

**CRISIS ON THE NATIONAL
FORESTS: CONTAINING THE
THREAT OF WILDLAND FIRE
TO THE ENVIRONMENT AND
COMMUNITIES**

OVERSIGHT FIELD HEARING

BEFORE THE

SUBCOMMITTEE ON FORESTS AND
FOREST HEALTH

OF THE

COMMITTEE ON RESOURCES
U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED EIGHTH CONGRESS

FIRST SESSION

Friday, March 7, 2003 in Flagstaff, Arizona

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**OVERSIGHT FIELD HEARING ON “CRISIS ON
THE NATIONAL FORESTS: CONTAINING THE
THREAT OF WILDLAND FIRE TO THE ENVI-
RONMENT AND COMMUNITIES”**

**Friday, March 7, 2003
U.S. House of Representatives
Subcommittee on Forests and Forest Health
Committee on Resources
Flagstaff, Arizona**

The Subcommittee met, pursuant to call, at 9:53 a.m., in the City Council Chambers, City Hall, Flagstaff, Arizona, Hon. Scott McInnis [Chairman of the Subcommittee] presiding.

Present: Representatives McInnis, Pombo, Walden, Renzi, Gibbons, Hayworth and Shadegg.

Mr. McINNIS. You may be seated.

I would like to thank the Veterans of Foreign Wars and the American Legion, and of course the Boy Scouts. I would also like to begin the meeting by thanking the community of Flagstaff. As I said earlier, it is a beautiful community. We also appreciate the utilization of your City Hall, and I am particularly pleased—I know we come from different sides on this issue, but I am particularly pleased at the turnout that we have today.

It is an issue that is very important to all of us, and the fact that we have come out like this to participate in it, this is what it is about, this is why we wanted to bring this hearing, so that you could see what a hearing that would otherwise be conducted in Washington, you could witness how we do this.

With that, Congressman Renzi—and what I would like to do as we go for our opening comments, I would like each Congressman, since most of us are from out of this area, to introduce themselves. But Congressman Renzi, why don't you introduce our special guests.

Mr. RENZI. Thank you, Congressman, McInnis.

Today, we have with us two very important people from Washington, D.C., The Honorable Mark Rey, U.S. Department of Agriculture, Under Secretary for Natural Resources and Environment; The Honorable Rebecca Watson, U.S. Department of the Interior; The Honorable Gene Kelley, Mayor of Show Low; and we are expecting today, Dallas Massey, the Chairman of the White Mountain Apaches; and of course, from Colorado, your home state, Lyle

Laverty, who is the person in charge of Natural Resources for Colorado.

So with that, I want to thank you all for coming today.

May I go into my remarks, or would you like to—

Mr. MCINNIS. Well, first, I want to tell you that one of the reasons we are down here is just to get Renzi to be quiet. All he talks about are these forests in this district. We said, all right, if we come out there, will you be quiet for the rest of the year?

[Laughter.]

If you do not mind, I would prefer—I would like to start with your Mayor, if you would like to introduce the Mayor and let him make some remarks.

Mr. RENZI. I would, yes, thank you very much. Thank you, Mr. Chair.

I want to thank all the people from Flagstaff and the surrounding communities who have turned out today, and I especially want to thank Mayor Joe Donaldson for being a great host and facilitator of this. And I welcome and would like to hear your opening remarks, Mr. Mayor.

**STATEMENT OF JOSEPH C. DONALDSON, MAYOR,
CITY OF FLAGSTAFF, ARIZONA**

Mayor DONALDSON. Thank you, Congressman, Mr. Chairman, members of the Subcommittee, welcome to our community and thank you for taking the time and effort to visit us. Your presence here is an honor for our community. As Mayor, I am grateful for the opportunity to be part of this hearing process.

As evidenced by the ongoing drought, a dramatic increase in insect populations and the ever-growing threat of catastrophic wildfire, our forests are in disrepair and have become littered with untold numbers of dead trees. We are in critical need of a massive cleanup and tree removal effort that can only be achieved with technical and financial assistance through the Federal Government. The Stafford Act has been utilized in many disasters to assist local governments in debris removal efforts. We would ask your consideration in initiating this process to provide Federal assistance to our areas in order to mitigate a very hazardous condition that threatens both the lives and personal property throughout the region.

It is also a concern that there are insufficient air support resources to effectively suppress a wildfire outbreak in this area. The immediate air response capability on the Coconino and Kaibab National Forests has been reduced to a single small capacity helicopter. The availability to obtain fixed wing tankers, large haul helicopters and lead planes are non-existent from our local air bases. We urge the Committee to support this effort and provide the necessary resources to properly equip the area suppression forces with this vital firefighting tool.

Your presence in our community is evidence of your interest in this subject and your commitment to make a positive change. I would like to acknowledge Congressman Rick Renzi, Congressman J.D. Hayworth and Congressman John Shadegg for making this historic visit to Flagstaff possible. Mr. Chairman, and members of the Subcommittee, you have my pledge as Mayor that we regard

this issue as a partnership, and that we stand ready to move forward with you.

I again welcome you to our city and offer the services of our fine staff, if we can be of further assistance to you. I also encourage you to stay after the hearing to take advantage of the beauty and history that northern Arizona has to offer.

Thank you and welcome.

[The prepared statement of Mayor Donaldson follows:]

Statement of Joseph C. Donaldson, Mayor, City of Flagstaff

Mr. Chairman, Members of the Sub-Committee:

Welcome to our community, and thank you for taking the time and effort to visit us. Your presence here is an honor for our community, and as Mayor, I am grateful for the opportunity to be a part of this hearing process.

As evidenced by the on-going drought, a dramatic increase in insect populations, and the ever-growing threat of catastrophic wildfire, our forests are in disrepair and have become littered with untold numbers of dead trees. We are in critical need of a massive clean-up and tree removal effort that can only be achieved with technical and financial assistance through the Federal Government. The Stafford Act has been utilized in many disasters to assist local governments in debris removal efforts. We would ask your consideration in initiating this process to provide Federal assistance to our rural areas in order to mitigate a very hazardous condition that threatens both lives and personal property throughout the region.

It is also a concern that there are insufficient air support resources to effectively suppress a wildfire outbreak in this area. The immediate air response capability on the Coconino and Kaibab national forests has been reduced to a single small capacity helicopter. The availability to obtain fixed wing tankers, large haul helicopters and lead planes are non-existent from local air bases. We urge the Committee to support this effort and provide the necessary resources to properly equip the area suppression forces with this vital firefighting tool.

Your presence in our community is evidence of your interest in this subject and your commitment to make a positive change. I'd like to acknowledge Congressman Rick Renzi, Congressman JD Hayworth and Congressman John Shadegg for making this historic hearing in Flagstaff possible. Mr. Chairman and members of the subcommittee, you have my pledge as Mayor that we regard this issue as a partnership, and that we stand ready to move forward with you.

I once again welcome you to our city, and offer the services of our fine staff if we can be of further assistance to you. I also encourage you to stay after the hearing to take advantage of the beauty and history that northern Arizona has to offer.

Mr. MCINNIS. Thank you, Mr. Mayor.

I will tell you, members of the Committee, that the Mayor has told me that he would like us to participate in his green effort, meaning greenback dollars, he would like us to spend a few while we are in town.

[Laughter.]

Mr. MCINNIS. Thank you, Mr. Mayor.

Let me just very quickly tell you who we have on the Committee. First of all, as you know, my name is Scott McInnis and I chair the Subcommittee. The Subcommittee is a Subcommittee of the whole Committee. The whole Committee is Chaired by a gentleman named Mr. Pombo, Mr. Pombo is sitting to my right—this is Mr. Pombo from the State of California. Mr. Shadegg from the State of Arizona, Mr. Hayworth from the State of Arizona; Mr. Gibbons from the State of Nevada, Mr. Walden from the State of Oregon, and of course, Mr. Renzi from your fine area right here.

**OPENING STATEMENT OF THE HON. SCOTT MCINNIS, A
REPRESENTATIVE IN CONGRESS FROM THE STATE OF
COLORADO**

Mr. MCINNIS. I will start with my opening remarks, then we intend to go around and give every member an opportunity for opening remarks and then we will go to our witnesses.

And to our witnesses, I specifically thank you for making the effort to come to this community to present some of the testimony we asked to hear today.

My district is the western area of Colorado. All of us have large districts, ours is larger than the State of Florida, to give you an idea of just how big those districts are. All of us at this table have been touched by fire in one way or another. I actually have in the audience here my father, who came down here, my father lived at the foot of Storm King. I was on the Storm King fire, in fact was in a group that went up and brought our deceased firemen off that fire after that tragedy. My father's home was surrounded on three sides this summer in Glenwood Springs, Colorado by fire up there in Colorado. All of the fires in Colorado were in my district, so we know what it is like. We have a lot of sympathy for the horrible fire that you have suffered down here.

I have been in the U.S. Congress now for six terms and I will begin with my opening remarks.

I want to tell you that when we focus on healthy forest, somebody said do you look at the economy, do you look at the economics of a forest, and I say this Committee does look at the economics of a forest, the environmental economics of a forest.

We had a fire in Colorado called the Hayman fire and people say well, look at the damage to the timber industry. I said in Colorado, we do not have much timber industry any more. The real damage of that fire was the damage to our air. We had more air pollution from that fire than we have all the C20 or whatever those emissions are from all the vehicles combined for the entire year in the State of Colorado.

Our watershed will cost the City of Denver—that is where they get their water—their watershed is so polluted, it looks like a thick chocolate malt. It will cost them tens and tens and tens of millions of dollars.

The safety factor obviously is our highest priority, the human safety factor. But then you take a look at the animals. I grew up—fortunately for my father's choice, we grew up and have many, many generations in those mountains and we are surrounded by animals. It was horrific what happens in these fires to these animals.

So that is what I consider the economics of a forest, all of those different issues. And I hope today we have an opportunity to address this.

I think that is appropriate that the legislative push begins here in Arizona which was ripped by your fire last year. Mr. Walden and I know something about these fires. Mr. Walden had probably the largest fires in the country, or close to it, and I appreciate you coming all the way from Oregon, Mr. Walden, to participate today too.

If these unnatural fires and many others like them have taught us anything, it is that the disastrous status quo on our national forests and public lands is not acceptable. The status quo is unacceptable not only because of the massive price that it has exacted on wildland urban communities and rural economies, it is also intolerable because of the disastrous impact these unnatural fires have on our air, water, wildlife and our forest resources.

My good friend, Lyle Laverty, will highlight this in much greater detail during his testimony, but the Colorado Hayman fire, as I said earlier, provides a good example of what I call that environmental economics.

Of course, these stories are of no surprise to anybody in this room. In fact, I assume that everybody in this room has been touched by fire or threatened by fire. And so we want to take home a message and that is that responsible environmental stewardship requires that Congress, land managers and affected communities move aggressively to address these crisis conditions on our national forests and our public lands. Managing over-dense forests is the right thing to do, it is the right thing to do for our safety, it is the right thing to do for our air, it is the right thing to do for our water and it is the right thing to do for our wildlife.

But to treat at-risk landscapes on a meaningful and effective scale, the process that we have seen, bogged down process, paralysis by analysis is the word that we often see, and frankly, Congress is guilty of a lot of that, that presently constrains our Federal managers, the people on the ground, the people that work it every day from being able to do their jobs, that is where we have got a severe handicap. It takes our land managers on average between three to 5 years to maneuver a thinning project through a tangled morass of Federal procedures and processes. With communities in harm's way and our environment at risk, that is wrong.

In the weeks ahead, with cooperation from our Chairman, Mr. Pombo, and obviously he is a strong supporter of this, we intend to push legislation in concert with the members on this dais and any other Republican and Democrat—and I can advise you this is a very bipartisan effort—to this crisis that would break the cycle of bureaucracy and empower local forest managers with the tools needed to restore our nation's forest lands to a healthy state.

It is with this that I thank Congressman Renzi for inviting us here today for this important discussion and commend Chairman Pombo and the others for their leadership on this critical issue.

Two other points I wish to make. One, some ask us are you coming to town for a town meeting; this is not a town meeting. What we wanted to do was—the Chairman actually directed this, he came to his Subcommittee Chairman and he said I want people outside of Washington to kind of see, witness what hearings are like. And so that is why today, people asked if we could take questions from the public, obviously we have a lot of enthusiasm demonstrated out there, but unfortunately this is a hearing where we do not do that, we do not do that in Washington, we take it from our panel.

The second thing is you will probably note or it might be noted elsewhere, the members of the panel up here are Republican. We do not have a boycott going on by the Democratic side. The logistics

of being able to move a Committee out halfway across the country—and frankly, most of the Congressional people in the West are Republicans—so it is tougher to get the Democrats here, but we do not have a boycott and I can tell you, last year, the two leading advocates in the U.S. Congress for so-called environmental issues were a gentleman named Peter DeFazio from the State of Oregon and a gentleman named George Miller from the State of California. Those happen to be the two individuals who worked the hardest with Mr. Walden and myself, Mr. Pombo and our panel, to come to some legislation. Unfortunately, the day after it was discovered they were meeting with us, press releases went out calling them the chainsaw caucus and here, they are the two leading environmental people. So if either one of them could have made it here today, they would have been here. There is no boycott, it is just the circumstances and the logistics that you happen to have all of one party.

With that, it is my privilege to turn the podium over to the Chairman of the whole Committee, Mr. Pombo. Mr. Pombo.

[The prepared statement of Mr. McInnis follows:]

**Statement of The Honorable Scott McInnis, Chairman,
Subcommittee on Forests and Forest Health**

It's a pleasure to be here in Flagstaff, Arizona to initiate this Committee's full court press to enact legislation to protect our communities and our air, water, wild-life and forest ecosystems from the destructive forces of catastrophic wildfire. It's appropriate that this legislative push begins in Arizona, which was ripped by the record-setting Rodeo-Chediski fire last summer. Mr. Walden and I know a thing or two about record-setting wildfires ourselves—last summer's Biscuit Fire was the largest in Oregon's history, and my home State of Colorado experienced two wildfires last summer that were bigger and more destructive than any other in our state's recorded history.

If these unnatural fires and the many others like them have taught us anything, it is that the disastrous status quo on our national forests and public lands is not acceptable.

The status quo is unacceptable not only because of the massive price it has exacted on wildland-urban communities and rural economies. It's also intolerable because of the disastrous impact of these unnatural fires on our air, water, wildlife and our forest resources. My good friend Lyle Laverty will highlight this in much greater detail during his testimony, but Colorado's Hayman Fire provides a startling example of the kind of enduring environmental degradation that these fires cause. The fire dumped massive loads of mud and soot into Denver's largest supply of drinking water, annihilated several thousand acres of cathedral-like Ponderosa Pine old growth, and polluted Colorado's blue skies with carbon heavy black smoke. The fire so thoroughly polluted Denver air that the young and the elderly were urged not to go outside, and one asthmatic even died.

Of course, these stories are no surprise to anyone in this room. The Rodeo-Chediski produced its own environmental horror stories, just as did the many other fires around this nation.

And so the take home message is this: responsible environmental stewardship requires that Congress, land managers and affected communities move aggressively to address these crisis conditions on our national forests and public lands. Managing over-dense forests is the right thing to do for our air, water and wildlife.

But to treat at-risk landscapes on a meaningful and effective scale, the slow-moving process that presently constrains Federal land managers must be improved. Currently, it takes our land managers on average between 3 and 5 years to maneuver a thinning project through a tangled morass of Federal procedures and processes. With communities in harms way, and our environment at risk, that is plain wrong.

In the weeks ahead, I intend to push legislation, in concert with the Members on this dais and any other Republican and Democrat interested in a bipartisan solution to this crisis, that would break this cycle of bureaucracy and empower local forest managers with the tools needed to restore the nation's forestlands to a healthy

state. After enduring 2 fire seasons in the last 3 years that match any in terms of ferocity and wide-ranging destruction, doing nothing is just not an option. The time for action on the part of Congress is now.

It is with this that I thank Congressman Renzi for inviting us here today for this important discussion, and commend Chairman Pombo and the others for their leadership on this critical issue.

OPENING STATEMENT OF THE HON. RICHARD POMBO, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. POMBO. Thank you, Mr. Chairman. At the outset, I want to thank Rick Renzi for hosting all of us here in Flagstaff. In the time that I have gotten to know Rick, he has shown himself to be extremely knowledgeable and enthusiastic on the issues, and we are all looking forward to working with him in the coming years to solve some of the problems that we have here in Arizona and throughout the country on forest issues and other issues that are near and dear to his heart.

I want to also thank the Chairman of the Subcommittee, Scott McNinnis, for chairing this hearing. Scott has become an expert on forestry issues and I value both his input and his hard work over the years on this issue.

Ensuring forest health is a top priority for myself and the many Resource Committee members that are here today. Today is especially important to me, as it is the first field hearing that I have attended as Chairman of the full Resources Committee. It is vitally important for Members of Congress to get out of Washington, D.C. and visit the local areas the decisions made in Washington impact. Rick Renzi's district, home to last year's catastrophic Rodeo-Chediski fire, the largest in southwest history, is the perfect place to hold this hearing.

Public lands have undergone drastic changes during the last century. Large areas of these lands are vulnerable and need our protection. The number of people visiting our public lands, be they national parks or forests, increase every year. That is a good thing. It is important our lands remain open to the public so that, for example, parents can take their children hiking through a national park to see the wonders of nature. This makes it imperative that we do all we can to protect these lands.

And there is no more devastating event that can happen than a forest fire. A forest fire destroys everything in its path—trees, wildlife, personal property and causes devastating pollution to both the air we breathe and the water we drink.

We all take clean air and clean water for granted. In reality, however, we remain in a delicate balance. To ensure that we make the right decisions in protecting our environment, we need the best science available and local input for the decisions we make. Congress can help, indeed, Congress has an obligation to help, but no one knows how to best protect Arizona forests than the people of Arizona.

We have a responsibility to protect our citizens, our property and our environment and public lands. When severe fire threatens, as they do throughout the West every summer, we need to ensure that

we have a plan that will act as an instrument of assistance, not an instrument adding fuel to an already raging fire.

Mr. McInnis, I want to thank you again for coming to Arizona to see this situation firsthand. I am confident that we can enact a sensible policy that will protect our forests and I welcome the testimony of all of our witnesses today.

Thank you.

[The prepared statement of Mr. Pombo follows:]

**Statement of The Honorable Richard Pombo, Chairman,
Committee on Resources**

Good morning. Thank Rick Renzi for hosting all of us here in Flagstaff. In the time I have gotten to know Rick, he has shown himself to be a fine man who knows the issues well. He will be a terrific Congressman.

Thank you also to Scott McInnis for chairing this hearing. Scott is proficient on forestry issues and I value both his input and hard work.

Ensuring forest health is a top priority for me and the many Resources Committee members here today. Today is especially important to me as it is the first field hearing I have attended as Chairman of the Resources Committee.

It is vitally important for Members of Congress to get out of Washington, D.C. and visit the local areas that decisions in Washington impact. Rick Renzi's district, home to last year's catastrophic Rodeo-Chediski fire, the largest in Southwest history, is the perfect place to hold this hearing.

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It is imperative that we do all we can to protect these lands. And there is no more devastating event that can happen than a forest fire. A forest fire destroys everything in its path—trees, wildlife, personal property, and causes devastating pollution to both the air we breathe and the water we drink.

We all take clean water and clean air for granted. In reality, however, we remain in a delicate balance. We must protect our environment, we need the best science available and local input for the decisions we make. Congress can help, indeed, Congress has an obligation to help, but no one knows how to best protect Arizona forests than those people living in and near the forests of Arizona.

We have a responsibility to protect our citizens, our property and our environment and public lands. When severe fires threaten—as they do throughout the West every summer—we need to ensure that we have a plan that will act as an instrument of assistance, not an instrument adding fuel to an already raging fire.

Mr. McInnis, I want to thank you again for coming to Arizona to see the situation firsthand. I am confident that we can enact a sensible policy that will protect our forests, and I welcome the testimony of our witnesses.

Thank you.

Mr. McINNIS. Thank you, Mr. Chairman.

Mr. Walden—and if you would preface your remarks with a brief introduction.

**OPENING STATEMENT OF THE HON. GREG WALDEN, A
REPRESENTATIVE IN CONGRESS FROM THE STATE OF
OREGON**

Mr. WALDEN. Thank you very much, Mr. Chairman. I am Greg Walden, I represent the people of eastern Oregon, about 72,000 square miles, everything from the Cascade Mountains to Idaho, from Washington to the great State of Nevada and California and then almost over to the Oregon coast.

Part of my district and that area of Oregon I share with Congressman DeFazio went up in smoke last summer, over 500,000

acres, half a million acres in the Sour Biscuit fire were consumed, not only at the costs we heard from you, Mr. Chairman, in terms of its impact on the wildlife and the habitat for the endangered spotted owl, but also in terms of air quality. In fact, we were supposed to have the hundredth celebration of Crater Lake National Park and it was so smoky that day that you could not even see the lake from the rim as the smoke came over. It also cost taxpayers more than \$150 million to extinguish that fire, and really it was the rains that came this fall that put it out.

I believe my State of Oregon was second only to Alaska in the amount of acres burned by forest fires last year. President Bush took note of the fires that were raging in Oregon, came to my district, along with your Governor Hall and Governor Marx and our Governor Kulongoski, we toured the Squires Peak fire. It is an area that burned very recently, but they had been doing forest health work up in the Squires Peak area. The same people who were doing the forest health improvement work ended up being on the fire lines.

And as we stood and talked to the firefighters in their yellow suits, they made it clear they needed help, they wanted our help to be able to get in and do the work, because they saw first-hand the fires and where they had raged and how hot they had burned where the forests had not been treated versus where it had.

I do not know about most people, but being a native Oregonian, I like my trees green, not black. I want a health environment and a healthy forest. That is why Congressman Shadegg and Congressman McInnis and others from my state of both parties have worked very hard on this issue.

And I want to thank Congressman Renzi for encouraging us to come here and the fine people of this community and this state for turning out today. And I look forward to hearing the testimony of our witnesses.

As the President said in the meeting we had with elected officials from around the West, he said, you know, whatever it is we have been doing has not worked. We need to figure out a way to make it work for the future of our states and our forests.

And whatever side of the issue you find yourself on, let us try and reach some common ground that is good for our forests, that means our communities are not subject to catastrophic run-away wildfire that threatens not only habitat but lives and homes. These are our forests and we can do a better job of managing them.

Thank you, Mr. Chairman.

Mr. MCINNIS. Thank you, Mr. Walden.

And I might add that Mr. Walden's district probably had the most fatalities of firemen coming out of your district. Most of the men and women we lost on Storm King were out of your district and we lost I think six of them out of your district just down the road from my house in a horrible traffic accident.

Mr. WALDEN. Yes, indeed.

Mr. MCINNIS. When we were trying to transport them.

Mr. Renzi, thank you very much again for encouraging us; thank you for the warmth of your community. You may proceed.

**OPENING STATEMENT OF THE HON. RICK RENZI, A
REPRESENTATIVE IN CONGRESS FROM THE STATE OF
ARIZONA**

Mr. RENZI. Thank you, Mr. Chair.

I want to begin this morning by thanking the people of Flagstaff and the surrounding communities for coming out, taking time away from your families and your businesses to share and learn as we hear the testimony from these experts and from the community.

I also want to begin by thanking humbly my colleagues who have taken time away from their own districts, their own needs, their own cries in the hearts of their constituents to come to Flagstaff and to hold a Congressional hearing here in Flagstaff. In the words of our Chair, Subcommittee Chair, Mr. McInnis, we are bringing Washington to the people. So many people do not have the opportunity to go to Washington and hear a full Congressional hearing, and I thought it would be a great time, and particularly seeing the young people this morning during our pledge, turn out and be able to see first-hand a Congressional hearing, particularly given the critical nature and the times that we are facing here in the West.

I think it is also appropriate that we bring these discussions of forest health and our environment here to Flagstaff, given the fact that we are the home of Northern Arizona University and the School of Forestry, which is the origins of some of the best scientific contributions that we have seen to our forest health and management plans in recent years.

I would echo the comments of Congressman Walden, in that this is our environment. We cannot control the weather or the winds or the rains, but we can control the policies as it governs the trees, the undergrowth, the dog hair thickets, the bark beetles, and we can work together to find a way to live in a holistic approach to our lands and our public property.

I would be remiss not to point out that Chairman Pombo, our new Chairman of the full Resources Committee, has been kind enough to fund this and make sure that we all come here together and to thank him also for his great leadership. Thank you, Mr. Pombo.

[Disturbance from the audience.]

Mr. MCINNIS. May we have them removed?

Let me make this very clear to every one of you sitting out there. You are entitled to those kind of comments, but not inside this room. We are trying to conduct in a very professional fashion a meeting for the benefit of everyone. One more outburst like this, you will be immediately removed from this room and you will not be allowed to participate.

[Comment from the audience.]

Mr. MCINNIS. Take him out. Please have him removed.

[Pause.]

Mr. MCINNIS. At least they sing in rhythm.

Thank you folks for voluntarily removing yourselves. At least they did not chain themselves to the rail or something.

For the rest of us, we really are trying to have a constructive meeting and I think we will. We expected something like this. I can tell you though, I am very, very proud of our nation and I am certain that even these individuals, should we initiate action over

there, we will all support our troops. So I do not think that is any indication of lack of support for our troops.

But now, let us back to the agenda.

Under protocol—I must apologize to the next member, he is the Vice Chairman of the whole Committee, and under protocol, he should have been recognized right after our Chairman. So I do apologize to the gentleman from Nevada. I would like to introduce and ask him to introduce himself—Mr. Gibbons from the State of Nevada.

OPENING STATEMENT OF THE HON. JIM GIBBONS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEVADA

Mr. GIBBONS. Thank you very much, Mr. Chairman, and indeed I was glad that you did sequence the speakers the way that you had, it gave me a chance to think about and listen to my other colleagues out there; also to listen to some of the members in the audience who have just left the room. And I would like to remind all of us that this is exactly what democracy is about—what we are doing right here today.

There is no doubt about it, Mr. Chairman—and let me introduce myself before I begin my comments. I am Jim Gibbons from the Second Congressional District of Nevada. The Second Congressional District of Nevada is fortunate to touch on all five states in the western area. That includes California, Oregon, Idaho, Utah, Arizona and Nevada as well occupies about 110,000 square miles. We had a very mild fire season last year. Compared to other seasons when we have burned over two million acres, we burned only 90,000 acres last year.

But I think it is clear to all of us on this Committee and it is clear to those in the audience that we all have—those of us in Washington, those of us on this Committee, those of you in the audience, a moral obligation to protect your forests and to protect your air quality and your water quality as well.

Having lived my entire life in the great State of Nevada, I have witnessed countless wildfires that have begun in forests that looked just like the forests that you have outside this community, that I thought were very pretty until I got close and saw the infestation of bark beetle in those trees. Those forest fires in Nevada that raged through forests that looked very similar to yours ran faster than the wild horses we have in our state, and they destroyed not only the prized forests that all of us love and wish to visit and enjoy; they destroyed wildlife and everything in their path, whether that path included critical habitat, endangered species, wild animals and human lives.

And so our obligation, of course, goes to the fundamental issue of what can we do, what must we do for that moral obligation to protect our forests and the result of that habitat.

And if the absolute destruction of forests and brushland and private property is not catastrophic enough, as you ladies and gentlemen have already heard, just consider the air pollution that rises from one of these fires and the effects on human health for years could have individuals affected by air pollution and water pollution from these forest fires. And as I said, with no vegetation to hold

the soil in place, thousands of tons of sediment have been dumped into our streams and lakes and have greatly reduced the high water quality that our state enjoys and I am sure every state that suffers these wildfires enjoys as well.

This year is probably going to be even worse than last year. Many of us, including those in Nevada, have seen record warm temperatures, diminished snowfall; in fact, in some areas of Nevada, we have about 39 percent of the average snow pack in place that we need for a year, 13 percent of the average precipitation has fallen, that we anticipate. And our reservoirs are holding right now 8 percent of their capacity.

I am not here to give you a weather report, I think these statistics are of great concern to you, to everyone. We are in an ongoing drought condition and it is going to dramatically increase the risk, the speed at which these catastrophic fires will occur.

And Mr. Chairman, with that, I would like to just ask that my full recorded statement be entered into the record and I will yield back the balance of my time.

Mr. McINNIS. So ordered. Thank you, Mr. Gibbons.

Mr. McINNIS. I would add that the good news from my dear friends down river, Arizona and Nevada, it is snowing heavy in those Colorado mountains, we are going to have a good snow year up there.

The gentleman from Arizona—I will just tell you, I am the first one in the gym every morning and Mr. Hayworth is the second. So for about 15 minutes, I get to work out without hearing about the State of Arizona. But for the next 45, that is all I hear about.

Mr. Hayworth.

[Laughter.]

OPENING STATEMENT OF THE HON. J.D. HAYWORTH, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ARIZONA

Mr. HAYWORTH. Well, Mr. Chairman, I thank you, and to so many friends and neighbors who join us this morning, we offer a hearty welcome, as well as to our Congressional colleagues from the West.

And I can assure you in the same vociferous fashion, I believe for better, Congressman Renzi will not remain quiet about this issue and we are pleased that we are here in the new First Congressional District, formerly the Sixth Congressional District that I had the honor to represent for the better part of a decade. I would like to thank Congressman Renzi, and it really is impressive early in the first term to use the powers of persuasion to have the full Committee Chair and our Subcommittee Chair and our colleagues join us here, bringing Washington to the people.

I want to thank the Committee for all those who will join us with testimony and welcome the first panel. I would also like to thank the Committee for inviting our Governor to testify. It is unfortunate that Governor Napolitano could not clear her schedule and join us today. I believe it is very important to hear her perspective because there is such Federal interaction—we are dealing with Federally controlled lands in this situation and it is a role primarily taken on by the Federal Government. And I think my

colleagues from around the West would have welcomed hearing her perspective first-hand since we serve on the Forest and Forest Health Subcommittee. Now a member of her staff informed me earlier this morning that she will submit written testimony for the record and I know we all welcome her written testimony.

I would also like to thank the Governor's staff for extending a personal invitation to me this morning for the Forest Symposium Monday in Prescott. I will clear my schedule and be there in attendance because I believe it is important to listen to everyone and all perspectives on this issue and the challenges we confront, as we saw first-hand last year, with the Rodeo-Chediski fire, are too important to leave to partisan politics.

As we looked at what happened, and we welcome and look forward to the testimony of my friends Gene Kelley, the Mayor of Show Low and my friend Dallas Massey from the White Mountain Apache Tribe. They can tell you first-hand what transpired there, but friends, I think this is so important because no longer is catastrophic fire an abstraction.

If there is any silver lining to the pyro-cumulus clouds that envelop northern Arizona, it is the fact that now we understand first-hand the consequences of catastrophic fire.

