INTERMOUNTAIN TRAILS

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Focusing on State and Private Forestry

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Connecting Forestry to People

The State and Private Forestry (S&PF) organization of the USDA Forest Service reaches across the boundaries of national forests to states, tribes, communities and non-industrial private landowners. S&PF is the federal leader in providing technical and financial assistance to landowners and resource managers to help sustain the nation's forests and protect communities and the environment from wildland fires.

Mike Dudley
Director, State and Private Forestry
of the Intermountain and Northern Regions

State and Private Forestry programs bring forest management assistance and expertise to a diversity of landowners, including small woodlot, tribal, state, and federal, through cost-effective, non-regulatory partnerships. A key component of this relationship, along with others within the Forest Service, is hazardous fuels funding for the reduction of risk to communities from wildfire.

"The State and Private Forestry program of the Intermountain and Northern Regions plays a unique role. We work closely with our state partners to benefit private lands across our states. Forests know no boundaries. We have a variety projects as diverse as improving the Ogden River in downtown Ogden, protection of Aspen ecosystem in central Utah, and urban community support in Las Vegas. These projects are improving all lands in the west," said Mike Dudley, Director, State and Private Forestry of the Intermountain Region.

City To Stream

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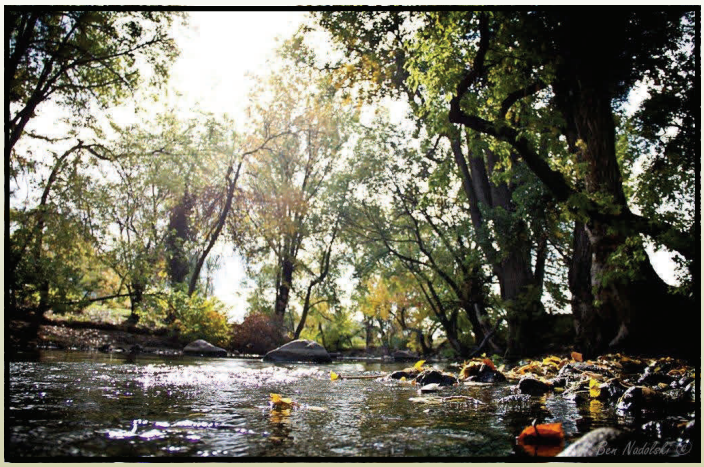
City to Stream

Enhancing the Ogden River Watershed and Linking Community to Natural Resource

Historic development patterns in Ogden, UT have limited the community's access to green spaces along the river and reduced the public benefits of living close to an urban waterway. In addition, decades of industry, dumping and junkyards near the river have degraded the riparian corridor, destroyed wildlife and aquatic habitat and allowed the spread of invasive species. Although a river trail is within walking distance of homes and businesses there is a lack of access and connectivity to safe, clean green spaces for people to utilize. The project City to Stream is part of an on-going effort to restore and preserve the natural, social and aesthetic values of the Ogden River through an integrated watershed management approach. A broad group of partners will accomplish this goal by restoring forests within the Ogden River corridor, removing invasive species, promoting education and creating a "green street" to connect the populated urban environment to a trail system and, ultimately, National Forest Lands.

Much of the river corridor engineering and riparian vegetation establishment has already been completed through partnerships with other state agencies and Ogden City. The City to Stream project will be part of the third and final phase of the Ogden River Restoration efforts. The City to Stream project was funded in the 2013 State and Private Forestry Competitive Grant allocation. Work began immediately in spring 2013 with enthusiastic volunteers gathering on both Make a Difference Day and Arbor Day to plant trees and shrubs along the river corridor. In addition, City staff began working to develop an invasive species control plan and used grant funds to start treating target weeds.

This winter Ogden City will be working with local high school students to develop community outreach brochures educating the public about the unique ecological attributes and functions of the Ogden River. The City and representatives from the Utah Division of Forestry, Fire and State Lands will also begin drafting material for interpretive signage along the Grant Promenade (Green Street) corridor and river walk.

