VOLUME XI NUMBER 1 JUNE 2008

NEW MEXICO TREE FARM NEWS

In This Issue

Thank you to Will Stapleton

The Executive Committee of the New Mexico Tree Farm would like to express their thanks on behalf of all New Mexico Tree Farmers to Will and Jean Stapleton. Will who has been most recently been serving as Secretary for the committee is temporarily stepping aside from this role. Those of you who have been Tree Farmers for quite some time know that Will and Jean have been instrumental in the leadership of this program since late last century. His many roles from secretary to chair over this period have contributed to some of the most productive years of the New Mexico Tree Farm Program. So Will & Jean, on behalf of all New Mexico Tree Farmers thank you very much for all you have done for us. *– Executive Committee.*

National Leadership Conference

Joe Stehling, Tree Farmer and member of the New Mexico Forest Stewardship Committee.

Joe Stehling, Hidden Lake, Angel Fire, joined New Mexico Foresters Doug Boykin, and Nick Smokovich, of Socorro, Arnie Friedt of Cimarron, and commercial forester and chairmen of the New Mexico Tree Farm committee Harry Morrison in attending the American Forest Foundation National Leadership conference in Coeur d' Alene Idaho, 27 – 29 February, 2008. The purpose of the conference was to bring together Tree Farm Committee leadership from 38 states to discuss issues that affect sustainable tree farming in the US and exchange ideas to further expand our knowledge of Tree Farming. A Tree farm is a privately-owned tract of forest anywhere from 10 acres to several thousand acres. The Tree Farm owner is a member of the American Tree Farm System, which was established in 1941 to encourage private forest landowners to conserve and protect their forests. The Tree Farmer usually owns 10 or more acres of forested land and has a written management plan by which he improves and enhances the health of his woodlands. He does this largely "out of his own pocket" and receives little or no thanks from the rest of us. In the United States, National Forests compose less than 10% of the forested land. Private landowners constitute 73% of the forests.

The conference covered such topics as Certification and Inspection Requirements, Conservation Solutions, Environmental Learning, Grant Writing. And an update on the status of the Farm Bill by Mark Rey, Undersecretary for Natural Resources & Environment, USDA. The Farm Bill contains provisions that would provide grant money for forest health enhancement projects on privately owned land.

Tree Farm in Change

Doug Boykin, EMNRD – Forestry Division – Socorro

5 years ago, the American Forest Foundation had an annual budget of around 2 million dollars and its major claim to fame was its solid bedrock of Tree Farmers in all but 5 states (Alaska, Hawaii, Utah, Arizona & Wyoming).

Today, we are looking at a perpetual endowment of over 150 million dollars, and budget of upwards of $7 million, and even more solid bedrock of Tree Farmers ready, willing and able to spread the good news of sustainable forestry and keeping good forestry on the land where it should be.

What Happened?, in a surprise move to many in the industry, AFF was the big winner in the Canadian Softwood Lumber Settlement, receiving that $150,000,000 as a way to support the small non-industrial private forest owners who had been treated unfairly by lumber trade politics between the US and Canada. To make a long story short, AFF is the benefactor and is ready to take on an increased role in the forestry issues in the US, in ways that we could only dream off 5 years ago.

In order to make sure that we do not loose sight of our roots, but also expand to meet the challenges ahead, AFF is moving forward in a slow and steady manner.

The first big changes were presented at the 2008 National Leadership Conference in Idaho in February. Myself, Chairman Harry Morrison, Inspecting Foresters Nick Smokovich and Arnie Friedt and 2007 Tree Farmer of the Year Joe Stehling were all able to attend thanks, in large part to a $5,000 increase in our yearly pass through funding provided by AFF.

AFF is adding additional staff and creating "centers of excellence" as part of it organizational structure:

These "centers" are:

Center for Conservation Solutions
Center for Environmental Learning
Center for Family Forest

All three of the centers have a separate function, but are also connected in delivering the message of sustainable forestry.

Center for Conservation Solutions

Will provide tools and resources to cultivate and support a network of conservation and research partners who can advance AFF's conservation goals.

Center for Environmental Learning

Will undertake both formal and non-formal education programs for youth and families, as well as information and outreach activities aimed at targeting audiences that can influence the climate for sustaining forest.

