

H A P P Y H O L I D A Y S !



*The Sharps Fire roared over the Little Wood River, other streams, and the landscape of the surrounding Pioneer Mountains. Partners employed innovative conservation practices to determine their efficacy in post-fire restoration. Photo: ©2018, Tess O'Sullivan, The Nature Conservancy*

## PARTNERS PIONEERING ON POST-FIRE PROJECT IN THE PIONEER MOUNTAINS

***More than 120 restoration structures installed in aftermath of the Sharps Fire***

*By Steve Stuebner*

The 65,000-acre Sharps Fire near Bellevue started with a bang on a hot day in late July last summer when a 35-year-old Bellevue man admitted to law enforcement officers that he ignited the wildfire while shooting at an exploding target. The fire forced people to evacuate their homes and

cost more than \$9 million to suppress.

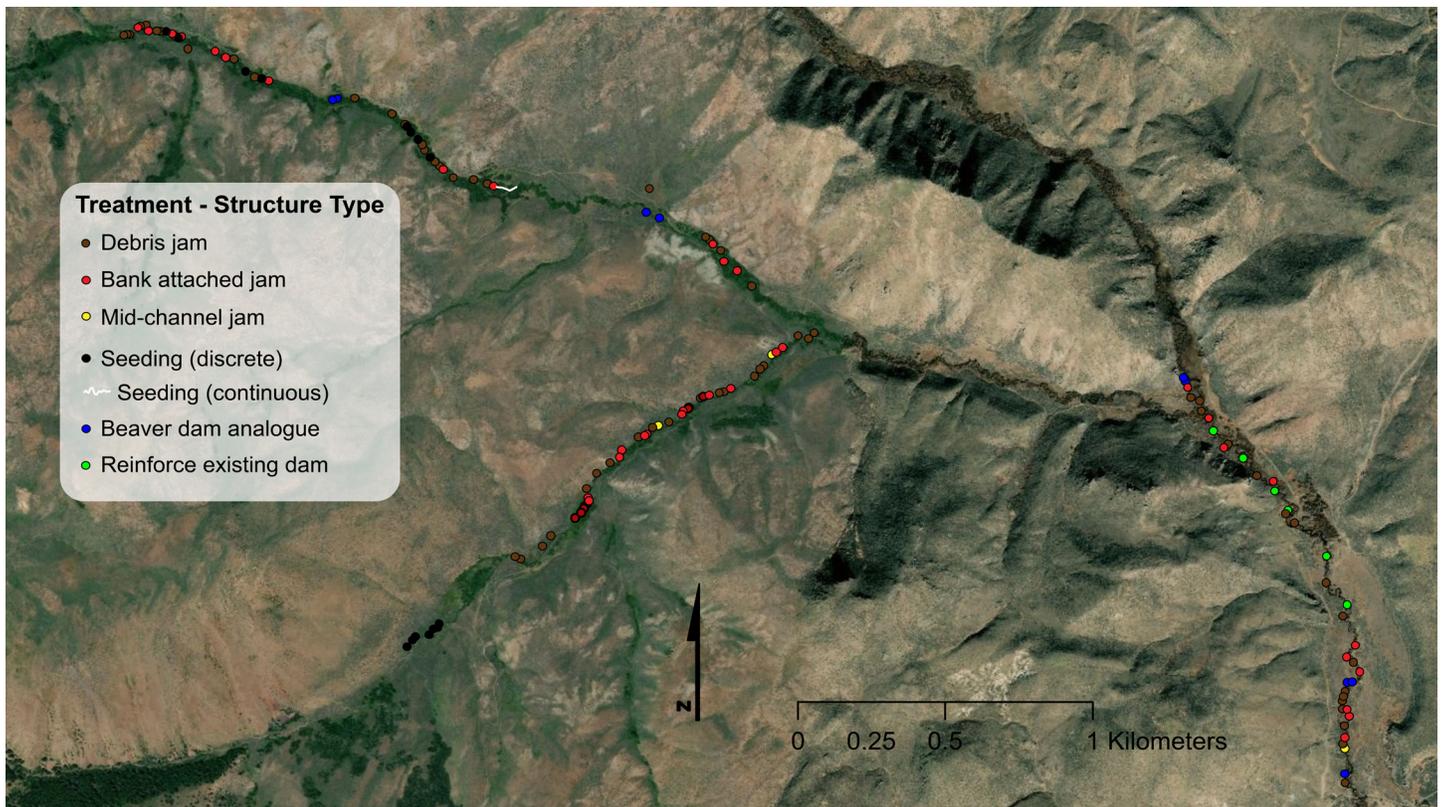
Ryan Jensen was charged with a misdemeanor in connection with the fire's ignition.

