

Case Study: Pocatello

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On June 28, 2012, a fire driven by high winds and scorching summer temperatures ravaged the hills south of Pocatello, Idaho in the Bannock Range. The accidental, human caused fire ignited on Charlotte Drive, located at the upper end of a highly populated mountain community and traveled down the mountainside into the Mink Creek area and eventually burned into the Gibson Jack area, the nearest northwestern valley. These regions that were once covered with dry grasses and Juniper trees became an inferno that consumed approximately 1,038 acres of both federal and private land, destroyed 66 homes, 29 outbuildings and in a little over 4 hours, left in its wake nearly \$7.2 million dollars in damage.

Many home and land owners experienced obvious severe detriment to their property after the fire raged through the hills that afternoon as more than 800 acres of the burnt land was privately owned. At 4,450 feet above sea level, Pocatello typically receives 12 inches of rainfall and 47 inches of snowfall per year; a dangerous amount when soil lacking nutrients and vegetation is on the catching end. Direct concerns of the home and land

owners and local officials prompted a plan to remediate the damaged area to prevent soil erosion or landslides, moderate storm water runoff, protect the local residents and private property, and to provide a safe habitat for wildlife.

Within days of the fire being contained, Dave Schmidt, a district conservationist of the United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS) and his colleagues evaluated the damage and identified critical areas in need of remediation. One of the biggest concerns was the land that was heavily covered by Juniper trees that typically absorbed a considerable amount of rainfall and additionally emits a toxin into the soil that eliminates potentially competitive growth below them. The mixture of these two characteristics left very little vegetation behind to control runoff or stabilize the soil in the badly burned areas. "We spent numerous days looking at flooding and soil erosion potential," Schmidt said. "The potential is there for some serious mud and rock debris." In addition to the Juniper covered areas, other critical areas included steep slopes located above homes and infrastructure, especially culverts and roads.

Dave Schmidt wrote a letter Rep. Mike Simpson, R-Idaho expressing the urgency for a grant to fund the remediation of the Charlotte Fire burn area. He formally submitted the request for emergency funds to the Emergency Watershed Protection Program (EWP) and within 5 days the EWP allocated the funds. The EWP is a program that was arranged by Congress to respond to emergencies due to natural disasters. "It [EWP] is designed to relieve imminent hazards to life and property caused by floods, fires, windstorms, and other natural occurrences. The purpose of EWP is to help groups of people with a common problem." www.nrcs.usda.gov.

The EWP provides necessary funding to public and private landowners in order to have the means



Wildfire ravages through the neighborhoods of the hills above Pocatello, Idaho. Over 1,000 people were under mandatory evacuation orders. Approximately 1,038 acres of land was consumed in a little over 4 hours, destroying 66 homes and 29 outbuildings.



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to immediately remediate areas in need after natural disasters take place, such as the Charlotte Fire. The EWP funds will provide up to 75 percent of the overall cost of an approved remediation construction project. The rest of the cost has to be provided by local sources, such as the local project sponsor; oftentimes a city or county divisions of the state. This cost can be made up of cash or in-kind services that would equate to the quarter percent of the construction cost. Bannock County Commissioners agreed to act as the project sponsor and appointed Dan Copeland, Bannock County Public Works Director as co-director of the Charlotte Fire remediation project.

Bannock County provided their 25 percent portion of the cost of construction in the manner of cash donations and in-kind services that included manpower, machinery, utility usage, storage areas for materials, funding of the bidding and contracting, and numerous other tasks that they valiantly fulfilled as they arose.

The critical remediation area was so expansive and extensive; the team chose hydro seeding the area by air and ground application as the Best Management Practice for such a project. Other BMPs such as silt fences, wattles, straw tacking, and drills seeding were also considered. Home and land owners implemented some of these tactics immediately following the fire using their own funds and resources. Part of EWP grant was used to purchase and install small structures in culverts to moderate the movement of water in areas that might cause watershed issues during the winter runoff.