Center for Family Forest

Will maintain, support and mobilize a robust community of forest owners – along with a diverse, nationwide network of organizational

partners – a committed and able to help sustain multi-generational stewardship (Tree Farmers).

Another note of interest is the final roll out of the new "Certified Family Forest" sign. For years we have talked about the sign with the big "Tree Farm" right in the middle. Starting this year, landowners will have an option when their properties become certified. They can continue using the standard Tree Farm sign (right)

or can opt for the new Certified Family Forest sign (left). Both signs represent the AFF program but, the CFF sign recognizes that many properties are more than just a tree farm; they are family forest and are being managed that way.

There are many other issues out there, that will be reported in future newsletters, but I invite you all to visit the AFF national site at www.affoundation.org and the NM Tree Farm site at www.nmforestry.com on the World Wide Web to read for yourself about the activities, issues and direction of the AFF. It is indeed an exciting time to be involved in the Tree Farm Program and we welcome your input, ideas, and involvement to help us grow the NM program and keep it as one of the premier programs in the West.

NEW MEXICO LAND CONSERVATION INCENTIVES ACT

Bob Sivinski, EMNRD – Forestry Division – Santa Fe

Editor's note:
Land fragmentation, or more accurately ecosystem fragmentation, is a leading threat to wild areas, and forestlands nationwide and is becoming particularly problematic here in the southwest as our population continues to expand. When once undeveloped land such a forest or woodlands becomes subdivided and developed, typically for housing, it is an example of ecosystem fragmentation. There are a suite of problems that can arise when ecosystems become fragmented including disruptions of migratory pathways, introduction on new, potentially invasive organisms (i.e weeds and disease) and other demands on the "undeveloped" lands adjacent to developed lands. And then there are those detrimental impacts that affect humans. For example, how would your sense of beauty be influenced if you were looking across a forested landscape such as the Wheeler Peak area, only to have eyes gaze upon a subdivision of homes two thirds up the side of the mountain.

We often read about urban sprawl into agricultural land and the detrimental impacts it can have on a community or economy. Similar stories can be written about when wild lands become developed. There are many parallels between these two forces influencing land development in these two areas. Historically, in many instances, communities developed around productive agricultural areas as the economies of these areas were often tied to agricultural enterprises. Eventually, the communities became large enough that the productive agricultural land needed to be converted to housing to support the increased population. Today, communities are developing in wild lands as society has the economic ability along with incentive to

"escape" crowded cities and live or vacation in more "rural" environments. People were originally drawn to these areas because of the natural beauty of these areas. As more and more people head to these areas their very presence, or more precisely the presence of their homes, can adversely impact the natural beauty of the area which drew them there in the first place. In agricultural systems, the value of the land as housing sites can be worth far more than the value of the crops being produced on the land. Again, this can be said for timber and woodlands throughout the southwest, the land is worth more than the potential revenue that could be generated from timber, wildlife or grazing operations.

The challenge then, is how to keep these lands as wild lands or agricultural lands while minimizing the "economic penalty" to the land owner, in our case the Tree Farmer must bear. State taxations departments have historically stepped in, by reducing the tax burdens on these lands that are "under management for the production of goods." However, the rate at which many of these lands are increasing their value as development sites is exceeding these benefits. This is where land trusts can play a role. Bob Sivinski of the EMNRD is the program lead for the New Mexico Forest Legacy Program and has considerable knowledge in the area of land trusts. What follows is an update on the New Mexico Land Conservation Incentives Act from Bob. If you find yourself wanting to know more about this program and land trusts in general, Bob has put his contact information at the end of the article.
-John Harrington, Editor & Interim Secretary NMTFS

The Land Conservation Incentives Act (LCIA) has been amended to increase maximum amount of the land conservation tax credit to $250,000 and to make the tax credit transferable for donations made after January 1, 2008.

- Charitable donations of land or an interest in land (conservation easement) to public or private conservation agencies for conservation purposes are eligible for an LCIA tax credit.

- The maximum tax credit is 50% the appraised value of the donation and a maximum of $250,000 per individual donor. For example, a single landowner donating a conservation easement (CE) with an appraised value of $1,000,000 could receive a tax credit of $250,000. If the same CE was donated by a husband and wife and both are identified on the deed as owners, they could each receive a tax credit of $250,000 ($500,000 total). If the same CE was donated by five equal owners of the property, each could receive a $100,000 tax credit ($500,000 total).