I have been struck over the years as we have worked on these issues and tried to build consensus for effective sound science and effective forest management—our good friend that will testify later, Professor Wally Covington, from here at Northern Arizona University, said something to me that has just stuck with me through the years, and that its conditions are such that the City of Flagstaff, in a horrible conflagration, could be reminiscent of the City of Dresden in World War II. The firestorms of Dresden could be visited on a place like Flagstaff, Arizona. And indeed, without the inexplicable rise in humidity, as Mayor Kelley and I were talking about earlier today, that we can only attribute to divine providence, the City of Show Low would have been consumed last summer. This is not an abstraction, this is a genuine problem.

As my friend from Oregon pointed out, the President of the United States is reorienting us to a task that transcends party by its very necessity.

I thank you again for holding this hearing in Flagstaff and again look forward to the testimony of those who join us. Thank you, Mr. Chairman.

[The prepared statement of Mr. Hayworth follows:]

**Statement of The Honorable J.D. Hayworth, a Representative in Congress
from the State of Arizona**

The CHAIRMAN.

Thank you for holding this hearing here in beautiful Flagstaff. I am also grateful to Congressman Rick Renzi for requesting this hearing and for bringing the House Committee on Resources to Arizona today.

Forest conditions across the country have gone from bad to worse. Communities, wildlife, and our environment are at greater risk now than ever before in Arizona and across much of the West. Simply stated, our forests are in a treacherous condition and are perfectly suited for catastrophic wildfire. Flagstaff has, for the most part, so far dodged the bullet. But the communities southeast of here are more than a little aware of the dangerous state of the forest.

The Rodeo-Chediski fire devastated the lives of thousands of people who lived on the Apache-Sitgreaves National Forest. Although we aren't going to point fingers, one can hardly help but wonder how bad last summer's cataclysmic fire would have

been, had the forest been in a condition of fire sustainability. But decades of mismanagement and, frankly, under-management, left the forest in a state where a small fire turned into the firestorm of the century. Dense forestland quickly went up in flames. Devastating crown fires ravaged the land for two weeks. The fire was so large and so intense that it jumped roads, it jumped rivers, it spread over tens of thousands of acres each day. It killed wildlife, including threatened and endangered species. It wreaked havoc on the watershed. It burned nearly 500 structures, many of them private homes. The smoke and debris was so heavy and widespread, it formed its own weather system. This is NOT the type of fire you see in a healthy forest.

The fact is, healthy forests can sustain small fires. In fact, small fires are beneficial to a healthy forest because they periodically clear underbrush and small-diameter timber. As we tragically learned last summer, our forests are not in a healthy state.

For years, our forests have been poorly managed. In fact, for the most part, our forests simply have NOT been managed. Additionally, lawsuits brought by environmental extremists have tied our hands and kept us from employing sound science and proven principles of forest management. There are some that would have us believe that a hands-off approach is natural, and that we must not actively manage our forests. These are the same people who believe that the forests should not be touched at all—not by naturalists, not by recreationists, not by picnicking families, not by anybody. That is ridiculous. I firmly believe that we should enjoy our forests, and that this can be done in a responsible way. The fact is, if we don't act to protect our forests, there may one day be no forests left. Simply put, we have a moral obligation to protect these valuable resources so that our children may have the opportunity to enjoy nature as we have.

I have reviewed the President's Healthy Forests Initiative. This plan will allow for an environmentally-friendly, common-sense approach to protecting and conserving our forests. The plan will not only save lives and forestland, but it will save each American taxpayer money. The damage from the Rodeo-Chediski fire was nearly \$60 million. The Forest Service spent more than \$40 million fighting this fire. And what is the value of endangered species that were killed?

The Healthy Forests Initiative addresses the need for hazardous fuels reduction. Investments in fuels reduction saves so much more money spent on fire suppression. The bill will reform the appeals process, which is completely broken. It makes conservation of forestland a priority, and will allow for long-term forest health. This initiative will keep environmental extremists from holding our forests hostage. In fact, the Healthy Forests Initiative will bring us to a new age of practicing not "elitist environmentalism," but "enlightened environmentalism."

Again, I am grateful for the opportunity to revisit my friends here in Flagstaff, and again want to thank Resources Committee Chairman Pombo, Forests and Forest Health Subcommittee Chairman McInnis, and my colleague, Congressman Renzi for bringing us here to address this important issue.

Mr. MCINNIS. Thank you, Mr. Hayworth.

The audience might note that Mr. Shadegg is well-dressed—he has a reputation for being one of the best dressed Members of Congress and I can tell you how that happened, because before we come to Arizona, he tells all the rest of us, don't wear a tie down there, they will not like it.

[Laughter.]

Mr. MCINNIS. He walks in at the very last—so once again, he takes best dressed of Arizona.

With all seriousness, Mr. Shadegg, I have appreciated very much working with you and your experience in the forests and so on and your help. And you may proceed with a brief introduction. Thank you.

**OPENING STATEMENT OF THE HON. JOHN SHADEGG, A
REPRESENTATIVE IN CONGRESS FROM THE STATE OF
ARIZONA**

Mr. SHADEGG. Thank you very much, Mr. Chairman, I appreciate that. I thought all you guys would be in suits.

I want to start by complimenting Congressman Rick Renzi, my colleague. It is no mean feat to bring about what he has done this early in the year and this early in his very first term. Of course, if you know Rick, you know that he's pretty intense on a lot of issues and I am not surprised he has been successful.

I also want to say a few words complimenting both the full Committee Chairman and the Subcommittee Chairman. The reality is Rick was in part successful in getting this hearing because of his intensity, but he was also successful because these two gentlemen care a lot about this issue. They understand the issue, they are from the West, they have forests in their district, they have been working on this issue for a long time and it is a compliment to us that they care so much about this issue and that they would accede to this demand because they care.

I am kind of an interloper here and I need to thank both the full Chairman and the Subcommittee Chairman. I no longer have the privilege of serving on the Resources Committee or the Forest Health Subcommittee, that was taken away from me sometime ago, I do not get to serve on this Committee. Nonetheless, I am, as many of you know, a native Arizonan, I have camped and hiked many of the forests of Arizona, my family has a summer home in Prescott and these issues mean a lot to me and so I have remained involved in them after leaving the Committee.

As my colleague, Greg Walden, pointed out, last year, we spent—Mr. McInnis and Mr. Walden and I and others—spent countless hours trying to find a middle ground on this issue and I want to echo my colleague Mr. Walden's words on that issue. It is vitally important, no matter where you come from on this issue, no matter how strongly perhaps you believe we should not be moving forward with thinning our forests and restoring them to health or how strongly you believe that we should, we absolutely must come to common ground on that issue, it is essential for the forests of this nation and for the communities which border those forests. And I will tell you, last year following the devastating fires here in Arizona, but also the devastating fires elsewhere around the country, the Chairman of this Subcommittee threw himself into that effort and we did meet for countless hours with George Miller and Peter DeFazio. The good news is that Mr. DeFazio has forests in his district and he understands the problem and he has the respect of George Miller and so he is able to bring Mr. Miller, who has no forests, has an urban district, around and make some progress.

This is an absolutely critical issue, not only for Arizona and for northern Arizona, but for the entire nation. We are fortunate to have had such great experts working on this problem.

I want to briefly enlighten you as to how difficult it is for some of our witnesses. We have many great witnesses here and I want to thank all of them for their testimony today, but I want to particularly thank Mark Rey, the Under Secretary of the Department of Agriculture, who has worked on this issue and given great

testimony before the full Committee and the Subcommittee, and I want to point out the difficult life he lives with.

Last year, when the Interior appropriations bill was going forward, I made an effort to add \$23 million for forest fire fighting to the bill. I went onto the floor, I offered the amendment during the appropriations process, I argued for it vigorously. One of my colleagues stood up and said absolutely not, we did not need that extra \$23 million, this was an outrage and it should not pass.

In yesterday's Washington Post, that same member who argued we did not need that \$23 million is attacking the U.S. Forest Service for not having enough money in its budget for forest fire fighting.

[Laughter.]

Mr. SHADEGG. Welcome to the wonders of Washington, D.C.

Mark, I applaud you for your efforts. It is an outrage that we have left this year, the Forest Service some \$300 million sort in fire fighting funds and I will continue to fight to get resources for fire fighting.

I want to conclude by simply talking a little bit about the resource we have here in northern Arizona. The Ecological Restoration Institute at NAU is a tremendous resource for this nation on this issue. And in preparing for today's hearing, I was reading through some of their materials that I think are worth including. I presume they were written by Dr. Wally Covington, the Director of the Institute, but they deserve to be thought about by everyone.

He begins by pointing out that there is a parallel between the work they have done, the research they have done at the Ecological Restoration Institute, working with the BLM, the Forest Service, the Arizona Game & Fish and others, in the nature of clinical trials. But he says this, "The results of these clinical trials are so impressive that it is unethical for us not to enlarge our restoration efforts to protect entire landscapes and human communities embedded within them."

He goes on to say that often in our personal lives, someone says someone ought to do something about that problem, and then he raises this question, "Who is that someone? It is us, it is our generation and the time to act is now."

Those words by Dr. Covington and his staff, I think set the tone for this hearing. It is us and the time to act is now.

With that, I yield back the balance of my time, Mr. Chairman.

Mr. MCINNIS. Thank you, Mr. Shadegg. Mr. Shadegg, I do want to publicly acknowledge your effort. It was really a great group, we had a lot of fun—Miller and DeFazio, we really did.

Mr. SHADEGG. We came very close.

Mr. MCINNIS. On a lot of issues, this is not a group that we usually mesh together, but on this issue, we came together pretty strongly, so that was pretty neat.

We are now going to—first of all, members, thank you for your opening statements. We are going to move to our witnesses now. I want you to know, witnesses, we have another party that I have not introduced, but I am going to introduce. Her name is Betty Crocker and she, you only hear her through a little timer. What we are trying to do—she does not say much but a little bing once in awhile, and what we are trying to do is attempt to limit your

testimony, if you would respect us, to 5 minutes. We have this timed such that if we can keep it to 5 minutes for every witness, that then allows us some time to ask questions of the panel, then bring the other panel up and go through the same kind of thing.

So let me briefly introduce the entire panel—The Honorable Mark Rey, who is the Under Secretary, U.S. Department of Agriculture; The Honorable Rebecca Watson with the U.S. Department of the Interior; The Honorable Gene Kelley, the Mayor of Show Low, out there in Arizona, I am looking forward to your testimony, considering the year you have had; Mr. Dallas Massey with the White Mountain Apache Tribe and Mr. Lyle Laverty, a long time friend of mind, long time forest employee, now with the Colorado Department of Parks.

Mr. Rey, why don't we start with you. You may proceed.

STATEMENT OF THE HONORABLE MARK REY, UNDER SECRETARY, NATURAL RESOURCES AND ENVIRONMENT, U.S. DEPARTMENT OF AGRICULTURE

Mr. REY. Thank you. On behalf of the United States Departments of Agriculture and Interior, we want to express what a pleasure it is to be here today to enjoy the hospitality of Congressman Renzi and the citizens of Flagstaff, and also to acknowledge the leadership of yourself, Mr. Chairman, full Committee Chairman Pombo, and the balance of the Committee on this issue.

As we are working together as one, we will have one statement for both departments and both Secretary Watson and I will summarize our statements.

In my summary, I would like to do basically four quick things for you—one, review the 2002 fire season; two, talk about our 2002 rehabilitation and restoration work; three, talk about safety, community preparedness and fire fighting cost issues that were raised as a consequence of the 2002 season, and then four, tell you a little bit about what the outlook is for 2003.

In 2002, 7.2 million acres burned nationwide. We had fires in every one of the 50 states.

Mr. MCINNIS. Excuse me, Mr. Rey, what was the number?

Mr. REY. 7.2 million acres.

Mr. MCINNIS. Thank you.

Mr. REY. And there were fires in every one of the 50 United States, so this is not a regional issue. The Federal Government expended \$1.6 billion in extinguishing that fires, that makes 2002 the second worst year in history in terms of acreage consumed or recent history in terms of acreage consumed, and the most expensive year in recent history and probably all of history in terms of expenditures.

We spent 62 days at preparedness level five, that is our highest level of fire preparedness. That is, by comparison, 22 more days than we spent at preparedness level five than we did in the year 2000.

Nevertheless, as a consequence of the assistance Congress provided in 2000 and the development of the National Fire Plan and the inter-governmental coordination that resulted, over 99 percent of the wildfires were stopped during initial attack. In addition to our efforts and those of our cooperating state and local

governments, we received assistance in firefighting from the U.S. Army, from firefighters from Canada, Australia and New Zealand, as we have reciprocal agreements with firefighters from those countries, and some of our firefighters are in Australia today as we speak.

You have already recounted the environmental and economic effects of the 2002 fires, so I will not elaborate on what is already in our testimony.

With regard to the restoration and rehabilitation work, the majority of the work that remains to be done is needed to respond to the effects of the largest six to eight wildfires. Through our burned area emergency rehabilitation program, the Department of Agriculture has already invested \$72 million and the Department of the Interior has spent \$78.1 million in emergency restoration work in the areas that were affected.

The Interior Department and the Forest Service have carryover in Fiscal Year 2003 budget resources that provide another \$50 million for continued restoration work, with more that will be available from other accounts as we get further along in developing our final long-term restoration and recovery plans for the largest fires.

A season like 2002 raised, inevitably, a number of safety, community preparedness and cost concerns. For instance, we have done a review of our aircraft program and have enacted new safety standards for contract firefighters. I believe that by the time we conclude the review of the aircraft program, we will have sufficient air attack resources available as the fire season commences here in the southwest where it usually begins.

In addition, we have assisted over 11,000 communities in prevention and provided over 5000 rural and volunteer fire departments with training or equipment. And while no one would call New York City either rural or remote, you should know that last month we signed a memorandum of agreement with the Fire Department of New York City to train them in the incident command system. As part of their training, some of New York's firefighters will be participating with us this summer in firefighting efforts in the wildland area here in the West. Probably you will be able to recognize them by their accents, I would guess.

[Laughter.]

Mr. REY. Costs of a year like 2002 are extraordinary, with impacts on programs from which funds were borrowed. We thank the Congress for providing us a repayment of those funds in the 2003 Omnibus Appropriations Act.

Those costs also spurred an inter-agency accountability team to review expenditures on large fires and establish new contract containment procedures and clarify financial management provisions.

Now let me close by talking a little bit about 2003 and I will illustrate this with a map, if someone will hold the map for me.

Mr. MCINNIS. Mr. Rey, let me tell you, I have just been advised of a complication we have and that is that we have a fixed camera. So unfortunately, you are not on camera and since we are trying to do this for the community, we really want to do that. So if you would not mind moving to the podium with the map and then wrap up your testimony—you have to move to the podium itself.

And then for other witnesses while we are doing this, unfortunately, that will also necessitate you giving your testimony from the podium, versus from your seat. So in sequence, if you would go up there.

And then one final thing, when we ask questions by the Committee here, if all of you would stand at podium, then you can take the question there. And the only reason I do this—I really want the community to get a full picture of what we are doing here.

Mr. Rey, you may conclude with your remarks.

Mr. REY. The absence of my visage will not diminish the quality of the hearing, I am sure.

[Laughter.]

Mr. REY. 2003 is stacking up to be another very difficult year. It looks a little bit better in the southwest, but a little bit more difficult in the northern and central Rockies and in the northern Great Lakes.

The areas in red hatches are areas where we believe that there will be above-average potential for wildfires. The areas in the green are where we believe there will be below average potential for wildfires.

There is some good news and there is bad news in this map. Some of the good news is that we will be able to do a lot of our prescribed burning program on national forests in this part of the country because we will have—

Mr. MCINNIS. Mr. Rey, if you will—again, sorry to interrupt you, but I think this is very important. If you would describe the geographical locations on the map since most of the audience cannot see the map. If you would say down in the Florida area or so on.

Mr. REY. Right, down in the southeastern United States from Texas through the Florida panhandle and up into North Carolina. So there, we will have below average potential for wildfire.

Also, some good news is that the situation in the southwest is mixed. New Mexico has been very wet in the last month, Arizona is improving. It may be that our fire season will start later in 2003 than it did in 2002.

Now on to the bad news and that is that the northern Rockies—Montana, northern Idaho, Wyoming, eastern Oregon—are looking at above-average potential for wildfires. So that means that our fire season in 2002 which ended relatively early, will probably extend into September and maybe even early October if these trends continue.

These are crude scale maps, they are based upon snowpack, stream flows, precipitation and fuel moistures, and they will change as the year changes and unfolds. But this is what it looks like at this point in time.

As Mr. Shadegg said, this is a difficult task with a lot of problems associated with it that are daunting in their magnitude.

I know when the President asked me to take this job, I said a quiet prayer and said I hope that if I do this that I will be able to serve in a time of budget surpluses and above-average rainfall. And I am 0 for 2.

Thank you very much.

Mr. MCINNIS. Mr. Rey, you will note I let you go beyond the 5 minutes, that is because I want to treat you with kid gloves so we get your airplanes out here. Get them fixed, get them in the air.

Ms. Watson, The Honorable Rebecca Watson, U.S. Department of the Interior. You may proceed.

STATEMENT OF THE HONORABLE REBECCA W. WATSON, ASSISTANT SECRETARY, LAND AND MINERAL MANAGEMENT, U.S. DEPARTMENT OF THE INTERIOR

Ms. WATSON. Thank you, I am very glad to be here. Good morning to both Chairmen and members of the Committee. I am the Assistant Secretary from the Department of the Interior. One of the bureaus I administer is the Bureau of Land Management.

I am here today to talk about the Healthy Forests Initiative and my role for the Department there as spokesperson for the four bureaus in our Department that have concerns about wildland fire. They are the National Park Service, the Fish & Wildlife Service, Bureau of Indian Affairs and Bureau of Land Management.

Interior has different lands, different missions than the Forest Service does. We have the parks, we have wildlife refuges and we also have more range and grass and woodland landscapes than we do timber.

I come from western Montana and I lived through the fires of 2000, so I share some of the experiences that members of the Committee discussed today. I know the catastrophic effects that can come from wildfire and that my state is still living with.

I want to talk a little bit about catastrophic fires and the local communities here in Arizona. The Rodeo-Chediski fire inflicted tremendous resource and economic impacts on the White Mountain Apache Tribe. The fire killed about 60 percent of the tribe's timber, resulting in a loss of investment and adversely affecting long-term local employment opportunities in a community that desperately needs its timber program.

Rehabilitation, restoration and salvage costs for the Tribe's assets are high and they are vitally needed. I want to announce today that as of this morning, I talked to the Budget Office of Department of Interior; we are aware of the Tribe's need for an additional \$5 million for restoration and stabilization, and we will provide that money. We have reprogrammed the money and will provide that to the Tribe, so I am pleased to announce that to the Chairman today.

Mr. MCINNIS. Now you get an extra minute for that.

[Laughter.]

Ms. WATSON. Good.

I quickly want to just show some pictures before I get into the Healthy Forests Initiative and what we have done in the Administration, just to set the stage. It is a simple problem to describe, but it is complex to implement, which is why we are here.

This first picture is from my State of Montana, it is the area where the fires of 2000 occurred. You see here what the forests looked like in the 1880's and 1890's. This is what the forests looked like in 1980, same cabin, densely covered with trees. This is the forest—

Mr. MCINNIS. Rebecca, could you lift it up so we can get it on camera too, I want the community to see it. Thank you.

Ms. WATSON. This is the forest in the year 2000. The cabin had been removed previously but the trees are now all black. And that is what the problem is, over-dense forests.

It is just like any plant that you are familiar with, plants need three things, they need sun, they need water and they need soil nutrients. When you have 1000 trees competing for those same resources versus the 50 that in historic times were on these lands, it is not surprising the trees are thin, disease-prone, insect-prone and go up in flames.

This is a picture from the Squires Fire in Oregon that we heard about earlier. This is what wildfire looks like in an untreated forest, it flames up and crowns.

Here is an example of what the forest looks like, the results, after a fire like that. This is from Rodeo-Chediski, these are black trees that result in an unthinned forest and fire.

Again, we go back to the Squires Fire, this is an area that had been treated. You see the fire dropping down to the ground, clearing out the understory, not going up to the trees' crowns.

The last picture, again back to Rodeo-Chediski, this is an example of a thinned forest after the fire, and you see green trees, you see big trees remaining, mid-sized trees, and this is what the forest looked like.

The last picture is one that is also up on the wall and it is particularly revealing. It is a satellite image from the Department of the Interior's USGS and it shows four green spots across there. You can see them here, here, here and over there. And those are areas that were treated. The red is what was not treated and was burned in the Rodeo-Chediski fire. And I think that is a compelling picture of what we are talking about in the Healthy Forests Initiative.

The foundation for the Healthy Forests Initiative is the 10-Year Comprehensive Strategy and Implementation Plan that will reduce risks of wildfire. And what makes that plan unique—and you in Congress have voted a resolution in support of it—is that it is a collaborative effort between states, counties, Federal agencies and Tribes. Part of our implementation of that is a recent agreement we just signed between these entities to agree to a collaborative process to prioritize and select fuels treatment projects. So it is reaching out, it is not the Federal Government in isolation deciding what projects should be done. We work together with counties and states and interested parties to prioritize projects for treatment.

Another step that we have done pursuant to the President's directive is issuing two guidance documents to expedite Endangered Species Act consultation. As you know, this problem is large. The process can slow us down, as the Chairman mentioned, process predicament. What we want to do here is meet the legal requirements of the Endangered Species Act, but do it in a smarter, more efficient way, so we issued two guidance documents last fall to do that.

The Department of Interior and Forest Service have also proposed an expedited use of the National Environmental Policy Act, or NEPA. And here we have proposed two categorical exclusions that can be used for hazardous fuel reduction. I want to make it clear to you and the members of the public that these are narrowly

crafted categorical exclusions. Categorical exclusions are a tool recognized by NEPA and these categorical exclusions provide that they cannot be used in wilderness areas, no herbicides or pesticides can be used, you can have no new roads and there are no timber harvests unless hazardous fuel reduction is the primary purpose. So, this is not an expedited means to do timber harvests; it is something entirely different.

Mr. MCINNIS. Rebecca, would you mind—excuse me again—just very briefly for the benefit of our audience, describe what a categorical exclusion is—very briefly.

Ms. WATSON. Sure. The National Environmental Policy Act requires Federal agencies to take a hard look at the environmental consequences of any action they take, and you can meet those requirements by either preparing an environmental impact statement, which is a long, lengthy document; an environmental assessment, which is a shorter document; or a categorical exclusion. With categorical exclusions are is you take a look at the same actions that have been done repeatedly. If you see there are no environmental impacts, it repeatedly comes back saying no, there is no impact, you do not need to prepare an environmental impact statement, then you can have a categorical exclusion. And you look at not just the individual impact, but the cumulative effects. So these are actions that have been done so many times that we know that they do not have a significant environmental impact and so they are categorically excluded or have a permit to go under NEPA.

Mr. MCINNIS. Thank you.

Ms. WATSON. Another administrative action that we have done for those cases where a categorical exclusion is not appropriate is an environmental assessment document. The Council on Environmental Quality, part of the White House, has proposed a model environmental assessment. What it is trying to test is, can we get back to the original intent of NEPA, to have a focus document that people in the public can read and understand and meaningfully participate in. So we have 15 projects around the country, Forest Service and BLM, and those projects are designed to test whether or not a 20 to 35-page environmental assessment will disclose impacts rather than what we have seen in both agencies, environmental assessments getting up to 300 pages and longer.

In addition, both agencies have proposed changes to their administrative appeals processes. We want to expedite those, by placing those appeals to the front of the line. It still, of course, provides for public participation through that appeals process, but we want to expedite the process and recognize the emergency that our public lands are under.

We think these administrative proposals will facilitate treatment of these lands. The problem is enormous, some 190 million acres of public land at risk of catastrophic wildfire. Resources are limited, especially at this time in our country's history. So we need to find tools to address this problem. These administrative tools are part of that solution. I want to take this opportunity to thank Congress for a very important tool we just received through the Omnibus Appropriations Act, which is stewardship contracting. We at Department of the Interior have now received this authority for the first time for the Bureau of Land Management, and it has been ex-

tended for the Forest Service. We want to thank Congress for that, we think it is going to be very important and also want to assure the public that we are going to implement stewardship contract authority with their input. We are already reaching out to the Governors, to the counties and to other interested members of the public on how to craft the guidance surrounding our use of stewardship contracting.

Finally, I want to just mention legislation briefly. The President endorsed legislation at the end of August and the President's proposed 2004 budget sent forward proposals designed to accomplish timely and efficient implementation.

We look forward to working with this Committee in a bipartisan fashion, as you fashion Healthy Forests Initiative legislation. So thank you.

Mr. MCINNIS. Thank you, Rebecca. I appreciate the substance of your comments. I would add that Mr. Renzi will probably mosey on over to your desk and look for a check to present to the tribe there.

[Laughter.]

Mr. MCINNIS. He has been on that. Thank you very much.

Next, I would like to introduce The Honorable Gene Kelley, the Mayor of Show Low. Thank you, Mayor, for coming over, we appreciate it; thank you for letting us in your area. I know you had a trying summer. You may proceed.

[The prepared statement of Mr. Rey and Ms. Watson follows:]

Statement of Mark Rey, Under Secretary, Natural Resources and the Environment, U.S. Department of Agriculture, and Rebecca Watson, Assistant Secretary, Land and Minerals Management, U.S. Department of the Interior

Mr. Chairman and members of the Committee, thank you for the opportunity to meet with you today. Since the Department of the Interior and the Department of Agriculture work closely together in fire management and in implementing the National Fire Plan, it is appropriate to use one statement to talk about the 2002 wildland fire season, and discuss our work on the National Fire Plan and the President's Healthy Forest Initiative. President Bush's proposed Healthy Forests Initiative is based upon a common-sense approach to reducing the threat of catastrophic wildfires by restoring forest and rangeland health. Our goal is to ensure the long-term safety and health of communities and natural resources in our care. Our responsibility is to ensure the long-term health of our forests and rangelands for the use, benefit and enjoyment of our citizens and for generations to come.

But first, we would like to congratulate you, Chairman Pombo, on assuming the leadership of the Resources Committee. We also want to thank you, Chairman McInnis, for your aggressive attention to the issue. We look forward to working with you and the Committee. As we move into the 2003 fire season, fighting wildland fires is only one aspect of the work we must do to protect communities; we must also reduce the amount of hazardous fuels, and restore healthy ecosystems to protect communities and our natural resources.

NATIONAL FIRE PLAN

With the fire adapted ecosystems of North America, we have the challenging task of reducing fuels and the vulnerability of our communities to wildfire while restoring the health of our forests and rangelands. This challenge is national and long term in scope. Of the three factors that most influence wildland fire behavior—weather, topography, and fuel—land managers can effectively impact only fuel. Since the severe 2000 wildland fire season, Congress has funded the National Fire Plan for Federal agencies to work on a long-term program to reduce fire risk and restore healthy fire-adapted ecosystems in the Nation's forests and rangelands. Federal agency field units, States, Tribes, and other partners have been busy, putting into action the concepts of the National Fire Plan. Bipartisan Congressional support provided the funding necessary in 2002 for 17,400 Federal fire employees and thousands of contract fire personnel to prevent, detect, and suppress wildland fires, treat

hazardous fuels, and provide leadership for the organizations. In 2002, despite the severe drought, the Forest Service and the Department of the Interior accomplished a total of 2.2 million acres of hazardous fuels reduction; of that, almost 1 million acres were in the wildland urban interface. This is 168,000 acres more than 2001. We also reduced hazardous fuels on slightly more than 1 million additional acres through wildland fire use. For 2003, we anticipate treating 2.5 million acres of hazardous fuels of which 1.1 million acres are in the wildland urban interface.

Recently, the Forest Service, Department of the Interior, National Association of State Foresters and National Association of Counties agreed to a collaborative process to identify fuels treatments. In order to more expeditiously protect communities and improve forest and rangeland health, the parties agreed to coordinate this process across ownerships and jurisdictions.

2002 FIRE SEASON

The 2002 wildland fire season was intense, difficult, and historic. Long-term drought over most of the West contributed to an earlier and very severe fire season. Of the 7.2 million acres burned in 2002, only a few wildfires were the large, uncontrolled fires seen on television. These were the fires that burned in and around wildland-urban interface areas requiring extensive evacuations of communities, subdivisions, and ranches. Fire activity was intensified by unfavorable weather conditions and in many situations posed a safety threat to firefighters and members of the public.

When we realized the potential severity of the 2002 wildland fire season, we hired seasonal firefighters early and we staged firefighting crews and equipment in locations where they could be mobilized quickly and effectively. Federal wildland fire agencies had enhanced initial attack capabilities in Arizona, New Mexico, Colorado, Montana, and Nevada by pre-positioning resources ranging from air tankers, to hand crews, to engines in strategic locations. Although several fires were devastatingly large, the additional resources made a difference in reducing the size of many of the fires. Without the added National Fire Plan support, our response would not have been as strong. Initial attack suppression activities were highly successful, as about 98% of 2002 wildfires were stopped during initial attack. We sustained 62 days of Preparedness Level 5, our highest level of activity; 22 days longer than the 2000 wildland fire season, another record year. Modular Airborne Firefighting System military C-130 aircraft were based in Colorado, Utah, Washington, Idaho, and California and dropped more than 1.6 million gallons of fire retardant on wildfires burning on these areas. One battalion from the U.S. Army, Task Force Destroyer (1/5 FA 1st Battalion, 5th Regiment) Fort Riley, Kansas was also assigned for 30 days. International firefighting assistance was provided by Canada, Australia, and New Zealand. These international resources provided a total of thirty-nine 20-person hand crews and 131 overhead or management personnel assisted in fire suppression activities across the West.

ENVIRONMENTAL EFFECTS OF WILDFIRE

For most of the twentieth century, all wildland fires were thought to be bad. As a result, fires were suppressed as soon as possible to reduce their negative effect. Aggressive fire suppression was effective but had an unintended consequence. The frequency and intensity of wildfires appears to have increased due to the buildup of fuels such as dead and dying trees and dense growth of flammable vegetation. Fire exclusion resulted in woody species encroachment into shrublands and grasslands, altered wildlife diversity and populations through habitat modification, and increased disease and insect infestations. This build up of fuel coupled with other factors like drought have raised increasing concerns about the overall wildland condition and particularly the health of the forest and rangelands.

These conditions of increased fuel and severe drought have resulted in increasingly large and severe wildland fires. Damage to watersheds, wildlife habitat, air quality, erosion, and old-growth forests are the undesirable effects of large and severe fires. These fires are costly and increasingly difficult to control.

However, where the natural fire return interval has been maintained through prescribed burning or where the buildup of fuels, such as thick understory and dense trees, have been thinned by environmentally sound forest management practices, these wildfires can be beneficial. This is particularly so in plant communities that have historically experienced frequent low severity fires such as ponderosa pine. Low intensity fires generally leave the soil intact, recycle nutrients, and stimulate the regeneration of many beneficial plant species. These fires often create a patchy mosaic on the landscape, increasing the overall biological diversity or health of the area.

