

Utah Forest News

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Why Poplar is Popular with Wildlife

Eric Berne (1910-1970) said, “The moment a little boy is concerned with which is a jay and which is a sparrow, he can no longer see the birds or hear them sing.”

I’m not sure what this quote means to a biologist, especially one bent on ornithology. I hope my own experience would prove otherwise.

I worked in south-central Utah for many summers doing field work. As the elevation increased on my study site, aspen stands began to appear in the sea of sagebrush and, above 9,000 feet, aspen became a significant part of the vegetation community. Each spring, the songbirds would move back into these areas to breed. While many of those bird species used aspen for reproductive habitat, one particular species would come and fill the air with its music. Hermit thrushes, not-too-distant relatives of the American Robin, occurred in the area, and their unique calls resonated clearly through the aspen stands on the mountain. In the morning and evening, it was overwhelming yet beautiful. I would sit and listen to their choruses dance through the poplar (aspen) trees,

finding their way out of the small ravines and canyons covered with white-barked aspen trees and clearings of sagebrush.



A young fawn bedded down in a mixed aspen stand near Dixie National Forest.

Aspen forests occur throughout the mountains of Utah. Aspen has an interesting life history with a few different options for maintaining itself. Aspen can reproduce sexually through pollination, or asexually through a clonal process. Aspen stands may look like a forest of separate trees, but are often large clones of the same genetic specimen, connected through their

roots. Disturbance through fire or physical means, such as cutting or avalanche, helps spark regeneration through the clonal process.

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As noted in the personal experience I shared above, aspen provides important habitat for many wildlife species, from invertebrates and songbirds to small mammals and large herbivores. Aspen stands often have more desirable characteristics compared to the surrounding areas, with wetter soils and more productive understories. These conditions may be what attract many wildlife species. Deer and elk often give birth in aspen, where the dense young aspen trees or the thick understory can hide their newborns.

Two other wildlife species use aspen regularly, and one really depends on aspen during the winter. Ruffed grouse and dusky grouse (sometimes referred to as blue grouse or pine hens) rely on aspen for reproductive habitat throughout much of the Intermountain West. Early age aspen, with its high stem density and canopy coverage, is particularly useful for these two species. Ruffed grouse males will find an appropriately hollowed out log to drum on as a breeding display behavior, and females will often nest in aspen stands. Dusky grouse can also display in aspen, but typically move into more open areas, where males can attract females at their booming sites. Interestingly, dusky grouse let out one of the lowest audible sounds in nature that humans can hear. A person almost “feels” a dusky grouse call rather than hearing it. Dusky grouse females also use aspen stands for nest sites, but can use other areas like sagebrush, conifer stands and brushy areas. Both species benefit from the more mesic, or moist, conditions in aspen stands, which usually have higher forb and insect abundance, to raise their broods.

During the winter, ruffed grouse remain in their aspen habitat and can use aspen buds for their diet. They will have nocturnal roosts in snow caves, if the snow is deep enough, and feed on aspen buds during the day. Research has found this to be their primary diet throughout the winter in certain areas.



A dusky or blue grouse roosts in the forest.

Dusky grouse have a different strategy. While many wildlife species are leaving the mountains as winter sets in, dusky grouse move up in elevation and spend the winter near the tops of the mountains. They eat a strict diet of conifer needles, primarily Douglas-fir. Both species have found a solution to the problem of a winter resource bottle-neck by using relatively common sources of plant material for their diets.

Aspen plays a key role in the life histories of many wildlife species here in the Rocky Mountains. Conservation efforts are important to keep aspen on the landscape. Early age, dense aspen stands, with their unique characteristics, are particularly important to many species. The beauty of aspen is it usually responds well to disturbance and can be managed over time. I hope future generations can venture into the mountains in the spring and hear the chorus of hermit thrushes serenading the hills, the almost inaudible boom of dusky grouse and the thunderous drums of ruffed grouse resonating through the trees.

by David Dahlgren, USU Extension Associate

Audio samples of the bird species mentioned can be found at www.allaboutbirds.org

Mobile Pyrolysis in Kamas, Utah

USU Extension and the Utah Biomass Resources Group teamed up with Amaron Energy of Salt Lake City to demonstrate mobile pyrolysis technology at the Annual Harvest Festival at the High Star Ranch in Kamas, Utah, on Saturday, October 5. More than 1,000 participants enjoyed the festivities of the day including food, music and sunshine. There were lots of questions and answers regarding mobile pyrolysis. Local sawmill owners, arborists, business people and nursery workers were especially interested in the technology.

