



E-Newsletter of the Forest Guild

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September/October 2009

Register NOW for the Guild SE Regional Meeting Nov. 7-8
www.forestguild.org/SEmeeting09.html



Photo by Jean Shaffer.

NM WORKSHOP DRAWS EXPERTS ON HEATING WITH WOOD

Although there are a limited number of wood heating projects in the Southwest, a need exists in the region to build markets for material removed from Southwestern forest restoration efforts. To help meet the need for renewable sources of energy and creating markets for low-value wood, the Forest Guild worked with foundations, private companies, and federal and state agencies to host a workshop, How to Heat With Wood in the Southwest, August 3-4 in Santa Fe, New Mexico, exploring the nuts and bolts of using wood to heat buildings.

Across the Landscape is a bi-monthly newsletter of the Forest Guild
Marcia Summers, editor.

Across the Landscape (ATL) now includes more regional news items and short articles from members. The deadline for receiving articles for the Nov/Dec issue of *ATL* is Friday, October 16, 2009.

Comments, suggestions, and questions are welcome. We also accept guest op-eds and letters relating to articles from *Forest Wisdom* and *ATL*.

Email to marcia@forestguild.org or send to:
Marcia Summers, Editor
Forest Guild
PO Box 519
Santa Fe, NM 87504

Join Our Mailing List!

FOREST GUILD WELCOMES 12 NEW MEMBERS!

Professional Members

Paul Gregory,
Carver, MA
Davin Ivans,
Spurger, TX

Supporting/Sustaining Members

James Freeman,
Santa Fe, NM



The goal of the workshop was to provide accessible information about how to heat schools, hospitals, or other non-industrial buildings with renewable wood or woody biomass. Since much of the Forest Guild's work in this area emphasizes the sustainable forestry side of the equation, we needed partners to help explain how to make a wood heating project successful. The workshop included experts from across the U.S. on fuel supply, combustion technology, project economics, air quality, and engineering concerns.

For example, Dave Atkins, USFS biomass utilization program manager, Montana, talked about the successful Fuels for Schools program, which has brought wood heat to communities across the West. Later, a panel of five industry representatives presented an overview of the latest boiler technologies available in New Mexico. Much of the workshop focused on detailed case studies of facilities that are now heating with wood, such as those in Eager, Arizona, and

Raymond Majesty,
Glenville, IL
Kenwood Nichols,
Selma, AL
Arturo Sandoval,
Albuquerque, NM
Walt Tysinger,
Raleigh, NC

Student Members

Lee Lawrence,
Northern Arizona University
Takem M.B. Magloire,
University of Yaounde,
Cameroon
Rajan Parajuli,
Louisiana State University
Spencer Plumb,
Northern Arizona University
Joe Ventimiglia,
Michigan Tech University

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Register NOW for the SE Regional Meeting

Profile of a Guild Model Forest

Enterprise, Oregon. The case studies highlight the importance of a local champion to help push through projects, and demonstrate how to avoid potential difficulties of fuel handling.

More than 50 people attended two days of presentations, discussions, and a tour of two existing biomass heating systems. A number of participants specifically mentioned that



the opportunities for conversation among foresters, engineers, community development advocates, and other stakeholders was a key benefit of the workshop. As one participant commented, "This is a great start for biomass in New Mexico. If we hold

this event again in 3 years and have 300 in attendance, we'll know we've succeeded." All of the presentations and other workshop resources are available at

www.forestguild.org/ThermalWorkshop.html



Photos by Eytan Krasilovsky.

REGISTER NOW!

