

# Opening Rivers for the Movement and Migration of Native Fishes in the Bear River Basin

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## Introduction

The Bear River has its headwaters in the Uinta Mountains and the mainstem river flows for about 500 miles through Utah, Wyoming, and Idaho before terminating in the Great Salt Lake (Figure 1). It is a “working river” with nine large dams on the mainstem and numerous smaller irrigation diversions on it and its tributaries that have decreased the ability of fishes to move to required habitat. Throughout the Basin are found Bonneville Cutthroat Trout that have resident, fluvial, and adfluvial life histories. Bluehead Suckers are also found in some reaches of the mainstem Bear River and Northern Leatherside Chubs in some tributaries (Figure 2)



Figure 2. Native fishes of concern in the Bear River Basin that are benefiting from this fish passage work include Bonneville Cutthroat Trout (left, photo credit: Tyler Coleman), Bluehead Sucker (middle, photo credit: Utah Division of Wildlife Resources), and Northern Leatherside Chub (right, photo credit: Utah Division of Wildlife Resources).

In 2018, the Bear River Basin was chosen by the Bonneville Cutthroat Trout Coordinating Committee and the Western Native Trout Initiative as a focal area to accelerate conservation activities by securing partners and financial resources to implement projects. A new funding partner, the Open Rivers Fund, a program of Resources Legacy Fund supported by The William and Flora Hewlett Foundation, provided funds directed at the planning, design, and removal of fish passage barriers, and to benefit local economies.



Scan the QR code to watch a short video by Jason Jaacks about ORF projects in the Bear River Basin



## Projects

To date, a total of 19 fish passage projects have been initiated throughout the Basin, including 10 completed construction projects (Figure 1, Table 1). Over \$1.4 million has come through the Open Rivers Fund with a total project value of nearly \$6 million. These projects are removing 24 barriers to fish passage and opening 145 miles of rivers and streams to upstream fish passage throughout the basin (Table 1).

Table 1. Open Rivers Fund projects with status, barrier type(s), number of barriers, phase(s) funded, and upstream miles opened. Lead partners: TU (Trout Unlimited), USFWS (United States Fish and Wildlife Service), BLM (Bureau of Land Management), WGF (Wyoming Game and Fish Department), IDFG (Idaho Department of Fish and Game), CTNF (Caribou-Targhee National Forest, and NBSN (Northwestern Band Shoshone Nation)

Map #	Title	State	Status	Barrier type(s)	# of barriers	Design	Construction	Miles Opened	Lead Partner(s)
1	East Fork Hilliard Canal	UT	Completed	Push-up dams	2		X	14	TU
2	Danielson Diversion and Fish Screen	WY	Completed	Push-up dam	1		X	2	TU, USFWS
3	Pine Grove-Crown Diversion	WY	Completed	Push-up dam	1	X		0.1	TU, USFWS
4	Lewis and Homer Diversions	WY	Completed	Push-up dam	2	X		7.4	TU, USFWS
5	Evanston Town Dam and Myer's Ditch #1	WY	Completed	Dam, Push-up dam	2	X	X	1.8	TU, USFWS
6	Booth Diversion	WY	Completed	Push-up dam	1		X	20	TU, USFWS
7	Sims Creek Diversion	WY	In Progress	Push-up dam	1	X		11.4	USFWS
8	John Sims Ditch	WY	Completed	Push-up dam	1	X	X	1.3	USFWS
9	SP Ditch Diversion	WY	Completed	Push-up dam	1		X	1.5	USFWS
10	Almy Diversion	WY	Completed	Push-up dam	1	X	X	0.4	USFWS
11	Morris Brothers Diversion	WY	Completed	Push-up dam	1		X	2.9	USFWS
12	Dry Fork Smith's Fork Culvert Replacement	WY	In Progress	Culvert	1		X	12	TU, BLM
13	Salt Creek Fish Passage and Restoration	WY	Completed	Culvert	1		X	10	WGF, TU
14	North Eden Creek	UT	In Progress	Culvert, Diversion	2	X		10	TU
15	St. Charles Creek Lower South Diversion	ID	Completed	Diversion	1	X		22	IDFG
16	Stauffer Creek Diversion Dam	ID	Completed	Dam	1	X	X	19	CTNF, TU
17	Stauffer Creek Oxborrow Diversion	ID	In Progress	Diversions	2		X	5	IDFG
18	Steve's Creek	ID	Completed	Diversion	1	X		3.2	IDFG
19	Wuda Ogwa (Beaver Creek)	ID	In Progress	Diversion	1		X	1	NBSN, TU
<b>Totals</b>					<b>24</b>	<b>10</b>	<b>13</b>	<b>145</b>	

## Summary:

- The Bear River Basin has been a focal area of the Open Rivers Fund program since 2018 and nineteen projects have been initiated.
- This focused, fish-passage effort has dramatically increased the scale and pace of habitat reconnection to benefit native fishes.