“Truly what we needed to do was to get some cover on the land with a mixture of the mulch and seed.” Dave Schmidt expressed during an interview while supervising the ground application of the hydro seeding mulch slurry. Dan Copeland added “It [hydromulch] covers a vast area...covering as much area as we can with the dollars that we have.”

Once a strategy of remediation was chosen, a meeting was held to introduce the hydro seeding plan to the home and land owners that were affected by the blaze. In order for the project to move forward, the team had to procure signed lien releases from all of the home

and land owners in the area to have the right to allow the hydro seeding of the private land and in addition releasing the County of any liability in case of accidental damages during or after the remediation construction. Very few of those approached were opposed to the plan and most of the releases were signed and the project was made public for hydro seeding contractors to remit bids. Initially, the County was looking for bids on aerial application; unfortunately, the quotes that were received were not within the project budget and they were forced to look at spraying the area using ground applicators instead.

The applicators who won the bids are longtime purchasers of NaturesOwn® hydro mulches and recommended

the product to the team of officials. They were surprised to find that one of the larger manufacturers of mulch was right in Idaho, merely 120



miles away in the small city of Twin Falls. Hamilton Manufacturing, Inc. (HMI) is a 50-year-old family owned and operated manufacturer of a variety of organic, recycled cellulose mulches. HMI was able to provide their expertise from past projects such as the reclamation of the Jesusita National Forest Santa Barbara, California after a fire in 2008 destroyed many homes and almost consumed the town. The proximity of the manufacturing plant to the drop zone kept the freight costs down and erosion control third party testing results made the team feel confident that the bidding process had chosen the right product and contractor for the job.

“There was no reason not to use NaturesOwn®”

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Dan Copeland concurred.

One of the contractors was Anderson Hydroseeding, locally owned and operated by brothers, Todd and Noel Anderson since 1995. They utilized their 900 gallon tow behind trailer to get into every nook and cranny in the locations that they were contracted to spray. The 40 HP Isuzu motor pumped the slurry out at about 65 GPM and sprayed at a distance of up to 160 feet. Some of the areas that they were contracted to cover were on terrain steep enough that they employed the use of their trailer connected to a caterpillar and backed it down the slopes in order to apply the mulch slurry to the desired, hard to reach locations. The Anderson Hydroseeding crew worked sun up to sun down for roughly 10 days to complete their portion of the project.

A few days before Anderson had completed their portion of the contract, Apex Erosion Control, a contractor from Clarkston, Washington and a subcontractor, Selby Erosion Control from Newcastle, California brought in larger, more specialized equipment to spray the longer, steeper, and more expansive slopes. Three of their finest application trucks between them, ranging from 4,000 to 5,000 gallon capacity, were onsite for approximately 8 days and together covered around 350 acres. The smaller of the two Apex trucks was a 5600I International truck with a 525 HP Cummins diesel motor that housed a 23,000 pound front end, a 46,000 pound rear end, six wheel drive; all lockers, and carried a massive 4,000 gallon Apex Xtreme hydro seeder with a 220 HP Deutz motor that was capable of discharging 300-400 feet. The larger truck was a Kenworth T800 with a 650 horsepower Cummins Diesel motor. This particular truck had a 22,000 pound front end and a 78,000 pound rear end with triple drive axles and triple lockers. It too had an Apex Xtreme hydro seeder but was a bit larger with 5,000 gallon capacity of slurry and had a 275 HP John Deere motor that gave it the power to also shoot 300-400 feet. Selby Erosion Control's bright yellow cab on their 357 Peak Peterbilt with a 350 HP Cummins Diesel was easy to spot on the slopes and fit in with the Apex pack with its 4,000 gallon Apex Xtreme hydro seeder with 180 HP Deutz engine that pushed the slurry out at a distance of up to 300 feet. All three trucks

were able to pump the slurry out at 1,000 GPM and apply 85,000 pounds of mulch per day.