Forest Guild 2009 Southeast Regional Meeting November 7-8, 2009

Join Forest Guild members and friends November 7-8 in North Carolina's Blue Ridge Mountains on the beautiful campus of Warren Wilson College (WWC) in Swannanoa (just east of Asheville). The Guild's Southeast regional meeting will begin on Saturday with a morning field tour of the forests of Biltmore Estate, home to the first large-scale experiment in forestry in America. This experiment, envisioned and designed by George W. Vanderbilt and Frederick Olmsted, was implemented by Biltmore's first forester, Gifford Pinchot, and his successor, Dr. Carl A. Schenck. At the Biltmore Estate forest, we will look at some examples of early reforestation efforts, including 110- to 120-year-old plantations and natural forest stands. We will observe current management practices and how they relate to Biltmore's master plan and objectives, including examples of recent low-impact or "light touch" timber harvest areas. We will also discuss the challenges of controlling and eradicating invasive plants and insects, and wildlife management issues.



After lunch, we will tour the U.S. Forest Service Bent Creek Experimental Station. Research forester Dave Loftus will lead a field tour of thinning, growth, and yield plots, mostly focusing on

regeneration, but also on how regeneration relates to the station's fire research. The overall theme will be understanding how species (and communities) are distributed across environmental gradients and appreciating why that understanding is important.

After leaving Bent Creek, we will return to the WWC campus to enjoy a pulled pork barbecue where a whole pig (raised, butchered, and prepared by Warren Wilson students) will be roasted.

Sunday morning Forest Guild member and WWC faculty, Dave Ellum, assisted by WWC students will lead a tour of the WWC forest that will include horse logging and shitake mushroom cultivation; there may also be a discussion among the participants of the past, present, and future of forestry in the southern Appalachians.

Registration is now open on the Forest Guild website at www.forestguild.org/SEmeeting09.html. There will be an informal group dinner gathering for early arrivers on Friday, November 6. For more information, please contact Forest Guild Southeast region coordinator Nate Wilson at jessandnatew@blomand.net.

Photo provided by Dave Ellum.

PROFILE OF A GUILD MODEL FOREST

Interview with Gary Burns, Manager of Goodrich Tree Farm

*Based in Crocket, Texas, Forest Guild professional member Gary Burns (www.burnsforestry.com) has been managing forestland in southeastern Texas for both timber and wildlife values for several decades. Gary has been managing the Goodrich Tree Farm since 1982, and has authored comprehensive management plans for the property. The property, under the ownership and leadership of the King and, later, Goodrich families, provides an excellent opportunity to showcase both loblolly pine (*Pinus taeda*) management, at the western edge of its range, and an experiment in longleaf (*Pinus palustris*) restoration. Model Forest Program Coordinator Eytan Krasilovsky recently interviewed Gary.*



Eytan: *How would you describe your selection system for harvests?*

Gary: Southern pines for harvest are marked utilizing a selection method to improve the quality and growth of the residual stand. Trees are removed individually where trees have the capacity to respond to thinning. Group selection, seed tree, or shelterwood methods are usually necessary to regenerate those species that are not shade tolerant. Prescribed fire may also be necessary to control hardwood competition in commercial pine stands.

Similar to crop tree release, we try to "save the best, cut the rest" to concentrate growth on a few good trees. Leave or reserve trees are those with the highest quality and growth. Thinning too conservatively prevents crown development, and excessive thinning may result in wind breakage and windthrow or blowdown.

We mark trees that are poor quality (crooks, forks, etc.), poor risk (insect and disease problems), damaged (scarred, root-sprung, etc.), and overmature (unlikely to survive until the next cutting). Trees in unfavorable locations are also marked, to minimize damage from logging equipment. A residual basal area of 60 to 80 square feet per acre is traditionally recommended for areas of high southern pine beetle danger.

Eytan: *Which non-timber resources (water, wildlife, wetlands, mushrooms, etc.) are part of the management at the Goodrich Tree Farm?*

Gary: Water and wildlife are of special importance on the Goodrich Tree Farm. Streamside management zones are maintained on all ponds and creeks. For example, instead of utilizing a temporary stream crossing, a more expensive, permanent low-water crossing was initiated on a large creek, with particular attention to preventing erosion and water degradation. Hardwoods as well as wildlife travel corridors are retained in pine areas. Food plots are maintained to supplement native food during stress periods. Prescribed fire has improved wildlife browse by producing new succulent growth and lowering the height for better access. Also, more than ten acres have been planted to white oak (*Quercus alba*) and black cherry (*Prunus serotina*).

