environmental Coordinating Committee have toured the Bartschi property and met with the landowner in 2017. These partners are excited about the project and are wanting to move the project planning and coordination forward. Currently there is a need to assess the Bartschi property, develop draft designs for irrigation and aquatic habitat improvements, and coordinate farm operations and improvements with the landowner.

Project Goals and Objectives

The following specific goals and objectives were developed collaboratively by project partners to improve agricultural operations and aquatic resources on lower Stauffer Creek. These measures are integrative and complimentary and were developed to meet project goals while accomplishing conservation actions listed in the Management Plan for Conservation of Bonneville cutthroat trout in Idaho.

Project Goal 1. Restore fish passage to Stauffer Creek and tributaries

- Objective 1a. Remove diversion dam structure from Stauffer Creek to restore fish passage to 19 miles of Stauffer Creek and tributaries. Removing the diversion dam structure is a pivotal action that allows for the rehabilitation of meadow and stream channel conditions for Goal 2.
- Objective 1b. Reconstruct channel morphology at the diversion dam site to provide fish passage for all age classes of native BCT at all flow levels within Stauffer Creek.
- Objective 1c. After dam removal, replace the existing vehicle/farm machinery crossing at the diversion dam with a vehicle/farm machinery crossing of the stream that is fish passable.

Project Goal 2. Restore stream channel, riparian, and wet meadow form and function to increase aquatic and riparian habitat complexity and diversity.

- Objective 2a. Restore morphologic conditions within and increase aquatic habitat diversity within 1.07 miles of channelized stream channel on lower Stauffer Creek by establishing a meandering, low gradient, low width/depth ratio stream with pool and riffle sequences.
- Objective 2b. Reconnect Stauffer Creek to the floodplain with appropriate flood regime by increasing stream length and sinuosity.
- Objective 2c. Restore surface and groundwater interactions by constructing stream channel and floodplain morphology that do not result in excessive erosion or deposition.
- Objective 2d. Utilize plug and pond methods to create wetlands and backwater habitat in the channelized reach of Stauffer Creek.
- Objective 2e. Remove dikes and ditches, re-grade portions of the meadow, and restore tributary spring creek channels to restore 170 acres of the fluvial and riparian system.
- Objective 2f. Provide for agricultural forage production outside of the riparian corridor to allow for agricultural operations to progress without the need for manipulation or regulation of the fluvial system.
- Objective 2g. Restore wetland and riparian vegetation to riparian areas and the wet meadow.
- Objective 2h. Restore natural spring hydrograph in lower Stauffer Creek by establishing stable and self-maintaining Stauffer Creek channel morphology that reconnects the channel to the floodplain while eliminating dam and ponding regulation of stream hydrology.
- Objective 2i. Improve water quality within lower Stauffer Creek by supporting agricultural operations that don't require the existing damming of the creek that release excessive nutrient and sediment inputs to the stream.