2002 REHABILITATION AND RESTORATION

Rehabilitation and restoration are critical parts of responding to the aftermath of wildfire. These efforts focus on lands unlikely to recover quickly and naturally from wildfire. Rehabilitation activities generally take several years and include reforestation, watershed restoration, road and trail rehabilitation, noxious weed control, and fish and wildlife habitat restoration. Native plants and trees are used whenever possible.

The majority of the work needed to be accomplished for Fiscal Year 2003 results from the negative fire effects such as erosion, sedimentation, downstream flooding, and spread of noxious weeds, from the Rodeo/Chediski, Hayman, McNally, Biscuit, and Tiller Fires of 2002. Some of the previous commitments we have made for rehabilitation work resulting from fires of 2000 include the watershed and road work provided for in the Bitterroot Settlement agreement and completing the reforestation efforts that are already underway with the nurseries.

Through Burned Area Emergency Rehabilitation (BAER) Plans in 2002, \$72 million was authorized for immediate emergency stabilization after fires. This post-fire work focuses on preventing additional damage to the land, and minimizing threats to life or property resulting from the effects of fire. This work typically begins before the fire is completely contained and is generally accomplished within the first year after the fire. The longer rehabilitation efforts follow this emergency stabilization work.

Like the Forest Service, the Department of the Interior experienced a demanding workload for stabilizing and rehabilitating burned areas after wildfires. Interior made \$78.5 million available for emergency stabilization and burned area rehabilitation last year, with \$15 million carrying over to continue stabilization efforts this year. The carryover from Fiscal Year 2002 plus the Fiscal Year 2003 appropriation will provide the Department with \$35 million for emergency stabilization and rehabilitation in Fiscal Year 2003. This funding has been targeted to priority projects to protect public health and safety, protect municipal water supplies, threatened and endangered species habitat, and prevent invasive plant establishment.

SAFETY

We thank you and your Committee for your support of the men and women who make up our firefighting corps. Our firefighters do an impressive job under adverse conditions and they deserve our thanks and admiration. Firefighting is a high risk, high consequence activity. Following the Thirty-Mile Fire tragedy in July 2001, where four firefighters lost their lives, we reexamined our safety programs and made a number of improvements. Through training and reinforcement, we are emphasizing management of firefighter fatigue, use of the 10 Standard Fire Orders and the 18 Watch Out situations. We have revamped our training to include findings and lessons learned from the Thirtymile incident. Firefighter briefings now include standard components that address planned suppression operations, hazards and risks, critical fuels and weather conditions, and other crucial information. We have an improved fire shelter which is used as a "last resort" tool and a key component of fire fighter safety equipment.

Despite our efforts, there were 23 fire-related Federal, states, or volunteer fatalities in the 2002 wildland fire season. Over half the fatalities were contractors to Federal agencies; most of the fatalities were the result of vehicle accidents, some attributed to fatigue. Therefore, we are including in Fiscal Year 2003 contracts Federal firefighter work-rest guidelines to minimize fatigue for contracted firefighters and support personnel. Six fatalities resulted from 3 aviation accidents. The Forest Service and Bureau of Land Management commissioned an aviation blue-ribbon panel that surveyed the aviation program and made factual findings. Based on the findings, the Forest Service made several changes to the aviation program, including extensive inspections of airtankers as well as grounding other aircraft until air worthiness can be assured. In addition, Sandia Lab in Albuquerque is developing increased aircraft safety criteria for Forest Service contracted aircraft.

WHAT COMMUNITIES CAN DO

More than 2,000 structures were lost to wildfires last year. Of the structures destroyed, 835 were primary residences, 46 were commercial properties, and 1,500 were outbuildings. Communities can help themselves to prevent this sort of loss in the future. Indeed, with our State Forester partners through the State Fire Assistance program, we assisted over 11,000 communities by developing local projects on fire prevention, fire suppression, hazard mitigation, and creating FIREWISE communities. In 2002, both Departments helped over 5,000 rural and volunteer fire departments by providing training, protective fire clothing, and firefighting equipment through the Volunteer and Rural Fire Assistance programs. Additional efforts will

promote partnerships, community action plans, and projects where communities can themselves reduce fuel hazards, improve building codes, and create fire resistant landscapes.

National fire prevention teams were activated throughout the year in many Western states where fire danger was extreme. Teams were dispatched for month-long assignments to assist local resources in assessing human-caused fire starts. Once assessments are complete, these trained fire prevention professionals prepare a site-specific strategy of unique fire prevention solutions for the area. Fire prevention teams were placed in Salt Lake City, UT, Santa Fe, NM, Custer, SD, Seattle, WA, Sequoia National Forest, CA, and Colorado Springs and Durango, CO.

In addition, citizens can take action through the FIREWISE program, which helps people who live or vacation in fire-prone areas educate themselves about wildland fire protection. Homeowners can learn how to protect their homes with a survivable space and how to landscape their yard with fire resistant materials. A consortium of wildland fire agencies that include the Forest Service, the Department of the Interior, and the National Association of State Foresters sponsors the program.

COSTS

There is no question that fighting these fires was expensive—the total cost for both Departments was almost \$1.6 billion. The Forest Service transferred approximately \$1 billion from other accounts to fund fire suppression costs. We want to thank Congress for acting upon the Administration's request and repayment. \$636 million was appropriated in the Fiscal Year 2003 Omnibus Appropriations Act. Every effort will be made to repay these as quickly as possible. The Forest Service has established a priority process to repay the accounts from which funds were transferred, and every effort will be made to repay these in a timely fashion.

Interior also had emergency wildfire response costs that exceeded funding available within the fire management appropriation by more than \$250 million last year. The Secretary transferred \$240 million from the construction and land acquisition accounts of the land management bureaus and BIA to cover most of the additional costs for emergency suppression and stabilization. The fire program also reprogrammed \$14 million intended for fire facility maintenance and construction and hazardous fuels reduction projects.

Recent criticism of how the Forest Service and the Department of the Interior spend funds to suppress wildfire is of great concern to the Departments and the agencies. In response to criticisms that occurred during this past fire season, Forest Service Chief Dale Bosworth in cooperation with Interior agencies promptly dispatched an accountability team to review specific expenses and policies that may have contributed to unnecessary expenditures on large fires. As a result of this and other interagency efforts, new procedures have been established that will focus on cost containment strategies in suppressing wildfire and eliminating unnecessary expenses; establish clearer financial management accountability of incident commanders and line officers; and provide for improved controls and incentives for suppression costs.

Additionally, the Forest Service and the Department of the Interior will fully implement performance measures in cooperation with the Department of the Interior that reflect the level of risk reduced by treatments as part of the interagency effort to increase accountability of Federal wildland fire management efforts.

In implementing these performance measures, it is important to emphasize that firefighter safety and the protection of communities will not be compromised. As we focus on an efficient wildland firefighting organization, we must not lose sight of the fact that fire suppression often is an expensive operation where major costs will be most substantially reduced by accomplishing the goals of the President's Healthy Forests Initiative and the National Fire Plan.

2003 SEASONAL WILDLAND FIRE OUTLOOK

At this time, our experts at the National Interagency Coordination Center (NICC) in Boise, Idaho, indicate that long term drought persists and is expected to intensify over much of the interior West. Mountain snow pack and precipitation remains below average for most of the western states with the exception of northern and central California. The outlook for February through April calls for above normal temperatures and below normal precipitation over the Pacific Northwest, Northern Rockies, portions of the Great Lakes, and the Ohio River Valley. Unless the weather patterns provide relief, 2003 has the potential for an above normal fire season in these areas, especially in the interior West.

Drought conditions and dense vegetation increase the risk of wildfires that burn longer, faster, and more intensely. We know that fire historically played a positive role in sustaining ecological stability. Where appropriate, we will manage wildland

fire use as prescribed in land and resource management plans. However, because of the degraded condition of many forests and grasslands, use of fire for forest management has become much more complex. It requires scientific support and new tools to help plan, implement and monitor fire management activities. One of these tools is the President's Healthy Forest Initiative.

THE PRESIDENT'S HEALTHY FOREST INITIATIVE

In May 2002, working with the Western Governors' Association and a broad cross-section of interests including county commissioners, state foresters, tribal officials and other stakeholders, we reached consensus on a 10-Year Comprehensive Strategy and Implementation Plan to reduce fire risks to communities and the environment. The plan sets forth the blueprint for making communities and the environment safer from destructive wildfires. The plan calls for active forest management focusing on hazardous fuels reduction both in the wildland-urban interface and across the broader landscape. Active forest management includes: thinning trees from over-dense stands that produce commercial or pre-commercial products, biomass removal and utilization, and prescribed fire and other fuels reduction tools. We want to thank you, Chairman Pombo, Chairman McInnis, and the members of the House of Representatives, for initiating and passing House Concurrent Resolution 352 endorsing the Collaborative 10-Year Strategy.

In order for the 10-Year Implementation Plan to succeed, the Forest Service and Interior agencies must be able to implement critical fuels reduction and restoration projects associated with the plan goals in a timely manner. Often, however, the agencies are constrained by procedural requirements and litigation that delay actual on-the-ground implementation. As we testified last September, the three factors most contributing to project delay are: 1) excessive analysis; 2) ineffective public involvement; and 3) management inefficiencies. We have reached a point where we must change to allow agencies to implement management decisions to achieve healthy forests and rangelands.

On August 22, 2002, President Bush announced Healthy Forests: An Initiative for Wildfire Prevention and Stronger Communities. The Healthy Forest Initiative would implement core components of the 10-Year Implementation Plan, enhancing and facilitating the work and collaboration agreed to in that document.

The President's initiative directs us, together with Council on Environmental Quality Chairman Connaughton, to: improve procedures for collaborative selection and implementation of fuels treatments and forest and rangeland restoration projects; reduce the number of overlapping environmental reviews; develop guidance for weighing the short-term risks against the long-term benefits of fuels treatment and restoration projects; and develop guidance to ensure consistent NEPA procedures for fuels treatment activities and restoration activities. We will report today on several actions the Secretaries have taken to accomplish these objectives.

ADMINISTRATIVE ACTIONS

The USDA Forest Service and the Department of Interior have proposed two categorical exclusions that can be utilized across jurisdictional boundaries by Federal agencies engaged in hazardous fuel reduction and post-wildfire resource and infrastructure rehabilitation. These two categorical exclusions were based on an analysis of over 3,000 hazardous fuel reduction and post-wildfire restoration projects. Our analysis of these activities has shown that these types of narrowly defined actions have not resulted in individually or cumulatively significant environmental impacts, and therefore, may be conducted without preparation of an environmental assessment or environmental impact statement. We expect to publish final categorical exclusions later this year.

A categorical exclusion may not always be the appropriate level of analysis; each project is different and some may not meet the criteria for use of a CE. Therefore, CEQ Chairman, Jim L. Connaughton, has issued guidance which clarifies the policy on the preparation of environmental assessments for fuels treatments. The clarification addresses the purpose and content of a model Environmental Assessment for fuels treatments. The guidance is being applied initially to ten Interior and five Forest Service projects to test the adequacy of the model EA to address the impacts typically found in fuels treatment projects. Process lessons learned in developing these projects will be shared widely throughout all agencies for application to additional projects.

The Forest Service has proposed revising its implementing regulations under the Appeals Reform Act. Proposed changes are designed to encourage early and meaningful public participation in project planning, rather than focusing the public on review of a completed EA and on appeal of a decision after it has been made. The proposal gives the line officer discretion over the timing of the 30-day notice and

comment period, rather than requiring that it take place after the environmental assessment is complete. There would also be limitations on appeals based on early project involvement and on raising new issues that had not previously been raised. A final policy is expected to be published later this year.

The Department of the Interior's Office of Hearings and Appeals (OHA) and the BLM are proposing a series of changes to their administrative rules, to streamline their appeals process for hazardous fuels treatment projects. Interior wants to ensure that appeals from decisions involving either forest or rangeland health are resolved quickly without depriving the public of the right to participate in the administrative process. Frequently, delaying a project can be the same as stopping a project. The proposed rules would require OHA to resolve any appeal involving forest or rangeland health within sixty days from the filing of all paperwork from the parties. Forest and rangeland health appeals will not be subject to any different standards than other types of appeals. Under this proposal, they must simply be handled first. The proposed rules also contain a number of technical changes that will allow OHA to do its job more efficiently and apply rules more consistently.

The Fish and Wildlife Service and the National Oceanic and Atmospheric Administration issued a joint guidance memo on Endangered Species Act Section 7 consultation in October, 2002. It emphasizes the use of programmatic interagency consultation under the Endangered Species Act for Healthy Forests Initiative projects. It also emphasizes the grouping of multiple projects into one consultation. These agencies also issued joint guidance in December, 2002 providing direction on how to fully consider and balance potential short- and long-term beneficial and adverse impacts to endangered species when evaluating proposed Healthy Forests Initiative projects.

In addition to these Healthy Forests Initiative actions, the Forest Service has proposed the addition of three new timber harvest categorical exclusions (CEs) to its authorities. Projects would include limited timber harvesting of live trees, salvage harvests, and sanitation of dead and dying trees for insect and disease control. Projects of this nature occur routinely as part of managing National Forest System lands.

LEGISLATIVE ACTIONS

In August, 2002, the Administration endorsed legislation to implement the Healthy Forest Initiative. Recently, the Congress passed the Omnibus Appropriations Act of 2003 [PL 108-7]. Section 323 of the Act contains stewardship contracting language that includes the Bureau of Land Management and extends authority through Fiscal Year 2013 for the Forest Service to enter into long-term stewardship contracts with the private sector, non-profit organizations, local communities, and other entities. Long-term contracts provide contractors the opportunity to invest in equipment and infrastructure needed to productively use material generated from forest thinning to make forest products or to produce energy. The stewardship contracting provision does not provide any authority to enter into long-term contracts that the Forest Service did not already have under the National Forest Management Act. The Departments are currently developing public involvement methods and are working with the state Governors, counties and interested parties to develop procedures to implement the Act.

As the Committee knows, the President's budget included proposals for the Healthy Forest Initiative. We thank the Committee for their bipartisan efforts to pass Healthy Forest legislation in the last Congress. We look forward to working with your Committee to develop Healthy Forest legislation and pledge our cooperation.

SUMMARY

With the outlook for an upcoming severe fire season, the five Federal land-managing agencies and our partners at the State and local level are doing all that we can to be prepared. Safety of firefighters and communities is our first priority. With the fire adapted ecosystems of North America, we have the challenging task of reducing fuels and the vulnerability of our communities to wildfire while restoring the health of our forests and rangelands. This challenge is national and long term in scope. The 10-Year Implementation Plan and the Wildland Fire Leadership Council will continue to foster cooperation and communication among Federal agencies, States, local governments, Tribes, and interested groups and citizens. With your continued help, all the agencies can accomplish robust performance-based programs for the nation's forests and rangelands, and do so in full collaboration with state governments, communities, Congress and the American people.

We look forward to working with you in implementing the agency's programs and would be happy to answer any questions.

**STATEMENT OF THE HONORABLE EUGENE KELLEY, MAYOR,
SHOW LOW, ARIZONA**

Mr. KELLEY. The thank you should come from me to you. Mr. Chairman, members of the Subcommittee, I do thank you for the opportunity to testify before you today.

Last year, the Rodeo-Chediski fire was something that none of us ever want to see repeated. The fire experts from the Type 1 team told us on Saturday that our city would surely overburn, all fire science said that was what was going to happen. We evacuated the city and on Sunday, we were spared the most certain forecast, by the intervention of our good Lord providing us with 48 percent humidity and most favorable winds that took the fire out of the crown of the trees and put it on the ground. Please do not misunderstand me, we also owe our gratitude to over 5000 firefighters that were able to jump this fire and within hours have it under control within less than one quarter mile of our city limits and our homes.

As the Mayor of Show Low, I am most grateful that Show Low was spared the devastation. I know that I speak for our entire community when I express my sincere condolences to our neighboring communities who experienced great losses. I express our collective gratitude to everyone involved in suppressing this fire. I especially thank those in the Forest Service and the White Mountain Apache Tribe for the countless acres of their land that was thinned prior to the fire. We believe that this effort ultimately protected Show Low. In particular, Rick Lupe's team and dedicated fire crew deserves a lot of credit for saving Show Low and our neighboring communities. We are forever in their debt.

The City of Show Low has been concerned for years that what happened last summer was a possibility. we have worked hard and long in an effort to prepare our community for the possibility of such a disaster. For years before the Rodeo-Chediski fire, we have been involved in forest health issues and focused on the need to thin our forests to restore them to their natural, pre-settlement state.

Since the fire, we have embarked upon a number of thinning projects on city property in an attempt to set an example for private property owners. It is our believe we will have completed before peak of fire season the thinning of all city-owned and controlled property within our city limits.

In addition, Show Low's City 4 Television has done a number of programs on the importance of protecting our homes and businesses from the threat of wildfire with firewise landscaping.

We have coordinated with the University of Arizona Cooperative Extension, the Northern Arizona University School of Forestry and the Ecological Restoration Institute. These groups developed and implemented the Blue Ridge Demonstration Project, 17,000 acres of forest land adjacent to the communities of Pinetop-Lakeside, our neighbors to the south. This project has demonstrated that all the interested parties can work productively together. A special debt of gratitude is owed Senator Jon Kyl, who was responsible for directing a significant amount of funding toward this project.

Currently there is an area south of Show Low and east of Highway 60 that has been designated as most critical to the protection of Show Low and much of the White Mountains. This area must

be treated if we are to be protected and our communities from the forest fire possibilities. We have been informed by our friends at the Forest Service that money for the project will not be available to put work forces on the ground until May or June. If they start the project in May or June, they may well be shut down because they are a threat of ignition. Trying to be creative, thinking outside the box, using some common sense, the City Council of Show Low recently unanimously voted to lend the Federal Government \$300,000 to facilitate that thinning project on approximately 600 to 1000 acres of forest land. Unfortunately, the Federal Government has no mechanism in place to be able to take advantage of our offer.

[Laughter.]

Mr. KELLEY. We were only going to charge interest at the rate of zero, and expected the money to be paid back when they were funded this year. We find this to be a very frustrating catch-22. We continue to pursue the project through political means and today's hearing is part of that process. I do have a pleasant ending. In just a moment, I will share it with you.

We have had much success convincing homeowners and business owners of the importance of saving the forests in our community by cleaning up their own property. The Show Low Council has passed two resolutions in support of forest health and fire protection, landscaping within our community, and we are in the process of preparing an ordinance that would address those issues.

I was here prepared to recommend to this Committee go back to Washington and develop a mechanism to handle this little catch-22 to possibly save Show Low, Pinetop-Lakeside and many key parts of the reservation. I do not need to ask you to do that, because moments before this hearing began, Secretary Rey informed me that the problem had been solved internally and within 2 weeks the money would be in the Show Low area to let the contract and the prediction then would be the project will be completed before peak fire season.

Therefore, I change my recommendation specifically to you and ask that you go back to Washington and put into place a mechanism that will cause our forests to be managed by good, scientifically proven methods that we know work, and to stop forest management by lawsuit that oftentimes it appears represents less than one-tenth of 1 percent of the people of this country's interest. Therefore, that is my challenge to you, gentlemen.

Thank you for your time.

Mr. MCINNIS. Thank you, Mayor, I appreciate that. And Mr. Rey, once again, thank you for your assistance in the difficulty that we had with Show Low.

I would also like to highlight one of the Mayor's comments, and that was the thousands of firefighters that came to our assistance. As you know, a lot of these people are young, vibrant people and they were of great assistance. And today, if you see a Forest Service employee, BLM, Parks or local fire department—we have several people in the crowd—pat them on the back, we appreciate the good job you did last year.

[The prepared statement of Mayor Kelley follows:]

**Statement of The Honorable Gene Kelley, Mayor,
City of Show Low, Arizona**

Last year's Rodeo-Chediski fire was something that none of us ever want to see repeated. As the Mayor of Show Low I am most grateful that Show Low was spared the devastation. I know that I speak for our entire community when I express my sincerest condolences to our neighboring communities who experienced great losses. I express our collective gratitude to everyone involved in the suppression of this fire. A special thanks goes to the Forest Service and the White Mountain Apache Tribe for the countless acres of their land that was thinned prior to the fire. We believe that this effort ultimately protected Show Low. In particular, Rick Lupe and his dedicated crew deserve a lot of the credit for saving Show Low and our neighboring communities. We are forever in their debt.

The City of Show Low has been concerned for years that what happened last summer was a possibility. We have worked hard and long in an effort to prepare our community for the possibility of such a disaster. For years before the Rodeo-Chediski fire we have been involved in forest health issues that focused on the need to thin our forests to restore them to their natural state.

During the winter and spring prior to the fire, the City of Show Low was very heavily involved in Navajo County efforts aimed at preparing our collective communities for the possibility of a catastrophic wildfire. The City of Show Low developed a "Surviving a wildfire...are you prepared?" Brochure that we believe led to a very effective evacuation of Show Low once that became necessary. In addition, the City was involved in many efforts aimed at preparing our residents for the very real possibility of a wildfire. The City of Show Low sponsored a community fire preparedness forum in the spring of 2002. It was well received by the community and helped us spread the message of the importance of preparedness. That forum aired live on City 4 Television, our city-sponsored cable station.

Prior to the fire the City had begun some projects to remove dead trees on City property in an attempt to mitigate the bark beetle problem and in the process reduce the fire danger. Since the fire, we have embarked upon a number of thinning projects on City property in an attempt to set the example for private property owners.

In addition, City 4 Television has done a number of programs on the importance of protecting our homes and businesses from the threats of wildfire with firewise landscaping. One program in particular documented the effect that firewise landscaping had on a home in Timberland Acres, one of the areas hit hardest by the fire. By following the simple guidelines provided by the Firewise program, a family was able to save their home while the homes of their neighbors were lost.

We have coordinated with University of Arizona Cooperative Extension, the Northern Arizona University School of Forestry, and the Ecological Restoration Institute. Six years ago we were a partner in the formation of the White Mountain Natural Resources working group, to bring together all interested parties involved in the natural resources debate and identify workable solutions to forest health concerns in both the community forest and the Apache Sitgreaves National Forest. The group developed and implemented the Blue Ridge Demonstration Project on 17,000 acres of forest service land adjacent to the community of Pinetop-Lakeside. This project has demonstrated that all the interested parties can work together productively. To date 5000 of the 17,000 acres have been effectively treated. The treatments implemented south and west of Show Low, that enabled firefighters to keep the Rodeo-Chediski Fire out of Show Low, Pinetop-Lakeside, and beyond, were modeled after these successful treatments conducted on the Blue Ridge Demonstration Project. A special debt of gratitude is owed Senator Jon Kyl who was responsible for directing a significant amount of funding towards this project.

Another very positive result of the Natural Resource Working Group and the Blue Ridge Demonstration Project has been the designation of the Apache-Sitgreaves National Forest as a County Partnership Restoration (CPR) Program pilot forest. Funding for this pilot is in the current National Fire Plan. This program includes the local communities as partners in the forest restoration and management, planning and implementation process.

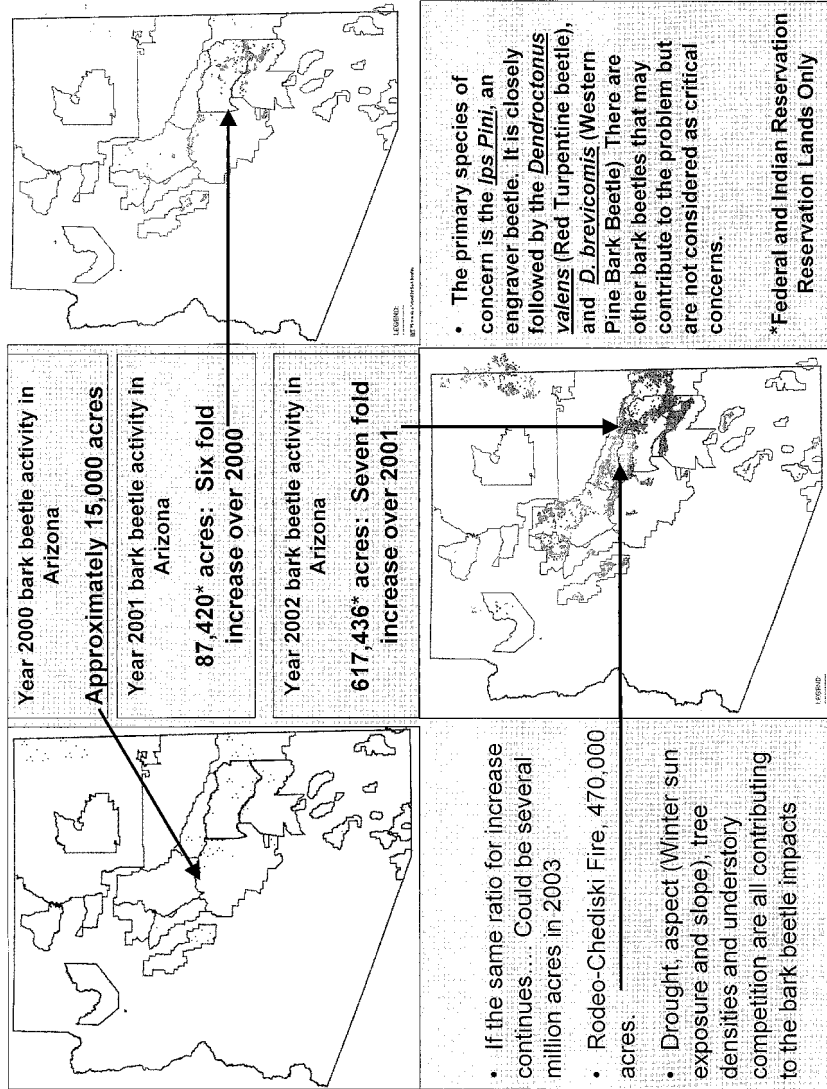
There is an area south of Show Low that has been designated as an area critical to the protection of Show Low and much of the White Mountains. That area must be treated if we are to protect our communities and forests from another catastrophic fire. We have been informed by our friends at the Forest Service that money for that project will not be available until May or June. If they can't start that project until the funding is available in May or June there is a good chance they will have to shut the project down (if they ever get started) because of the onset of the fire season. In response to that news the Show Low City Council re-

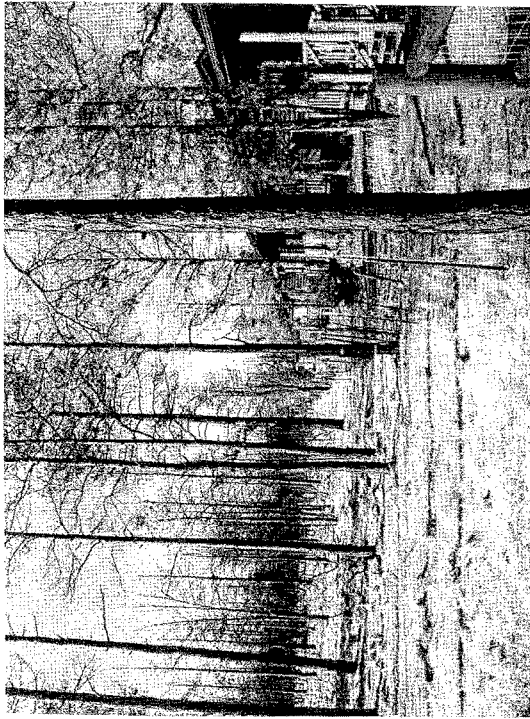
cently voted unanimously to lend the Federal Government \$300,000 to facilitate that thinning project on approximately 600—1000 acres of Forest Service land. Unfortunately, the Federal Government has no mechanism in place to be able to take advantage of our offer. We find this to be a very frustrating catch-22 situation. We continue to pursue this project through political means and today's hearing is part of that process.

We have had much success convincing homeowners and business owners of the importance of saving the forests in our own communities by cleaning up their own property. The Show Low City Council has passed two resolutions in support of forest health and fire protective landscaping within our community. We are in the process of preparing an ordinance that would address those issues. Now, we need your support in making it possible for the Forest Service to have the necessary funds available for critical projects on public lands like this one.

I would recommend that this Committee go back to Washington D.C. and develop a mechanism to implement the solution that we have outlined. Find a way to break the impasse now. We need your support in giving us the opportunity to make a difference in our own community and throughout the White Mountains. Words cannot express how important and essential this project is to protecting our communities.

[Attachments to Mr. Kelley's statement follow:]





There is a thirty foot separation between forest and homes. Trees were killed 200 feet into the development by the heat.

- The developer reduced tree densities to less than 40 trees per acre in this cabin development.
- Primary heat pulse of the crown fire lasted less than two minutes.
- Homes that were lost were lost due to the bridging of ground fire into structures by landscaping materials and plants, poorly placed out buildings and/or open decks.
- Long duration heat pulses from burning homes or out buildings spread fire to adjacent structures.
- Flame length on the forest side of the boundary was reliably reported at 125 feet.
- Tree density on the forest side was 95 to 125 trees per acre to a depth of 330 feet.

Lessons Learned

1. In an extreme fire event with low humidity, high energy release and perfect wind conditions, relatively open forests and thirty foot fuel breaks around homes can greatly reduce property losses.
2. Home owner construction and landscaping practices actively contributed to both saving and/or reducing the losses of structures as a consequence of the crown fire event.
3. Firesafe forest, landscape and building methods combined to save these homes!

CITY OF SHOW LOW

STAFF SUMMARY REPORT

DATE: May 30, 2002
 TO: Mayor and City Council
 FROM: Ed Muder, Planning and Zoning Director
 AGENDA TITLE: CONSIDERATION OF RESOLUTION NO. 954—ADOPTING A TREE POLICY

RECOMMENDATION

Staff recommends that the City Council MOVE to adopt Resolution No. 954.

BACKGROUND

Over the past several months the White Mountain Community Forest Task Force, comprised of members from the communities of Pinetop–Lakeside and Show Low, Navajo County, real estate and insurance industry representatives, the University of Arizona Cooperative Extension Service, and a community forester recently hired by Show Low, Pinetop–Lakeside, and Navajo County, met with the goal of developing a tree policy. The final draft of the proposed policy was completed March 22, 2002 with the intention that Pinetop–Lakeside, Show Low and Navajo County would present the draft to their respective boards and councils for consideration.

Attached is Resolution No. 954 which would have the effect of adopting the tree policy recommended by the task force. The policy would serve as a guide for the adoption of ordinances relating to tree management and maintenance. The communities and Navajo County are proposing to work together in developing ordinances that would be consistent throughout all of the forested areas in Navajo County. Attachments

CITY OF SHOW LOW RESOLUTION NO. 954

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE CITY OF SHOW LOW, ARIZONA
ADOPTING A TREE POLICY AS RECOMMENDED BY THE WHITE MOUNTAIN COMMUNITY
FOREST TASK FORCE

RECITALS:

WHEREAS, the most significant reasons that people are attracted to the White Mountains of Arizona are the mountains, forests, lakes and streams, moderate summer climate and rural setting; and

WHEREAS, most people living in this area value these attractions and have strong convictions regarding their conservation; and

WHEREAS the current biomass accumulation and fuel ladder development present an increased potential for catastrophic crown fires; and

WHEREAS, fires of this nature would have a tremendous negative effect on those very attractions for which people live or vacation here; and

WHEREAS, recent fires in the Ponderosa pine forest in the Southwest and elsewhere have put a tremendous financial burden on the Nation Forest Service and taxpayers; and

WHEREAS, for these reasons, the White Mountain Community Forest Task Force strongly recommends that the attached Tree Policy be adopted and that the communities of Show Low and Pinetop–Lakeside, and Navajo County, work together to develop consistent ordinances based on these guidelines.