Eytan: *Please elaborate on endangered species on the property, including the impacts to*

your management and effects on cost.

Gary: The property has been enrolled in the Safe Harbor Red-Cockaded Woodpecker (RCW) Habitat Improvement Cooperative Agreement since June 2000. The Goodriches have agreed to perform activities that may result in incidental taking of RCW (*Picoides borealis*) clusters only during the non-reproductive season (August through February), and to allow state agencies to translocate any RCWs, if necessary.

Eytan: Any additional thoughts on the habitat conservation plan for the RCW?

Gary: To the best of our knowledge, there are no RCW colonies on the Goodrich property. However, the Goodriches want to ensure that RCW or any other endangered, threatened, or rare species, either animal or plant, are adequately protected. The Texas Parks and Wildlife Department believes that the forest management activities we employ—such as the configuration of compartments, conversion of open pasture to longleaf pine, and prescribed burning—would provide potentially significant nesting and foraging habitat for RCW in the future.

Eytan: Please elaborate on longleaf restoration in southeastern Texas, your approach, and the results of this effort on the tract.

Gary: In 2001, the Goodriches machine planted and banded over 60 acres of bareroot longleaf pine seedlings in cooperation with the Longleaf Alliance. Survival was less than optimal, so the area was interplanted by hand in 2002 and then again in 2003 (being climate driven, longleaf are delicate). Also in 2001, a one-acre plot was planted to test containerized longleaf selected to produce a shorter grass stage interval. The results showed a very high degree of variation. The Goodrich tract is a few miles north of what we estimate to be the natural range of longleaf pine in East Texas, which could make it somewhat vulnerable to ice damage. However, longleaf pine has been planted and managed to saw timber size a few miles north. We have experienced no problem with limb breakage so far and are optimistic regarding the project.

Eytan: Please describe some of the management tools you rely on.

Gary: All open areas, previously utilized for cattle grazing and hay production, have been planted to longleaf or loblolly pine. Herbicide banding is utilized to reduce grass competition with planted seedlings, and chemical site preparation has been utilized in stand conversions. Understory prescribed fire is applied to control brush competition and encourage natural regeneration.

Eytan: How does your work at the tree farm compare to common forestry practices in your region.

Gary: We employ regeneration and intermediate treatments common in the South. The main difference in the Goodriches' management style is a concern for wildlife and water quality. As I mentioned above, wildlife management programs include maintaining travel corridors, supplemental feeding, prescribed fire, and hardwood plantings. Water quality programs include extensive streamside management zones, minimal site preparation, and low-impact stream crossings.

Eytan: Thank you for taking the time to share your thoughts with our readers.

Gary: No problem, I'm glad to.



Photos provided by Gary Burns.

BOOK REVIEW

The Wild Garden: A Journey of Loss and Renewal

Disturbance ecology.

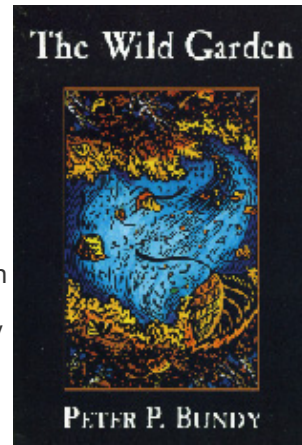
Hegel's synthesis theory. Restoration forestry. These are not terms typically associated with a sensitively written memoir exploring mortality and change. But author Peter Bundy has managed to weave such sophisticated topics together with experiences in his own life, crafting a satisfying story of life, death, and renewal set on the shores of a beautiful lake.