- A taxpayer has a maximum of 20 years to fully use the tax credit following the taxable year in which the donation was made.

- The tax credit may be transferred to another taxpayer through a tax credit broker in minimum increments of $10,000. At least two existing Colorado tax credit brokers are establishing offices in New Mexico. These brokers have been obtaining up to $.80 on the dollar for donors selling similar land conservation tax credits in Colorado. The market value of the New Mexico tax credit is unknown at this time.

- The LCIA tax credit will only be given for donations that are reviewed by the NM Natural Lands Protection Committee and certified by the EMNRD Secretary as being for conservation purposes that are protected in

perpetuity, and having conservation values that are significant and important to the State of New Mexico.

- New LCIA rules are being proposed that would allow landowners to apply for an EMNRD assessment of their proposed donation before conveying the donation of land or interest in land. The certification process will be complicated, but worthwhile if approved.

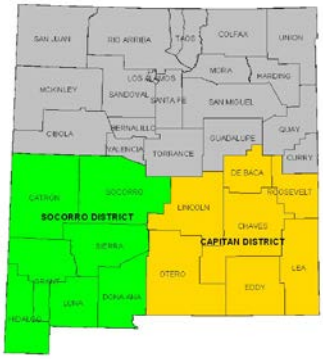
- EMNRD hopes to have the LCIA rules adopted and published within the next two months. Application forms will be available on the EMNRD web site as soon as the new rules are adopted: http://www.emnrd.state.nm.us

Call Bob Sivinski at 505-476-3347 with any questions. A list on non-profit land trusts operating in NM can be found on the Land Trust Alliance web site: http://www.lta.org/

A LAND OF SUPERLATIVES

Will Stapleton – New Mexico Tree Farmer

A quick glance at a map showing the Socorro Forestry District alongside the Capitan Forestry District would not be enough to determine which was the larger of the two. I knew I'd be in hot water if I tried that approach so I sought expert reference instead; i.e., the New Mexico Administrative Code, All Counties Statistics, Year 2002. Adding the land area (in square miles) of the counties in each district, Socorro Forestry District emerges as the winner with 31,921 square miles. Capitan Forestry District has 30,989 square miles.



This large district has two counties within its boundaries that are large. Catron County, in the northwest quadrant, with a land area of 6898 square miles, is the largest county in New Mexico. Its neighbor to the east, Socorro County, with a land area of 6626 square miles, is the third largest county in New Mexico. Socorro and other counties (Bernalillo, San Miguel, Santa Fe, and Taos) were political entities, created by Mexico, in 1844. After New Mexico became part of the United Sates in 1846, these counties were re-established as territorial counties (1850-52). Socorro County is one of the oldest counties in New Mexico.

Before leaving Socorro County, there is another feature which deserves some attention. Known as the Rio Grande Rift, it came into being about 30 million years ago when tow more or less parallel fault zones crossed New Mexico from north to south. As tension pulled the tow halves of New Mexico apart, the central north-south sliver between the fault zones dropped downward. As the center portion dropped and filled with sand and gravel, land masses on either side of the valley pushed upward, creating mountain ranges like the Sandias and Manzanos. The faults along the eastern side of the rift have been inactive for many thousands of years, but there's still plenty of minor movement on the west side between Belen and Socorro and north of Los Alamos. The movement (seismic activity) in the Socorro is roughly centered above a thin 650 square mile magma body. The magma is moving, in small quantities, upward into the

crust less than 12 miles below the Earth's surface, causing it to rise ¼ inch per year.

About 50 miles to the northwest of Socorro, in the northcentral part of the district, there is a geographical feature known as the Plains of Augustin. This beautiful, flat-floored, mountain-bounded, extensively-grassed valley, tucked in New Mexico's largest closed basin, was once a 50-mile-long Ice Age Time (1.8 million to 10,000 years ago) lake. The vegetation of the Ice Age (steppe grassland; sagebrush upland; riparian forest of birch, spruce and shrubs; as well as xeric plants such as ragweed, juniper, oak, cottonwood and willow) supported a melting pot of very large and small animals. By 10,000 years ago, the very large animals had become extinct, because of change in climate and plant communities or hunting pressure from humans. Paleo-Indians, nomadic, big-game hunters had arrived in the area about 11,000 to 12,000 years ago.