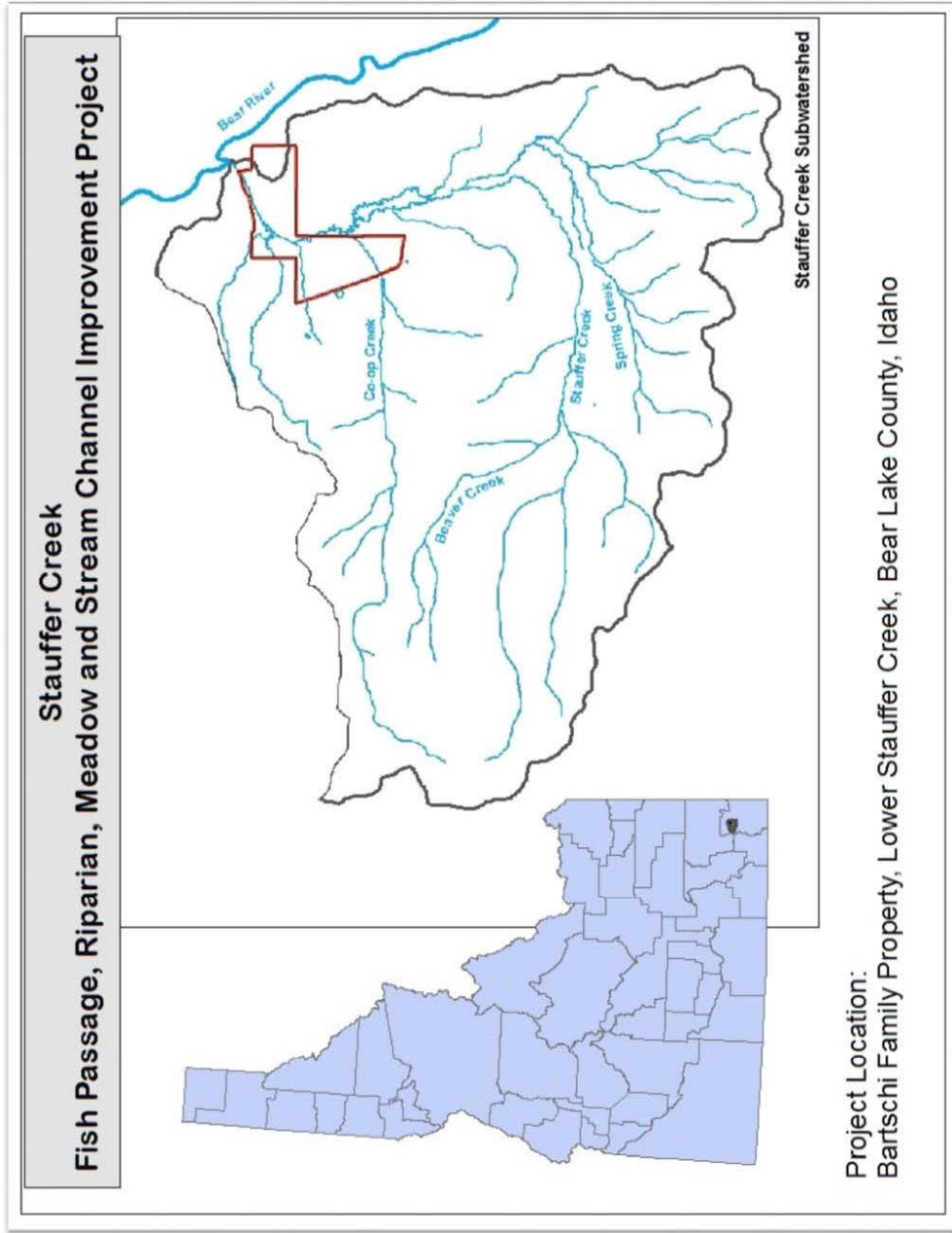
Project Goal 3. Improve grazing infrastructure and management to maximize livestock production and protection of aquatic resources.