The mulch that was used during the remediation varied from a Stabilized Mulch Matrix (SMM) to a Bonded Fiber Matrix (BFM) depending on the degree and length of the slopes, severity of the damage, and access to the spray locations. The slurry was made up of one of two mulches, Triple Tac™ tackifier, a seed mixture made up of wheatgrass, alfalfa and flax, and water in applications



Dori Topholm

Two application teams worked sun up to sun down for about three weeks to complete the massive job of applying hydromulch slurry to approximately 350 acres of steep terrain in need of extreme remediation.



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mulches, Triple Tac™ tackifier, a seed mixture made up of wheatgrass, alfalfa and flax, and water in applications of 1500 to 2500 pounds per acre. NaturesOwn® High Density (SMM), recycled cellulose mulch, was mixed into the slurry and utilized in the shorter, less steep slopes of the burn area. Evolution 70 (BFM) comprised of recycled cellulose and an alternative naturally strong agricultural



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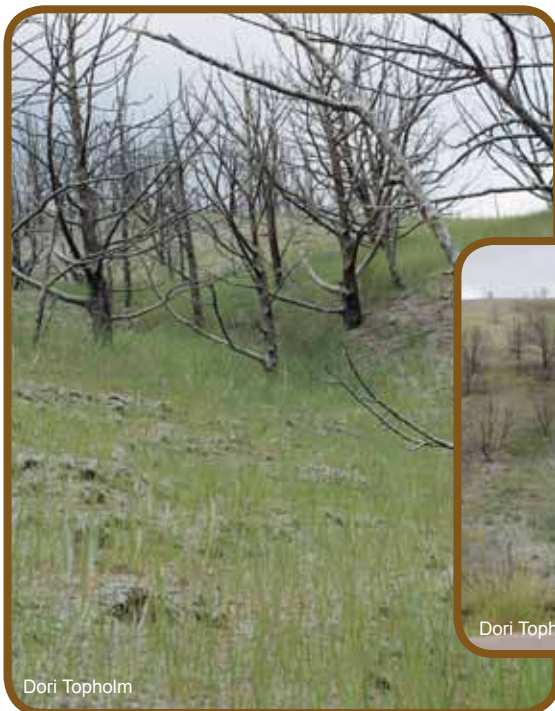
fiber was implemented in the steeper, longer slopes to add additional bonding characteristics to ensure protection of the land during germination of the seed.

Many of slopes greater than 2:1 and 900 feet long were covered with Evolution 70 during the last 9 days of application. The burned cliffs and canyons that overhang the Bannock County Highway and rest above hundreds of homes were of critical concern and proved to be a challenge due to limited access. A nearly 2 mile long road was cleared of burnt trees to allow access to the cliffs. From there, tactics were devised to remove dead trees and debris from a steep cliff to create an approximately 500 foot long road down an extremely steep slope that would allow the contractors access to the outermost edge of the critical burn area. Safety concerns arose and the team opted to then connect the massive trucks to a large caterpillar that would lower them and the fully loaded 4,000 gallon hydromulcher down the road, wait for the coverage process and slowly pull them back up to safety. There was some concern about the angle of the slope and amount of heavy equipment involved but in the end the target areas that could possibly result in severe erosion were covered.

“I don’t think that anything like this application has ever been documented before.” says John Larson, owner and operator of Apex Erosion Control. A desire to document to the fullest extent, Larson initiated three flights around the application area to take photographs and video to share it with the erosion control community. “Others have just got to see this!”

Just two days after the application was complete, a snowstorm covered the entire application area with several inches of snow. The location is to be monitored visually by representatives of the NRCS in the months and years following the application. As of December 5th, warmer winter weather has melted most of the snow that fell in the month earlier to reveal continuous coverage of the burned land with sprigs of seedlings already protruding through the mulch. It is the best outcome the team could have hoped for and they can’t wait to see what the hills will look like in the spring.

During an interview with Dan Copeland while overseeing the operation, he confidently stated “let’s mark this spot (a slope near the Bannock County Highway) and meet here in the spring to document the vegetation that is sure to grow.” -Dori Topholm, BS, LEED® AP



Significant growth on steep slopes, one year after the fire and 8 months after application



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A return of wildlife is a great sign that the regrowth is aiding environments and habitats



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