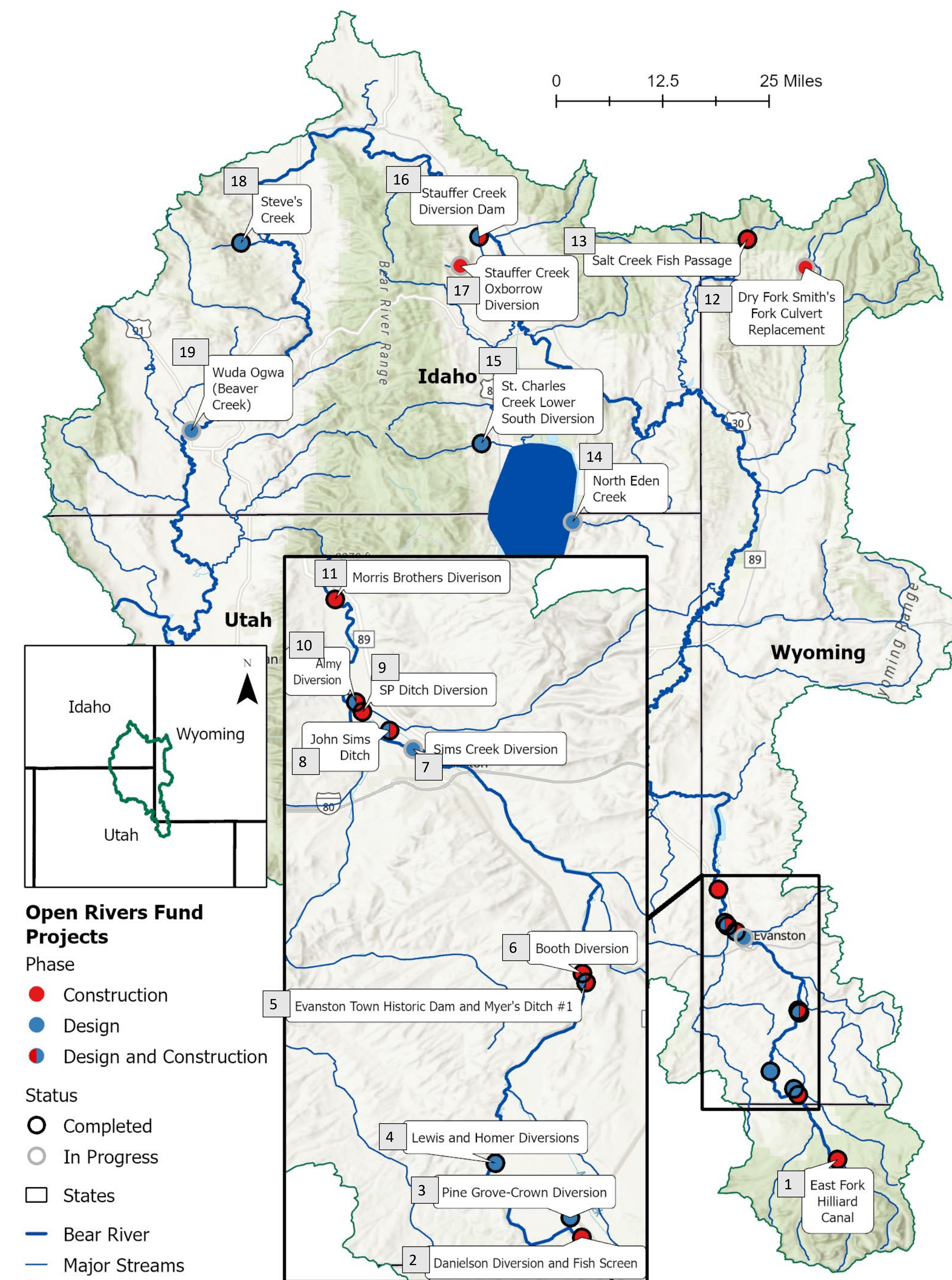


Figure 1. Location map of the Open Rivers Fund projects (n = 19) in the Bear River Basin (Utah, Idaho, and Wyoming) that indicates the project phase(s) and status. The headwaters of the Bear River are in the Uinta Mountains (near the East Fork Hilliard Canal project). The river flows north all the way into Idaho before heading back south to end in the Great Salt Lake in Utah. The inset map highlights ten projects on the mainstem Bear River near Evanston, Wyoming. Map produced by Selena Barrett, Reflection Geospatial.