In this sequel to his book *Finding the Forest*, Bundy explores the concept of disturbance in terms of the forest on his land, and again in the metaphorical forest of his life. Within this format, he takes somewhat abstract concepts and gives them clarity and color. Bundy is faced with choices, chaos, and opportunities for regeneration that run in parallel with events in the natural world.

Bundy's background as an educator and professional forester give him a unique perspective on life: in a chapter about invasive species he writes, "I might compare my European ancestors with white pine blister rust (*Ribiclo cronartium*), a European fungal import." What makes this book superbly readable, however, is that Bundy does not hide behind intellectual theories. He shares the spiritual aspects of his profession in a way that will make readers think twice about forests and the foresters who tend them.

The Wild Garden has a meditative pace; like a well-planted garden, the delight is in the details. Beautifully drawn landscape block prints by Mary Sandberg divide the chapters and reinforce the fact that, from cover to cover, this book is a work of the heart.

Editor's note: Peter Bundy is a Forest Guild member who volunteers as the Guild's state coordinator for Minnesota. Lois Manno, author and artist, is the Guild's current membership coordinator.



MODEL FOREST UPDATE - ZENA MODEL FOREST TOUR

Small Woodlands Association Tour of Zena Forest

On Saturday, August 22, 20 members of the Washington County Small Woodlands Association visited the Zena Forest, a Guild Model Forest in Oregon's Willamette Valley. The tour was led by Sarah Deumling and Joe Bowersox. Sarah owns 1,300 acres which she manages under a conservation easement mandating a combination of FSC commercial forestry standards and oak savannah and oak woodland habitat conservation. Under the same easement, Joe manages 300 acres of the forest that is owned by Willamette University, just a few miles away in Salem. The university's management is primarily for education and research, with an eye toward a future sustainable forestry program.



The tour included a number of stops showcasing Zena management practices of mixed hardwood-conifer stands and the gradual conversion of Douglas-fir plantations to mixed-age, mixed-species forest, as well as providing some discussion of oak restoration practices.



The tour also visited the Zena sawmill site to take a look at their Mobile Dimension Saw and small custom-made hardwood band saw. A large new timber-frame barn, under construction using wood from the forest, will serve as shop, office, and inventory storage. Zena's primary market is the flourishing green-building market in the nearby Portland metropolitan area.

After a noontime picnic in the woods, those eager for additional exercise and conversation walked to several more sites. Truly, a good time was had by all. For more information about the Zena

model forest, please email Sarah at sdeumling@gmail.com.

Photos by Bill Triest.

AITKIN COUNTY (MN) LAND DEPARTMENT HOST OF INTERMEDIATE TREATMENT TOUR

Editor's note: This article was adapted in part from a web posting by Bernadine Joselyn, Bland Foundation's director of public policy and engagement.

One of the key concepts addressed in the "Vital Forests Vital Communities" forest productivity tour series in Minnesota is that intermediate treatments can be effective in increasing forest productivity. On July 31, the Aitkin County Land Department (ACLD), along with co-sponsors the Forest Guild, the Aitkin County Private Woodlands Committee, and Blandin Foundation, led a day-long field tour focused on ACLD's experiences in applying intermediate treatments to a variety of forest types.

The tour hosted about 20 people, including state and county land managers, researchers from the University of Minnesota and US Forest Service, private land managers, non-profit organization leaders, and others. Guild members Mark Jacobs and Beth Jacqmain (Aitkin County), Peter Bundy (Masconomo Forestry), Brian Palik (US Forest Service), Katie Fernholz (Dovetail Partners) and others helped plan and participated in the tour.