Pyrolysis involves cooking biomass under controlled temperatures and with limited oxygen to thermally decompose the material into three products: bio oil, biochar and producer gas. Bio oil is similar to crude oil and can be refined to make heating oil or a variety of other biochemical products. Biochar is essentially charcoal and has considerable value as a soil amendment. The producer gas is similar to propane and is used to heat the biomass so the process is, to a large extent, running off its own product. This is a modern way to turn waste wood into high value products.

The unit has also been demonstrated in Nevada and the group plans to do more demonstrations in the next

year. It is capable of processing a half ton of biomass per day. Although we focus on woody biomass, we have cooperated with Amaron to run more than 17 different feedstocks successfully through the process, from aspen to phragmites (an invasive swamp reed common on the Great Salt Lake), tamarisk, and even tires (they make great oil).



Attendees of the annual Harvest Festival in Kamas have their questions answered regarding the mobile pyrolysis machine.

The UBRG is part of a larger team of Utah scientists that was recently awarded a SUN grant from the U.S. Department of Transportation for \$493 million to help scale up this technology to a larger portable unit capable of handling nearly a semi-truck full of

wood per day. The idea is based on the fact that wood is mostly air and water; it cannot be transported economically, so bring the machinery to the woods and drive away with high value biomass products. This has implications for how we manage our forests, especially for wildland fire hazard reduction. It also has implications for rural farmers and ranchers, city arborists, cabinet makers and other businesses. Finally, it has the potential to open up new sources of job creation and improve energy security.

by Darren McAvoy

Building Community, One Tree at a Time

In 2012, the Utah Division of Forestry, Fire and State Lands recognized Jason Barto with a Forest Stewardship Achievement Award. Barto, a resident of Kamas, Utah, received the award for his work with the nonprofit organization Wasatch Back Trees. The organization has been responsible for many community tree plantings and other projects in Summit, Wasatch, Salt Lake, and Utah Counties. Through Barto's efforts, three cities, including Oakley, Francis, and Coalville, have received Tree City USA status, a program led by the Arbor Day Foundation that recognizes communities committed to improving their urban forests.

I spoke with Barto to learn about what led him to start Wasatch Back Trees. "I spent my time in the forest, which gave me an awareness of trees," Barto said, speaking of his youth in the mountains near central Pennsylvania. As a student at Colgate University, Barto witnessed the decline of some historic willows on campus. He was part of a board that decided how the situation should be resolved. Barto saw how much goes into municipal forestry, and eventually drew on those experiences when founding Wasatch Back Trees.

After moving to Utah and working as a firefighter in Salt Lake City for five years, Barto retired due to medical issues, but the lack of public service created

a noticeable void in his life. Initially, he started volunteering as a part of his local Lions Club. After playing an integral part in a tree planting project with the group, he saw the impact that a nonprofit organization dedicated to urban forestry could play in the community. Starting Wasatch Back Trees wasn't easy due to the declining economy, but the need was present, so Barto went forward with the nonprofit.



Jason Barto teaches residents of Francis proper planting techniques.

As organizations such as Tree Utah and other nonprofits experienced tightening budgets, new partnerships were needed for Wasatch Back Trees to make an impact. Barto describes how great the opportunity was to convert non-traditional supporters to become supporters of planting trees in the community. So far, Wasatch Back Trees has been able

to work with many different organizations to make an impact in the community. Timber companies and tree removal companies willingly donate wood chips for mulching, while local nurseries and the Kamas Soil Conservation District have participated in projects as well. Snack bar maker PROBAR, based in Salt Lake City, sponsored a tree planting at a park and ride near Jeremy Ranch, and the local Starbucks has been donating used coffee grounds to help amend the mulching soil used in the plantings.