ENACTMENTS:

NOW, THEREFORE, BE IT RESOLVED that the Mayor and Council of the City of Show Low, Arizona hereby adopts the attached Tree Policy, recommended by the White Mountain Community Forest Task Force, be adopted and that the communities of Show Low and Pinetop–Lakeside, and Navajo County, work together to develop consistent ordinances based on these guidelines

PASSED AND ADOPTED this 4th day of June, 2002, by the Mayor and Council of the City of Show Low, Arizona.

/ signed/ Gene Kelley, Mayor

ATTEST:

/ signed/ Elizabeth A. Burke, City Clerk

APPROVED AS TO FORM:

/ signed/ Michael J. Brown, City Attorney

TREE POLICY DRAFT—MARCH 22, 2002

UPDATED MARCH 29, APRIL 9 AND MAY 5, 2002

People are attracted to the White Mountains of Arizona for a variety of reasons. The most significant of these include the mountains, forests, lakes and streams, moderate summer climate and rural setting. Most people living in this area value these attractions and have strong convictions regarding their conservation. History

tells us that many dramatic changes have occurred in the Ponderosa pine forest ecosystem over the past 120 years. The current biomass accumulation and fuel ladder development present an increased potential for catastrophic crown fires. Fires of this nature would have a tremendous negative effect on those very attractions for which people live or vacation here. Recent fires in the Ponderosa pine forest in the Southwest and elsewhere have put a tremendous financial burden on the National Forest Service and taxpayers.

For these reasons, the White Mountain Community Forest Task Force strongly recommends that the following goals be considered for adoption of consistent ordinances by the communities of Show Low and Pinetop-Lakeside and Navajo County. The communities should further work together on an ongoing basis.

Maintenance

- A. The urban forest environment shall be maintained in an ecologically sound condition with particular emphasis on forest health, wildlife habitat, and wild-fire prevention by implementing policies and programs to reduce the risk of a catastrophic urban wildfire. A community forester or other designated individual shall have general oversight over the maintenance of trees by promoting tree health and determining the elimination of fuel laddering whenever possible. Tree maintenance may include pruning, fertilizing, watering, insect and disease control, removal or thinning or other tree care activities. Maintenance may be accomplished by the resident, personnel of the municipal and county government or by contract with commercial tree care companies.
- B. Maintenance of optimal levels of age and species diversity will be established to help stabilize the urban forest by buffering it from pest and disease infestations. Representatives of low-growing species (junipers, etc.) shall be retained but pruned to eliminate existing fuel laddering. Attempts should be made to keep representatives of all layers and age classes currently present in the overstory.
- C. Good community forest management practices shall be established with a clear set of priorities and a long-range plan. Record-keeping on costs and types of operations performed is recommended. Activities such as planning, ordinance enforcement, research, public outreach and education shall be tracked.
- D. When requested, the community forester or other designated individual shall provide information to owners of private property regarding all aspects of tree care, including the latest techniques and procedures currently being practiced.
- E. Community response mechanisms shall be developed to eliminate conditions that threaten forest health, including disease, infestation and excessive fuel loading.

Conservation

- A. Conservation of the urban forest structure and natural resources shall be promoted by protecting existing healthy tree resources.
- B. Basic performance standards shall be set for the amount of tree canopy to be retained or achieved.
- C. A master plan for tree planting, protection and removal shall be developed.

Tree Management Standards

- A. Urban forest management and enforcement shall be the responsibility of the community forester or other individual. This manager shall coordinate all activities that affect urban trees and specify cooperation between departments and agencies.
- B. Urban forest management guidelines and "best management practices" for residential and commercial property shall be developed.
 1. Tree hazards such as diseased, insect-infested and/or dead trees shall be removed.
 2. Proper pruning, thinning and removal, fertilizing, watering, etc., shall be accomplished annually with the goal to achieve fuel reduction and tree health.
 3. Proper care of existing trees in commercial development areas shall be enforced.
 4. The review process prior to development will include assessment of impacts to trees, grading considerations, footing and foundation design and structure design.
 5. Tree planting, maintenance and removal guidelines as specified by the International Society of Arboriculture shall be followed.
 6. Urban forest interface should be based on firewise concepts where private property and commercial property are analyzed by either:
 - 1) Canopy cover,
 - 2) Biomass per unit area, or

- 3) Basal area.
- 7. The construction of houses, decks and/or buildings around existing trees on private/commercial property shall be strongly discouraged.
- 8. Standards and procedures for certification and/or licensure of individuals and businesses engaged in commercial tree removal and maintenance shall be established.
- 9. Standards for tree maintenance and care shall be established with International Society of Arboriculture guidelines by each community entity (Show Low, Pinetop-Lakeside and Navajo County).

Enforcement

- A. A legal basis for enforcement of required tree management standards shall be established.

Education

- A. A tree board, commission/committee shall be established by each entity. It is recommended that its membership be comprised of a representative from each of the following: fire districts, universities and Master Gardeners. Duties for this group shall be established by each entity.
- B. The community forester shall assist the community and agencies of the municipal government through public education to create and maintain a healthy and firewise community forest. The community forester shall also provide information and public relations to citizens and groups in the City regarding trees. The forester shall gather information and publish reports as needed about community forest vegetative and tree resources. The community forester shall work with municipal departments and agencies to improve agencies' understanding of trees and tree problems. The community forester shall meet regularly with the tree board.
- C. Assistance and education for citizens performing tree maintenance shall be provided through the University of Arizona Master Gardener program under the direction of the community forester.

CITY OF SHOW LOW RESOLUTION NO. R2003-09

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE CITY OF SHOW LOW, ARIZONA
ADOPTING A FIRE-SAFE COMMUNITY FOREST MANAGEMENT POLICY

RECITALS:

WHEREAS, Show Low is at risk from wildfire from both within and without the community; and

WHEREAS, during the Rodeo-Chediski Fire of last summer, a portion of the forest that surrounds our community did burn; and

WHEREAS, Show Low continues to be a great risk from another wildfire if the forest within and without the community is left in its present condition.

ENACTMENTS:

NOW, THEREFORE, BE IT RESOLVED that the Mayor and Council of the City of Show Low, Arizona hereby adopts the attached Fire-safe Community Forest Management Policy and the City of Show Low pledges to continue to work with the surrounding communities and government agencies to develop consistent ordinances that will protect the White Mountains from the threat of catastrophic wildfire.

PASSED AND ADOPTED this 18th day of February, 2003 by the Mayor and Council of the City of Show Low, Arizona.

Gene Kelley
Mayor

ATTEST:

Ann Kurasaki, City Clerk

APPROVED AS TO FORM:

Michael J. Brown, City Attorney

FIRE-SAFE COMMUNITY FOREST MANAGEMENT POLICY

The City of Show Low agrees to:

- A. Recognize that the responsibility for all structural and landscape protection within the community begins with the individual home or business owner and initial developer, progresses to the local property owners associations or home owner associations, and finally rests with City government which has the charge to provide for the safety and well being of all citizens within the community.
- B. Address the issue of property owner and homeowner association restrictions and prohibitions concerning the removal of trees. These agreements should be structured so that property owners will be encouraged to remove vegetation, not for the purpose of clear cutting but for the purpose of attractively protecting homes and businesses from the threat of wildfire.
- C. Provide for the elimination of any current policies within City government that limit the ability of any property owner to remove vegetation without incurring sanctions.
- D. Encourage all property owners, developers, property owner and home owner associations, and all government agencies to implement and maintain fire-safe forest management practices with the understanding that no one can rely on adjacent properties or sites as protection from their own failure to implement fire safe practices and follow-up maintenance schedules.
- E. Establish and sponsor a training and certification program for contractors that wish to provide landscape and property fire safe landscape treatments within the community. All certified contractors will be placed on a list of recommended providers that will be shared with interested property owners.
- F. Formally develop and implement a permit process that will monitor and map all work conducted on private and public property within the community.
- G. Evaluate the entire community and identify priority areas for the establishment of safe zones and natural corridors to serve as defense lines in the event of a wildfire.
- H. Conduct a forest health survey within the community to delineate the impacts of climatic conditions, insect and disease on the entire community forest.
- I. Develop a long-term strategic plan to develop a safe and secure community forest. This plan will have five, ten, and fifteen year objectives, will be reviewed and updated annually, and will include the implementation of a maintenance program that all property owners will be encouraged to continue.

Mr. McINNIS. Now I think we get an opportunity to hear from our Senior Chairman of the White Mountain Apache Tribe, Mr. Massey. Mr. Massey, thank you and you may proceed.

**STATEMENT OF DALLAS MASSEY, SENIOR CHAIRMAN,
WHITE MOUNTAIN APACHE TRIBE**

Mr. MASSEY. Good morning, Chairman and Committee also. Thank you, Chairman, members of the Committee and Rick Renzi, thank you for bringing the hearing here to Flagstaff.

I am honored and pleased to be able to share a few words with you today. We have prepared a PowerPoint presentation for you, but to save time, I think it is better that we present it at the conclusion of my talk.

I hope we can develop a better understanding of wildfire impacts and methods to protect our forests and our communities. As the Chairman of the White Mountain Apache Tribe in eastern Arizona, my people and I have learned a lot about wildfire.

Last summer on June 18, year 2002, the Rodeo-Chediski fire broke out on our reservation and consumed more than 500,000 acres of reservation lands, Forest Service lands and private lands and State of Arizona lands; 276,000 acres or about 61 percent of the fire, was on our reservation. Today, more than 6 months after the outbreak of the fire, I am here to tell you we have learned from our experiences.

First, let me tell you, a fire of this magnitude not only destroys trees and landscape, it is destructive to jobs, to families and to our

economy. We are struggling to recover from the fire which is greater than anything we have imagined and experienced in our history. And if we do not work together and take strong steps, we could see more fires destroying our precious resource basis and devastating families and communities throughout the West.

Now for us, recovering has been a full time task, which we must face every day. We are still working to get our first break-through to get back on our feet. Our recovery work focuses on bringing our forests back to health and restoring our economy, getting jobs for people. And we ask for your help for both. Both restoration and management of our forests is only half of recovery needs. I often remark to others that at the core, recovering from a fire is really centered on recovering for our people. Recovering means assistance and strengthening for our families, for our wage earners, for our communities. So planning for forest health must also recognize that people are part of these forests and our plans for protection and betterment of our forests must involve us.

For the White Mountain Apache people, our lands, our forests, are part of us. For us Apaches, our land is our home. In my language the term is chinek. The word is used to describe the land. Also, the same word is used to describe our mind. Our land, our mind are integrated, so we are truly tied to our land, we live, we work, we spend our days in our forests.

So when we lost so many acres because of the fire, we lost part of our home, part of ourselves also.

This is why our recovery work must move forward and must be fully completed, to bring healing to our land, our people. Unfortunately, with our limited resources, we are struggling to meet the challenges for this recovery. With the loss of so many acres of prime commercial forests, we realize the tribe must further expand its economy to make up for the loss of harvestable timber. We are trying to develop the use of our precious streams, lakes and mountains for outdoor tourism, fishing, camping, skiing and other economic activities using our natural resource base. This will help expand our economy and benefit our entire region.

But the key to bringing long-term recovery to the forests and economy to the region, must link to the people, getting people employed. Without economy base, we cannot afford to do the work we need to fix our forests. We need your assistance and cooperation to help identify new products and new markets and new policies to use small diameter trees which crowd our forest land, so that we may create the jobs and provide economic engines to fund and perpetuate a long-term sustainable and healthy forestry program in our region. And to protect our forests from future catastrophic fire.

For our recovery efforts, we have met many obstacles and roadblocks. We ask for your assistance. But we are patient people and we are committed to long-term recovery. We are proud people and we are proud citizens of the United States. We have every confidence that we will reach our goals. We are pleased to share our experience and knowledge and we are committed to work with all of you to restore our land to health. If we do not act, my people, my land will continue to suffer. We all face the risk of another fire with a greater magnitude of destroying more of our precious land.

Are we able to do this?

Mr. MCINNIS. Mr. Chairman, we are pretty tight on time and in courtesy to the other members, I am watching my clock, I have got to tighten it up. So if you can wrap it up in 30 seconds, that is where we are.

Mr. MASSEY. OK, the pictures say more than 1000 words, and you have before you the slides that we are going to give you.

Mr. MCINNIS. That is the handout that you have given to us?

Mr. MASSEY. Yes.

Mr. MCINNIS. Great, thank you.

Mr. MASSEY. But if we could have had time for these people to see what is on there, it would have been amazing. There is a lot a picture can tell.

Mr. MCINNIS. I understand that and maybe what we can do is come back to you, Mr. Chairman, but unfortunately we have got to meet a 1 time deadline for a bunch of connections this afternoon. So if we have time afterwards, I can bring you back up, unless you can wrap it up in 30 seconds or a minute. If it takes longer than that, I have to—

Mr. MASSEY. All right, we will go ahead and take a few pictures up here, very fast—

Mr. MCINNIS. All right.

Mr. MASSEY. —and have you guys look at it from the audience. Thank you for your time and we will go ahead and continue doing this. Look at the fires, how we can—if we manage our forests right, this is what we have out there and you can read how fire laid down if we can manage our forests right. The trees are still out there. And look at the post-fires there, no recent density fuel management treatments—all gone. Unmanaged forests, fire affects you. Creosote fire, 10 percent harvest; post-fire, artificial regeneration. That is what it looks like when we treat our salvage harvest. Low post-fire timber salvage, that is what it looks like.

Thank you.

[The prepared statement of Mr. Massey follows:]

Statement of Dallas Massey, Chairman, White Mountain Apache Tribe

Thank you Chairman and members of the Committee for inviting me to provide testimony at this hearing. I am honored and pleased to be able to share a few words with you today, and I hope we can develop a better understanding of wildfire impacts and better methods to protect our forests and our communities.

As Chairman of the White Mountain Apache Tribe in eastern Arizona, my people and I, have, unfortunately, gained a great deal of first-hand knowledge about the threats and impacts from wildfire. Our reservation, containing more than 1.6 million acres of Tribal trust land, was the site of the devastating Rodeo-Chediski Fire which broke out last summer, consuming nearly one-half million acres of forest land. Of that amount, more than 276,000 acres destroyed by fire were within our Tribal lands.

Today, more than six months after the outbreak of the fire, I am here to tell you about our experiences learned in the Rodeo-Chediski Fire, to describe for you the impacts it has had on our land and our people and our economy, and to offer our suggestions, along with the other valuable comments you will hear today, about what we can do together to respond to the threat which remains with us this year and for years to come from the threat of uncontrolled wildfires in our precious forest lands.

Our learning experience from the Rodeo-Chediski Fire began June 18, 2002, which for us White Mountain Apache was a day that changed our lives. On that day, looking to the west on our reservation from my own community of Canyon Day, we could see smoke billowing up like a dark thundercloud in the sky. We knew that the long dry spell had caught up with us and that we would be in for a major fire. We had battled forest fires before; for us Apache, fire is a way of life and it is re-

garded in our culture as a teacher. But we soon learned that this fire was very different. Within a matter of hours it grew beyond all control and expectation on its march to become the largest fire in Arizona history and one of the largest in recorded history in the western United States.

Within several days of its outbreak, the Rodeo Fire had merged with a new fire on the west side, the Chediski Fire and quickly became a threat to our lives, our communities, and our livelihood. The combined fires forced the evacuation of communities all along the northern boundary of our Tribal lands. Our effort to fight the fire and to cope with the evacuations and emergency planning consumed our people 24 hours a day. My memory of that time is a blur of endless meetings, telephone calls, and planning and replanning to coordinate scores of work teams and equipment which were dispatched in every direction. When the fire was curtailed and people could begin to return to their homes and their jobs, more than \$50 million had been spent in fire fighting and well more than 4,300 personnel, in addition to countless volunteers, had been assigned to the fire.

As the fire was brought under control and drew to a close, we learned the devastating impact from the fire. On our lands two primary watersheds in mountainous terrain had been scorched from flames, creating ongoing damage from erosion and flooding. It is estimated that more than 400 million board feet of timber from our commercial forests were destroyed, in addition to the damage and disruption to the variety of plants and animals which inhabited the 276,000 acres of burned land within our reservation.

Now, some six months after the fire has come through our lands, we have gained knowledge and experience and a degree of frustration and sorrow from what we have seen and what we have learned. For us each day we are faced with the task of recovery. This means recovery from the fire's effects on our lands and its effects on our homes, our jobs, and our future. Recovery for us is a full-time job. It will occupy future planning for our Tribe for years to come; and to guide our steps to recovery, we look to what we have learned from the fire and its impacts on our lands.

Some of what we have seen and learned has been very gratifying and promising. We have seen that our forestry management work made a significant difference in the fire and we understand better the need to continue the prescribed burning and the thinning which was occurring in some areas of the Rodeo-Chediski Fire. The maps which have been prepared through our BIA Agency Forestry Office show that when the Rodeo-Chediski Fire approached areas of our forest which had been treated through burning or thinning within the past ten years, the fire intensity dropped and became a healthier fire. The fire dropped from a crown fire to a surface fire, leaving healthy trees intact to survive and to provide seed for a future forest. As you can see from the maps and photos, there is a very dramatic and direct correlation between areas of treatment and areas of little or no serious fire damage.

In contrast, in the untreated areas, the fire was highly destructive and in many places, sterilized the soil. Again, the map shows high fire damage where there were no treatments or treatments in the recent past. The lesson is that multiple treatments at regular intervals will make the difference between catastrophic fire and a potentially healthy fire. In addition, a wildfire which breaks out in a treated area burns much less intensely and is much much easier for crews to control and manage. This is what allowed crews to contain and control the eastern flank of the fire in Cottonwood Canyon. The result will be much less destruction to the forest base and much less risk to private property and homes adjacent to forest lands from the threat of wildfire. We have seen this same pattern in earlier fires within our reservation, such as the 1999 Rainbow Fire, which abruptly stopped where it reached a pre-treated area near Cradleboard School.

Our fire also taught us some lessons about the recovery and rehabilitation work that is needed in the forest after a catastrophic wildfire. The Rodeo-Chediski Fire burned through a portion of our forest which had previously been burned in 1971 in the Carrizo Fire. We were able to salvage the destroyed trees in some areas, which removed fuel for the Rodeo-Chediski fire and resulted in lower fire severity. In the unsalvaged areas, our forestry officials found that when the Rodeo-Chediski Fire reached the perimeter of the old Carrizo Fire, the dead timber, along with additional fuels provided from brush and new growth, accelerated the fire and it burned with an even greater intensity. This experience shows that active management steps before a fire can ensure that the risks from runaway fires are minimized and action following a fire in the burned area can reduce impacts 30 years later. If we pull together now, we can utilize this knowledge to plan for our future and return our forests to a healthy condition and a fire-safe condition.

For us Apache people, our land is our home. As a people, we draw our identity and our culture from our land. In my language, the term *shii ne* is the word we

use to describe our land and it is also the same word we use to describe our mind. So, our land and our mind are integrated and in that way we truly are a people who are tied to and are of our land. So for us, the terrible destruction to our forest land is a loss of ourselves and who we are. That is why our recovery work must move forward and must be fully completed to bring healing to our land and to our people.

Unfortunately, for our Tribal government with limited resources, we are struggling to meet the challenges for this recovery, especially after experiencing the devastating economic setback from the fire. This has left the Tribe with even greater challenges to improve the livelihood of its people, many of whom are now at risk for layoff and job closures due to the loss of the commercial forest on the west side, and at a time when our Tribe is struggling economically to get back on its feet following the fire.

In conjunction with the BIA we have received funding for recovery for our lands through the Emergency Stabilization and Rehabilitation (ESR) process, formerly known as BAER, but we know that our recovery needs will extend much beyond the three year extent of ESR funding and will need much greater scope and attention than the preliminary soil stabilization and limited tree replanting, which is the focus of the recovery plan. For example, we estimate it would take over 150 years of recovery and growth before we will, once again, have a commercial forest in the Rodeo-Chediski Fire area. We seek your assistance in providing positive policy direction and funding to continue this rehabilitation to prevent further irreparable damage to our lands and to ensure that recovery becomes a reality for our forest lands.

But we understand that recovery for us will mean much more than stabilization and rehabilitation for our land, although we consider this very important. I often remark to others that at the core, recovery from this fire is really centered on recovery for our people. Recovery means assistance and strengthening for our families, for our wage earners, and for our communities which have been impacted by this fire. In turn, planning for future forest management and forest health must also recognize that we as people are a part of these forests and our plans for the protection and betterment of our forests must involve us.

For the White Mountain Apache people, our lands, our forests are part of us. We live, we work and we spend our days in our forests. We undertake our activities in our forests, including our logging, in an integrated approach. We use our staff and our years of experience to plan and carry out our forest activities in fulfillment of our environmental regulations and standards to ensure protection and health for our watersheds, our pasture lands and our forests. We also recognize that to bring about recovery we will need help. We have identified critical projects for our Tribe which we think can help expand our economic base, still using our precious natural resources, but geared to alternatives to commercial timber activity.

With the loss of so many thousands of acres of prime commercial forest, we realize that the Tribe must further expand its economy to make up for the loss of harvestable timber. With our streams and lakes and mountains in a state known for its dry deserts, we recognize that outdoor tourism, fishing, camping, and even skiing are to play a vital role in our economic future. As part of our recovery, we hope to obtain funding and assistance to further enhance our outdoor recreation programs. In turn, we recognize that the dollars spent for these programs, whether it be sport fishing or camping or skiing, brings a tremendous boost to our hard-pressed rural economy in eastern Arizona. The White Mountain Apache Tribe is already well-known and well-regarded for its tourism and outdoor recreation opportunities. We hope to expand these programs to further strengthen our regional economy and open a door to our future in cooperation with our regional partners.

However, we do not mean to overlook a key historic cornerstone of our economy, as represented by our commercial forests. We also seek funding and assistance to better adapt our timber processing and manufacturing to meet the new resource base of smaller trees, and unfortunately, of salvage trees impacted by fire or the growing threat in Arizona of bark beetle. It is our firm belief that without a viable economic base to the activities we wish to undertake in managing and perpetuating our forests, even the best of efforts will be short-lived and will not produce the results we wish for our offspring and future generations. We need your assistance and cooperation to help identify new products, and new markets, and new policies to utilize the overabundance of small diameter trees which crowd our forest lands so that we may create the jobs and the economic engine to fund and perpetuate a long-term, sustainable and healthy forestry program in our region and to protect our forests from future catastrophic wildfires.

As I stated, ultimately, recovery from our fire and planning for our forest health must be tied to people. For that reason, we seek the assistance and the funding to

be able to return our people to work after the devastating setback from the fire and to build a model which links our activities at the workplace with the future growth and health of our forests. Those are not unattainable goals, in fact, we believe that this approach is the only real viable solution to the future welfare of our Tribal lands and the forest lands throughout our region.

From the date of the fire last summer, we have met many obstacles and road-blocks to our plans for recovery. Expectations of assistance and aid have been met with only limited responses and, more often than not, denials. But we are patient people and we are committed to our long-term recovery. We are a proud people, and we are proud citizens of the United States. We have every confidence that we will reach our goals and we will achieve our vision for sustenance for our economy, a positive future for our people, and restoring our land to a balance of health, but we need your help. We lost much more than trees and forests from this fire. We have suffered a loss of a part of ourselves and our heritage, and we ask you for help. Without it, my people and my land will continue to suffer, and for all of us, the question becomes not if, but when will another fire of even greater magnitude erupt to destroy more of our precious lands. We look to your assistance in bringing our recovery goals to reality, and we pledge our commitment of cooperation in channeling the resources of our people and their enthusiasm toward the health, the recovery, and the welfare of our great lands.

Thank-you very much.

Mr. MCINNIS. Thank you, Mr. Chairman. I found your testimony very moving.

Next, Mr. Laverty, Director of the Colorado State Parks Department of Natural Resources. Thanks, Lyle, for coming down. You may proceed.

STATEMENT OF LYLE LAVERTY, DIRECTOR, COLORADO STATE PARKS, COLORADO DEPARTMENT OF NATURAL RESOURCES

Mr. LAVERTY. Thank you, Mr. Chairman.

Mr. MCINNIS. Also, if you do not mind, Mr. Laverty, if you would give your background prior to becoming the Director of Parks, so we have an understanding of your knowledge of the forests.

Mr. LAVERTY. Thank you. It truly is an honor to be here in front of you and the Committee again. I am currently the Director of Colorado State Parks. Last December, Governor Owens asked me if I would take on that job. In my prior life, I have had a number of opportunities to engage in a review, I was the Associate Deputy Chief of the Forest Service dealing with implementation of the national fire plan. Prior to that assignment, I served as a regional forester for the Rocky Mountain Region of the U.S. Forest Service here.

It has really been a delight to see, and I am encouraged with the conversation that you folks are entertaining as it relates to really critical issues.

I have got three quick points I want to share with you that relate to Colorado specifically, and really it is an honor to be here representing Governor Owens and Greg Walter, our Executive Director of the Department of Natural Resources. Both of those folks are passionately committed about forest health conditions in Colorado and I will share with you at the end where we are really taking some very active and progressive actions to deal with forest health conditions.

Three things I will just share with you—some highlights of the 2002 season in Colorado; some very, very specific impacts that happened in Colorado as a result of similar situations that you have

seen this morning, and then just share with you very briefly some of the actions that we are currently taking in Colorado.

The fires in 2000 in Colorado, we burned over 500,000 acres with over 2000 fires; a dramatic change for the historic pattern in Colorado.

On the question of cost, just alone in Colorado, not quite like the Oregon fires, we did spend over \$152 million just in suppression costs and rehab costs are going off the wall.

As a result of the fires, we moved out 81,000 people, we evacuated 81,000 residents in Colorado because of racing fires. They burned over 384 homes, 600-plus structures.

The 134,000 Hayman fire burn was nine times the size of the largest fire that we have ever had in Colorado, and that was 14,000 acres back in 1994. The 17 wildfires required the investment of almost 16,000 firefighters throughout the course of the summer, and tragically, we also ended up with nine fatalities.

As we looked at the situation, we found that there are really some very common denominators that existed across Colorado and perhaps across the interior west. The first being the fact that we had extremely low fuel moistures, really unbelievably low fuel moistures; unnaturally dense forest conditions of which we have been talking about for some time; and then those continuously high temperatures and lack of precip.

The urban interface lessons that we learned, I think these are the important parts I will share with you:

One is that we know that landscape treatments can in fact make a difference. Landscape treatments can make a difference when it affects the fire behavior and reduce the risks and the effects of fire.

In the fall of the season before, we burned about 8000 acres on a prescribed burn and the Hayman fire ran into that fire and it just went down very similar to the pictures you saw here. So the records are replete with examples on how active forest management can in fact affect these costs, suppression costs, can in fact significantly be reduced. But when you begin looking at the \$152 million that we just spent in Colorado, the majority of those costs were dealing with the urban interface. So being proactive in terms of managing that landscape can make a huge difference, and I am convinced that we can show you examples over and over again of how this will work.

Compounding the situation that we are wrestling with, with fire, is the whole issue of forest health. And in Colorado, not unlike what I just saw when I flew into Flagstaff this morning, is forest health conditions. We have the pinyon beetle down in southwestern Colorado that has currently killed 50 percent of the pinyon pine in southwestern Colorado, and my guess is that is basically the situation here in Arizona and New Mexico.

Just a couple of specific elements that I would just like to highlight as it relates to the fires that we had in Colorado. Congressman McInnis talked about the effects on water quality, on air quality and on endangered species. We have found—well, my time is up.

Mr. MCINNIS. If you could wrap it up.

Mr. LAVERTY. I will go quick.

The endangered species, we have lost acres and acres, thousands of acres of habitat as a result of the 2002 fires in Colorado. Water quality, we have spent over \$25 million in the Denver watershed just as a result of the Buffalo Creek fire 2000—in 1996, I am sorry—and the Hayman fire has burned 10 times the size of that Buffalo Creek fire. So we are anticipating those are going to be huge impacts on the people of Colorado.

Let me just talk quickly about some actions. The legislature in Colorado has taken some very aggressive action—

Mr. MCINNIS. Mr. Lavery, we need to do it in about 30 seconds.

Mr. LAVERTY. I will do it in 30 seconds, I will talk fast.

The legislature has taken some very aggressive action to encourage state agencies to manage forest stands in a healthy condition. We are working right now with the Forest Service and in fact, today we are cutting on Staunton State Park to show you the kinds of treatments that are taking place on the Apache Tribe. This is an urban interface and I tell you, it is a great example of how we can in fact show people that good positive forest management can make a difference in fire effects and behavior and it can be a very positive thing as a result in how a state park looks.

Thanks very much, I will be happy to answer any questions you might have.

[The prepared statement of Mr. Lavery follows:]

**Statement of Lyle Lavery, Director, Colorado State Parks,
State of Colorado**

Ladies and gentlemen of the Committee, my name is Lyle Lavery and I currently serve as the Director of Colorado State Parks. It is my distinct honor to come before you and provide some information about the degraded air quality, water quality, and wildlife impacts that catastrophic fires had on the State of Colorado in 2002.

As you well know, the Hayman fire was the largest wildfire in Colorado's recorded history, burning some 138,000 acres in and around the Pike National Forest—less than 20 miles from the Denver Metropolitan Area—at a cost of \$40 million in suppression costs. The Hayman fire, the Missionary Ridge fire, and some 2,000 other wildfires statewide were unprecedented. I would like to share with the Committee just a few of the impacts that these fires had on the natural environment in Colorado.

The Hayman fire was started on June 9, 2002. Severe drought and unseasonably dry weather, exacerbated by unnatural fuel accumulations throughout the forest, had left the Pike a virtual tinderbox. In a move not often seen by wildfire ecologists, the Hayman fire crowned and made a 12-mile run in half of a day's time. It destroyed almost everything in its path, including threatened and endangered species habitat and imperiled one of Denver's largest municipal water supplies.

Water Quality

The impact of catastrophic wildfires on forested watersheds is difficult to underestimate. The Denver Metro Area is primarily served by the South Platte River drainage located within the Pike National Forest. The Denver Water Department, which supplies 1.2 million users in the Metro area, owns several storage facilities in the South Platte drainage. One of the most significant storage facilities is the Cheesman reservoir, which is also at the heart of where the Hayman fire burned. In fact, some of the most severely burned stands are directly within the Cheesman drainage. If history is any indicator, this bodes very poorly for Denver's drinking water.