But after the smoke cleared, the stars aligned for an innovative partnership project to come together, featuring

more than 120 restoration structures including beaver dam analogues (BDAs) – man-made beaver dam-like structures built with natural woody materials – and woody-debris structures to not only slow down runoff next spring and catch erosion, but also potentially restore and improve



Looking down-watershed into the restoration area before the Sharps Fire. Photo: ©2018, Tess O'Sullivan, The Nature Conservancy.



Partners installed a variety of structures and treatments to the burn area post-Sharps Fire.



Channel spanning structure



BDAs and other restoration structures are useful tools for slowing down water flows, reducing erosion, encouraging regrowth of riparian vegetation, and restoring habitat for wildlife and other species, all critical components of successful post-fire restoration work. Photo: ©2018, Dan Brown



Beaver Dam Analogues (BDA) were installed.



Existing beaver dams were reinforced.

several streams on private lands in the burn zone.

Derek Mynear, sagebrush landscape restoration specialist for the Conservation Commission, worked together with top experts in BDA technology from Anabran Solutions, along with helpful personnel from the Idaho Department of Fish and Game, U.S. Fish and Wildlife Service, Trout Unlimited, Wood River Land Trust, The Nature Conservancy, Governor’s Office of Species Conservation, and two very supportive landowners.

Mynear said this is a first-of-its-kind project in Idaho to use BDAs and other low-tech, low-cost structures in a post-fire environment on this large of a scale. All of the agency personnel, Anabran Solutions employees and volunteers worked together to install all of the structures in a week between Nov. 7-14 before winter set in. All told, they treated more than 5 miles of streams in the Little Wood River drainage, north of Carey.

“We saw an opportunity to get the BDAs installed on this kind of large scale before the snow came, but we really had to hustle to get it done quickly,” Mynear noted.

“This project could never have been completed if it weren’t for the mighty slate of partners we had who worked tirelessly to make this happen,” he said. “It was truly an example of Conservation the Idaho way, and once again, highlights the importance of partnerships in getting stuff done.”

In addition, the project was perhaps one of the first and best examples of a new focus that Idaho’s land management agency officials aspire to follow, called “All Hands, All Lands.”

“This project is definitely a great example of our agency partners coming together to do a unique conservation project at the ground level in cooperation with two very proactive landowners,” said Teri Murrison, administrator of the Conservation Commission. “The net result is exactly the way

we want to see All Hands, All Lands projects come together - landowners and land managers work together voluntarily to transcend ownership boundaries and do landscape-level conservation in harmony with each other and the environment.”

After a large wildfire like the Sharps Fire, the immediate concern was that severe erosion could occur during spring runoff next year. After a hot burn, soils typically become “hydrophobic,” meaning there is a black surface crust that repels water and prevents it from soaking into the ground as it runs off. This can lead to rapid runoff. The concerns were that the runoff could send untold amounts of sediment and mudflows into the Little Wood River Valley, harming private property, plus potential loss of topsoil and down-cutting of tributary streams.