ACLD defines intermediate treatments as management activities, such as thinning, that occur in between stand initiation and the final harvest in an even-aged management system. Intermediate treatments such as thinning, understory planting, weeding and cleaning, salvage and sanitation cutting, and prescribed fire all can help increase timber value, improve wildlife habitat, facilitate recreational use, and protect forest health. The tour included stops at Norway pine (*Pinus resinosa*), aspen (*Populus sp.*), mixed pine (*Pinus sp.*), and red oak (*Quercus rubra*) thinning. Discussion topics included the importance of using the right equipment to protect the residual stand and the crop trees that are being given more room to grow by the thinning operation; the benefits of intermediate treatments on more productive aspen sites as opposed to thinning very young aspen stands, which is likely to be uneconomical; and the need to find markets for high-quality materials and engage the industry to help develop new opportunities.



In his related report entitled *The Power of Silviculture: Employing Thinning, Partial Cutting Systems and Other Intermediate Treatments*, author Jim Bowyer points out that in areas managed for fiber production, "intermediate treatments such as thinnings and partial cuttings have not been given high priority, in part because sufficient wood fiber volumes could be secured without the need for additional stand treatments between stand establishment and final harvest." However, these fiber-producing forests are simpler than nature intended and lack the diversity of species, age classes, and structures.

Even-aged management without intermediate treatments can have negative impacts on both public perceptions of forestry and landowner support for active management. Intermediate treatments and modified harvest regimes develop a greater diversity of species, age classes, and structures. By producing a more even flow of income from the forest with less dramatic harvests, intermediate treatments may be the key to increasing active engagement of forest owners and building public support for forestry.

For more information, please see the intermediate treatments report available from the Dovetail Partners website: www.dovetailinc.org/files/Dovetailsilvics0509.pdf
Guild member Katie Fernholz, executive director of Dovetail Partners, Inc., produced a ten-minute video summary of the tour that you can see on their website: www.dovetailinc.org/content/forest-tour

Photos provided by Katie Fernholz.

MY EXPERIENCE AT THE GUILD PNW SUMMER MEETING IN BRITISH COLUMBIA

A Guild Member's Perspective

by Jean Shaffer

While planning for this summer's Pacific Northwest regional meeting in August in British Columbia, Richard Hart sought approval for the spirituality-and-forestry theme from the Forest Guild's executive director at the time, Howard Gross. In responding, Howard said, "I have the utmost respect for what you are expressing and feel that the Guild members in the Pacific Northwest would very much appreciate this."

So when I participated in the meeting, I took a leap into quantum science to experiment with letting go of my own best-forest-management knowledge, by first asking, "What's Creation's plan here?" and "What's going on here?" instead of "What do I think is going on?" I practiced participating with the spirit side of forestry by acknowledging that every member of the forest community is a statement of itself, that spirit is participatory, and that it doesn't manifest unless consciousness invites it. So I learned to ask the ecosystem members, "What needs to be done here?"

Through his studies, Ray Travers believes that the evolution of the Western mind has set us on the path of "production science," which insists on a disconnect between science and spirituality and the arts, since Western culture separates value and fact; our scientific forbearers believed that in order to learn something, the facts, they had to forget something else: the values. We live with the negative consequences of this disconnect every day.



Those of you like Richard, Ray, and me have developed a keen sense around our intuitive connection with the object of our work. The idea of such an intuitive connection is being borne out by quantum science. Richard has learned it from science, his biological monitoring work, and spiritual nature. Ray has arrived at it from science and using adaptive management, Aldo Leopold's philosophy that nature is the standard, and also through his spiritual work.

I have learned it through natural selection forest restoration and Native American mentors. I believe that Native Americans sustained nature for thousands of years. How did they do it? Not only by paying attention to the "members" of nature, such as plants, animals, and water, but initially by getting in touch with the spiritual aspect, by "listening to the bones of their ancestors in the soil," as Hawk Rosales, a member of the Sinkyone tribe, says. He also told me back in 1993, "The dominant culture can use all the science in the world, but without using the Spirit key, they are just missing the answers in management."