In 1996, the 12,000-acre Buffalo Creek fire—which is located just north of where the Hayman fire burned in the South Platte watershed—burned above a drainage leading to another Denver Water storage facility in the South Platte basin. Heavy rains a month later caused flash flooding across the denuded landscape, washed out a state highway and deposited 600,000 cubic yards (or hundreds of thousands of tons) of sediment into Strontia Springs reservoir—the equivalent of 13 years of sediment load in a few short days. To date, the State Forest Service estimates that more

than \$25 million has been spent as a result of the comparably small Buffalo Creek fire.

Colorado's concern, and more acutely, the concern of the Denver Water Department, is what will then happen if a heavy rain falls upon the Hayman burn area—an area roughly 10 times the size of the Buffalo Creek fire and above a reservoir roughly 6 times the size of Strontia Springs. We are looking at a potentially disastrous situation, despite the mammoth \$7 million flooding mitigation effort by the Denver Water Department. Denver Water has constructed very large sediment barriers, but granular granite sediment across such an immense landscape still has the potential to do tremendous damage to the reservoir.

In short, the Hayman fire has already affected the quality of Denver's drinking water. Fortunately, the area has not seen any significant rain as of yet. Unfortunately, our forest professionals tell us that the threat of landslides and massive sedimentation will not subside until vegetation has been reestablished. Because of the heat and intensity of the fire, many of the soils are incapable of supporting vegetation without scarification or other expensive mitigation efforts.

It is estimated that Denver's South Platte water supplies will be cut off for upwards of three days until water quality levels are safe again if heavy rains occur in the Hayman area. Perhaps most disturbing is the fact that this threat of incapacitation may persist for up to three years.

Air Quality

While water quality has been one of the most difficult ongoing challenges that we have had to deal with after the Hayman fire, the air quality impacts during the height of the fire may have actually been worse.

The Metro Area has spent the past thirty years working hard to improve air quality. In fact, we were recently given "clean air" status from the EPA for the first time since the inception of the Clean Air Act. To put that into context, in 1977 only Los Angeles had worse air quality than Denver.

On June 9, 2002, the day the Hayman fire exploded across the Pike National Forest, a strong northeasterly wind carried the enormous plumes of wildfire smoke up the South Platte riverbed and right into the downtown area. As the smoke entered the city, visibility was reduced to less than three miles, and was as little as 1° miles in some places. The result of this thick smoke was the worst air pollution levels ever recorded in Colorado. The fine particulate matter levels were so high that the air across the Metro Area was deemed unhealthy to breathe, according to EPA standards. Obviously some members of the public are more sensitive to air pollution. There was one fatality recorded as a result of the smoke pollution combined with the individual's reported asthmatic condition. But humans were not the only fatalities recorded as a result of these catastrophic wildfires.

Endangered Species

The Pawnee Montane Skipper butterfly is a Federally threatened species, listed under the Endangered Species Act (ESA) in 1987. It is found in only one place in the world and that is the Upper South Platte watershed area. The total amount of suitable habitat burned since 1996 is 12,026 acres, or 48.3 percent of the mapped suitable habitat. Based on the USFS fire severity mapping for the four major fires since 1996, it is estimated that the skipper population has been extirpated from about 30 percent of its former habitat since 1996. The fires of 2002 alone burned 39% of known skipper habitat. The species is now believed to be in a drought-induced dormancy, so official population estimates will not be known for some time, although few skipper have been observed since the fire. Needless to say, the Hayman fire has put tremendous stress on an already sensitive species.

Over 40,000 acres burned within the boundary of designated critical habitat for the Mexican Spotted Owl. There were several other threatened or endangered species that lost habitat—either known or suitable—in the Hayman fire, including the Bald eagle, Preble's Meadow Jumping Mouse, and Canada lynx.

We also lost an undetermined number of big game species, such as elk. Because the fire burned so early in the season, elk calving was a factor and state officials estimate that cows and calves were lost due to the immobility of young at that point in the season. The Hayman fire did not burn the primary range of elk, but wildlife officials are still unsure about the total impact to the herds in that area.

Colorado experienced a wildfire season in 2002 unlike anything we have faced before. The largest two fires in our recorded history—the Hayman and Missionary Ridge fires, respectively—not only burned simultaneously, but represented nearly half of the total acreage burned in the entire state in 2002—well over half a million acres in all. There are contributors to unnatural wildfires like these that are beyond

our control, such as weather and drought. But the unmitigated fuel levels across Colorado's 22 million acres of forested lands is not beyond our control.

The Federal Government owns two-thirds of Colorado's forested acres. Reducing the fuel levels on those lands is a monumental task with which Congress will have to wrestle. There are enormous roadblocks that the Federal land management agencies are facing in their effort to reduce dangerous fuels throughout the West. We know that the actions we are asking the Federal agencies to take will come at significant costs—though these costs can and should be reduced through effective tools like stewardship contracting. But we would ask Congress to keep in mind the cataclysmic costs that inaction would have on the landscapes of our forests.

At the state level, Colorado has taken the initiative to address forest health conditions. The Colorado State Legislature has passed through one house a bill requiring state land management agencies to manage state-owned forested lands to reduce the threat of catastrophic wildfire and to improve wildlife habitat and water quality. We anticipate the Governor will sign the bill in the coming months. The only problem is that this bill only deals with state-owned lands, some 1% of Colorado's forests.

Catastrophic wildfires like that of the Hayman can be avoided through aggressive and coordinated fuels reduction treatments. We know thinning works. Science and research support these findings. Treatments in and around the Hayman fire dramatically altered fire behavior. But to be effective, treatments must occur on a landscape scale. It is for these reasons, among many others, that the State of Colorado whole-heartedly endorses the Bush Administration's Healthy Forests Initiative.

Colorado is currently moving on legislation that will allow us to use thinning to restore healthy ecosystems in state-owned forests. But we must have action from the Federal Government to provide thinning on a landscape scale. Our best efforts simply cannot effect the volume necessary to avoid Hayman-type catastrophes in the future unless they are mirrored by Federal land managers. Nothing short of that will provide the necessary protections for our precious air, water, and wildlife.

Our analysis provides the following findings:

- The key to reducing the risk of catastrophic fire in Colorado is to return Colorado's forests to a more fire resistant, resilient condition.
- There are active management techniques that can speed up the process of returning forests to a more natural, fire resistant condition.
- Obsessive focus on short-term species protection impedes long-term habitat protection.

Mr. MCINNIS. Thank you again, Lyle.

It has now come to the time for the Committee to ask questions of the panel. Again, just because we have a fixed camera, if the members of the panel would just move over to the podium, then members, if you would limit your questions and the anticipated response to 4 minutes, we can stay on track.

So if the panel would go ahead and stand up and shift on over, and members of the Committee will direct the question to a specific individual. I do not want to spend the whole day on this, but it is just the circumstance we face.

Mr. Chairman, if you would start the questioning.

Mr. POMBO. Thank you. I just wanted to ask a question of Chairman Massey, if I could.

Native Americans tend to look at things much longer term than a lot of us do, and when you look at protecting your land, your area water, your forests, and you are planning out the next seven generations, how do you see us and our management of our forests playing an active role in managing those forests?

Mr. MASSEY. Well, the White Mountain Apache Tribe and the Bureau of Indian Affairs have been working real close together managing our forests and I think with your Committee, we need your help, I think loosening some of those environmental laws that we have out there. And I think we can really manage our forests the right way.

Yes, we have an environmental work plan that we have, an inter-governmental agreement, but we need to work together on those issues and I think we can harvest a lot more small trees and help on that. We would really appreciate that also.

Mr. POMBO. So you see it as an active management, actually people in the forests actively managing it, trying to plan out what that forest is going to look like in order to protect it into the future?

Mr. MASSEY. Yes, we believe in working in forests.

Mr. POMBO. Thank you.

And just a follow up with Mr. Laverty, if I could. You talked in your oral testimony and in your written testimony about the active management of forests and how important is that. In your experience, if we adopted a policy of hands off, lock down the forests, do not touch them, are these fires the result of that kind of a management policy?

Mr. LAVERTY. Mr. Chairman, great question. And I would say that the result that we are experiencing today in Colorado and the interior west is a result of these unnatural conditions, for a variety of reasons, and you have heard them all. But whether there has been active suppression or various management practices, the conditions are not normal. And if we do not go in there and do some proactive work right now, we are going to have more and more of these kinds of fires that we have had this summer.

We are very conscious that we are going to experience in Colorado large fires again that are going to have even more catastrophic effect on the life and property of people. So I really believe that with active management, we can in fact make a difference, we can in fact make a difference—we can do it.

And I think the present healthy forest initiative—I subscribe to that personally and I would love to show you what we are doing on the ground in Colorado because it first exactly with the President's efforts.

Mr. POMBO. I am sure we will get the opportunity to see that before it is over with.

Mr. LAVERTY. Let me bring you to Colorado.

Mr. POMBO. And just in conclusion, Mr. Chairman, I would like to thank Secretary Rey and Secretary Watson for taking their time to come out here. It is not very often that we do a field hearing that we get two high ranking officials from the Administration out here and I greatly appreciate you making the effort to be here. Thank you.

Mr. MCINNIS. Thank you, Mr. Chairman. Mr. Gibbons, you may proceed.

Mr. GIBBONS. Thank you very much, Mr. Chairman. And I think the first two questions I have would relate to either Secretary Watson or Secretary Rey, perhaps both would like to answer.

Congress' duty, of course, is to fund adequately services for each agency as predicted for what would be expected occurrences over the next year or so, during the budget. How do you predict in your budget what your annual firefighting cost will be so that we have that picture in our budget?

Mr. REY. Normally what we have done over the last several years is to take the 10-year average expenditures for the past 10 years and budget that. You have also granted us the authority, if

the fire season is worse than that, to use any available funds to fight fires and then, as has been the case, you have replenished those funds as they have been borrowed, in the next appropriations bill.

That system may not work as well now as it once did, for a couple of reasons. One, it was facilitated by excess trust fund balances that we no longer enjoy. Second, we are into what looks to be a sustained situations where fire seasons are going to be bad for awhile until we can do the fuels treatment work we need to do.

I believe that what we would like to do is to sit down with your Committee to look at some alternatives for a more stable means of funding firefighting costs and today is probably not enough time to get into that, but there are several alternatives that we are working with the budget Committee and with OMB and we would be happy to share those with you as well.

Mr. GIBBONS. Thank you very much, Mr. Secretary, and that was such a clear explanation that I am sure Secretary Watson would agree with it as well for her budget.

Ms. WATSON. I do.

Mr. GIBBONS. Let me ask Secretary Watson a very brief question, if I may. In Nevada, we have what is called a wildfire support group, which is something that would go to perhaps Mayor Kelley's question about how do you prepare a community for fires, but the wildfire support group in Nevada is a group of individuals who have been trained to fight fires, they are not your volunteer firefighters, they are individuals—they may be ranchers in a community, they may be ordinary citizens out there that have a residence nearby that are trained.

Is that a program that you support and you believe that having wildfire support groups that can address fires in a rapid fashion when they are small and containable, to be a significant part of the answer to preventing or addressing these larger wildfires that erupt, that are out of control after many days?

Ms. WATSON. I am not familiar with that particular program, but the concept of having locally trained people to respond is an important one, because we have found the first responders are often local folks and they can get a handle on a fire quickly. And I think adequate training is part of what the National Fire Plan is all about, working with local communities, getting them the equipment and the training they need to work together with us and to respond quickly.

Mr. GIBBONS. I would like to make that suggestion to Mayor Kelley and in fact anybody in this area, this region, that has a region that is susceptible to fire and the wild/urban interface. Because the resources that could be used to train these individuals, these individuals then would be qualified to address a fire, sort of like a rapid response team that we have created in homeland defense for terrorist threats, we could now have a homeland defense for wildfires.

So thank you, Mr. Chairman, and thank you to these witnesses.

Mr. MCINNIS. Mr. Walden.

Mr. WALDEN. Thank you very much, Mr. Chairman.

Mr. Rey and Secretary Watson, I want to commend the Administration. My understanding is you last year worked on 168,000 more

acres in fuel reduction than the prior year and for this year, you are proposing to double that increase to almost 300,000 more acres than were done before.

You know, we grow up hearing about the odds of something happening are like being struck by lightning. In the case of our Federal forests, I am betting on lightning right now. We have, what, 100 million acres that are susceptible to catastrophic fire, disease and bug infestation? And we are creating—

Mr. REY. 180.

Mr. WALDEN. 180? And we are treating 2.2 million acres a year at this rate, is that correct?

Mr. REY. That is about right.

Mr. WALDEN. So it is probably better to bet on lightning than the fact that we are going to get all this treated in time.

Mr. REY. Well, we have to ramp up the rate of treatment significantly, there is no question about that. But I think we also have to acknowledge that it took us 100 years to get into this situation and it is going to take us more than a couple of years to get out of it.

Mr. WALDEN. I could not agree more. What are the biggest obstacles that you are running into right now in being able to treat our forests?

Mr. REY. I think the biggest obstacles right now are the ones that we are focusing on addressing, which is the procedures that we have used that have become too cumbersome and expensive to carry out the work on a timely basis. Our hope is that by changing that alone we will be able to accelerate the amount of work that we do on an annual basis and certainly the use of stewardship contracting, the tool that you have just provided us, will assist that as well.

Mr. WALDEN. Some critics of the President's plan have said that it shuts people out from the courthouse door, that you cannot participate in the process. Is that the case?

Mr. REY. I think what we want to try to do is to encourage participation earlier in the process by a broader range of interests. If we are worried about shutting people out of the courthouse door, we have already failed. Because once an issue gets to the courts, we have already sustained a significant amount of time and expense in trying to do the treatments.

Mr. WALDEN. And can you describe some cases where the delay has resulted—or the appeals process the way it is currently constructed, has resulted in areas not being treated that later were subject to catastrophic fire, does that go on a lot?

Mr. REY. Probably the two most notable examples from 2002 are the Hayman fire, where part of the watershed was designated for treatment, but appeals needed to be resolved before that could occur; and the Squires fire, the one the President visited, where appears and litigation slowed up the work that needed to be done, so that it could not be done before a fire hit.

Mr. WALDEN. In the case of the Sour Biscuit fire in southwestern Oregon, half a million acres were burned, I met with Josephine County Commissioners 2 weeks ago, they have already been in and harvested and are beginning I guess replanting in the 25 acres that

the county had in that area. Can you describe for me what the Forest Service's time line is to get in and do any kind of salvage effort?

Mr. REY. Sure, the Forest Service has already done a limited amount of salvage of what we call hazard trees that represent a direct threat to human life and welfare. That has been concluded using a categorical exclusion.

In our case, the situation is a little different because the fire did not go out finally until about November 19, so we looked at a large level assessment, a full environmental impact statement, to do all the treatments as part of a comprehensive project. We completed the analysis that precedes that environmental impact statement at the end of the year, we are assuming that we will have the environmental impact statement completed by this fall or thereabouts, and we will begin starting to deal with the salvage activities that have to occur thereafter.

Some of the rehabilitation work is already being done, all the emergency rehabilitation work or virtually all of it, has already been completed.

Mr. WALDEN. But will it not take, in most people's estimate, another year of appeals after you complete the EIS before you actually can get in on the ground?

Mr. REY. Most likely, given the size of the operation and the location of the area.

Mr. WALDEN. So 2 years basically.

Mr. REY. For large projects and controversial areas, that seems to be about the norm.

Mr. WALDEN. And is it not true also that if it is pine, within that 2 year period, the value of those trees is basically lost?

Mr. REY. It depends on the size of the trees and the species involved. Lodgepole will last longer than ponderosa. In this particular instance, it is mostly ponderosa and Doug fir.

Mr. WALDEN. Mr. Chairman, could I ask a question of Mr. Massey?

Mr. MCINNIS. Mr. Walden, we have got to keep it pretty brief, because I want everybody to have an opportunity.

Mr. WALDEN. Am I over my 4 minutes?

Mr. MCINNIS. Well, the timer broke, so I'm guessing right now. [Laughter.]

Mr. WALDEN. How convenient. I will keep going until I hear the buzzer.

[Laughter.]

Mr. MCINNIS. You can assume you have heard the buzzer.

Mr. WALDEN. All right. Mr. Massey, when I was in a part of my district, there were logs on a rail car that were burned pine, I believe they came from this area clear up into Oregon, which are going to a mill in my district. Can you just briefly describe what your time lines are to get in after a fire, and begin restoration and salvage efforts?

Mr. MASSEY. Yeah, they told us 2 years and I do not think it is going to be 2 years. There are a lot of trees already showing cracks, but as soon as they are done, we are ready for recovering. We are doing some of it already.

Mr. WALDEN. You are already doing some?

Mr. MASSEY. Some of the bare activities, yes, and reseeded, we are already doing.

Mr. WALDEN. Very good. Thank you, Mr. Chairman, for your indulgence.

Mr. MCINNIS. Thank you, Mr. Walden.

Mr. Hayworth.

Mr. HAYWORTH. Thank you, Mr. Chairman.

Let me continue with Chairman Massey for just a second, on the question of the mill there on the White Mountain Apache Reservation.

I understand in terms of salvage, you have a mill there but as I understand it, you are fitted primarily for large diameter trees, 17 inches and above. Given the efforts of some to reduce the size of trees that could be processed, will you have to retrofit your mill to do that?

Mr. MASSEY. Yes, Hayworth. Our mill was built about 40 years ago, that was when we had big trees on the reservation, but as of today, we have more smaller trees and we really do need assistance in downsizing our mill.

Mr. HAYWORTH. So you would have to downsize the mill. Do you know how long a period it would take to retrofit it?

Mr. MASSEY. We started some process already, I think we have got about \$8 million into our mill downsizing already, but we still need some more to make it run efficient, to run small trees.

Mr. HAYWORTH. Continuing with the subject of money, I was very interested in Mayor Kelley's offer, if you will, to the Federal Government, a loan—and let me call up my friends from the Administration, if I could, please, to talk about this. Because I appreciate the thinking outside the box and it goes without saying, when we were visiting earlier, Mark, that the Mayor was very happy to hear that the funds are on the way and we will try to avoid the phrase "the check is in the mail," for obvious reasons.

But what about this thinking outside the box, I mean, should we in the Congress look to find a mechanism for inter-governmental agreements where local municipalities or county governments or even with the trying financial conditions we have right now, states in essence float a loan to the Federal Government to expedite projects?

Mr. REY. We actually have those agreements. If you have enough time to do the upfront work to execute a memorandum of agreement with a state or a local government, and we have many of those because firefighting is a cooperative and inter-governmental effort, then money can flow back and forth between the Federal and local governments. In California, for instance, we rationalize at the end of a fires season what we owe the state or the county of Los Angeles, or what they owe us.

The problem here was we had no instrument to work from ahead of time, during the timeframe involved. But if the Mayor wants to look at something on a longer term basis, or any unit of government does, we are open to that and have the tools to do it.

Mr. HAYWORTH. Well, this would then beg the question, I believe, for us as legislators, to work with our friends in appropriation and try to form a fast track uniform process, because when you are dealing with fires and you are dealing with the trauma a commu-

nity undergoes, and we have all heard of really the risks of a second environmental disaster with beetle infestation and disease and all those other problems, that just as we come into an area and try to work very quickly under the auspices of FEMA with low-interest loans to try and get people back on their feet, perhaps there is a mechanism we need to explore to fast track it so there is uniformity to move that forward.

Does that sound plausible, Rebecca?

Mr. REY. It sounds imminently plausible. We could look at the authority to write short-term instruments that can be executed very quickly. The memoranda of agreement that we do write tend to be programmatic, they tend to be expressions of how we are going to cooperate, share funding and resources over an extended period of time. They are not designed to deal with an emergency situation like this.

Mr. HAYWORTH. So that would be something that we need to look at.

Rebecca, one quick—

Mr. MCINNIS. Time is up.

Mr. HAYWORTH. I did not hear Betty Crocker's bell, but I will accede to the Chairman.

Mr. MCINNIS. Well, again, Betty Crocker—

Mr. HAYWORTH. Is out baking right now.

Mr. MCINNIS. Yes. That thing is not working, so I am doing the best I can at guessing at about 4 minutes. Thank you, Mr. Hayworth.

Mr. Renzi, you may proceed.

Mr. RENZI. Thank you, Mr. Chair.

Mark—Secretary Rey, if I could ask you a couple of questions real quick. We in the Congress and in the White House, in the President's initiative, are trying to give you a tool, a new tool, called stewardship contracting, and yet there are those who are opposing us in this realm. And I would like, you do not mind, please to explain to the public, particularly in Flagstaff, the quick essence of stewardship contracting and also as it relates to some of the funding that my colleague Mr. Gibbons was talking about, as it relates to maybe A-Bar-S, Apache-Sitgreaves and some of the hope that we can have in the White Mountains.

Mr. REY. Simply stated, stewardship contracting gives us a new tool that we currently lack, to do long term, landscape level work on the ground, by using the authority you provided us to write a long-term stewardship contract—10 years in length or shorter. That's twice as long a contract as we can write under existing procurement regulations, and allows us to treat areas where there is not as much commercial value as there are in other areas where we can use commercial timber sale contracts to do the treatments.

So the importance of the tool is it allows us to work over a longer term basis at a landscape level. The contractor who signs the contract has the stability with a 10-year contract to make investments not only in the equipment that he uses to do the work on the ground, but perhaps in the infrastructure to use low-value material and convert it into biomass energy or particle board or something else for trees that are not of a sufficient size or quality to be used in sawing lumber. It is a very important tool.

One of the things I think it is worthwhile to announce today is that we are poised on the brink of announcing a long-term stewardship contract on the Apache Sitgreaves National Forest. We are going to call it the White Mountain stewardship project, it will last over 10 years, it will treat 150,000 acres, 15,000 acres a year. The contract has been developed in cooperation with local communities and the Nature Conservancy. The Nature Conservancy has agreed that they would be our monitor of how well we do under the stewardship contract. We are hoping to get it announced in July, solicit public comments on it and get it operating this fall.

So we will be able to see on the Apache-Sitgreaves National Forest and the White Mountain area, the value of this contracting tool. And hopefully the way it brings people together to look at land treatments that need to be done to avoid the circumstances that we saw last summer.

Mr. RENZI. Thank you, Mr. Secretary. I want to thank you for that announcement and also thank Ms. Watson for her help at White River.

Just real quick, we have got about 30 cattlemen who drove up in a bus this morning from Globe and we have had a real tendency to see our cattle moved off the Tonto. Our cattle industry in rural Arizona is a critical part of our economic engine.

Could you please speak briefly to the cattle's role in creating a healthy forest?

Mr. REY. We do in many areas use livestock to reduce flora and forage to reduce fire risk. In many of our forests where we have fuel breaks, particularly in southern California and elsewhere in the southwest, we use cows, goats and sheep to maintain the fuel breaks. So they do have a salutary effect in that regard.

Here in the southwest, we are in the middle of an extended drought cycle and it has been a very tough time to maintain range quality and we have had to make very difficult decisions. But I will tell you that we are committed to retaining the grazing industry as an integral part of the public lands and as an important component of slowing the development and subdivision of private lands, because every ranch that goes out of business tends to become a subdivision or a series of ranchettes. In the last 20 years, 3.5 million acres in the 11 western states have been converted from privately owned ranch land, often ranch lands that were providing important wildlife habitat, to subdivisions.

Mr. MCINNIS. Ms. Watson, I am going to allow you to answer that because I think it is very important.

Ms. WATSON. All right, thank you very much.

I just wanted to make mention that the Bureau of Land Management shares the sentiments that Mr. Rey just described and I would like to urge your constituents to participate in a proposed rulemaking that the Bureau of Land Management just put out on modifications to the grazing rules and regulations and our processes. It was just published in the Federal Register and we need and want comments from the grazing folks on this initiative. We too think that grazing plays a very important role, not just in the health of the lands, but in the health of our rural economies. We want to give them the tools to continue on the land in the 21st century.

Mr. MCINNIS. Rebecca, I assume that you have a website that folks could look up?

Ms. WATSON. Yes, if they go to the Department of Interior website, they can find those regulations there.

Mr. MCINNIS. Mr. Rey, I assume that applies to your agency as well—website?

Mr. REY. There is a USDA website. If I was more computer literate, I could remember—

Mr. MCINNIS. Well, they could put in search, but there is a website out there that where they can get some of this data. Also, we are going to try and put everything we can on our website for today's hearing, some of the pictures too.

Mr. POMBO. Mr. Chairman, if you would just yield on the point.

Mr. MCINNIS. Of course.

Mr. POMBO. For all of the members of the audience, all of the information from this hearing will be linked to the House Resources Committee website as well as the information that our two Under Secretaries just talked about will be linked to our website. It will take our staff a couple of days to get it on there, but all of that will be on our website. So any further information that you want, you will be able to pull down. Thank you.

Mr. MCINNIS. And that website, Mr. Chairman, would be—what would they throw in a search?

Mr. POMBO. Ask one of them.

[Laughter.]

Mr. MCINNIS. Get your pencil out and we will give it real quick.

Mr. POMBO. Resources.gov—

Mr. SHADEGG. Do you want me to read the whole thing here?

Mr. MCINNIS. Go ahead.

Mr. SHADEGG. //ResourceCommittee.House.gov/107cong/—

Mr. MCINNIS. Slow down, slow down.

Mr. POMBO. Just put in ResourcesCommittee.gov.

Mr. MCINNIS. ResourcesCommittee.gov will do it for you.

Mr. SHADEGG. I am informed there is a handout with the website address on it.

Mr. MCINNIS. Terrific, we will do that.

Mr. SHADEGG, you may proceed.

Mr. SHADEGG. Thank you, Mr. Chairman. I want to begin with you, Chairman Massey.

You heard some discussion earlier that there was an ongoing effort in Washington the try to strike a middle ground and pass legislation this year where we worked with George Miller and others to try to reach compromise legislation. Mr. Walden and the Chairman of this Subcommittee worked very hard on that.

But we were opposed in that because some people to this day across America, many, adamantly believe we should not be treating our forest. Chairman Massey, I just want to compliment you on this PowerPoint presentation. I wish somebody would make a TV documentary of it to show to the Nation and to the people of the Nation and to our colleagues in Congress. We got a chance to see the photos, I want to walk through some of them quickly.

First, it showed that untreated forest is an abject disaster, that is a picture of that. It shows that by contrast, a treated forest is just dramatically better, even after the fire goes through it.

And then it showed something I had not realized. You have photographs that show where it has been treated only mechanically, but not by burning as well, prescribed burning. It is better than untreated, but it is not near as good as land that has been treated both mechanically and by prescribed burning. And I think that is an incredibly important lesson for us to learn.

It also shows something else that I have been focused on. I want to focus a lot on the issue of timber salvaging. My colleague Mr. Walden brought out the fact that if we do not do timber salvage work very quickly here in Arizona—because mostly our forests are ponderosa and not pole pine, we had better do it quickly, and we are not doing it quickly enough. But your photos also showed that in areas of the fire where there had been a forest fire before and there had been no salvage, they were devastated much worse by the second fire than in areas of the most recent fire where there had been previous fires and you had done timber salvage and restoration work.

And I think that is a tremendous PowerPoint presentation, which as I said, I wish we could make into a documentary.

Is it true that the tribe is now currently doing timber salvaging and doing it fairly aggressively?

Mr. MASSEY. Yes, we are doing with several contractors on the reservation and part of our own sawmill, we are doing some of that salvage also. But I would like to thank you for pointing those things out. I think from the Rodeo-Chediski fire, there is history there. I think we can go take a trip and learn from it of what we have been doing to our forests out there.

Mr. SHADEGG. I have information showing that you have at least three bidders that have already bid to do timber salvage work and I guess it is going forward presently, and they are harvesting that timber salvage right now; is that right?

Mr. MASSEY. Yes.

Mr. SHADEGG. Secretary Rey, I want to ask you a question before I run out of time and the Betty Crocker bell rings. It is my understanding that on the non-reservation portions of the Rodeo-Chediski fire, we only have let one timber salvage contract and I understand it is only of the type you previously described, that is on areas adjacent to roads and campgrounds where a falling tree could injure or kill someone; is that right?

Mr. REY. Actually there are a couple of contracts that have been let, all of them under that categorical exclusion and all of them currently under litigation.

Mr. SHADEGG. That was my second question. At the moment, they have all been stopped by litigation; is that correct?

Mr. REY. So far that is correct.

Mr. SHADEGG. And under the normal time line for that litigation, is there any hope that we will be able to do the salvage timbering or will the litigation prevent us from being able to do that if it pursues its normal course, because this is ponderosa pine and we have 2 years or less?

Mr. REY. It is a little too early to tell. If the case goes to a full trial on the merits, the scenario you describe is probably correct, but at this point, we have not even had a hearing on a preliminary injunction. So it is unclear what will happen.

Mr. SHADEGG. I want to encourage you on behalf of all of northern Arizona to aggressively pursue that litigation and try to win it any way you can. And I also want to tell you that some of us in Congress are thinking about introducing legislation that would address that ongoing litigation.

But beyond that, is there—are there plans to let additional contracts for areas beyond those adjacent to the human habitat areas?

Mr. REY. Yes, the environmental impact statement covering those areas should be done in May and then, depending on whatever appeal and litigation activity occurs thereafter, we will see what happens next.

Mr. SHADEGG. My final question is, is there anything else that we can do legislatively to assist you in ensuring that that timber salvage work does go forward?

Mr. REY. We could probably talk about that back in Washington, if you would like.

[Laughter.]

Mr. SHADEGG. Well, some of us want to do that, so thank you very much.

Mr. MCINNIS. Unfortunately, Betty Crocker has been replaced by the little hammer up here.

But Mr. Shadegg, I would point out that your questioning on litigation is absolutely on point and that has really caused a problem. And while the litigation is being delayed, I think we will probably hear from some of the rest of the panel, the beetles move in and then pretty soon the beetles make it and then we have got another disaster on our hands. But I am glad you brought that up, I appreciate that.

Mr. POMBO. Mr. Chairman, just to clear this up in my mind, when we are talking about this timber salvage that you are discussing, we are talking about removing dead trees.

Mr. SHADEGG. Dead trees inside the footprint of the Rodeo-Chediski fire that could be used—have an economic value right now but as has been brought out in other questioning, soon will have no economic value whatsoever.

Mr. POMBO. So you are not suggesting cutting green trees, you are suggesting that we go in and remove dead and burned trees.

Mr. SHADEGG. Mr. Chairman, that is absolutely right.

Mr. POMBO. OK.

Mr. MCINNIS. And I might add, Mr. Chairman, keeping in mind that every day that goes by that you do not remove that, that becomes a nest for beetles and then when the beetles do not have their tummy full from that, they fly to the live trees. And we have experienced it in huge proportions in Colorado.

I want to thank the panel; thank you very much. I apologize you had to stand there for all this questioning, but thank you very much for coming and I ask that the audience recognize the group.

[Applause.]

Mr. GIBBONS. Mr. Chairman.

Mr. MCINNIS. Yes.