Using the emerging technology of BDAs seemed like a natural fit, said Scott Shahverdian, project manager for Anabran Solutions and a design



*In places, not just one but a series of structures were installed to widen and spread out stream flow in order to raise the overall flood plain and reconnect the existing stream to the historical flood plain.*

geomorphologist, because the BDAs are a low-cost approach that can be installed relatively quickly with natural materials.

“We haven’t worked in a post-fire context before,” he said. “But we saw this as a unique opportunity. We’re not just trying to mitigate the natural runoff that will occur next spring, but we’re also designing the BDA structures to try to restore the streams and riparian zones where there has been some down-cutting in the past. We’re designing them in different ways for a variety of objectives, and ultimately, hoping to improve the riparian areas and streams.”

All of the project partners recognize that there will be a need to revisit the project area, see how the restoration structures perform during and after spring runoff, see how project objectives were met or not met.

“We’re looking at this as an experimental project,” Shahverdian said. “It’s not a one-and-done project.”

Rancher Dan Brown and ranch owners

Rebecca Patton and Tom Goodrich were supportive of the project from the get-go. Brown owns about 1,900 acres of rangeland on Sheep Creek and Hailey Creek, and Patton and Goodrich own about 5,000 acres along Baugh Creek and the Little Wood River.

There were some early discussions about doing a stream-restoration project on Baugh Creek before the fire occurred, Patton said, because of the value of the private lands for sage grouse habitat. The concept initially was to use some U.S. Fish and Wildlife Service Partners in Wildlife funds for habitat improvement. A former employee with the FWS was involved in the initial landowner outreach, and then Josh White with the FWS took over that role.

“We want to manage our land for the overall health of the land and make sure the wildlife habitat is strong,” said Patton, who serves on the board of the Wood River Land Trust and Idaho Conservation League. “Before the fire came, we were talking about BDAs as a low-cost way to bring back more

beaver activity in the area. We knew that beavers can be a natural way to bring back stream quality. And then the fire came.”

Both Patton/Goodrich and Dan Brown did not want any further damage to occur to the streams on their properties. “There is some down-cutting on our streams, and we don’t want that to get any worse,” Brown said. “Anabranch designed the BDAs to collect silt and raise the level of the streambed in the process.”

In the down-cut areas, Anabranch designed the BDAs to promote the collection of sediment to raise the overall flood plain area and reconnect the stream to the historical flood plain, Shahverdian said. “Where the streams are down-cut and narrow, they need to widen and spread out. Bank erosion is OK.”

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Anabranched tailored the design of the BDAs and other structures to the restoration objectives. “The strength is in the numbers and diversity of structure types,” he said.

In a map of the project area, the BDAs are listed as “debris jams,” “bank-attached jam,” “mid-channel jam,” beaver dam analog and reinforce existing beaver dam.

Beavers have been active in the Little Wood area for some time, and the partners are expecting that beavers will potentially take over some of the BDA sites, too. “Once the beavers get an increased toe-hold, they can influence the system and far exceed what we’re capable of doing,” Shahverdian said.

To make the collaborative project possible, all of the participating agencies played a role. Myneer did the permitting, securing permits from the Army Corps of Engineers and Idaho Department of Water Resources for stream-channel alterations, and permits from Blaine County and the Idaho Department of Lands.

Myneer walked the project with Shahverdian and Terry Gregory from IDFG to look at the project site and think about design. Then, Shahverdian did the project design, and the trio went out to stake the BDA locations.

Josh White with the USFWS and Gregory provided 450 posts for the BDAs, and IDFG had a post-pounder from previous BDA projects elsewhere. IDFG also provided camp trailers that were parked at Little Wood Reservoir so the large crew of agency folks and volunteers could stay overnight near the project area to expedite the extensive construction project.

Gregory also worked with fellow IDFG employees to cut a large amount of standing dead aspen trees that had been burned over in the fire zone and haul them to the project site for use in building the BDAs. “Terry and his people deserve a huge amount of thanks,” Shahverdian said. “They gathered all of the aspens and staged them at the various locations in the project area.”