As interesting as the foregoing is to some of us, most visitors do not come to the Plains of Augustin for the same reasons. Most visitors to the area are interested in seeing the site of the radioastronomy observatory where a Very Large Array of saucerlike antennae gathers radio signals from far out in interstellar space. Signals emitted millions and even billions of years ago, only now reaching the Earth, give scientists here a look at conditions within the universe at the time when our solar system was young. A visitor center, a slide show, and a walking tour explain the various areas of study—among them the births and deaths of stars, the properties of galaxies like our own, and the history of the origin of the universe. Mostly the array of 27 antennas (each weighs 230 tons and measures 82 feet in diameter) is distributes along railroad tracks arranged in a Y shape. Two branches of the Y are about 13 miles long and the third is more than 11 miles long. Antennas rotate toward a radio source, of which a picture is generated after 8 to 12 hours exposure time. The array can be contracted or expanded by moving the antenna towers along intersecting railroad tracks.

Image courtesy of NRAO/AUI

Beginning about 40 million years ago, much of southwestern and central New Mexico was subjected to an enormous explosion of volcanic activity that lasted about 20 millions years before subsiding. Great thicknesses of ash-flow tuffs, along with andesite, rhyolite, and basalt flows, originated from gigantic volcanic cauldrons (some more than 30 miles in diameter), as a consequence of two colliding tectonic plates along the western coast of North America. Many of the cauldrons have been eroded so that they are not obvious in the present landscape. One exception is the Black Range. The southern two-thirds of the range is a 30-mile-wide caldera that has been tilted and eroded. Thus, the interior is visible. More than two Valle Grande calderas (28 miles wide) could fit in the Black Range caldera. It's that big!

The Gila National Forest is the largest National Forest in New Mexico with 3.3 million acres (including 614,202 acres of the Apache National Forest in New Mexico that's administered by the Gila National Forest). It is a vast area of rugged mountain ranges in southwestern New Mexico that is little affected by civilization. It had been called a cauldron of colliding ecosystems because it is positioned where the Chihuahuan Desert, the Sonoran

Desert, the Sierra Madre Mountains and highlands of Mexico, the Southern Rocky Mountains, and sky islands, like the Chiricahua Mountains (thrusting abruptly from the desert floor to create forested "islands" in a sea of arid grasslands), all overlap. The mountains represent the northern limit for many tropical plant and animal species, the southern limit for North American species and migratory corridor for hundreds of others. A profusion of plants and animals, many of them throwbacks to the Ice Age are now stranded on the sky islands. Others use the north-south alignment and microclimate to provided migratory corridors and borderland paths for birds and animals. There is a tremendous amount of biological diversity here in this part of the United States.

There you have it. A small taste of something BIG. I hope you have an opportunity to get out enjoy it.

PREDICTED CLIMATE CHANGE AND FOREST MANAGEMENT IN THE SOUTHWEST

John Harrington – New Mexico State University
Mora Research Center

Climate change, global warming, hardly a day goes by without these terms showing up in the newspaper or on the national news. Oftentimes, these terms are in the headlines when federal or state legislation is being proposed or passed. This typically occurs when such governmental bodies are in session which in New Mexico's case is the winter. So invariably the announcement will come out during a record cold spell. While the timing of such announcements is humorous, the potential consequences of the predicted changes in climate or the impacts of the policies on people's lives are usually not humorous.

Climate change is normal. For millions of years the Earth's climate has fluctuated and the planet, as we have come to know it, has changed or evolved with these changes. The southwestern United States provides great fossil and living records illustrating how vegetation and other life forms have changed over the millennia as the climate of the area has changed. For example, petrified wood, wooly mammoth fossils and scores of other prehistoric organisms can be found throughout New Mexico.

The forests and woodlands we see today also provide a great opportunity how living organisms adapt, evolve and expand or contract the distribution. New Mexico's forests include the southern most extension of the range of several trees species found in the Rocky Mountains, such examples are limber pine (*Pinus flexilis*) and lodgepole pine (*Pinus contorta*). New Mexico forests also contain the northern most extension of several tree species found in the Sierra Madre Occidental range including southwestern white pine (*Pinus strobiformis*) and Chihuahua pine (*Pinus chihuahuana*). Are these species expanding their ranges southward or northward respectively or are their ranges contracting moving northward or southward respectively in response to long-term changes in climate?