Figure 3. Before- and after- photos of the Stauffer Creek Diversion Dam project (photo credit: Corey Lyman). An earthen dam with a road across it was used to back up water to irrigate over a mile of meadow. A bridge was installed in 2022 to replace the road crossing and irrigation pivots were installed on a hillside to replace the irrigated acreage in the meadow. This project reconnected over 19 miles upstream and will restore a total of about two miles of stream above and below the former dam.

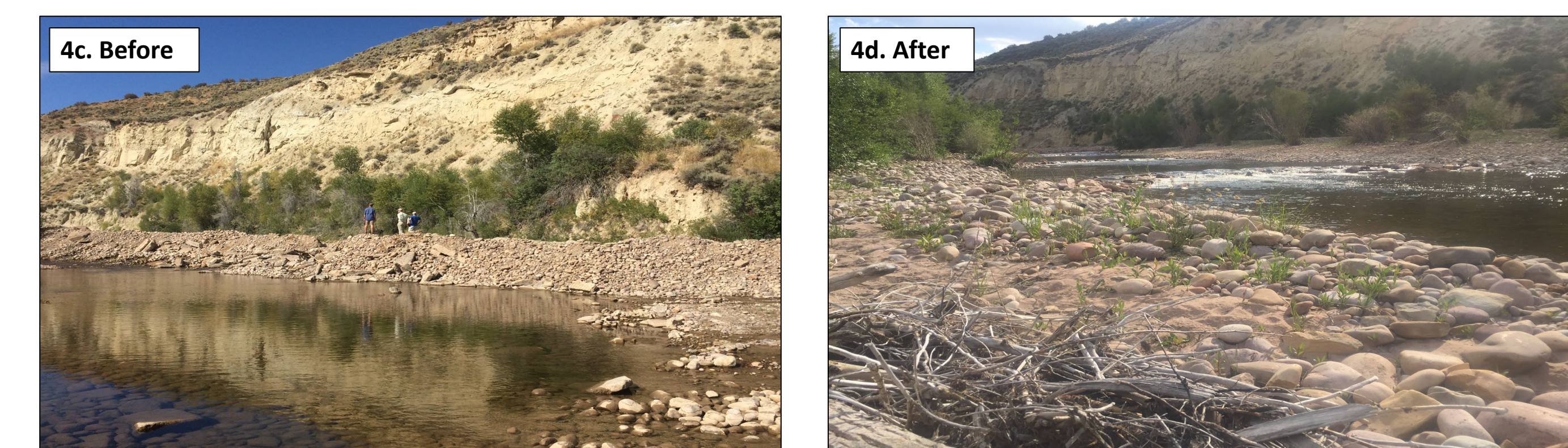


Figure 4. The Booth Diversion before (a. and c.) and after (b. and d.) the project. The 6- to 8-foot-high push-up dam spanned about 170 feet across the entire Bear River channel. The push-up dam was replaced with a series of large rock cross vanes in 2018 that allowed the water user to divert water and provided upstream fish passage. Drone photos courtesy of Jason Jaacks. Ground photos by Jim DeRito.