Agency personnel that helped build



*Post-assisted log structure.*

all of the structures came from the FWS, IDFG, Wood River Land Trust, Trout Unlimited, and The Nature Conservancy, plus many of them brought volunteers, and Anabranched also had a crew of people working on construction.

Keri York, project manager in TU’s Hailey office, said her group’s involvement in the project came naturally from being involved in watershed-restoration projects with the Pioneer Alliance, a group of landowners, agencies and community members that work to preserve the natural resources and cultural heritage of the Pioneer Mountains-Craters of the Moon landscape.

BDAs are a relatively new thing in the local area, but York had participated in a BDA workshop held earlier this summer at the Rinker Rock Creek Ranch near Hailey, Idaho. “Using BDAs and other low-cost techniques to improve watershed health is something I am definitely interested in,” York said. “For this project specifically, TU provided a small amount of funding and a small amount of in-kind labor. I plan to apply for more funding to use these techniques in adjacent tributaries that were also affected by the fire but did not get treated this year. I am also interested in seeing the utility of BDAs and other instream woody structures to control erosion post-fire, and how that compares to typical responses that Scott and his team see after implementation.”

Everyone on the team will be bracing for the impacts from spring runoff next year. They believe the runoff could potentially blow out some of the structures, but it’s too early to tell. “We won’t know until next spring,” says Gregory of IDFG in Jerome. “But it’s a huge improvement to doing nothing. We will have to wait and see.”

On the land above the streams, the BLM has done some emergency seeding to jump-start nature’s natural recovery from the fire in terms of vegetation growing back to hold the soil and protect the watershed. Shahverdian said the fire did not cook the soil as much as it could have. A soils map shows the burn severity was rated as “low” to “medium” in the areas where the BDAs were installed. That gives the project partners hope that native plants will sprout next spring to hold the soil together.

“Interestingly, the riparian areas within the burn that were inhabited by beaver, and thus lush in riparian vegetation and wet meadow, survived much better than those without beaver,” Myneer says.

Specific project benefits anticipated include:

- Restoration of riparian plant communities and willows in particular.



*Dan Brown's completed project awaits spring runoff. Photo: ©2018, Dan Brown*

- Slowing the movement of sediment during spring runoff.
- In-stream benefits such as macroinvertebrates, rainbow and cutthroat trout.
- Restoration of beaver colonies.
- Improvement and expansion of wet meadow habitat for sage grouse and other species.

Derek Mynear's position at the Conservation Commission was created to facilitate more on-the-ground wet meadow/mesic habitat restoration projects in Idaho, and to provide tech-

nology transfer and training for people interested in using low-tech, low-cost techniques, officials said.

The position was funded by a National Fish and Wildlife Foundation grant in partnership with the Conservation Commission, the Natural Resources Conservation Service (NRCS), and the Governor's Office of Species Conservation (OSC), all of whom contributed to helping fund it.

"My job allows me to work with others to forge partnerships and build

capacity to carry out and implement projects of this kind moving forward," Mynear said.

Overall, Rebecca Patton is excited about seeing how the BDAs fare in the project area. She thinks BDAs may become more popular in other locations in Idaho over time. Project partners say the area will likely become a dynamic outdoor learning lab for landscape restoration and enhancement.

"I expect that we will see a lot more of these projects," Patton says. "I'm hoping our experiment will help others. It's really promising and encouraging to see this kind of cooperation going on between our agencies and the nonprofit organizations involved. I am very interested in this intersection of conservation and working lands."

Both Patton/Goodrich and Brown lease their private rangeland for livestock grazing, sheep grazing in particular. "It doesn't have to be an either-or. Working lands can be great lands for conservation if they're managed well," she said.

Brown says he is glad to be part of the project, and he wants to thank everyone who made it possible. "Everyone worked together so well, from the agencies to Anabran to the nonprofits," he said. "Excellent work by everyone involved." □

*Steve Stuebner writes about conservation success stories on a regular basis for Conservation the Idaho Way.*