Mr. GIBBONS. Mr. Chairman, if I may ask the indulgence of the Committee while we are changing panels here, there are some of us who would have liked to have added questions to this panel. If it is in the discretion of the Chairman and the Committee, we

would like to submit questions for the record for the panels to answer.

Mr. MCINNIS. For the audience here, we have a procedure, because we almost always run into time problems in Committee hearings, so we do have a procedure that allows the Committee members to submit further questions and submit questions for the witnesses and those responses and then we incorporate those into the record.

The Chairman of the whole Committee has asked me to remind—well, not remind, many of you are not aware of this, but some of you would have liked to present some public testimony, but you did not have an opportunity, for obvious reasons, to present it as our panel has been able to present it. So we are going to allow you an opportunity to submit written testimony. Again, you can send it by e-mail or you can send it—and we will get you an address on the handout for the Committee. We do ask that you submit that testimony within the next two or 3 days. And we will include that in the public record as well. So please, be aware of that.

I want to thank the second panel for attending. Dr. Moore, you may go ahead and proceed to the podium, you are going to be the first.

Let me introduce the whole panel—Dr. Moore a doctor with the Greenspirit Strategies, Inc.; Dr. Wally Covington—Doctor, nice to see you again, School of Forestry, Northern Arizona University; Sarah Cassatt from Flagstaff; Dr. Kolb from Northern Arizona University; Mr. Gibson from Pulp and Paperworkers Resource Council; and Mr. Ack from the Grand Canyon Trust.

Thank you all. Dr. Moore, my timer is broken, so we are going to give you 5 minutes and I am going to give a little tap if you are running over. I appreciate you watching that. Thank you very much, you may proceed.

**STATEMENT OF PATRICK MOORE, PH.D., CHAIRMAN AND
CHIEF SCIENTIST, GREENSPIRIT STRATEGIES, LTD**

Mr. MOORE. Thank you, Mr. Chairman and members of the Subcommittee for this opportunity to testify today.

As an ecologist, co-founder of Greenpeace, where I served 15 years full time, and a life-long environmentalist, I find myself in an era where many other environmentalists have adopted policies that would see millions starve in Africa rather than eat perfectly safe genetically modified corn, that oppose dams producing renewable hydroelectric power in China when the alternative is non-renewable coal, and that would see forest fires kill every living thing rather than support sustainable forestry and the use of renewable wood.

In this policy environment, I fashion myself the sensible environmentalist. And there is nowhere a greater need for some common sense than in the debate over how to manage the national forests and other public forest lands.

There is simply no sense in allowing conditions to prevail that inevitably result in uncharacteristic and catastrophic wildfires. The waste of renewable resources, the destruction of wildlife, the loss of soil and siltation of rivers, the release of vast amounts of carbon dioxide and the loss of property and sometimes human life are

things to be avoided, not encouraged. This is especially true when one considers how simple it is through the application of time-tested silvicultural practices to maintain forests in a state that minimizes catastrophic outcomes.

There are two primary root causes of the forest conditions on Federal public lands today. The first is constitutional and political. Most of the Federal public lands are in the West and most of the population and politicians who determine the fate of those lands are in the east. This imbalance in electoral accountability has led to policies that satisfy remote interests while stifling more local ones.

The second root cause is ideological and stems from the fact that many powerful environmental groups are basically anti-forestry and favor policies that reduce the use of wood rather than encourage its use as a renewable resource. They promote a policy of cut fewer trees, use less wood.

A sensible environmentalist knows that the correct environmental policy is grow more trees, use more wood. This in turn requires active management, the application of scientifically based silvicultural treatments and the productive use of the wood thus obtained.

The active management of the majority of public lands with forests to reduce fire risk, to enhance wildlife habitat, to protect life and property and to obtain wood in no way contradicts the desirability of maintaining a world class system of protected areas where industrial activity is restricted or banned. The World Wildlife Fund official policy is that 10 percent of the world's forests should be off limits to industrial use. That is a reasonable policy, but begs the question of what to do with the remaining 90 percent. A sensible environmentalist would favor sustainably managed forests producing high volumes of wood, while taking the needs of wildlife and biodiversity into account.

The anti-forestry activists are telling us the way to save the forest is to let them burn to the ground. Last summer, I toured forests in Idaho with a group that included former Forest Service Chief Jack Ward Thomas. We witnessed the devastation caused by uncharacteristic wildfires in the ponderosa pine forest in the high country northeast of Boise. I include a few images from that field trip for your interest.

These photographs show that even after 15 to 20 years, the forest has not recovered from the devastation caused by uncharacteristic wildfires. The soil was burned off exposing bare rock. Erosion continues, sending debris into rivers where it damages fish habitat. A beautiful biodiverse ponderosa pine forest has been reduced to a barren landscape that will take decades to recover.

I am not saying that fire in forests is always bad for the environment. Fire can be a very useful tool for managing fuel loads and enhancing wildlife habitat. But fire is a tool that should only be used by professionals trained in forest science, not by idealists with the naive notion that because fire is natural, it is automatically good for the environment.

The inferno that began in the Bandelier National Monument in Los Alamos, New Mexico in May 2000 is a classic case in point.

The park officials who started this fire did so with good intentions. But they failed to take into account the fact that over 50 years of fire prevention had resulted in a fuel load buildup that nearly guaranteed the catastrophic results that ensued. The only solution in these circumstances is manual and mechanical removal of wood to reduce the fuel load. In some types of forests, it may then be possible to manage fuel loads with prescribed fire. In other types of forests, however, especially where there are homes and other property at risk, mechanical thinning and harvesting are the only practical options.

Just a brief word about the precautionary principle which is so often used these days to try to convince us that we should do nothing. There is a risk of using logging and thinning practices in forests, but there is a far higher risk of allowing those forests to come to a state where they will have catastrophic fires. In other words, the precautionary principle is not only about considering the risk of doing a certain thing, it is also about considering the risk of not doing it, not doing active management in other words.

It is therefore essential that the present legislative and policy obstacles to implementing active management of national forests and other Federal forest lands be removed. It is unfortunate that some activist groups characterize this need as being destructive to the environment, when it is actually the only way to break the present environmentally destructive pattern of fuel buildup followed by catastrophic wildfire. I wish the legislators, policymakers and all those responsible in the field well in bringing about these very necessary changes in law and practice.

Members of the Subcommittee, I have attached a section from my book *Green Spirit: Trees are the Answer*, for your interest. The section that is about fire, and I would also ask you to go to greenspirit.com which is my website which contains a great deal more material on this and many other subjects.

Thank you very much.

Mr. MCINNIS. Thank you, Dr. Moore, very interesting testimony. [The prepared statement of Dr. Moore follows:]

**Statement of Patrick Moore, Ph.D., Chairman and Chief Scientist,
Greenspirit Strategies Ltd.**

As an ecologist, co-founder of Greenpeace, and a lifelong environmentalist I find myself in an era where many other environmentalists have adopted policies that would see millions starve in Africa rather than eat perfectly safe genetically modified corn, that oppose dams producing renewable hydroelectric power in China when the alternative is non-renewable coal, and that would see forest fires kill every living thing rather than support sustainable forestry and the use of renewable wood, I fashion myself the Sensible Environmentalist. And there is nowhere a greater need for some common sense than in the debate over how to manage the National Forests and other public forest lands.

There is simply no sense in allowing conditions to prevail that inevitably result in uncharacteristic and catastrophic wildfires. The waste of renewable resources, the destruction of wildlife, the loss of soil and siltation of rivers, the release of vast amounts of carbon dioxide, and the loss of property and sometimes human life are things to be avoided, not encouraged. This is especially true when one considers how simple it is, through the application of time-tested silvicultural practices, to maintain forests in a state that minimizes such catastrophic outcomes.

There are two primary root causes of the forest conditions on Federal public lands today. The first is constitutional and political. Most of the Federal public lands are in the West, and most of the population and politicians who determine the fate of these lands are in the East. This imbalance in electoral accountability has led to

policies that satisfy remote interests while stifling more local ones. The second root cause is ideological and stems from the fact that many powerful environmental groups are basically anti-forestry and favor policies that reduce the use of wood rather than encourage its use as a renewable resource. They promote a policy of “cut fewer trees—use less wood”. A Sensible Environmentalist knows that the correct policy is “grow more trees—use more wood”. This in turn requires active management, the application of scientifically-based silvicultural treatments, and the productive use of the wood thus obtained.

The active management of the majority of public forests; to reduce fire risk, to enhance wildlife habitat, to protect life and property, and to obtain wood, in no way contradicts the desirability of maintaining a world-class system of protected areas where industrial activity is restricted or banned. The World Wildlife Fund official policy is that 10% of the world's forests should be off-limits to industrial use. That is a reasonable policy but it begs the question of what to do with the remaining 90%. A Sensible Environmentalist would favor sustainably managed forests producing high volumes of wood while taking the needs of wildlife and biodiversity into account.

The anti-forestry activists are telling us that the way to save forests is to let them burn to the ground. Last summer I toured forests in Idaho with a group that included former Forest Service Chief Jack Ward Thomas. We witnessed the devastation caused by uncharacteristic wildfires in the Ponderosa Pine forest in the high country northeast of Boise. (Here are a few images from that field trip).

These photographs show that even after 15–20 years the forest has not recovered from the devastation caused by uncharacteristic wildfires. The soil was burned off exposing bare rock. Erosion continues, sending debris into rivers where it damages fish habitat. A beautiful, biodiverse Ponderosa pine forest has been reduced to a barren landscape that will take decades to recover.

I am not saying that fire in forests is always bad for the environment. Fire can be a very useful tool for managing fuel loads and enhancing wildlife habitat. But fire is a tool that should only be used by professionals trained in forest science, not by idealists with the naive notion that because fire is “natural” it is automatically good for the environment. The inferno that began in the Bandelier National Monument near Los Alamos, New Mexico in May 2000 is a classic case in point. The park officials who started this fire did so with good intentions. But they failed to take into account the fact that over 50 years of fire prevention had resulted in a fuel load build-up that nearly guaranteed the catastrophic results that ensued. The only solution in these circumstances is manual and mechanical removal of wood to reduce the fuel load. In some types of forest it may then be possible to manage fuel loads with prescribed fire. In other forest types, especially where there are homes and other property at risk, mechanical thinning and harvesting are the only practical options.

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(Please see the attached excerpt from my book “Green Spirit—Trees are the Answer”)

Fire in the Mountains (Excerpt from Green Spirit—Trees are the Answer, Patrick Moore, 2000)

While the changes caused by ice are as slow as glaciers, the destruction caused by fire is instantaneous by comparison. A lightning strike or a careless camper can burn an entire hillside or valley in a matter of hours. The worst fires last for weeks, destroying new areas each time the wind picks up to fan the flames. Forest fires spark fear in humans and animals alike. If you find yourself in the wrong place at the wrong time the flames cannot be outrun.

Public attitudes towards forest fires have always been strong. Fear, fascination, and anxiety over environmental and economic devastation have combined to generate powerful opinions. People who live in communities surrounded by forest want to be able to control fires so their towns don't get burned to the ground. Foresters view fire as sometimes beneficial and sometimes harmful, depending on a wide range of factors. Many environmental activists take the view that since fires are natural occurrences they are therefore good and should generally not be controlled.

Little can be gained by arguing about whether forest fires in general are good or bad. First, forest fires come in a great variety of sizes and intensities. Some fires burn a small area and kill only the shrubs and ground-cover, leaving the trees alive.

Other fires kill virtually everything over vast areas including the seeds and soil, leaving the site sterile and subject to erosion. Second, while forest fires are often "good" as a way of temporarily increasing forage for wild grazing animals they are just as often "bad" for soil, trees, fish, birds, and humans. We tend to think worse of wildfires the larger the insurance claim when there is loss of human life and property. This may seem reasonable to us but it has little to do with the health of forest ecosystems.

For the sake of discussion forest fires can be placed in one of three groups: those started by lightning, those started by humans through carelessness or accident, and those caused by humans on purpose, often called "prescribed burning." Wherever forests are valued for timber, recreation, and wildlife, efforts are taken to control wildfires to protect these values. In 1924 the U.S. Congress passed the Clarke-McNary Act, an agreement among forest land owners, the western States, and the Federal Government to cooperate in controlling fires. A monument at Snoqualmie Falls in Washington State commemorates the historical meeting where the agreement was reached. Since that time fighting fire has become a sophisticated enterprise employing satellite surveillance, helicopters, fire-retardant chemicals and water bombers, in addition to the traditional fire-spotters in mountaintop watch-towers. Each year thousands of fires are reported and most of them are controlled before they spread very far. Some of them get away and do a lot of damage before they are contained.

In British Columbia, fire control is the responsibility of the provincial government. In an average year some 2,500 wildfires are reported, of which about half are caused by lightning and half by people. In addition, hundreds of fires are ignited on purpose for a number of reasons including brush control, preparation of harvested areas for planting, and improving grazing land for wildlife and cattle.

Forest fire control has had a significant impact on the "natural" cycle of forest disturbance and renewal that occurred prior to the advent of modern forest management. Areas severely burned were particularly large during periods of drought. Even today, in the far northern boreal forest of Alaska, Yukon, and the Northwest Territories, where there is little incentive to control fires, vast areas are burned by lightning strikes nearly every year. When these fires spread without any intervention they have sometimes wiped out whole mountainsides and valleys. If the soil is badly burned it can take decades for the forest to recover on exposed rock. These periods of catastrophic burning were followed by periods of re-growth and a new succession of forests that were burned again when conditions were right. Today, in areas where forests are commercially valuable, most potentially devastating fires are put out before they get out of control but there are still many fires that defy early attempts at control and burn large areas.

Some species of plants and trees are specially adapted to survive forest fires. Trees such as Douglas-fir, western larch, and longleaf pine have thick bark that protects them from ground fires. The seeds of some trees are adapted to survive all but the hottest blaze and some of their cones actually require heat from fire to trigger the release of seeds. The nutrients in the ashes from fires, so long as heavy rains do not wash them away, provide a basis for rapid growth of new plants on the site.

Foresters realize that in some areas small frequent ground fires play an important role in reducing the potential for eventual catastrophic fires. The ground fires can clear away the accumulation of dead wood and brush before the fuel load becomes large enough to support a fire that kills the trees. While this might lead one to think that fires should therefore be allowed to burn whenever they start it is not that simple. It is often difficult to tell in advance if a particular fire is the kind you want or if it might develop into an inferno that wipes out a whole forest. When there are towns nearby the decision becomes even more difficult. This is a good example of a real-life situation that requires judgment based on experience and knowledge. The answer cannot be found in a rule or regulation and even the wisest person will get it wrong sometimes. It's instructive to consider two examples of situations where judgments were questioned and where there has never been a resolution on the subject of whether a wildfire should have been put out or not.

In the summer of 1994 there was a large forest fire near Penticton in the Okanagan Valley of British Columbia. The fire started in rugged hills south of the town in timber not considered valuable. Initially, winds were light and blowing away from the town so forestry and environment officials decided to let it burn as a way of clearing off the fuel load and improving grazing for wild mountain sheep. This worked fine until a few days later when the wind came in strong from the south and fanned the flames in the direction of the town of 35,000. I watched as the pines exploded in flame and the blaze leapt from tree to tree. Whole suburbs were evacuated, 18 homes were burned down, and the town's electrical supply was threatened. Water bombers were called in from Vancouver Island and as far away

as Ontario to combat the blaze and save the town. Luckily the combined efforts of forestry firefighters, water bombers, and the Penticton Fire Department kept the damage confined to the outskirts. Needless to say, government officials came under severe public criticism for not doing more to extinguish the fire. Even so, environmentalists and wildlife advocates declared that the fire would result in improved wildlife grazing habitat.

A much larger fire began in July of 1988 during a hot dry summer in Yellowstone National Park.¹ At first the officials in charge decided to let the fires burn as part of the natural cycle. As the summer progressed the fires became more numerous and spread throughout the park. Local environmentalists strongly opposed controlling the fires even though they were spreading outside the park into commercially valuable forest. Loggers, ranchers, and residents of nearby communities wanted the fires stopped. By September the main lodge at Old Faithful was threatened with destruction and the decision on action was passed all the way up to the White House. By the time President George Bush ordered the National Guard in as firefighters, a massive effort was required to subdue the blazes, ultimately costing over \$120 million. In the aftermath those in favor of controlling such fires before they get out of control felt they had been right all along. The environmentalists disagreed, stating that even though it had been finally judged necessary to put the fires out that they had been beneficial to the ecosystem. They believed the forest would recover quickly from this "natural" event.

Eight years later I visited Yellowstone, and made extensive observations on the effects of the fire, which in the end affected over a million acres (400,000 hectares), nearly 50 percent of the area of the park. There are huge areas of forest where all the trees and plants were killed and there are other vast stretches where the forest was partially burned. It soon became clear to me that depending on where one looked, a case could be made for both positions regarding the impact on the ecosystem. In some areas, where the fire had not been severe, new lodgepole pine seedlings have grown back so thick they look like a green carpet. These sites will recover fairly quickly. But in other extensive areas, such as the Lewis River canyon, all the trees are dead and very few new trees have grown back. These areas were so hot that the seeds were burned and the phosphorous in the soil was vaporized. The only vegetation after eight years is from seeds like fireweed and cottonwood that have blown in on the wind. The soil has been heavily eroded in places and it will take many decades before a healthy new forest becomes established.

It is one thing to debate the merits of forest destruction by fire in a park and quite another when commercially valuable timber is at stake. It is even more problematic when a fire starts in a park and then spreads outside the park into areas designated for forestry. The two land uses, parks and timber production, are managed according to different values. In the park we care about aesthetics, recreation, and an environment not dominated by the material needs of people. On commercial forest lands we care about wood production, wildlife, and recreation. Fire is not aware of these distinctions and does not respect the boundaries between them.

I don't believe there is an absolute right or wrong answer to the question of whether a particular fire should burn or not. Wildfires in forests, whether caused by lightning or people, remind us that we are not always in control of the outcome of events. The only rational approach is the combined use of experience, careful judgment, and common sense. It is just as foolish to reject efforts to control forest fires as it is to think they should always be put out. The most reasonable approach must balance forest health, timber supply, human safety, and property protection. Such a complex mix of factors, each depending on circumstance, cannot be reduced to a simple formula.

In many of the areas where it is practiced, logging has replaced fire as the major cause of change in the forest. To some extent clearcutting and other forms of harvesting can "mimic" the impact of fire in the evolution and successional development of the forest. This is discussed later in this chapter.

Mr. MCINNIS. Dr. Covington. Dr. Covington, welcome to the Committee, I appreciate your attendance here today. You may proceed.

¹Micah Morrison, *Fire in Paradise: The Yellowstone Fires and the Politics of Environmentalism*, HarperCollins, New York, 1993.

STATEMENT OF W. WALLACE COVINGTON, PH.D., SCHOOL OF FORESTRY, NORTHERN ARIZONA UNIVERSITY

Mr. COVINGTON. Thank you very much. Thank you, Chairman McInnis, Chairman Pombo and members of the Committee for the opportunity to testify before this Subcommittee. And thank you for breakfast this morning. You find out you feed a forester, you have got a friend for life.

Mr. MCINNIS. Well, you are buying lunch, I assume you have packed lunches coming in for all of us.

Mr. COVINGTON. So on with the testimony. I will summarize the highlights of it and of course ask that the full body of my testimony be incorporated in the proceedings.

Although the general principles that I will talk about today apply to the vast majority of forests of the West, of the frequent fire or dry forest types of the West, I will focus most of my testimony on the ponderosa pine type. As you know, the General Accounting Office has identified that over 90 percent of the severe crown fires in the West occur in ponderosa pine and closely related forest types.

My testimony today has four major points. First, that the greatest threat to the sustainability, diversity and social viability of the forests and communities of the West is our failure to aggressively restore forest health in these frequent fire forests.

My second point is that the pace and scale of forest health restoration treatments is wholly inadequate and unconscionable. Treatments should at least be on the scale of acres destroyed by catastrophic fires. I will say more about that in just a minute.

My third point is that knowing what we now know, it is critical that we move forward with large scale restoration-based fuel treatments, using an adaptive management approach.

And my fourth and final point is that there are emerging models of communities working together with agencies and other organizations to restore forest health in the full suite of values that accrue to society from forest health restoration.

So first, the greatest threat to sustainability, diversity and social viability in the West is our failure to restore forest health. I used to say that it was crown fires, but in fact, that is overly simple. It is also the bark beetle infestations and all of the manifestations of forest health problems that we now see.

Simply installing fuel breaks around our cities and rural developments, in my opinion, is forsaking wildlands that are the basis of the long-term sustainability of the western United States and of the nation. Such actions fail to address one of the most contentious problems that we face, the protection of endangered species. Severe frequent wildfires of the West are the greater taker of endangered species habitat right now. It is not forest harvesting, it is not development, suburbanization or any of that; it is these severe wildfires that we are seeing.

If we are serious about restoring ecosystem health, we must confront the bigger problem, not just protecting our houses and habitat, but protecting the houses and habitats of wildlife, of spotted owls, of goshawks, os salamanders, all of the rest of the components of the community of life in our western forest lands.

The second point, the pace and scale of our forest restoration treatments is wholly inadequate.

The current rate of acceleration in the severity and size of wildfires in the West indicates that average annual losses over the next two decades are likely to be in excess of 10 million acres per year. Unless we act aggressively, we will long for the years of 2000 and 2002 because the trend is undeniable. It is been building now for five decades. Using the reasonable assumption that preventative restoration treatments should at least be on the pace and scale of losses to severe stand replacing fires, one would conclude that we should conservatively be treating five to ten million acres per year, and that the size of those treatment areas should be on the scale of the losses we are now accruing. We should be looking at 100,000 to half a million acre units when we analyze and implement treatments, not 10,000 acre units, not 20,000 acre units. It needs to be hundreds of thousands of acres.

I also want to point out that when I speak about preventative restoration treatments, I am not talking about trying to close the barn door after the horses are out. What I am talking about is getting in before wildfires occur and putting in treatments like we have seen in earlier testimony today, that clearly will prevent the kind of devastation—

Mr. MCINNIS. Doctor, we have got to speed it up a little.

Mr. COVINGTON. OK. I have got my little watch running here too, so I am now going to wrap this up.

The last point that I have to make is that we have sufficient knowledge to do these treatments on the scale of hundreds of thousands of acres and that we need to do so in adaptive management framework.

And my final point is that we have emerging models of communities working cooperatively to make this happen. One of the best examples I think is here in the Flagstaff area, the Greater Flagstaff Forest Partnership, which is working on restoring the Greater Flagstaff Forest Ecosystem.

And again, thank you very much for the opportunity to present testimony.

Mr. MCINNIS. Thank you, Doctor, and I appreciate your time.

[The prepared statement of Dr. Covington follows:]

Statement of Dr. W. Wallace Covington, Regents' Professor and Director of the Ecological Restoration Institute, Northern Arizona University

Chairman McInnis, and members of the Committee, thank you for this opportunity to testify on a subject of personal importance to me and of critical importance to the health of our nation's forests and the people and communities that live within them.

My name is Wally Covington. I am Regents' Professor of Forest Ecology at Northern Arizona University and Director of the Ecological Restoration Institute. I have been a professor at NAU since 1975.

I have a Ph.D. in forest ecosystem analysis from Yale University.

Over the past 25 years I have taught graduate and undergraduate courses in research methods, ecological restoration, ecosystem management, fire ecology and management, forest management, range management, wildlife management, watershed management, recreation management, park and wildland management, and forest operations research. I have been working in long-term research on fire ecology and management in ponderosa pine and related ecosystems since I moved to Northern Arizona University in 1975. In addition to my publications on forest restoration, I have co-authored scientific papers on a broad variety of topics in forest ecology and resource management including research on fire effects, prescribed burning, thinning, operations research, silviculture, range management, wildlife effects, multiresource management, forest health, and natural resource conservation. I am

senior author of the Ecosystem Restoration and Management: Scientific Principles and Concepts chapter of the interagency publication entitled The Ecological Stewardship Reference. I am a member of numerous professional societies including the Ecological Society of America, the International Society for Ecosystem Health, the Society for Conservation Biology, the Natural Areas Association, the Soil and Water Conservation Society, the Society for Range Management, and the Society of American Foresters. I am also a member of the Society for Ecological Restoration and was founding chair of its Science and Policy Working Group. In addition to publishing in the scientific literature I have been actively involved in outreach efforts to natural resource professionals, community leaders, and the general public on issues related to forest ecosystem management.

Although the general principles that I will discuss apply to the vast majority of the West's dryer forest types, I will focus my testimony on ponderosa pine forests. As the GAO has pointed out over 90 percent of the severe crown fire damage nationally is in this forest type.

My testimony today has four major points:

1. The greatest threat to the sustainability, diversity, and social viability of the forests and communities of the West is our failure to restore forest health in the frequent fire forests of the West.
2. The pace and scale of our forest health restoration treatments is wholly inadequate; treatments should at least be on the scale of acres burned by severe wildfire annually.
3. Knowing what we now know, it is critical that we move forward with large-scale restoration-based fuel treatments using an adaptive management approach.
4. There are emerging models of communities working to reduce the threat of fire while restoring the forest for its full suite of values. Their success depends on meaningful community collaboration, human and financial resources and adequate scientific support to make well informed management decisions. Congress, Federal agencies, universities, and non-governmental organizations must support these communities to help them achieve success. These groups should be supported and encouraged to work at the scale of the greater ecosystem, 200,000 to 1,000,000+ acres.

Background

It is an unfortunate set of circumstances that have led to this hearing. Scientists have predicted the current forest crisis for the last 75 years (Leopold 1924, Weaver 1943). In 1994 I was senior author on a review paper in which I stated that we could anticipate exponential increases in the severity and extent of catastrophic fire. It is not a prediction I ever wanted to come true. In that same paper, I also suggested that we have a narrow window of opportunity to take preventative actions to restore forest health and minimize the losses of civilian and firefighter lives as well as the mounting damage to our nation's natural resources.

The forests of the West are full of communities that have poor escape routes and little capability for evacuation in the event of a fast moving fire. It is not likely that our luck will continue. Recent fires have traveled spread at rates in excess of 10 miles in a 24 hour period. Given such a rate of spread in heavy forest fuels there is no way that we will be able to evacuate vulnerable mountain communities in time to prevent the loss of lives. Clearly, if we do not do something quickly we can expect civilian and firefighter fatalities that are today unimaginable. I commend the Committee and Congress for taking a problem-solving approach to the current and future fire situation.

I am optimistic that thoughtful action, adequate resources and public and private leadership we can begin to solve this crisis.

1. The greatest threat to the sustainability, diversity, and social viability of the forests and communities of the West is our failure to restore forest health in the frequent fire forests of the West.

Simply installing fuel breaks around our cities and rural developments and forsaking the wildlands would be an abdication of our responsibility to future generations. Attention cannot be narrowly focused on a ring around the developed areas. Such actions will fail to address one of the most contentious issues of our time, the protection of endangered species. Severe wildfires in frequent fire forests of the West are the greatest single threat to critical habitat for many of these vulnerable species because they are not adapted to stand replacing fires. According to a recent draft plan by the Coconino National Forest surrounding Flagstaff, Arizona, over the last ten years the nesting habitats of seven northern goshawks and six Mexican spotted owls have been eliminated or severely altered by stand replacement fires in the vicinity of the San Francisco Peaks.

There are numerous factors that contribute to the decline of species in this country but the biggest threats, according to experts like E.O. Wilson, a Harvard conservation biologist, are habitat destruction and degradation. Degradation of habitat occurs for many reasons but one of the most severe factors is the elimination of important ecological processes, such as the periodic, low-intensity burns that characterize the fire dependent ponderosa pine forest. By not restoring the forest we contribute to the decline of habitat and the collision between society and nature.

From a conservation biology perspective (conservation biology deals with the biology of rare and declining species), one of the most critical needs for species conservation is the ecological restoration of the core areas of greater ecosystems. Core areas are large areas that are managed as source areas for native plants and animals to disperse across the larger landscape. Core areas are typically, but not always, wilderness areas, National Park backcountry, and similar undeveloped areas. In the ponderosa pine type, these core areas are often even more overcrowded by unnaturally dense stands of trees than is the rest of the landscape. As such, our parks, wilderness areas, and other reserve areas are at a much greater risk of catastrophic crown fire than is the rest of the landscape. Furthermore, because of the importance of these areas as strongholds of biological diversity, their loss to crown fire is a much more critical blow to biological diversity than are fires in other areas. If we are serious about restoring ecosystem health we must confront the difficult problem of how to restore these critical core areas and do so immediately. At the very least we should seek to protect them with a defensible perimeter using restoration based fuel breaks much as we are trying to do with urban areas.

2. The pace and scale of our forest health restoration treatments is wholly inadequate; treatments should at least be on the scale of acres burned by severe wildfire annually.

The current rate of acceleration in the severity and size of wildfires in the West indicates that average annual losses over the next two decades will be in excess of 5–10 million acres per year. Using the reasonable assumption that preventative restoration treatments should at least be at the pace and scale of losses to severe stand replacing fire, one would conclude that we should be treating 5–10 million acres per year. Our current pace and scale is woefully inadequate given the scope of the problem. Unless we accelerate treatments rapidly and immediately we will never get ahead of the problem.

3. Knowing what we now know, it is critical that we move forward with large-scale restoration-based fuel treatments using an adaptive management approach.

We have a solid body of scientific information to support a systematic scientific approach for implementing forest restoration that will protect people, communities and the forest. Adaptive management would use this information, coupled with ongoing monitoring and evaluation, to ensure that maximum learning comes from ongoing operational treatment implementation.

We have sufficient knowledge to implement large, landscape scale restoration treatments in ponderosa pine and related ecosystems. Such a scientific approach should be based on attempts to objectively discover the truth about how best to learn how to improve treatments during the course of ongoing large-scale restoration of the landscape. The scientific method has been developed as a systematic way to discover truth, or more specifically to avoid being fooled by biases about how we imagine that things might be. A.D. Bradshaw (1993) of the University of Liverpool in England has presented a particularly cogent discussion of the need for objectivity in ecological restoration work. Otherwise, he fears that arguments over restoration objectives and approaches will tend to degenerate into decisions and actions based on intuition and impressions instead of the best knowledge available. He goes on to state that, "With this goes the belief that good restoration is intuitive, stemming from feelings rather than logical understanding, and that because of this it is only learned by experience...Certainly nobody should ever decry the importance of intuition...Yet applied to the exclusion of other principles, these beliefs will destroy the efficiency and effectiveness of restoration ecology..."

Restoration ecology, he posits, must be based on six cardinal points:

1. Awareness of other work.
2. Preparedness to carry out proper experiments to test ideas.
3. Preparedness to monitor fundamental parameters in a restoration scheme.
4. Further tests and experiments suggested by these monitoring observations.
5. The restoration of functioning ecosystems in which a whole variety of species is involved.
6. Published results.