Merriam-Webster's Online Dictionary defines quantum theory, which scientists have been positively trial testing since 1912, as "a theory in physics based on the concept of the subdivision of radiant energy into finite quanta and applied to numerous processes involving transference or transformation of energy in an atomic or molecular scale." Ray describes chaos as unformed matter coming into being. He further describes the tension between the unformed and the formed as a flow or pulse. In between these pulses is the place of opening for us to participate with the Creation. Introducing the quantum in looking at the forest adds the perspective that every life form is making a statement by its very presence about its "fitting" in the place it occupies. It's also partnering in the continuous design and patterning of that place. What more could we learn about our partnering in this continuous design by taking up this process, too?

I know I've risked the impossible here, trying to describe the nuances of Richard Hart's and Ray Travers' talks and the weekend conversations. You really had to be there. Hopefully, a repeat

gathering could perhaps be better called "Reconnecting Science and Spirituality: One Way of Knowing Something Bigger." I invite you to join us.

Photo by Jean Shaffer.

DIRECTOR'S NOTES FROM THE NORTHEAST REGION

by Bob Perschel, Northeast Region Director

- Don't forget to register for the two-day field tour and training session at the Hidden Valley Nature Center in Jefferson, Maine, September 11-12. Maine State Coordinator Dave Hobson is assisting property managers Andy Shultz and Barrie Brusila in setting this up. Contact Dave at 207.233.4213 or dahobson@gmail.com to register.
- The national Forest Guild Biomass Policy Working Group is up and running. More than half of the 32 members are based in the Northeast. The group has reviewed a policy statement outline and offered feedback.
- The Northeast Biomass Harvesting Standards Working Group is forming, and there is still time to join in on this groundbreaking work. We have 17 members, with a great geographical distribution in the New England states. In September, the group will review Zander's background ecological review and begin to establish harvesting standards for Northeast forest types.
- On July 13, I reviewed our biomass work with the Northeast Area Association of State Foresters in Stowe, Vermont. They are very interested in setting state-level biomass harvesting standards and look forward to seeing the results of the Guild's working group on Northeast standards.
- The Forest Guild is one of several organizations funded by the U.S. Endowment to form a Northeast Forest Investment Zone. Diane Snyder, the Endowment's vice president, visited the Downeast Lakes region this summer. In October, she is planning to visit the Mahoosuc region of Maine and New Hampshire to better understand the work we are doing on community wood energy there.
- As part of our Mahoosuc Community Wood Energy Project, we will hold an October or November workshop to introduce foresters in that area to our first version of biomass harvesting standards. Their feedback will help inform the ongoing work of the Guild's Northeast Biomass Harvesting Standards Working Group.
- On Sunday, July 19, Guild members Amber Fields and Joe Trudeau hosted a field tour of old-growth forests in the Pisgah State Forest Harvard Tract in southwestern New Hampshire. Guild members Charlie Moreno and Bruce Spencer attended.
- I missed Joe and Amber's excellent tour on July 19 because I was already scheduled to make a presentation of the Forest Guild's activities to the board of the Norcross Wildlife Foundation. Guild member Dan Donahue manages the foundation's wildlife sanctuary in south-central Massachusetts, and Norcross has generously supported our work for a number of years.
- I recently attended a meeting convened by Senator Bernie Sanders of Vermont in Burlington. Senator Sanders has introduced a bill to support the thermal use of biomass and was looking for input from the forestry and forest products sector. Guild member Adam Sherman joined me at the meeting. The same day, Jamey Fidel convened a meeting of the Vermont Forest Roundtable to get the forest products industry's perspective on increased biomass harvesting. Several Guild members, including Robert Turner and Ehrhard Frost, are participating in a Vermont study committee which is considering increased biomass harvesting.
- And finally, our work on the national scene with energy and climate-change legislation is bearing fruit. I represent the Guild on the national Forest and Climate Change Working Group. Recent legislation passed by the House of Representatives identifies forest management as eligible for carbon offsets in the cap and trade portion of the bill. The legislative debate has now moved to the Senate, which will take it up in earnest this fall. We hope to see the forestry sections enhanced by including a supplemental program to provide incentives for landowners to manage for carbon. Something to keep your eye on

is how forest biomass is defined and what, if any, sustainability requirements will be added.