Wasatch Back Trees has been heavily involved in community plantings in Summit and Wasatch

Counties. The number of trees per project has varied from 12 to 120. Barto said, “Part of the reason for getting people out there is to educate them on the value of the trees and how to plant properly.” He added, “Planting is obviously a way to make an impact, to leave behind good trees and to practice what you preach.” Tree Talk is another program Wasatch Back Trees is involved in. The program requires a minimum of ten homeowners to participate for Barto to come and speak about the benefits of trees in their community.

The program gives private homeowners the chance to have a certified arborist come and talk to their neighborhood about the trees in their location and potential improvements that could be made to their own urban canopy.

Currently, Wasatch Back Trees is working in partnership with Rocky Mountain Power to start a “Citizen Tree Tender” program. The program empowers citizens to take responsibility for basic care of the urban forest. Volunteers receive training in basic tree care such as planting, proper mulching, and simple pruning techniques. Similar programs have been successful in areas such as Pittsburgh, Philadelphia, and Minnesota. Barto emphasized the importance of building partnerships, and using non-traditional partners. This collaboration with Rocky Mountain Power is just one more example of how Wasatch Back Trees has been able to build a strong community, even in difficult economic times.

Barto spoke about some of the future opportunities the organization is exploring. He hopes that Wasatch Back can involve itself in tree plantings at local schools. This outreach is great because, as Barto

explained, “the student is watching out for his or her tree as they progress through school, so we automatically have a built in a five-year care program when we involve youngsters.” The opportunity in other communities excites Barto, who sees great potential in working in areas like Vernal and Duchesne.



Jason Barto teaches onlookers about the importance of proper tree planting.

Overall, Jason Barto sees a lot of potential for community forestry in Utah. He wants to see Wasatch Back Trees help educate individuals on the benefits of planting a species-rich urban forest, as well as demonstrating proper planting techniques. He sees community partnerships as necessary in the process, and hopes individuals and organizations can work together to make a difference. “You may be very surprised how much you can get done by reaching out in a time of shrinking benefits and budgets,” said Barto. “It increases positive thinking and positive action, and opens up understanding of the processes on both sides of the fence, so at the end of the day, Earth is a better place.”

by Sam Nielsen



Forest Stewardship Achievement Award 2013

Dr. Jim Shuler was nominated by PJ Abraham (FFSL – Northeast Area Forester) and recognized through the Division of Forestry, Fire & State Lands Forest Stewardship Coordinating Committee as a successful nominee for the 2013 Forest Stewardship Achievement Award.

An outstanding landowner, Dr. Shuler not only shows initiative, but also puts forth a great deal of effort to be a good steward of his property and the properties of his homeowner association. Dr. Shuler owns and manages 180 acres of land in the Wolf Creek Ranch Estate. Beyond managing his own land for weeds, forest health and rangeland improvements, Dr. Shuler has helped increase public awareness throughout the entire 14,000 acre ranch, which includes 63 owners and their families about the importance of good, proactive forest management. He has focused on projects related to aspen health and the importance of elk management, which was absent until recently.

Dr. Shuler assisted in the creation of a highly skilled and diverse forest health/aspen management team. The team is comprised of educators, biologists, forest management professionals and other scientific minds. They have published and are currently publishing articles on forest land management based off findings at Wolf Creek Ranch. At both the local and state level, this helps increase public awareness and educates the public on good forest land management.

The aspen population in the area had until recently been under attack by a large population of elk. Elk

are reluctant to move on from the area due to the homeowner association’s hunting policies. Through research and careful observation, several solutions were brought to Dr. Shuler’s attention due to his advocacy of improved forest health. Through proposals in the Wolf Creek Forest Stewardship Plan, Dr. Shuler’s motivation and enthusiasm to be a steward of the land has helped him and others see the necessity of certain practices like logging, hunting and control of noxious weeds, among other treatments.

Dr. Shuler works with local youth groups to create awareness of forest land management practices and the importance of good stewardship. “Through continued contact with the local scout and youth groups during their respective field trips to the ranch for community service projects, Dr. Shuler has been

able to educate these young folks on some of the management practices used at the ranch along with introducing them to the environmental challenges faced here at the ranch,” said ranch manager Tom Cartwright.