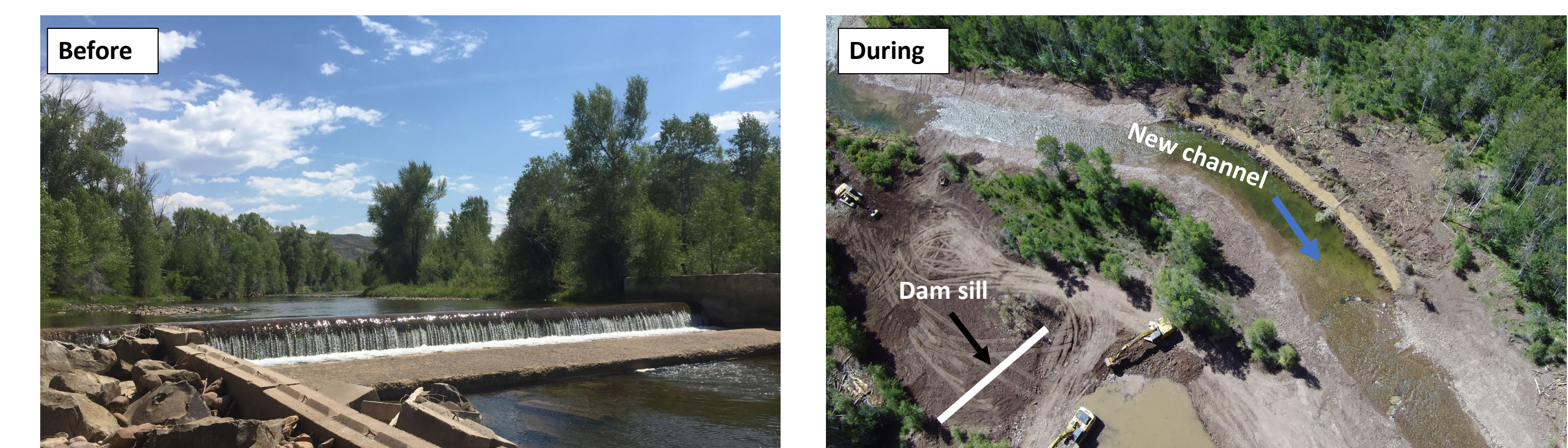


Figure 5. Evanston Dam was about a 5-foot drop, full-span concrete dam on the Bear River that was used to provide water to the city of Evanston prior to the early 1980s (before photo). The dam was deteriorating, but still provided water to a handful of nearby residents. The drilling of culinary wells for these households was paid for by ORF and the City of Evanston. The dam sill was buried in place and the river rerouted around it in 2022 (during-construction photo on the right). Photos by Jim DeRito and Nick Walrath.

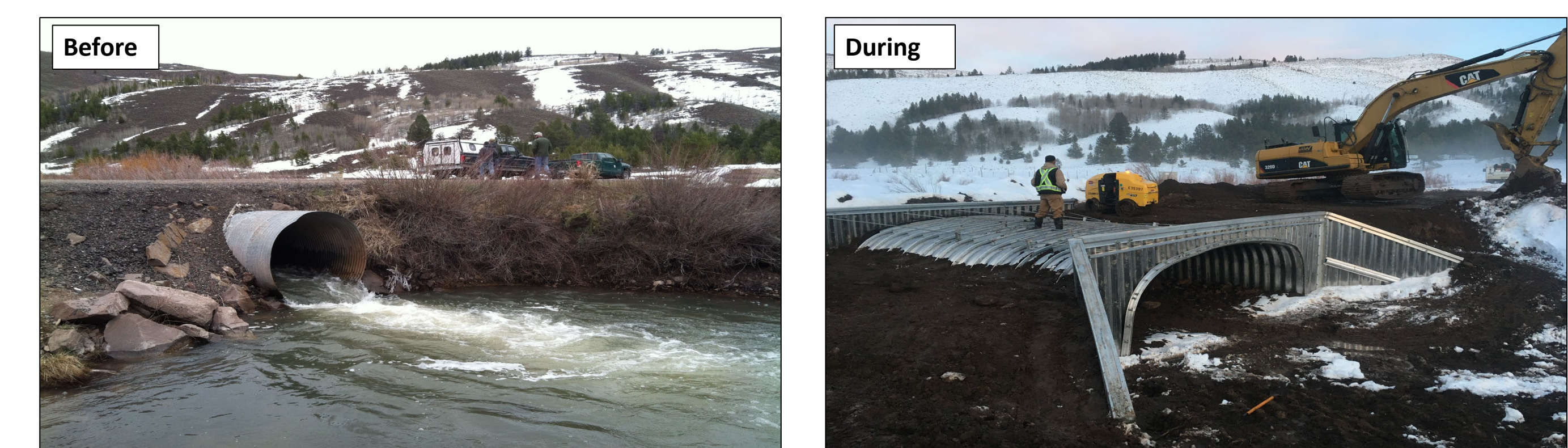


Figure 6. Salt Creek fish passage project shown before (left) with an undersized and slightly perched culvert and during construction in 2021 (right) with a bottomless arch culvert. Upstream of the road crossing the stream was moved away from an active salt mine to improve water quality and numerous deteriorating wood structures were removed or repaired on about 2 miles of stream. Photos by Jim DeRito.

## Acknowledgements

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