The biggest difference between historic climate change and the changes occurring today and predicted to occur in the future is the fact that man is now involved. More specifically, there are increasing numbers of reports being published implicating human activity as a contributor to these changes. The other human aspect that has changed is that humans have been and are exerting greater influence in these ecosystems and are deriving more goods and services from these ecosystems today.

While there is and continues to be a debate on the causes and magnitude associated with

recent climate change, there is broad scientific consensus that climate in the near future will be different than at any other period in the last ≈ 10,000 years. In 2007 the Intergovernmental Panel on Climate Change (IPCC), published the Fourth Assessment Report on Climate Change (http://ipcc-wg1.ucar.edu/wg1/docs/WG1AR4_SPM_PlenaryApproved.pdf) (UN - IPCC 2007). This summary for lawmakers indicates several aspects of the Earth's climate that will likely change and subsequently impact vegetation (i.e. New Mexico forest and woodlands). Some main changes include:

1) Warming of the Earth's atmosphere at a rate faster than in the past;
2) Increasing climatic variability, including alterations in precipitation patterns; and,
3) Increasing occurrence of severe climate/weather events.

What do these potential changes mean to the New Mexico Tree Farmer and their service forester? Will there be need for dramatic changes in goals and expectations or how the forest is to be managed? The answer to these questions will depend on many factors including forest type, current health of their Tree Farm and the goals and expectations placed on their Tree Farms. The latter two, Tree Farmers have the greatest influence over. Regarding the second question, the greatest change will probably be a greater emphasis on either restoring, maintaining or improving forest/woodland resiliency to increased stresses that may be associated with changes in climate. Many of the New Mexico Tree Farmers I have spoken to or serve as their service forester, the emphasis of management has been on forest health including resiliency, so very little will change in terms of managements. In all of these cases, forest health is central to management objectives, but is rarely the only objective. Timber and forage production and providing wildlife habitat are also targeted goals and should continue to be in the future.

The challenge, from my perspective, will be how to handle numbers 2 and 3 of the predicted changes in climate; increased climatic variability and increased occurrence of severe climate/weather events. Determining whether present management will suffice to handle these stressors and still provide the goods and services the Tree Farmer expects of their forests/woodlands will be challenging. If changes in management are needed then what management practices can be employed to improve forest health and resiliency? What stress agents (direct climate stressors: drought, heat; indirect climate stressors: fire, insects, etc.) should the emphasis of resilience focused management be placed upon?

From The Society of Ecological Restoration:

(http://www.ser.org/content/ecological_restoration_primer.asp)

Resistance is the term describing an ecosystem's ability to maintain its structural and functional attributes in the face of stress and disturbances.

Resilience is the ability of an ecosystem to regain structural and functional attributes that have suffered harm from stress or disturbance.

Ecosystem stability is the ability of an ecosystem to maintain its given trajectory in spite of stress; it denotes dynamic equilibrium rather than stasis. Stability is achieved in part on the basis of an ecosystem's capacity for resistance and resilience.

Again tough questions and wish I could provide all the answers to them in this article. However, with the level of uncertainty associated with climate prediction and the

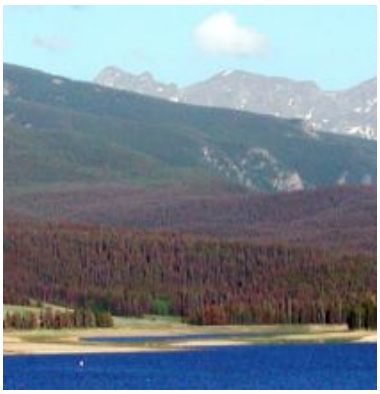
variability of different climate prediction models, I would not be comfortable in doing so at this point. To that end however, a group of foresters, land managers, forest scientists and ecologists, and yes a climate scientist or two, are working on answers to some of these questions. Answers, may not be the appropriate word, responses is probably a more accurate word. The goal of this effort is to look at the potential impacts of predicted climate change for the southwest, focus primarily on predicted changes in precipitation and temperature, on four primary forest types found in New Mexico (mixed conifer, ponderosa pine, pinon-juniper and bosque forests). Based on this, these folks will evaluate whether anything can or should be done to alter forest management given these predicted changes in climate. As part of this working group my hope will be to provide a summary report in next winter's Tree Farm Newsletter. Until then, I would encourage all Tree Farmers to review your Tree Farm Plans, in particular, your goals and objectives, and assess: 1) have we been managing our Tree Farm to attain these goals and objectives; 2) are they still the right goals and objectives for the Tree Farm; and 3) given a predicted drier and somewhat warmer future are these still reasonable goals and objectives?