NEW STUDIES SHED LIGHT ON MIXED-CONIFER FIRE REGIMES

by Zander Evans, Forest Guild Research Director

As the Forest Guild embarks on a new research project into fuel treatment practices in mixed-conifer forests in the Southwest and Sierra Nevada (for more information, see www.forestguild.org/ecological_forestry/Forest_Guild_Mixed_Conifer.pdf), two recent reports add to the science of fire in mixed-conifer forests.

A new study by researchers at Colorado State University, Final Report: Upper Navajo River Valley Fire Regime of a Mixed-Conifer Forest in Southwestern Colorado, sheds light on Southwestern mixed-conifer fire regimes through a detailed investigation of working forests in the Upper Navajo River Valley. The team used a combination of fire scar and stand age structure data to reconstruct fire's historical range of variability. There were six ecologically significant fires between 1748 and the advent of fire suppression. The study shows that high-severity patches vary widely in both size and frequency, and that the area had a mixed-severity fire regime. The management implications are that restoration approaches developed for low-severity fire ponderosa pine systems are unlikely to improve ecological conditions in Southwestern mesic mixed-conifer forests.

The second report, An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests, explores what has been learned since the Sierra Nevada Ecosystem Project published its findings in 1996. The report makes a key distinction between cool, moist mixed-conifer forests where historically fire would have burned less frequently, and upper, southern-aspect slopes where fire burned more frequently. The report's management recommendations emphasize the ecological role of fire, changing climate conditions, sensitive wildlife habitat, and the importance of forest structure heterogeneity.

Detailed reference information for both studies may be found in this issue's "Publications Briefly Noted" below.

PUBLICATIONS BRIEFLY NOTED

Conventional Wisdoms of Woody Biomass Utilization. Dennis R. Becker, Dalia Abbas, Kathleen E. Halvorsen, Pamela J. Jakes, Sarah M. McCaffrey, and Cassandra Moseley, 2009. www.forestguild.org/biomass/resources/ISE_Biomass.pdf.

An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests. Gen. Tech. Rep. PSW-GTR-220, US Forest Service, Pacific Southwest Research Station, Albany, CA. Malcolm North, Peter Stine, Kevin O'Hara, et al., 2009. www.treeseearch.fs.fed.us/pubs/32916.

Energy from Woody Biomass: A Review of Harvesting Guidelines and a Discussion of Related Challenges. Kathryn Fernholz et al., 2009. dovetailinc.org/reportsview/2009/responsible-consumption/pkathryn-fernholzp/energy-woody-biomass-review-harvesting-g.

Final Report: Upper Navajo River Valley Fire Regime of a Mixed-Conifer Forest in Southwestern Colorado. Carissa F. Aoki, Peter M. Brown, and William H. Romme, 2009. www.forestguild.org/ecological_forestry/BPR_mixed_conifer_study.pdf.

Realistic Costs of Carbon Capture. Mohammed Al-Juaied and Adam Whitmore, 2009. belfercenter.ksg.harvard.edu/publication/19185/realistic_costs_of_carbon_capture.html.

"Smoke Out," Laura Paskus. Forest Magazine. Fall 2009. <http://fseee.org> (Click on Forest Magazine in the left column. Then scroll down the new page and click on "Smoke Out.")

The Power of Silviculture: Employing Thinning, Partial Cutting Systems and Other Intermediate Treatments to Increase Productivity, Forest Health and Public Support for Forestry. Dr. Jim Bowyer et al. May 2009. <http://www.dovetailinc.org/files/DovetailSilvics0509.pdf>