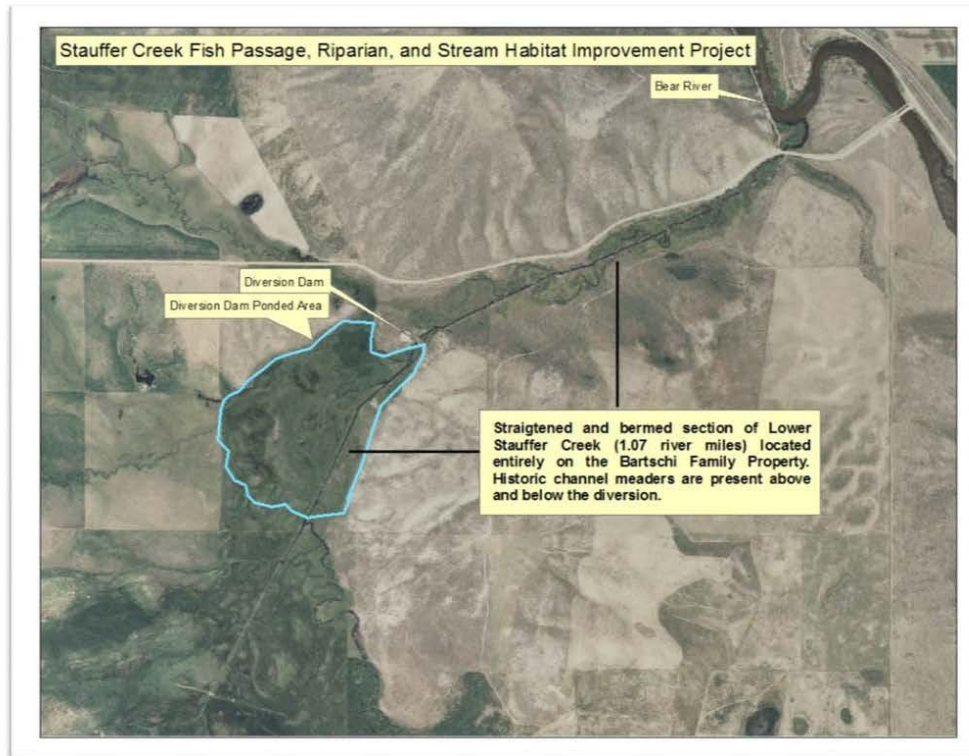
- Objective 3a. Provide irrigation infrastructure to improve grass production and forage conditions for livestock located outside of the riparian corridor. Install irrigation pivot with power source to adjacent upland area to provide for the current level of agricultural forage production.
- Objective 3b. Install two new farm crossings and rehabilitate a ford crossing on Stauffer Creek to provide access to new pivot.
- Objective 3c. Develop 4-5 upland or off-channel water troughs for livestock in existing pastures to facilitate rotational grazing.
- Objective 3d. Develop a rotational grazing plan that fully accommodates agricultural needs while reducing impacts on the Stauffer Creek fluvial and riparian systems.
- Objective 3e. Install temporary riparian fencing, where needed, to facilitate rotational grazing management and provide for stream channel and riparian area recovery.

Data Collection Scope. The intent of data collection efforts is to collect sufficient information to enable design of a self-maintaining stream channel that conveys sediment and hydrologic inputs without experiencing severe local erosion or degradation. A specific data collection effort is outlined to enable restoration of a stream channel that will maximize aquatic habitat for BCT and riparian conditions while preserving the vitality of the agricultural operation. Specific aspects of the data collection effort are outlined below.

- Site Topography. Collect topographic and geomorphic data to characterize existing stream channel configuration, relict channel conditions, and floodplain topography. Data acquisition efforts will focus on 3 distinct reaches including the upstream impounded reach, the existing dam facility and adjacent reach, and the downstream unregulated stream reach. Topographic data will be collected with a survey grade GPS system and will include measurement of channel thalweg, water surface, top of bank, local bankfull elevation, berm feature elevations, existing and relict channel elevations, floodplain characteristics, and channel cross sections typical within each project sub-reach. Field survey data will be supplemented with LiDAR data, which was collected in 2017 and is anticipated to be available in August of 2018.
- Site Hydrology. The hydrologic regime of the project reach will be quantified in order to identify bankfull flow (or the typical annual peak flow at which the floodplain becomes inundated and the channel experiences overbank flows). Hydrologic analysis will include application of regional regression equations, calculation of site-specific bankfull flow rate based upon open channel flow hydraulics, and correlation between the project site and existing stream gauges in the region. Output from site hydrology data analysis will identify the normal peak flow rate, the recurrence interval of larger magnitude peak flow rates, and the flow duration attributes of the reach.