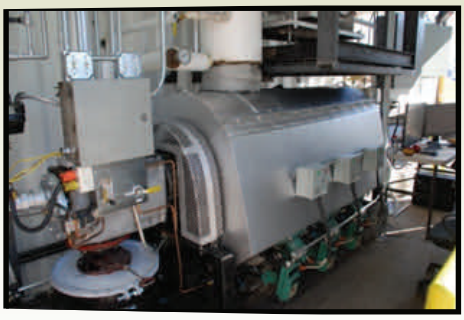


The USDA Forest Service grant funds have sparked great momentum and allowed for continued commitment and excitement in this critical watershed. As the project moves forward more and more grass roots partners are stepping up to support and contribute to the project. Though the final completion remains years away, it is clear to see that this investment is not only improving the environment, but the community as well!

Biochar Production

Utah Biomass Resources Group Project

The Utah Biomass Resources Group (UBRG) was officially formed in 2010 with the commitment to facilitate the development of a viable woody biomass industry in Utah. The UBRG's goals include seeing woody biomass markets established and available to Utah landowners and land managers and improving the economy of forest management activities to allow more acres to be treated while adding jobs and value to rural economies. The UBRG is taking a variety of approaches toward meeting those goals including the development of gasification and pyrolysis technologies, promotion of biochemical and conventional products and the advancement of cofiring and educational opportunities.



Part of the UBRG's strategy is to initially focus efforts on Pinyon Juniper (PJ) woodlands and branch out from this base to include upland forests. PJ is plentiful and available and currently has limited commercial value. PJ management is a priority for the Bureau of Land Management. They were one of the UBRG's original funders, in addition to grants from the USDA Forest Service and the Utah Dept. of Agriculture and Food. Our partners also include the Utah Division of Forestry, Fire and State Lands and the Utah Office of Energy Development. Utah State Univ. Extension leads the group.

The US Forest Service, in conjunction with the Eastern Nevada Landscape Coalition, the Pinyon-Juniper partnership and the Utah Biomass Resource Group, hosted a field demonstration of a mobile biochar and bio-oil production unit in Ely, Nevada on August 13 and 14 of 2013. Amaron Energy of Salt Lake City, the developer of this unique technology, demonstrated their mobile rotary pyrolysis reactor. More than seventy people attended over the course of the two day event.

This mobile pyrolysis unit produces biochar, bio-gas and bio-oil from woody biomass. Converting woody biomass to a viable and economic product supports the agency's goals of reducing the cost of treatment and providing economic stimulus to local communities.

Pyrolysis, cooking wood waste in an environment with limited oxygen, is an emerging technology that converts wood to biochar and bio-oil. The key component of the Amaron Energy equipment is a rotary reactor that is heated externally with burners fueled by recycled bio-gas. When biomass particles contact the hot inner surface of the reactor they are rapidly decomposed into bio-oil vapor, bio-gas and bio-char. The vapor and gas are drawn out of the reactor and into a two-stage air-cooled condensing section and the bio-char is drawn out of the reactor into a char cooler.

Since this unit is mobile, it will reduce the cost of production by reducing the cost of transportation out of the field to an offsite processing facility. There are no other companies that have a mobile pyrolysis machine, especially one that uses this unique technology.

In order to create this new market, we are also proving the benefits of biochar as a soil amendment through greenhouse and field demonstrations, as well as conducting demonstrations of the operation of the unit in various locations.

Spruce Beetles

The Spruce beetles (*Dendroctonus rufipennis*) are native to the spruce-fir forests of the Intermountain West. They infest green fallen and weakened trees, and are responsible for rapid and extensive tree mortality. Recent outbreaks in northern Utah have resulted in the loss of over 90% Engelmann spruce, which in 2009 prompted a cooperative, interagency Spruce Beetle Team to combat the spruce beetle threat.

The team determined that high levels of spruce beetle-caused tree mortality, and associated management projects, have important implications for forest resources in the Cottonwood Canyons and elsewhere along the Wasatch Front. Recreationally, large stands of old Engelmann spruce and subalpine fir give character to campgrounds and trails, providing shade, screening, and aesthetic value. Canopy openings within ski areas alter the condition, distribution, and depth of the snowpack, and the loss of trees that anchor the snowpack may affect avalanche frequency and multitude.