A Colorado Tree Farm Copes with an Epidemic

Mark Loveall – New Mexico State University Mora Research Center

From the northern edge of Rocky Mountain National Park and running along the spine of the Medicine Bow Mountains nearly to the Wyoming border, the Colorado State Forest encompasses 71,000 acres. It is truly a multiple-use area where large numbers of people camp, hunt, and fish alongside timber harvesting and livestock grazing. While overseen by the Colorado State Land Board, activities within the State Forest are managed by multiple agencies; most notably Colorado State Parks (recreation) and the Colorado State Forest Service (forest resources). Additionally, Colorado Department of Wildlife, Jackson County, private concessionaires and local grazing associations are active there as well.

The Colorado State Forest is also a certified Tree Farm. I worked as a forester there from 2005 through 2007, concentrating on timber sale layout and administration. Upon my arrival, the State Forest was transitioning from the initial stages of an insect outbreak to full-scale epidemic. The main culprit is the Rocky Mountain Pine Beetle (*Dendroctonus ponderosae),* although other insects (notably other *Dendroctonus* and *Ips* species) are active to a lesser extent in Colorado's forests.



Left: Typical appearance of a Colorado lodgepole pine forest in 2007.

Previous timber harvesting activities on the State Forest concentrated on removal of overmature lodgepole pine stands and reforesting with the same species. Most existing stands of lodgepole pine on the State Forest resulted from intense forest fires in the early 1900's. The resulting regeneration of these stands resulted in large single storied (even aged) stands of lodgepole pine, a condition conducive to that species' growth habits. The resulting stand structure, species biology and timber harvesting technology made clearcutting an effective way to harvest and regenerate these stands. However, an even-aged or even sized stand structure is also conducive to other actions. Enter the pine beetle.

As pockets of infestation began to appear, attempts were made to remove infected trees where possible. Unfortunately, it became apparent by 2006 that this piecemeal approach had no effect in slowing the infestation. In high-traffic public areas (campgrounds, picnic areas, and recreation trails) the main emphasis was to protect uninfected trees through the application of insecticides and repellants, and if necessary, removal of infected trees.

In other, less visible or less used areas, harvesting of infected stands followed by facilitated natural regeneration or tree planting where necessary. The areas where this management could occur were limited, since a large percentage of the State Forest has ground too steep for harvesting, or has limited access (i.e., no existing roads), or both.

Have these management activities have done any good? In some aspects yes, in others no. Intensive activity in public areas has resulted in the retention of many trees and the reduction of hazards. The harvesting may have slowed the beetle spread a bit, but it looks like ultimately more than 90% of the susceptible lodgepole pine stands in Colorado will fall prey to the beetle. Thus, in terms of protecting

Above: View on the Colorado State Forest showing 5-10 year old regeneration (foreground) and recent clearcuts on ridge behind.

mature and overmature stands of lodgepole pine on the Colorado State Forest Tree Farm, no timber harvest was successful. However, the timber harvesting was effective in sustaining the economy in adjacent rural communities. Already one can see a renewed vigor in many previously decadent enclosed aspen stands, an added benefit to wildlife, which in turn boosts local tourism-dependent economies.

In the long run, much like the fires that consumed these stands at the turn of last century, the lodgepole, by its very nature (silvics) should come back in most areas in coming century. The harvests which have taken place over the past several years will result in vigorous new stands of varying sizes and ages across the landscape

Author note: Mark Loveall has recently left Colorado and returned to New Mexico as a forest scientist working out of the NMSU Mora Research Center. He is also a certified Tree Farm Inspector.