- Sediment Conditions. Substrate samples will be collected to quantify the size class distribution of the existing surface grains within the project reach. Sediment data will inform design efforts to ensure that the restored channel form is stable vertically (will not down-cut or lower after project implementation).
- Water Rights. Water rights pertinent to the existing dam structure and project reach of Stauffer Creek will be inventoried, described, and summarized. Water rights data associated with point of diversion and place of use will be assessed to enable establishment of irrigated lands located beyond the riparian and channel restoration areas. Water rights will be fully described to ensure that water can be delivered and utilized within suitable areas to enable the continuation of agricultural production. Water rights data collection and analysis will ensure that the project does not result in any adverse effects to water users on or beyond the subject property.
- Wetlands. Wetlands will be assessed within the riparian and floodplain restoration areas to ensure that project activities comply with Section 404 of the Clean Water Act.
- Reference or Design Conditions. Channel conditions will be quantified within existing functional channel reaches, or within regional functional channels, in order to inform the design of stable and self-sustaining channel conditions within the Stauffer Creek project reach.
- Hydraulic Conditions. Hydraulic analysis will be performed to ensure that the design Stauffer Creek channel and floodplain morphology convey the anticipated hydrologic and sediment inputs without resulting in localized channel erosion or deposition, or channel degradation or aggradation. Hydraulic analysis will include methods to ensure that continuity in sediment transport competence and capacity are achieved. Hydraulic condition analysis will be completed utilizing data collected during analyses of site topography, site hydrology, sediment conditions, existing water rights, wetland characteristics, and reference or stable channel conditions.

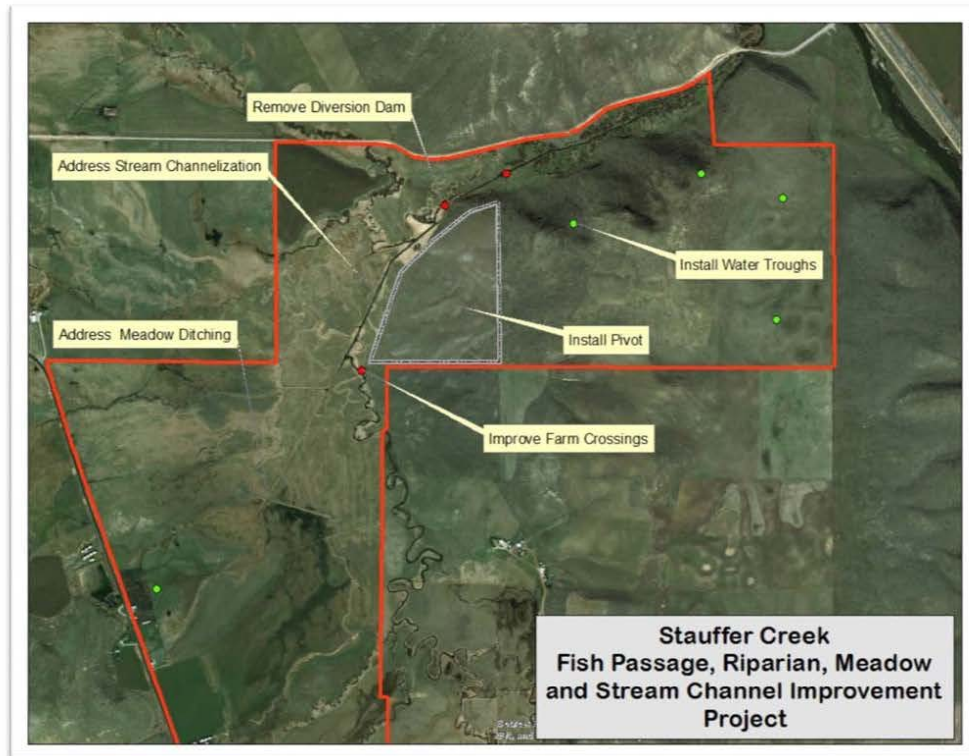




Existing Condition Map



1953 Aerial of Stauffer Creek



Stauffer Creek Project Actions



Diversion dam in operation.



Stream channel below diversion with decreased flows.



View of diversion with ponded water upstream and straightened ditched channel downstream.



View of ponded meadow bottom above diversion dam.



Stauffer Creek channelized reach above diversion dam.



Ditched meadow, view from standing on dike.