In areas managed for values other than recreation, the mortality of overstory trees results in a modification of stand structure and species composition with a reduction in average host tree diameter, height, basal area and age. Extensive tree mortality also alters fuel complexes and increases the potential for extreme fire behavior, eventually exacerbating the spruce beetle's initial impact on recreational areas and managed resources.

The team warns that, once disrupted, the return to climax spruce-dominated communities may require up to several hundred years following spruce beetle outbreaks. Artificially re-planting sites can accelerate the restoration of spruce beetle-killed stands, and silvicultural treatments (sanitation and thinning) may also facilitate stand recovery, but to realistically achieve any benefit treatments need to to begin immediately. The team suggests four broad steps for combating the spread of spruce beetles;

(1) Minimize adverse impacts that spruce beetle poses to high value sites and private property.
(2) Increase public awareness and education.
(3) Redirect and/or increase capacity and funding toward future restoration efforts, hazard tree removal, and reduction of hazardous fuels.
(4) Assist with the development of comprehensive stewardship or vegetation management plans that will promote forest health on both public and private lands into the future.

SAFETY TIP: Lifting Heavy Objects

Lifting heavy objects with improper form can have serious consequences—lift with your legs, keep your back straight, and ask someone if you think you might need help.

The Family Ranch in Blacksmith Fork Canyon Protected Through Conservation Partnership

Public will benefit from protected wildlife habitat and scenic values

SALT LAKE CITY, UT. — The U.S. Forest Service, the Utah Department of Natural Resources and the White family are protecting 5,573 acres of forested ranchland near the mouth of Blacksmith Fork Canyon in the southern end of Cache Valley. Jon White and his family have voluntarily entered into a perpetual conservation easement with the Utah Department of Natural Resources Division of Forestry, Fire and State Lands. The Green Canyon Ranch has been owned by the White family since 1887. Historically and today land is used for timber harvest, seasonal grazing and recreation. Members of the public are able to enjoy fishing on the Blacksmith Fork River though an angling easement placed on a portion of the river property.

"My family and I are pleased that future generations will be able to work the ground, hunt, fish and enjoy the property as we have for over 100 years. With all of the development pressure occurring in Cache Valley it is comforting to know that when valley residents look up towards Blacksmith Fork Canyon they will not see our foothills dotted with new residential subdivisions," said landowner Jon White.

The Green Canyon Ranch area is critical winter range for mule deer and elk and provides year-round habitat for the Columbia sharp–tailed grouse, a state sensitive species. Perched above the towns of Hyrum and Paradise, the project area provides much of the culinary water for both towns. Some of Green Canyon's 4.5 mile northern boundary runs along the scenic Blacksmith Fork River, a "Blue Ribbon" trout stream. Brown and rainbow trout are the primary species. The river also provides habitat for the Bonneville cutthroat trout, another state sensitive species.

Funding for this acquisition of development rights was provided by the U.S. Forest Service Forest Legacy Program, the U.S. Fish and Wildlife Service, the state's LeRay McAllister Critical Land Conservation Fund, the Department of Environmental Quality Division of Water Quality, and also through a significant landowner donation of value.

Since 1998 the Forest Legacy Program, the Department of Natural Resources and other partners have worked with 26 landowners to protect approximately 75,000 acres of important working forests across the state. For more information about this program, visit http://www.ffsl.utah.gov/forestryassist/legacy/legacy.php.

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The History Column

Chief John McGuire once described the Forest Service as a "three-legged stool" with State and Private Forestry (S&PF) as one of its legs. S&PF works with States, Tribes, communities, and non-industrial private landowners to sustain the nation's forests and to protect communities and the environment from wildland fires. This concept of forestry cooperation originated with Bernhard Fernow, who became head of the USDA's Division of Forestry in 1886. Gifford Pinchot replaced him in 1898 and continued the practice of implementing cooperative agreements and offering assistance to owners of timberland. In 1908, three years after the creation of the Forest Service, Pinchot set up the agency's State and Private Forestry branch. For more than a century since then, S&PF has implemented numerous technical and financial assistance programs, emerging as a flagship of collaborative partnerships.