There is abundant scientific research that began in the 1890's and continues today that provides a sound scientific framework for implementing the science and

practice of restoration in ponderosa pine and related frequent fire ecosystems. We have solid information about presettlement forest conditions, changes in fire regimes over the last century, deterioration of overall ecosystem health, and ecological responses to thinning and prescribed burning—the key elements of any attempt to restore ecosystem health in ponderosa pine and related ecosystems. We know that current overcrowded stands of trees do not sustain the diversity of wildlife and plants that existed a century ago. We know this by examining the data of early naturalists and scientists. We also know this to be true from primary research. Scientists that have compared biological diversity of overstocked stands—stands that have had decades of fire exclusion—with open, park-like stands that have not had severe fire regime disruption, have found greater plant diversity, greater insect diversity, and greater bird diversity. Similar studies have also found greater old-growth tree vigor and resistance to insect attack in open, park-like stands—stands similar to those present before settlement. We also know that stopping ecologically based forest restoration that includes thinning, is not saving the forest as some would like you to believe, but only contributing to its demise and causing severe losses to the wealth of species that depend on it.

Research across the Intermountain West has shown that restoration treatments substantially reduce fire hazard by thinning trees to decrease tree canopy density, break up interconnected canopy fuels, raise the crown base height, and then reduce accumulated forest floor fuels and debris with prescribed fire. Where tree density is great, fire alone is inadequate. Without thinning, fire can lead to increased mortality, especially among old growth trees. This is the typical case over most of the ponderosa pine type throughout the West.

Restoration thinning enhances the productivity (growth) of trees, allowing young trees to develop old-growth characteristics such as large size and full crowns. Perhaps most importantly, restoration has been shown to increase rapidly the productivity of native understory grasses and herbs, the species that make up 90–99% of the plant biological diversity in western fire-adapted forests. The resources provided by abundant understory vegetation—seeds, flowers, fruits, and cover—translate into key wildlife habitat components. For example, the number of butterfly species and individuals increased within two years in Arizona sites that had received ecological restoration treatments.

A variety of restoration options are being investigated at research sites across the West, applying treatments developed locally by scientists, managers, environmental activists, resource users, and members of the public. It is important to continue and expand the research effort, but at the same time it is imperative that we accept the responsibility to apply the extensive knowledge we already have, before more forests are lost. Restoration faces many challenges, because ecosystems have been highly fragmented and degraded by decades of overuse. It is not necessarily simple nor is success always guaranteed. But the preponderance of research clearly indicates that restoration management approaches stand in striking contrast to the destructive effects of unnaturally intense fires. Clearly the risks of inaction far outweigh the risks of scientifically based restoration treatments.

The actions that others and I believe should be taken to restore the ecological integrity of ponderosa pine forests and therefore reduce the threat of crown fire are well known. I do not advocate a “one-size fits all approach” but rather crafting management approaches based on the location under analysis, its presettlement condition, and its relationship to the broader ecosystem and the communities that live within it. In this sense, ecological restoration should not be viewed as a strict recipe or a rigid set of prescriptions. Rather, ecological restoration should be viewed a broad intellectual framework for restoring and enhancing not only ecosystem health, but also sustainable human uses of the land.

At the Ecological Restoration Institute we have developed some general principles for restoration of ponderosa pine ecosystems <http://www.eri.nau.edu/>. In general, treatment design should:

- Strive to emulate, insofar as is practical, natural ecosystem patterns and processes. In ecological restoration we refer to these natural conditions as “reference conditions”. In most cases for ponderosa pine forests this includes fewer trees per acre; retaining older trees and removing the excess trees thus opening up the forest canopy to promote increased numbers and species of plants and grasses.
- Seek to incorporate human needs with ecosystem conservation goals. For example, in many circumstances it may be desirable to deviate from strict-sense restoration prescriptions to accommodate specific uses by humans, endangered species, or other ecosystem management objectives.

- Recognize that ecologically based restoration treatments not only provide fuel breaks to stop crown fires from spreading across the landscape, but also enhance resource values and minimize the risk of environmental degradation.
- Be based on comprehensive economic analysis. Initially the cost of pre-suppression treatments and restoration appears large, however, when compared to the cost of fire suppression, property loss, environmental services lost (such as water), potential loss of lives and other factors it is relatively small. As others have said, we can either pay now, or pay much more later.
- Recognize that initial costs will be higher than maintenance costs. For example, in a degraded forest the cost of restoration can be as high as \$700/acre. Following treatment, prescribed, low-intensity fire can be used as the primary tool at a much lower cost, as little as \$40/acre for large areas.
- Recognize that agency staff capacity and operational funds are limited and must be increased to meet the challenge. In the near term, fire suppression costs will continue to mount and implementing pre-suppression treatments will require resources as well.
- Consider the potential for the creation of new restoration based jobs and industries. Many new jobs will be created throughout the nation as a consequence of implementing ecological restoration. Furthermore, in many situations the woody material could be removed and used to produce wood products to provide jobs and offset some of the costs of the restoration.

This is not to suggest that we do not need more research or that we should not continue to learn from current treatments so that we can improve future treatments. One of the most important contributions the scientific community could make to improve land management is to develop monitoring protocols that are simply applied, affordable, understandable to land managers and that can be quickly synthesized to inform adaptive management.

This need for continued research and monitoring is particularly acute for processes that operate at the landscape scale. For example, with regard to endangered and threatened species as well as many other species occupying the forest, we need more information on wide-ranging animals that we cannot gather until there are more and larger restoration treatments in place. Ironically some critics of forest restoration argue that before we can implement landscape scale restoration treatments we must know the effects of treatments on this scale—a Catch-22 argument.

4. There are emerging models of communities working to reduce the threat of fire while restoring the forest for its full suite of values. Their success depends on meaningful community collaboration, human and financial resources and adequate scientific support to make well informed management decisions. Congress, Federal agencies, universities, and non-governmental organizations must support these communities to help them achieve success. These groups should be supported and encouraged to work at the scale of the greater ecosystem, 200,000 to 1,000,000+ acres.

There are emerging models of communities working to reduce the threat of fire while restoring the forest for its full suite of values. Designing restoration and fuel reduction strategies that protect towns and their wildland habitats is not easy because of the social, economic and philosophical ties people have to forests. In addition, even with broad support for treatments there are some people and organizations that will choose not to participate, yet will litigate if the approaches don't match their ideology. The towns working to implement fire risk reduction and the ecological restoration of forests are developing important models for accomplishing protection. In addition, their experiences are an important source of information that should be used by decision-makers, agency officials and others for adapting their own ways of operating to support community-based decisions.

An exemplary community based collaborative group has been working to restore the forests right here around Flagstaff. For the past six years the Greater Flagstaff Forests Partnership has worked to develop and implement strategies to prevent catastrophic fire and restore the ecological integrity of ponderosa pine forests in the Greater Flagstaff Forest Ecosystem. Over 25 public and private organizations participate in the Partnership. Members include Northern Arizona University, the Coconino National Forest, the City of Flagstaff fire department, the Chamber of Commerce, the Grand Canyon Trust and many others. The group was formed in response to the volatile fire season of 1996. During that season fires were a constant threat within the city limits and two wildfires in the Coconino National Forest demonstrated the vulnerability of the San Francisco Peaks to fire. In fact, it was the decision to re-deploy fire fighters from the Hochderffer fire in the Coconino National Forest to a fire within the Flagstaff City limits that resulted in the Hochderffer fire growing to approximately 16,000 acres.

The goal of the Partnership is to analyze the forest surrounding Flagstaff and within that area to treat strategically located areas to achieve fire protection for the town, the surrounding wildlands, and especially the San Francisco Peaks. Although there are aggressive fuel reduction treatments underway on city property and on private property in the city, the Partnership recognizes the social and economic importance of applying ecologically based restoration to the forest surrounding Flagstaff. The Ecological Restoration Institute at Northern Arizona University in collaboration with the Rocky Mountain Research Station and others is developing the science-based treatments, research and monitoring that are essential for developing effective approaches. Developing the science behind each treatment is a critical part of achieving community consensus and responding to criticism. Other important activities include developing economically viable approaches to restoration by promoting and developing the use of small diameter trees (where feasible), community outreach and education, and exploration of restoration based employment options.

What Congress Can Do

There are several constructive steps Congress and the Federal agencies can take to improve our current situation.

- Treatments to reduce fire threat and restore the ecological integrity of forests should become the single biggest priority of forest management policy and the land management agencies working in the West. The 1999 GAO report pointed out that the Forest Service has estimated that 39 million acres of Forest Service lands are at high risk to catastrophic wildfire in that region alone.
- Congress should provide adequate resources to the agencies to maximize treatments. A simple extrapolation of recent rates of increase in crown fire damage suggests that within the next decade acres burned could easily double whereas costs for fire suppression and compensation could approach four billion dollars annually.
- Wherever possible, Congress and the land management agencies should support the collaboration of forest communities to design ecologically based restoration treatments. This includes: producing high quality, timely environmental review documents; elevating the production of the review documents to a top priority; assisting communities to develop economically viable opportunities for restoration products; and assisting to develop new employment opportunities in restoration.
- Support the development of science-based restoration treatments.

To move forests from their current degraded conditions to healthy, diverse, and productive ecosystems requires knowledge. Our lack of understanding of how naturally functioning ponderosa pine forests function and the ecological and social implications of changed forest conditions has led to the current situation we now face with regard to catastrophic fire, endangered species and the social and economic upset of forest communities.

The Ecological Restoration Institute at Northern Arizona University and its collaborators are generating significant knowledge about pine forest restoration and working to get that information into the hands of communities and land managers that can apply it on the ground. With each treatment we learn more and can incorporate that knowledge into the next set of treatments. However, the time for clinical trials is over. Restoration based forest health treatments are proving to be so beneficial in contrast to no action that we must move forward rapidly and at large scales.

Thank you very much for asking me to appear before the Subcommittee.

Mr. MCINNIS. Our next witness, Ms. Cassatt, you may proceed.

**STATEMENT OF SARAH CASSATT, GARDENS MANAGER,
ARBORETUM, FLAGSTAFF, ARIZONA**

Ms. CASSATT. Thank you. Thank you for the opportunity to speak here. I work at the Arboretum at Flagstaff, which is a botanical garden here in the area.

The mission of the Arboretum at Flagstaff focuses on the conservation of plants and plant communities native to the Colorado Plateau and the wise stewardship of our natural resources.

One of the Arboretum's primary concerns relative to wildfires and forest management is the issue of invasive noxious weeds.

Where invasive weeds spread into native habitats, they have the following impacts: They reduce native plant populations and jeopardize the survival of rare plants. They alter native plant communities, sometimes replacing them entirely. They reduce wildlife habitat and the biodiversity of both flora and fauna. Invasive noxious weeds also degrade ecosystems in a variety of ways. Some species alter soil chemistry inhibiting the growth of native plants, some alter site hydrology, they may interfere with nutrient cycles and some of them alter the fire cycles and other characteristics, increasing fire frequency and intensity of those fires.

Invasive noxious weeds have already impacted 40 million hectares of land in North America and cost the United States economy billions of dollars a year.

I would like to talk a little bit about weed characteristics relative to this issue. The ability of particular plant species to rapidly invade new areas is based on several characteristics that provide competitive advantages under certain environmental conditions. Invasive plants tend to be species adapted to disturbed site conditions and their spread often follows the path of disturbances through habitats. They tend to be heavy seed producers, various species may produce 5,000, 50,000 and even 500,000 seeds per plant per year. These seeds may remain viable in the soil for up to 35 years. They typically grow well in soil low in organics and nutrients and are often very drought tolerant. The most troublesome of these species become dominant on a site, persist as dominants for years and may be toxic or poisonous.

The factors related to weeds that also relate to fires and forest management are as follows: Fire removes organics from the soil, exposing the soil and reducing moisture and nutrient levels. High intensity fires destroy important microorganisms in the soil that support native plant life, and thus make it difficult for those plants to regenerate.

Research in Arizona has shown a positive correlation between higher fire temperatures and a greater predominance of invasive weeds revegetating those areas.

Much of the equipment used in forest management activities are designed to be efficient in moving through forests. That usually means they have good traction, and tight turning radiuses. Unfortunately, that also means they are really good at churning up the soil.

Staging areas also disturb the soil surface and can compact the soil, both of which provide competitive advantages for the invasive weed species. People, animals, transport vehicles and equipment used in logging and thinning are all excellent vectors for transporting weed seeds from infested sites to new areas.

So what can we do? We think that prevention is, by far, the best method for controlling the spread of invasive noxious weeds. Once they are established, many of them are notoriously very difficult to control or remove.

So we would like to propose the following:

Evaluate each management area for existing weed colonies and the potential for spreading these weeds into, through, and out of these areas.

Minimize the potential for weed transport by avoiding or managing infested areas and by thoroughly cleaning vehicles before moving to new areas.

Following activities that disturb soil, mitigate those areas by mulching the area and/or reseeding with native understory species. Both of those activities will help reduce the likelihood of the non-native invasive species becoming dominant.

Where fire is involved, reinoculate the soil with microorganisms. This can be done by spreading native undisturbed soil over the area and also reseed, again with a native species.

There is some research going on looking at the slash pile burns. The bigger those slash piles are, the hotter the temperatures and again, the greater the disturbance of that soil. Those sites tend to become good vectors for introducing non-native invasive species.

So we would like to propose that during that kind of management activity, slash pile sites be kept small to minimize the burn temperature, and then again, restore those sites once the burning has been completed.

It is also important to conduct some follow up monitoring after forest management activities, to identify sites where invasive species are coming in and then conduct immediate and aggressive removal and control methods of new weed colonies while they are small enough to still be manageable. There have been many areas, many cases throughout the United States and the world where areas were let go and became problems that we now do not know how to manage.

In summary, the Arboretum of Flagstaff encourages the Subcommittee to consider the significant impacts of invasive noxious weeds on native plants, native plant communities and ecosystem functions. We strongly recommend that weed management be required as part of all forest management activities and that sufficient funding be provided for follow up monitoring and control of invasive weeds. Integrating weed management into the overall forest health management activities is essential to create truly healthy forests that will continue to provide both forest products and healthy functional ecosystems on which we all depend.

Thank you.

Mr. MCINNIS. Thank you, Sarah. Your points are excellent and I can tell you that the average individual out there does not even think about noxious weeds. So your points are very well taken, excellent. In our state, tamarix has overrun our state which uses, as you know, several hundred gallons a week. So thank you very much for your testimony. I appreciate that.

Ms. CASSATT. Thank you.

[The prepared statement of Ms. Cassatt follows:]

Statement of Sarah Cassatt, Gardens Manager, The Arboretum at Flagstaff, Flagstaff, Arizona

Invasive Noxious Weeds And Their Relationship To Wildfires And Forest Management Activities

The mission of The Arboretum at Flagstaff focuses on the conservation of plants and plant communities native to the Colorado Plateau and the wise stewardship of our natural environment.

One of The Arboretum's primary concerns relative to wildfires and forest management is the issue of noxious, invasive weeds, which are spreading rapidly throughout the West. Invasive weeds tend to move into sites where the soil has been dis-

turbed. Both fires and forest management activities often result in disturbed soils. Where invasive weeds spread into native habitats, native plant populations continue to be reduced. The Colorado Plateau region includes many unique habitats as well as many rare, threatened, and endangered plant species. In fact, about 15% of the native plant species of the Colorado Plateau is globally rare, whereas the average in other regions of the country is about 10%. The continuing spread of noxious, invasive weeds jeopardizes the survival of rare native plants and reduces overall plant biodiversity.

The spread of noxious, invasive weeds also impacts plant communities and ecosystem functions. As invasive weeds take the place of native plants, plant communities and associated habitat functions are altered and wildlife habitat and biodiversity is reduced. Ecosystem functions are being impacted through changes to a variety of components including hydrology, chemistry, and fire behavior, and the overall values of our natural resources are diminishing.

The rapid expansion of invasive, noxious weed populations is costing the United States economy billions of dollars annually in lost production, abandonment of farms, eradication and control, and habitat restoration.

The Arboretum at Flagstaff encourages the Subcommittee on Forests and Forest Health to consider the significant impacts of invasive, exotic species on native plants, plant communities, and ecosystem functions. The spread of invasive weeds tends to increase in response to activities that disturb the soil and native plants. The Arboretum strongly recommends best management practices that minimize the spread of invasive species be required as a part of all forest management activities and that sufficient funding be provided for follow-up monitoring and control of invasive, exotic species that do arise subsequent to forest management activities.

Many questions remain regarding mechanisms weed species use to out-compete native plants, how they take advantage of disturbance activities, and how best to control and eradicate them. The Arboretum at Flagstaff also strongly recommends that funding be provided to incorporate research on these questions into forest management activities. Concurrent research will maximize the benefits of forest health restoration programs.

Invasive, Noxious Weed Characteristics Relevant to Forest Management Activities

The ability of particular plant species to rapidly invade new areas once introduced is based on several characteristics that provide competitive advantages under certain environmental conditions. Those that become dominant by eliminating other species, may be toxic, poisonous, or parasitic, and that significantly reduce the desirable functions of the habitat are generally considered invasive, noxious weeds.

- Many exotic plant species grow and spread aggressively following various types of disturbances to forests and rangeland habitats. Some of these species, once established, have been observed to spread from disturbed sites into undisturbed sites.
- Particularly in disturbed sites, invasive species may out-compete native species, becoming dominant or even becoming a monoculture. The most troublesome are those that persist as dominants for years or decades, alter plant communities and ecosystem functions, are toxic or poisonous.
- Many invasive species are heavy seed producers. Several species are capable of producing up to 50,000 seeds or more per plant. Seeds may persist in the soil for a few years to 35 years or more. An individual dalmatian toadflax can produce up to 500,000 seeds, which may remain viable in the soil for 10 years.
- Other invasive species spread aggressively through extensive and rapid root growth. These plants can quickly produce new shoots from root buds when disturbed by mowing, burning, or hand-pulling.
- The dominance of invasive, noxious weeds degrade ecosystems in several ways:
- Some noxious species alter soil chemistry, inhibiting the growth and germination of other species.
- Noxious species may interfere with natural nutrient and water cycles, creating secondary impacts to other plants and the ecosystem.
- Some invasive species alter the fire cycle and the characteristics of fires within an ecosystem.
- These changes to ecosystems alter plant communities, wildlife habitat, and ecosystem functions.
- Some exotics are related to native species and are able to hybridize with them, which in the long run may genetically eliminate the native species.

Disturbance Factors that Contribute to the Spread of Noxious, Invasive Weeds

Invasive plants, both native and non-native, tend to be species adapted to disturbed site conditions. They typically grow well in soils with low organics and nutri-

ent levels. Their seeds sprout when on or near the surface of exposed soils and many are adapted to low soil moisture levels. These conditions are often the result of activities integral to forest health management.

- Fire removes organic material from the surface layer of the soil, exposing the soil and reducing moisture and nutrient levels. High intensity fires also destroy important microorganisms in the soil, which are important for plant uptake of water and nutrients. All types of fire activities have this affect including prescribed fires, slash pile burns, and uncontrolled fires. Research in northern Arizona forests have shown that the more intense the fire, the greater the number and species of exotic weeds. Many questions remain about the relationships between the timing of fires, soil types, and the successful invasion of noxious weeds.
- Much of the equipment used to thin or harvest trees disturbs the soil by churning up the surface layer and compacting the soil. Churning the surface exposes weed seeds to light, allowing them to sprout. Soil compaction limits plant root activities and reduces the water holding capacity of the soil.
- Equipment, vehicles, people, and animals are all vectors for transporting seeds from one location to another. Of primary concern is the movement of any of these vectors from an area infested with invasive, noxious weeds into an area not yet infested. Another important consideration is disturbing a site that previously sustained activities that brought weed seeds into the area. Areas that have been heavily logged or have been grazed earlier may retain weed seeds in the soil ready to sprout following the next disturbance.

Mitigation Measures

There are a number of Best Management Practices available to minimize the opportunities for invasive, noxious weeds to expand into new areas and to become dominant in areas in which they already occur as a result of forest health management activities.

Prevention is by far the most important measure for controlling the spread of invasive, noxious weeds. Once noxious weeds become established, their removal and even just control has proven very difficult and costly. Many infestations require multiple control efforts each year and for several years. Some species have successfully resisted control efforts for many years and research is ongoing to identify new methods. Early detection of an infestation and early and aggressive application of control methods are the most successful and by far least costly in time and expenses. The following is a brief outline of BMP methods currently recommended.

- Evaluate each area in which management activities are planned and identify the potential for weed infestations from existing stands and from potential seed bank in the soil based on previous activities in the area. Also identify ecological processes for that habitat relevant to the type of management activities planned. For example, determine the role of natural fire process for the habitat and natural forest stand densities to which the native plant communities are adapted.
- Limit possible weed seed transport from infested areas to non-infested sites. Avoid activities in or adjacent to heavily infested areas or remove seed sources and propagules from site prior to conducting activities, or limit operations to non-seed producing seasons. Wash or otherwise remove all vegetation and soil from equipment before transporting to a new site.
- Following activities which expose the soil, mitigate by covering the area with weed seed free mulch and/or seed the area with native species. Covering the soil will reduce the germination of weed seeds, maintain soil moisture, and minimize erosion.
- Conduct regular follow-up monitoring of areas in which the soil has been disturbed to identify any new infestations of invasive, noxious weeds.
- Conduct immediate and aggressive removal and control measures of new stands of invasive, noxious weeds while colonies are small and manageable. Consider that weed removal and control activities may again result in disturbed, exposed soil. In these cases, provide follow-up restoration measures, such as seeding, to restore a healthy native community to minimize the opportunities for future invasions by weeds.

Invasive noxious weeds have become a significant and costly problem throughout the forests and rangelands of the western United States. These weeds not only impact individual native plant and animal species, they also jeopardize entire ecosystems, which are the basic support system for our natural resources. Integrating weed management into the overall forest health management activities is essential to create truly healthy forests that will continue to provide both lumber products and healthy functional ecosystems on which we all depend.

Mr. MCINNIS. Dr. Kolb.

**STATEMENT OF THOMAS KOLB, PH.D., SCHOOL OF FORESTRY,
NORTHERN ARIZONA UNIVERSITY**

Mr. KOLB. I appreciate the invitation to testify here today. Just a little on my background: I have been on the faculty in the School of Forestry at NAU for about the last 10 years and during that time, much of my research has focused on the response of ponderosa pine forests to thinning and prescribed burning, also to drought and bark beetle attacks.

I also serve as President of the Board of Directors of the Greater Flagstaff Forests Partnership that has been mentioned already. The Partnership is a non-profit organization that works with the Coconino National Forest to help restore healthier forest conditions surrounding Flagstaff. For the last 5 years I have been a member of the Partnership Advisory Board, which includes 25 members. This has given me I think a pretty keen understanding of both the ecological issues and community concerns.

I just want to reiterate the point that clearly tree densities need to be reduced in our forests to reduce fuel levels and fire hazard, but there is an extra benefit of that. We have research results that indicate quite clearly that reducing tree densities by thinning will also provide more resources and energy for the trees to produce resin, which is their primary defense against bark beetles. So thinning has the extra benefit of increasing bark beetle resistance of trees.

I also advocate that these thinning treatments should not be restricted to the urban/wildland interface area, the area right around homes. This is an important area and a high priority area, but the quality of life and also the economy of people living in forested towns like Flagstaff are strongly linked to a healthy forest landscape. Proposals that I have heard that would limit tree thinning and prescribed burning to narrow bands around housing developments are very short-sighted, in my view.

I also want to make a case that this thinning should be aimed at trees less than 100 years old, not the old growth trees in the forest. In the southwest, for example, these old growth trees are scarce because of past timber harvest, but we know that they are more important for wildlife habitat and they are oftentimes more resistant to fire because they have thicker bark than the younger trees. However, just conservation of these existing old growth trees is not enough. We need to create conditions where the small trees will grow rapidly into good sized trees that have old growth characteristics. And we can do that through creative thinning. We know that silvicultural management of stands can make these young trees grow into old growth forests much quicker.

I also want to talk about something that I think has been under-emphasized so far in the hearing and that is the development of local markets and industries for small diameter trees. For example, the forest partnership here has a project that has had environmental reviews completed and this project has taken years to complete because we cannot do anything with the wood. There are no vigorous markets or industries that will use these small diameter trees and it has really slowed down progress for us.

We know from other parts of the United States and from other countries that industry can use small diameter trees profitably. Industry does not need large diameter trees in all cases. Locally, the most serious impediment to using those small diameter trees is uncertainty about the supply of these trees. No industry will come here and invest if they do not have some certainty that there will be a multi-decade supply of trees on a given time schedule. It is imperative that managers of Federal, state and tribal forests and private landowners work together to coordinate a reliable supply of this resource so that we can promote markets and industries that use these small diameter trees.

Some of the exciting developments in these areas are sawmills that use small diameter trees and also biomass energy plants that use wood of any size and also leaves and bark to produce energy and electricity.

I am going to touch on salvage logging and give you a different perspective on salvage logging. First of all, I do support salvage logging in some cases where very dense forests have high numbers of dead trees killed by bark beetles. These are cases where there are lots of dead fuels that need to be reduced to reduce fire hazard. However, I caution against widespread acceptance of salvage logging as being a way to restore areas that have been burned in wildfires, especially areas where you just have burned trees left and there has been severe soil damage.

Why do I caution you this way? We know that dead wood on the site provides habitat for insects, for animals, for microorganisms that over the long term will help these sites recover. Logs on the ground also help stabilize soils and in these severely burned areas, soil erosion is a severe problem. Salvage logging may involve new road construction and if it does, soil erosion can even be worse. And also locally, I have seen no evidence that areas that burned in very hot wildfires and severe crown fires, reburned hotly afterwards. I have been looking at areas that burned here in 1996 and the year 2000 and I have seen no evidence that these areas burned again very hotly or that these areas spread fire to unburned areas.

So I think that salvage logging should be approached cautiously, but I do recognize that there are situations where salvage logging must be used for safety reasons, immediately adjacent to roads, trails, towns and homes. And in those cases, it needs to be done using best logging practices. If trees have to be cut in salvage logging on steep slopes, they should be removed with helicopters. And I was very pleased to learn recently that on the Apache Tribal lands where there is some salvage logging that has started as has been mentioned, that helicopter logging is being used to minimize soil damage.

And the last topic I will briefly talk about are bark beetle outbreaks. Your staff has made it very clear to me that bark beetles should be on my agenda. Attached to my written testimony are two documents that describe the current conditions of bark beetle outbreaks in northern Arizona and there is one pamphlet that describes what we know in terms of prevention and control. Both of these pamphlets were authored by Tom DeGomez, who is the Arizona State Forest Extension Specialist.

If you read through that information, what you will see is all we can really do on a landscape level to make trees more resistant to bark beetles is use thinning to create healthier forest conditions. Once a big bark beetle outbreak gets going, in many respects, it is harder to stop than a wildfire. There is not a bark beetle rapid response team out there that can aggressively attack this problem.

So we are going to see a lot more bark beetle mortality in the next year. How much no one can say. Observations in other parts of the country suggest that these bark beetle outbreaks in one region lasts two to 5 years before they taper off.

Mr. McINNIS. Thank you, Doctor. I noticed from the hotel this morning looking out there, the beetle kill that you are experiencing here in your own community. That is deadly stuff. I appreciate your testimony. Thank you.

[The prepared statement of Dr. Kolb follows:]

Statement of Dr. Thomas E. Kolb, Professor of Forestry, School of Forestry, Northern Arizona University

I appreciate the invitation to testify at this hearing. I have been on the faculty of the School of Forestry, Northern Arizona University (NAU), Flagstaff, Arizona, for the last 10 years, where I am currently Professor of Forestry. At NAU, I teach courses in forest ecology, forest health, and tree physiology, and much of my research focuses on the response of ponderosa pine forests to forest management actions, stress, drought, and insect attacks.

I also serve as President of the Board of Directors of the Greater Flagstaff Forests Partnership (GFFP), a non-profit organization working with the Coconino National Forest to restore healthy forest conditions surrounding Flagstaff. In this role, I have worked with the Partnership's 25-member Partnership Advisory Board since 1998 which has given me a keen understanding of both ecological issues and community concerns.

My testimony today represents my own views, not the opinions of NAU and the GFFP.

Forest Health in Southwestern Conifer Forests

There is little debate now that coniferous forests in the Southwestern U.S. are in terrible condition. High tree density caused by heavy regeneration in the early 1900s and suppression of surface fires that used to kill many young trees have led to forests characterized by highly stressed trees that are susceptible to bark beetle outbreaks, low plant and animal diversity, degraded habitat for animals adapted to open forests and grasslands, and uncontrollable, highly destructive wildfires. These symptoms of decline are most evident in ponderosa pine forests, but also occur in some pinyon-juniper woodlands and higher elevation mixed conifer forests.

Corrective Actions

I advocate the following actions to improve forest health in Southwestern ponderosa pine forests:

1. Reduce tree densities to levels that will constrain fire to burning understory fine fuels, such as leaf litter and herbaceous vegetation, not tree canopies. In some forests that already have low tree densities, prescribed fire alone can be used to achieve this goal. However, most ponderosa pine forests contain too many trees for the fire alone approach, and require mechanical thinning to reduce densities. After tree densities are reduced to safe levels, fires should be allowed to burn through the understory as long as houses and towns are not threatened. Light, surface fires are a natural part of the ponderosa pine forest, and have beneficial effects on most plants and wildlife habitat.

2. Do not limit tree reduction treatments to the urban-wildland interface. While these treatments can reduce wildfire hazard to houses and towns if only applied locally, the forest health crisis is much larger. The economy and quality of life of most people living in forested towns are strongly linked to a healthy forest landscape. For many people, a healthy forest means green trees, meadows of native grasses, good wildlife habitat, protection from flooding by properly functioning watersheds, and recreation on the surrounding landscape, not only in their backyard or neighborhood. Proposals to limit tree thinning and burning activities to small areas surrounding human settlements are short sighted.

3. Thinning should be aimed at trees less than 100 years old, not old-growth trees. Old-growth trees, which for ponderosa pine can be defined as trees with yellow bark and greater than 100 years old, are scarce on the landscape because of past logging. They are more valuable for wildlife habitat than younger trees and often are more resistant to fire. However, conservation of existing old-growth trees is not enough to improve forest health; we need to create conditions that accelerate growth of young trees to large sizes. Development of forests with old-growth characteristics can be promoted by careful forest thinning.

4. Use a mosaic of different tree thinning approaches on the landscape, rather than one approach everywhere. Such a mosaic should include: heavily thinned stands, lightly thinned stands, meadow openings, unthinned stands, stands with a clumpy tree pattern, and stands thinned to approximate stand conditions present before European settlement. Creative use of such a mosaic can be used to reduce hazard to human settlements, provide diversity in stand appearance that most people like, and provide a diversity of habitats for animals.

5. Act now using an adaptive management approach in spite of incomplete information. We will never have all the information needed to address all important issues related to forest management. The best we can do is monitor the results of management actions, and learn by doing. Waiting for all the important information will result in large losses of ponderosa pine forests to wildfire and bark beetles and unacceptable impacts to people.