Dr. Shuler has also spearheaded the formation of an Environmental Protection and Enhancement Committee (EPEC) at the ranch. It was not a small task but through his leadership and countless hours of volunteer time, he has gained support from the Board of Trustees, owners and others who now have far greater appreciation and understanding of the challenges facing Wolf Creek Ranch lands.

by PJ Abraham, FFSL – Northeast Area Forester



Jim Shuler, recipient of the Forest Stewardship Achievement Award.

Nevada Conservation Group Awarded Biochar Research Grant

This past November, the Eastern Nevada Landscape Coalition (ENLC) was awarded \$75,000 to perform field tests of biochar application. The Coalition, which dedicates itself to “restoring the dynamic, diverse, resilient landscapes of the arid and semi-arid West for present and future generations,” received the award in the form of a Conservation Innovation Grant (CIG). In 2013, the USDA awarded \$13.3 million in these grants, which are part of a funding program through the NRCS. The program is “intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging federal investment in environmental enhancement and protection.”

The expansion of Pinyon and Juniper (PJ) in the Great Basin area has caused much concern among fire officials, wildlife habitat managers and conservationists. The field tests planned will utilize the pinyon-juniper biomass that is currently being removed as part of various projects. The grant will allow the ENLC to explore the potential benefits

of biochar application in areas where thinning and fuel reduction projects have taken place, as well as potential agricultural benefits that biochar application might provide.

“With this project, we are providing leveraging and synergy by addressing an ecological problem in one place—PJ encroachment—and using what would have been the waste product to potentially improve agricultural land and rangeland for hundreds or thousands of years,” said Jake Tibbitts, natural resources manager for the Eureka County, Nevada Department of Natural Resources and the local project coordinator. “By turning woody biomass, such as PJ, into biochar, and then returning the biochar to the soil at or near the site where the biomass was harvested, we hope to maintain or improve soil moisture and productivity, improve sage grouse and other wildlife habitat and return soil carbon to historic levels.”

by Sam Nielsen

For more information regarding any of the information presented in this newsletter, please call Darren McAvoy at Utah State University, 435-797-0560, write to him at 5230 Old Main Hill, Logan, UT 84322-5230, or email darren.mcavoy@usu.edu.

To get on our list for email delivery of this newsletter go to <http://forestry.usu.edu> and click on Join Our Mailing Lists. For back issues visit <http://forestry.usu.edu> and click on Publications and Utah Forest News.

The Utah State University Forestry Extension website, found at <http://forestry.usu.edu>, is an excellent source of technical forestry information for woodland owners.

State of Utah Division of Forestry, Fire & State Lands service foresters for your area can be contacted by calling 801-538-5555.

Ideas and written contributions to this newsletter are encouraged. Send your contributions or comments to the return address above or call 435-797-0560, or email darren.mcavoy@usu.edu.

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Utah Forest News

COMING EVENTS

Learn at Lunch Webinar: February 25, noon to 1 p.m. Soil Science Basics and How Utah is Adapting. Speaker: NRCS Resource Soil Scientist Doug Merkler, and Shawn Freedberg of DeepRoot Green Infrastructure, LLC. Visit forestry.usu.edu for more information

UNLA Utah Green Industry Conference: January 27-29, 2014, South Towne Expo Center, Sandy, Utah. Visit utahgreen.org for more information.

20th Annual Utah Tree Climbing Championship: June 6-7, 2014, Pioneer Park, Provo, Utah. Visit utahurbanforest.org for more information.

IUFRO World Congress: October 5-11, 2014, Salt Lake City, Utah. Visit <http://www.iufro.org/events/congresses/2014/> for more information.

Photo by John Craigle



Jason Barto is seen with other volunteers at a team build day for Habitat for Humanity of Summit and Wasatch Counties. Wasatch Back Trees works with the organization to plant trees at project sites. Sponsored by Rocky Mountain Power, the build day helps families in need receive housing. For more information, go to www.habitat-utah.org.