Several publications will interest those who want to delve further into the history of S&PF. William G. Robbins' 1985 book titled *American Forestry: A History of National, State, & Private Cooperation* is the most comprehensive. A recent publication by Lincoln Bramwell, the Forest Service's Chief Historian, builds on that work by examining more recent developments influencing the work of S&PF. They include the 1990 Farm Bill, the 2000 National Fire Plan, the 2002 establishment of the Office of Tribal Relations and the Urban and Community Forestry office, the 2003 Healthy Forests Restoration Act, and the 2009 FLAME Act. Both books may be checked out from the Region 4 History Collection. Bramwell's book, *Forest Management for All: State and Private Forestry in the U.S. Forest Service,* is also available from the Forest History Society.

Other sources include documents on the Region 4 History Website include Chief Henry S. Graves' 1919 speech on "Private Forestry," the 1940 publication *Forestry on Private Timberlands*, and Eliot Zimmerman's 1976 paper titled "A Historical Summary of State and Private Forestry in the U.S. Forest Service."

-Richa Wilson, Regional Architectural Historian

STATE FOREST SURVEY MADE

OGDEN—A survey of fire hazards of approximately four and one-half million acres of state and private land in Utah has just been completed, Ernest O. Buhler, official of the state and private forestry division of the national service at Washington, D. C., said Tuesday.

Forest and range fires were major factors in damage done Utah's watersheds, it was shown by Mr. Buhler, who has been in Utah since April 18 making the survey.

Purpose of the survey, made in response to an appeal by Governor Henry H. Blood to Secretary of Agriculture Henry A. Wallace, was to determine the state needs for extending fire protection to valuable state and private timber and watershed lands and permit the state to participate in funds provided by the Clarke-McNary bill for this purpose.

The report will be taken to Washington, D. C., and, after approval, will be forwarded to Governor Blood for study and formulation of a cooperative plan with the government.

Mr. Buhler did much of his survey work in cooperation with Paul M. Dunn of Logan, dean of the school of forestry at U. S. A. C.

Above: This 1940 article from the Salt Lake Telegram reports on an S&PF survey of fire hazards on

Regional Forester's Message

I would like to ask each of you to take to heart the need for open and clear communication between each other and your supervisors. Here are a few things that should come to mind in relation to staying safe and ensuring everyone makes it home each night.

Agreements - Have frequent conversations with co-workers and your supervisor around the activities you practice in carrying out the work. Are your actions and behaviors consistent with your leader's intent to get the job done? Often times we assume a practice is acceptable and understood by our supervisors to later find out they are surprised, even shocked by the way we do something. Dialogue will help supervisors and employees reach a higher level of **agreement** on critical issues such as what safety means, what risks are acceptable, and what risks are not.

Strategic Risk Assessments -By having discussions and empowering employees to share experiences and mistakes, co-workers, project planners and supervisors get a fuller and a more accurate **understanding of the real risks** employees are facing. This process day-lights the gap between work as practiced verses work as perceived. While this can be uncomfortable, it is also essential if we are to realistically approach risk strategically.

Talk to your co-workers and supervisors often about the environment you face.

-Nora

Awareness and **Preparation** - Discussions will bring awareness of the risks we face in our day to day work. This **awareness** is helping us plan better, and allowing us to **prepare** for and mitigate risks more completely.

Learning – Over six years ago, an external assessment of our agency found that the agency's ability to learn was impaired, specifically that, "The agency has in general difficulty making error objectively studied and transparently discussed as a source of learning and improvement." (Dialogos Review pg. 12). By increasing our conversations around the risks we face, we have a better chance to directly address this "impairment," and to better utilize this very positive force which is vectoring the agency ***towards a learning culture***.

During our Safety Engagement sessions over the last few years, we were introduced to these practices outlined above. Through discussions, I challenge each of you to become more familiar with these practices to the point of habit. Talk to your co-workers and supervisors often about the environment you face. Through a common process of sharing and learning, we will foster a safer work environment.

-Nora