6. Develop local markets and industries that use small diameter trees, not large diameter trees. We know from other areas of U.S. and other counties that industry can use small diameter trees profitably. The most serious impediment to developing local markets and industries for small diameter trees is uncertainty about wood supply. Managers of Federal, State, and Tribal Forests must work together to coordinate a reliable supply of wood to promote market development. Sawmills that specialize in using small diameter trees and biomass energy plants that use trees to produce energy are exciting developments in this area.

I caution against efforts to re-establish local industry based on large sawlogs. Such an approach would be a step backwards, and will create an uprising of public dissent that will threaten our efforts to improve forest health.

7. Many wildfire burned areas do not need salvage logging for restoration. I am concerned about recent proposals to clean-up severely burned areas by salvage logging of dead trees. If the goal is to hasten recovery of severely burned areas, I advocate leaving dead trees on site, not logging them. Dead wood provides habitat for many animals, insects, and micro-organisms that are important components of forest ecosystems. Logs on the ground will help stabilize soils and provide favorable micro-habitats for tree establishment. Road building associated with salvage logging often creates erosion, which is already a major problem in wildfire areas, and promotes establishment of exotic noxious weeds that reduce forest health. I have seen no evidence that dead trees left in severe wildfire areas in Southwestern ponderosa pine forests are highly prone to reburning catastrophically, or spread fire to unburned forests.

Despite these cautions, I recognize that salvage logging may be justified immediately adjacent to trails, roads, and houses for safety reasons, and to support economies of communities dependent on logging. In these cases, logging should be done when soils are not saturated, and soil compaction should be minimized by using best logging practices. If trees have to be cut on steep slopes, helicopter logging should be used. I was pleased to hear that some of the salvage logging of areas burned by the Rodeo-Chediski Fire on the Apache Tribal Lands used helicopter logging.

8. Invasion by exotic, noxious plants is a serious concern in wildfire burned areas. Several exotic, noxious plants that have degraded rangelands and forests in California and the northern Rocky Mountains, such as diffuse knapweed, spotted knapweed, yellow star thistle, and leaf spurge, are present in Arizona. Once established, these noxious plants degrade ecosystems, and can persist for decades. I urge the panel to take this threat seriously and mandate and provide the resources for thorough sanitation of vehicles, people, and equipment entering wildfire areas. Exotic, noxious weeds in wildfire burned areas should be monitored and controlled aggressively.

For Immediate Release: Pine Bark Beetle Outbreak in Arizona

Written by: Tom DeGomez, Forest Health Specialist, with the University of Arizona Cooperative Extension Forest Health Working Group and the Arizona Bark Beetle Task Force which includes professionals from University of Arizona, Northern Arizona University, United States Forest Service, & Arizona Public Service

Arizona's ponderosa pine and pinon forests have sustained significant impacts from the bark beetle outbreak of 2002. Conservative estimates, based upon U.S. Forest Service aerial surveys of Federal lands, place the number of dead ponderosa pine statewide at 2 million on 503,000 acres. This estimate is admittedly low because the surveys were done between late July and October and many additional trees were detected during fall. One area was re-flown in October and levels of mortality increased more than 300% over the earlier estimates.

The most heavily impacted forests of the state are the Tonto, Apache-Sitgreaves, and Prescott National Forests, and the San Carlos Apache Reservation and adjacent state and private lands. Some stands in these forests have 80 to 90% tree mortality, other stands have less than one percent mortality. Mortality in pinon pine woodlands are equally high. A late season survey of 28 square miles of pinon woodland southeast of Flagstaff revealed 700,000 dead trees or more than 90% of the mature pinon trees in the area. Table 1 describes the extent of the outbreak in Arizona's national forests.

Table 1. Estimated acres of ponderosa pine forest affected by bark beetles in Arizona, 2002.

National Forest	Acres of ponderosa pine type forest	Acres of ponderosa pine with bark beetle attack
Apache-Sitgreaves	729,306	129,895
Coconino	714,864	60,425
Coronado	6,916	10,255 *
Kaibab	432,023	6,010
Prescott	50,650	75,580 *
Tonto	140,128	66,585

* Much of the "piñon/juniper type" forest includes some ponderosa pine.

Several trees in the juniper family, and spruce have also been attacked by bark beetles. Native junipers, native Arizona cypress and Leyland cypress are among those being killed by the cypress bark beetle. Spruce bark beetle activity has occurred on over 35,000 acres of spruce as well.

The two main reasons why bark beetles are killing so many trees is that the forest has too many trees and the trees are very dry. Overcrowded forest conditions coupled with drought lead to the high probability of beetle attack. Unfortunately the winter of 2002-03 has not been as wet as hoped for. Moisture levels for the winter of 2002-03 (October to Jan) are running 3 inches below normal. The current dry conditions coupled with very high levels of overwintering bark beetles could very well lead to greater bark beetle outbreaks in 2003. Recent rains in mid February could greatly improve forest health; however it may take several years for stressed trees to rebuild carbohydrate stores. Stored carbohydrates are used by the tree to produce beetle fighting resin (pitch).

The forests of Arizona have been able to survive in relatively dry conditions because in past centuries low intensity fires helped to maintain a low density of trees in the forest. Whereas, in the past century we have controlled fire which allowed many forested areas to become overcrowded.

The best way to avoid having trees attacked by bark beetles is to take preventive measures. First and foremost is to lower tree density through thinning. Many people are unsure as to which trees should be removed. In these cases it may be best to consult with a certified forester or arborist. For a listing of certified professionals consult the yellow pages, call your local University of Arizona County Extension office, or log on to www.isa-arbor.com to find a certified arborist or www.safnet.org/certified/directory.htm to find a certified forester.

When removing trees it is important to treat the logs and slash properly or you may promote beetle populations to increase in the down material. If you are not interested in saving the logs then they can be hauled to the landfill or chipped. If they are chipped don't pile the chips deeper than 3 inches next to live trees as the chips may attract bark beetles. Try to keep chip piles in the open sun and as far from live trees as possible.

If bark beetles are found in the logs and you wish to keep the logs for firewood there are several options. Utilize the firewood prior to April 1. Peeling the bark from the logs will expose the brood to natural enemies. The bark should then be raked into a pile and burned. Covering sun exposed stacked logs with clear plastic in an attempt to cook beetles overwintering in the bark may not work as well in practice as in theory. If you use this method keep the stacks small (2 to 3 layers high) and check the plastic often for tears and any other openings that may allow the adult beetles to escape.

The small slash (limbs and tops less than 3 inches in diameter) is less likely to be used by beetles. This material can be chipped, or piled for burning this winter. When piling, put the smallest diameter material in the middle with the largest on the outside.

Often property owners will have several trees that have significant value in their landscape. These trees may be valued for their size or location. These high value trees can be given additional care to prevent infestation. They can be irrigated or sprayed with preventative insecticides.

If these trees are irrigated they should be given enough water to wet the soil at least two feet deep. The water should be applied in a donut shaped pattern at the drip-line or outer edge of the trees branches. It generally takes about 2" of rain to soak 2 feet deep. Check the soil 6 to 8 inches deep just outside the drip-line of the trees monthly. If the soil is dry, then water. Generally, the months that most often warrant watering are May, June, and October. However, depending on weather patterns watering may be needed any month of the year. If current dry conditions continue this winter you may need to irrigate in March or April. Keep in mind watering restrictions that may be in effect in your community and follow those guidelines as well.

Applications of fertilizers will not help protect trees from the effects of drought, and will not protect against bark beetle attacks.

Un-infested trees can be protected from beetle attacks by spraying with insecticides. When spraying, the entire trunk and the bases of large branches of the tree 4" in diameter and greater must be soaked. Spraying large trees is generally not a practice that homeowners can do themselves, to locate a certified pesticide applicator call the Arizona Structural Pesticide Control Commission at 800-223-0618. The only registered chemicals for this purpose are carbaryl and permethrin. You must use a product that is especially formulated for bark beetles, such as Sevin SL, Dragnet, or Astro. This is a protective measure only, it will not kill beetles once they enter the tree. Typical home and garden products containing carbaryl or permethrin will be ineffective. If the correct material is applied properly it should be effective for an entire season. Spraying should be completed prior to April 1 to ensure a full season of protection.

The only known direct control method is the removal of infested trees. A good rule to remember is "If the tree is brown cut it down, if in doubt cut it out." If we leave dead trees standing we run the risk of the new generation of beetles leaving the tree and attacking more trees. Finding reddish-brown boring dust in the bark crevices of a tree indicates that the tree has been successfully attacked, and the tree should be cut down even if the tree is still green at that point. If dead trees are next to houses or other structures, they can become a hazard tree.

Insecticide injections or systemics have not proven effective against bark beetles. Many trees have been injected with what seemed to be success. What has actually happened is that the treated tree successfully pitched out the attacking beetle with resin prior to the treatment. The tree was then injected with insecticide when in fact no beetles were actually in the tree. The tree saved itself! Studies have proven that injecting chemicals will not kill bark beetles attacking conifers.

There are several miracle cures being promoted to save trees from bark beetles. These materials may not have gone through extensive research to test their effectiveness. Buyer beware! Often, if what is being marketed sounds "too good to be true" it generally doesn't live up to its billing. Remember, it is against the law to use unregistered pesticides and using pesticides for insects not listed on the label is unwise.

The University of Arizona, Northern Arizona University, and U.S. Forest Service will be engaged in research to test materials to prevent and control bark beetles in Arizona. When these studies are completed and reviewed the results will be released to the public as soon as possible.

Many trees may only have the top half of the tree dead. Most often what happens is that the lower half of the tree will be killed shortly thereafter. Do not cut the top out of the tree hoping that the rest of the tree will recover. It is best to remove such trees to prevent the spread of beetles to other trees and to prevent them from becoming a hazard tree. You need not wait until the entire tree turns brown, many adult beetles may have flown from the tree before turning brown.

Remember, the most effective method for preventing bark beetle infestations is to thin overly dense stands of trees. If you need more information please contact your local University of Arizona Cooperative Extension office, State Land Department, or your local fire department. Additional information can be found at the following web sites. <http://ag.arizona.edu/extension/fh/> or <http://ag.arizona.edu/yavapai/>

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[An attachment to Mr. Kolb's statement follows:]

ISSUED NOVEMBER, 2002

TOM DE GOMEZ,
County Agent
DEBORAH YOUNG
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ag.arizona.edu/pubs/
natresources/
az1300.pdf

This information
has been reviewed by
university faculty.

COOPERATIVE EXTENSION
THE UNIVERSITY OF ARIZONA

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Pine Bark Beetles

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Pine bark beetles in Arizona are generally of the genus *Ips* or *Dendroctonus*. However, several other genera also attack pine, including: *Hylastes*, *Hylurgops*, and *Pityogenes*. Often several species will attack at the same time. Identification of specific beetle species can be difficult. Identification can be aided by knowing the host species attacked, time of year, and the design of the galleries (tunnels) created by the adults and larvae.

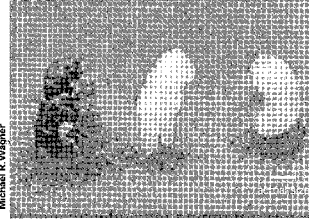
Bark beetles contribute to the death of thousands of ponderosa pines in Arizona each year. Most often when larger trees are attacked and killed they have been weakened by drought, lightning, construction activity or they have been growing on poor sites. Of special concern is the loss of high-value trees at home sites or in developed recreation areas.

Evidence of infestation

Fading foliage in the tree is often the first sign of a beetle attack. Trees attacked by *Ips* spp. typically fade from the top of the crown downward, while *Dendroctonus* spp. killed trees fade from the bottom of the crown upward. The needles change from green to a light straw color within a few weeks to one year after attack and eventually become brown or red. Dust caused by boring in the bark crevices and at the tree base is another sign. Often, numerous small pitch tubes (globules of pitch $\frac{3}{4}$ to $1\frac{1}{4}$ " diameter) appear on the trunk of infested trees. The pitch tubes generally have a creamy appearance, much like crystallized honey. A pink or red tint may be present in the pitch. The presence of one or two pitch tubes may not mean that a beetle was successful. Often a few pitch tubes can indicate that the tree successfully repelled the attacking beetle. Clear sap that runs down the bole (trunk) or limbs is generally not from bark beetles.

Life history

Life history varies with each species; the following description is true for most. Beetles become active in April and early May. Adults emerge from trees, slash, or firewood infested the previous fall. Adults prefer freshly cut green trees or trees stressed from drought but when a large number of beetles are present, they attack live pines. *Ips* spp. beetles characteristically attack the upper portion of the tree, but when beetles are



Michael B. Wagner

Typical bark beetles are $\frac{3}{16}$ - $\frac{1}{4}$ " (4-6 mm) in length.

abundant, the entire tree can be invaded and killed. Several species will only attack the base of the bole (see Table 1).

Adults bore through the outer bark and then tunnel and lay eggs in the soft inner bark. Eggs hatch in about a week and larva feed on the inner bark for six to eight weeks before they pupate. It is the boring activity of the adults and larvae that kills trees by girdling in combination with stain fungi the beetles introduce. The development of larvae and pupae of some beetles is completed in the outer bark. Adults develop from pupae and emerge by boring out through the bark. After emergence, adults fly and attack freshly cut material or susceptible trees and start the next generation. Most beetles produce one to two generations each year but some may have three or four. The overlap of generations during the summer may produce continuous attacks.

Prevention and control

Freshly cut ponderosa pine slash and firewood are subject to attack by bark beetles. The success of beetle attacks and production of young beetles are greatly influenced by when trees are cut. Trees cut during the late summer and fall are seldom successfully attacked, because the inner bark dries during the fall and winter. The inner bark of green trees cut from January to July remains moist and suitable for beetle habitat. An exception to this is the roundheaded pine beetle, which flies during the fall, and attacks trees at that time. The Arizona State Land Department found this beetle attacking trees near homes in the Santa Catalina

Table 1. *Dendroctonus* and *Ips* Species that Attack Pines in Arizona

Species	Hosts	Comments
<i>Dendroctonus adjunctus</i> roundheaded pine beetle	<i>Pinus ponderosa</i> , <i>P. flexilis</i>	Attacks the basal portion of the bole of overstocked and pole sized trees. Flies during the fall.
<i>D. approximatus</i> larger Mexican pine beetle	<i>P. ponderosa</i>	Attacks the basal portion of the bole.
<i>D. brevicomis</i> western pine beetle	<i>P. ponderosa</i>	Attacks mid bole of over mature or trees weakened by drought > 6 in. diameter. Introduces blue stain fungi. Can kill vigorous trees during outbreaks.
<i>D. frontalis</i> southern pine beetle	<i>P. ponderosa</i> , <i>P. leiophylla</i> , and <i>P. engelmannii</i>	Rarely a pest in the Western states, but has been killing pine in combination with <i>D. mexicanus</i> and <i>Ips</i> in the Chiricahua Mountains of southern Arizona.
<i>D. ponderosae</i> mountain pine beetle	<i>P. ponderosa</i> , <i>P. edulis</i> , <i>P. flexilis</i> , <i>P. aristata</i> , and <i>P. monophylla</i>	Attacks the entire bole of trees > 4 in diameter. Can kill numerous trees during outbreaks.
<i>D. valens</i> red turpentine beetle	<i>P. ponderosa</i>	Attacks lower bole and root crown of weakened or injured trees.
<i>Ips calligraphus</i> six spined ips	<i>P. ponderosa</i> and <i>P. flexilis</i>	Attacks the lower bole of large trees.
<i>Ips confusus</i> pinyon ips	<i>P. edulis</i> and <i>P. monophylla</i>	Attacks basal part of the bole of injured trees.
<i>Ips integer</i>	<i>P. ponderosa</i>	Attacks the entire bole of weakened and felled trees.
<i>Ips hoppingi</i>	<i>P. cembroides</i>	
<i>Ips knousi</i>	<i>P. ponderosa</i>	Usually associated with tree killing <i>Dendroctonus</i> species.
<i>Ips woodi</i>	<i>P. flexilis</i>	
<i>Ips lecontei</i> Arizona five-spined ips	<i>P. ponderosa</i>	Attacks upper bole followed by lower of sapling and pole size trees.
<i>Ips fonanseai</i>	<i>P. ponderosa</i> and <i>P. flexilis</i> .	Attacks resemble those by <i>Ips pini</i> .
<i>Ips mexicanus</i> Monterey pine ips	<i>P. flexilis</i>	Attacks the bole of living, injured or dying trees
<i>Ips latidens</i>	<i>P. ponderosa</i>	
<i>Ips pini</i> pine engraver	<i>P. ponderosa</i> and <i>P. flexilis</i>	Attacks 2-8 in. diameter trees and the tops of large trees when drought stressed. Also feeds in windfalls, logs, and slash.

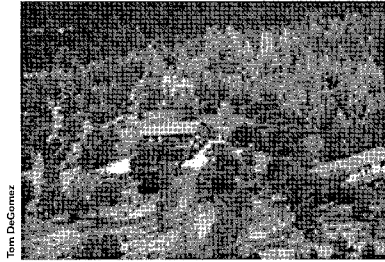
Pinus ponderosa – ponderosa pine; *P. leiophylla* – Chihuahuan pine; *P. engelmannii* – Apache pine; *P. edulis*–pinyon pine; *P. flexilis* – limber pine; *P. aristata* – bristlecone pine; *P. monophylla* – single leaf pine.

Mountains. Roundheaded pine beetle activity was found near trees that had been thinned and chipped in October.

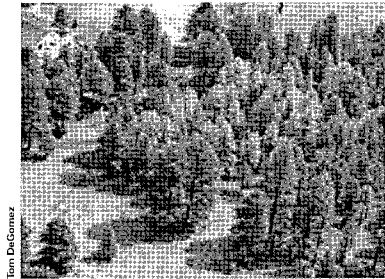
The slash and limbs of green pine trees should be buried or burned (according to safe conditions and laws) within 30 days after a tree has been cut down. The bole of the tree should receive the same treatment, unless it is needed for firewood or poles. Then the material should be piled away from living pine trees and covered securely to the ground with heavy, clear plastic. The

plastic covering should be left on the pile at least 60 days if the trees are cut during the April through October period. Heat builds up under the plastic and kills or traps the beetles. This treatment also dries the inner bark limiting the food for the beetles. Trees cut in winter should be used in a fireplace or disposed of before April. If not used, the firewood that is left at the end of March should be covered for 60 days. If logs are to be used as poles they should be peeled as soon as possible.

Once a beetle build-up starts in the neighborhood all live pine trees are targets for an attack, but some trees are easier targets than others. Trees that have been damaged or weakened by blasting, excavation, raising of the soil grade, lightning, disease, lack of water, septic systems, or other stresses are usually not able to withstand an attack as well as healthy trees. An attack by the beetle may not be detected until the beetle has completed its life cycle and the tree starts to fade and die. At this time, the beetle build-up can be stopped if the tree is immediately cut and the material treated within a few days as described above.



Tom DeGomez



Tom DeGomez

Bark Beetle Killed Trees

There are no practical and effective sprays or injections to stop an attack on green trees. Insecticides are not recommended once bark beetles have successfully attacked. Un-infested trees can be protected from beetle attacks by spraying with insecticides. When spraying, the entire trunk of the tree up to 4" diameter must be covered. This is a protective measure only. Insecticide will not kill beetles once they enter the tree. The available chemicals for this purpose can vary from year to year. You must use a product that is especially formulated for bark beetles. Typical home and garden insecticides will be ineffective. Check with your local county Extension office for current recommendations on the proper insecticides to use as a preventive measure.

Healthy trees offer some resistance to attack. Watering during dry periods (when less than 2 in. of moisture per month occurs) can help keep trees healthy. Thinning out dense stands of trees will make more water available for the remaining trees. Insecticides can be sprayed on the bole of the tree to prevent initial attack by beetles. This must be done prior to beetle emergence in the spring to be effective.

A fading crown and boring dust are the surest signs that a live tree has been attacked. When the entire crown begins to fade, there is no hope of saving the tree, and it should be removed as quickly as possible to prevent emerging beetles from attacking other trees. Once the entire crown has turned yellowish brown, it is generally too late to stop the spread because the beetles have already flown to attack nearby trees.

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Mr. MCINNIS. Mr. Gibson, you may proceed.

**STATEMENT OF KENT B. GIBSON, PULP AND PAPERWORKERS
RESOURCE COUNCIL**

Mr. GIBSON. Thank you. Good morning. My name is Kent Gibson from Snowflake, Arizona. I thank the House Resource Committee for this important field hearing and for the opportunity to express my concerns. I have worked for 30 years in the forest products industry. For 27 years I have been a member of the United Paperworkers International Union and the PACE International Union. Our memberships, working with our companies provide this country with high quality paper products. Today, I represent over 300,000 of my brothers and sisters who depend on wood fiber and timber to produce our products. I am currently serving on the national steering committee of the Pulp and Paperworkers Resource Council, a grassroots labor organization representing the interests of the nation's pulp, paper and solid wood products industry. We are dedicated to conserving the environment while taking into account the economic stability of the workforce and the surrounding community.

The testimony I give today needs to be viewed within the framework of my section of the forest products industry, which is the pulp and paper industry of this country. I also ask that you remember that my counterparts in logging, lumber mills, plywood and particle board mills and other industries who depend on our national forest lands are experiencing problems equal to or greater than those I speak of today.

In 1992, a group of five employees from Stone Forest Industries traveled to Washington, D.C. to meet with Members of Congress and discuss the serious problems facing our forest products industry.

The hard fact is that within 5 years I was the only member of that group who had a job in the forest products industry. My friends who worked at sawmills here in Flagstaff, Eagar, Arizona and South Fork, Colorado, along with towns like Fredonia, Heber and Winslow were all losing their mills, a vitally important part of their social and economic viability.

It is estimated that the two small lumber mills remaining in Arizona, which are not on the tribal lands, may produce about 2 percent of the 500 million board feet of timber harvested in Forest Service Region 3 during 1989. As alarming as this trend is to our state, the problem is not isolated to the forest products industries of Arizona. If you would look at this chart, in the last 10 years, 135 pulp and paper mills in the United States have closed. Since 1997, 30,000 people have lost their jobs in the pulp and paper industry. This represents 30,000 people who have lost their primary source of income, hundreds of counties, cities and towns who have lost much of their tax base. This occurred despite the fact that the basic forest reserves had not declined.

The mill that I work in chose to reconfigure our operation to 100 percent recycled operation. This decision in part was due to the difficulty in obtaining a reliable supply of wood for fiber. Paper mills have always used small diameter timber, thinnings and chipped wood to produce our products. In 1989, the Snowflake mill used an

estimated 60,000 cords of pulpwood and 290,000 units of chips. A unit of chips is about 2400 pounds. Which was an economic impact of \$23 million. But in the 1990's it became increasingly more difficult to secure contracts for wood needed to supply our operations. Arizona forests needed thinning but our mill was hauling chips from as far away as east Texas and Montana to supply our operation. The national impact of the loss of forest products revenue in just the pulp and paper mills is significant.

In the past decade alone, much of the forest products industry in this state is gone. And without industry, there is no infrastructure to support the work that must be done to return the forests to sound health. We must realize that industry is a vital tool in the recovery of our forests. Some say that we can place the cost of forest health recovery on the taxpayers and require someone other than industry to help restore the forests. I ask why pay someone else to do the work when industry has a need for the resources and will produce the products used by every one of us.

The areas that were most affected by the Rodeo-Chediski fire were not properly managed due to heavy restrictions. There is an absolute cause and effect relationship that exists between poor forest health and catastrophic wildfires. Had these forests been properly managed, we would not have seen the hundreds of thousands of acres destroyed in our state and the millions of acres across the Nation just last year. There are many tools needed to return our forests to a healthy condition, but we cannot forget three important tools which are thinning, controlled burning and logging.

The members of the Pulp and Paperworkers Resource Council strongly support the President's initiative to prevent wildfires, return the forests to health and create stronger communities. There should be no place for catastrophic wildfire in our forest management philosophy. It is imperative that a healthy forest management plan be implemented in order to protect our forest resources throughout the United States.

Thank you.

Mr. MCINNIS. Thank you, Mr. Gibson.

[Applause.]

Mr. MCINNIS. I guess one who fully appreciates your testimony, Mr. Gibson, is somebody without a job. Most of us in this room are fortunate enough right now to have jobs, but your testimony is moving and it does have—in my beginning comments, I talked about what I called the economic—the environmental impact, but it certainly has an economic impact on people of your trade. Thank you very much for your testimony. I think you spoke well on behalf of your colleagues that you represent.

[The prepared statement of Mr. Gibson follows:]

Statement of Kent B. Gibson, Pulp & Paperworkers Resource Council

Good afternoon, my name is Kent Gibson from Snowflake, Arizona. I thank the House Resource Committee for this important field hearing and for the opportunity to express my concerns. I have worked 30 years in the forest products industry, and I am currently employed by a large paper mill as an instrument and controls technician. For 27 years I have been a member of the United Paper workers International Union and the PACE international union. Our membership working with our companies provide this country with high quality paper products. Today I represent over 300,000 of my brothers and sisters who depend on wood fiber and timber to produce our products. I am currently serving on the national steering committee of the Pulp

and Paperworkers Resource Council, a grassroots labor organization representing the interests of the nation's pulp, paper, and solid wood products industry. We are dedicated to conserving the environment while taking into account the economic stability of the workforce and surrounding community.

The testimony I give today needs to be viewed within the framework of my section of the forest products industry, which is the pulp and paper industry of this country. I also ask that you remember that my counter parts in logging, lumber mills, plywood and particle board mills, and other industries who depend on our national forest lands are experiencing problems equal to or greater than those I speak of today.

In 1992 a group of five employees from Stone Forest Industries traveled to Washington D.C. to meet with members of congress and discuss the serious problems facing the forest products industry. The hard fact is that within 5 years I was the only member of that group who had a job in the forest products industry. My friends who worked at sawmills here in Flagstaff, Eagar, Arizona, and South Fork Colorado, along with towns like Fredonia, Heber, and Winslow were all losing their mills a vitally important part of their social and economic viability.

It is estimated that the two small lumber mills remaining in Arizona may produce about 2 % of the 500 million board feet of timber harvested in Forest Service Region 3 during 1989. As alarming as this trend is to our state, the problem is not isolated to the forest products industries of Arizona. In the last 10 years at least 135 pulp and paper mills have been closed in the United States. (See attachment A.) Since 1997 more than 30,000 people have lost their jobs in the pulp and paper industry. (See attachment B.) This represents 30,000 families who have lost their primary source of income, hundreds of counties, cities, and towns which have lost much of their tax base. This occurred despite the fact that the basic forest reserves had not declined.

The mill that I work in chose to reconfigure our operation to 100% recycle fiber. This decision in part was due to the difficulty in obtaining a reliable supply of wood for fiber. Paper mills have always used small diameter timber, thinnings, and chipped wood to produce our products; in 1989 the Snowflake mill used an estimated 60,000 cords of pulp wood and 290,000 units of wood chips, an economic impact of \$23,443,000.00. But in the 1990's it became increasingly more difficult to secure contracts for the wood needed to supply our operations. Arizona forests needed thinning but, our mill was hauling chips from as far away as east Texas and Montana to supply our operation. 39,500 cords of wood and 182,400 units of chips were used in the final year of timber based operation, 1997, with an economic impact of \$24,139,000.00. The national impact of the loss of forest products revenue in just the pulp and paper mills is significant.

In the past decade alone much of the forest products industry in this state is gone. And without industry there is no infrastructure to support the work that must be done to return the forests to sound health. We must realize that industry is a vital tool in the recovery of our forests. Some say that we can place the cost of forest health recovery on the taxpayers and require someone other than Industry to help restore the forests. I ask why pay someone else to do the work when industry has a need for the resources and will produce the products used by every one of us.

The areas that were most affected by the Rodeo-Chediski forest fire were not properly managed due to heavy restrictions. There is an absolute cause and effect relationship that exists between poor forest health and catastrophic wildfires. Had these forests been properly managed we would not have seen the hundreds of thousands of acres destroyed in our state and the millions of acres across this nation just last year. There are many tools needed to return our forests to a healthy condition, but we cannot forget three important tools which are thinning, controlled burning, and logging.

The members of the Pulp and Paperworkers Resource Council strongly support The Presidents Initiative to prevent wildfires, return the forests to health and create stronger communities. There should be no place for catastrophic wildfire in our forest management philosophy. It is imperative that a healthy forest management plan be implemented, in order to protect our forest resources throughout the United States.

Attachment A:

Summary of jobs lost in the western United States—Oregon, Idaho, Washington, and California

Total Mills closed—396
 Total Mill jobs lost—35,610
 Total Logging jobs lost—10,942
 Total jobs lost—46,552

Attachment B:

U.S. Paper Mill shutdowns by year—American Forest and Paper Association
Employment at Pulp and Paper Mills—Bureau of Labor Statistics

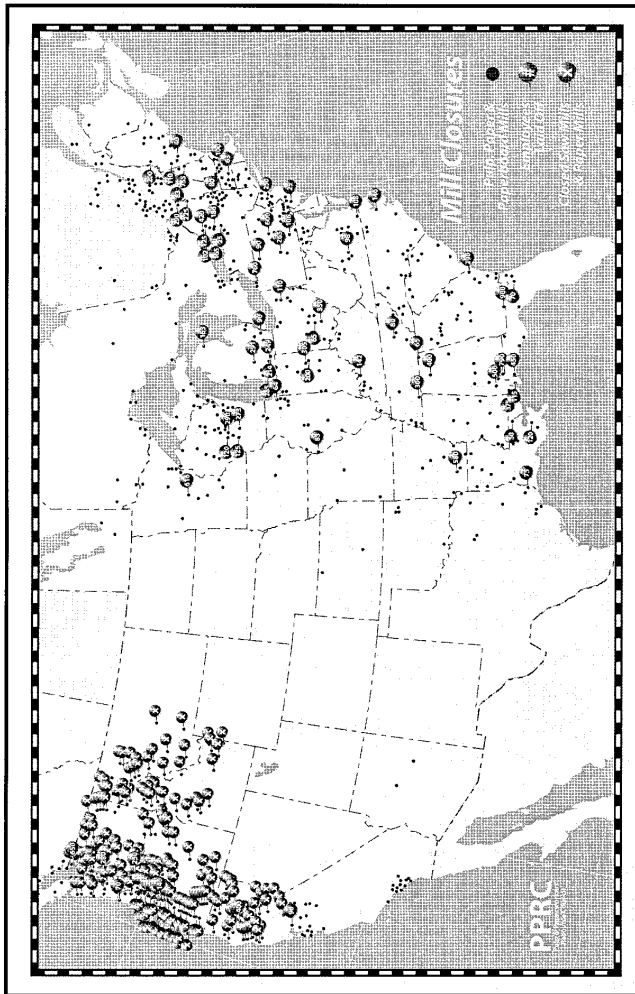
Attachment C:

Table 102—USDA Forest Service—1989–2000

Attachment D:

Pulp & Paperworkers Resource Council Position on Forest Health

Attachment A: MILL CLOSURE MAP 1989-2002



Attachment B

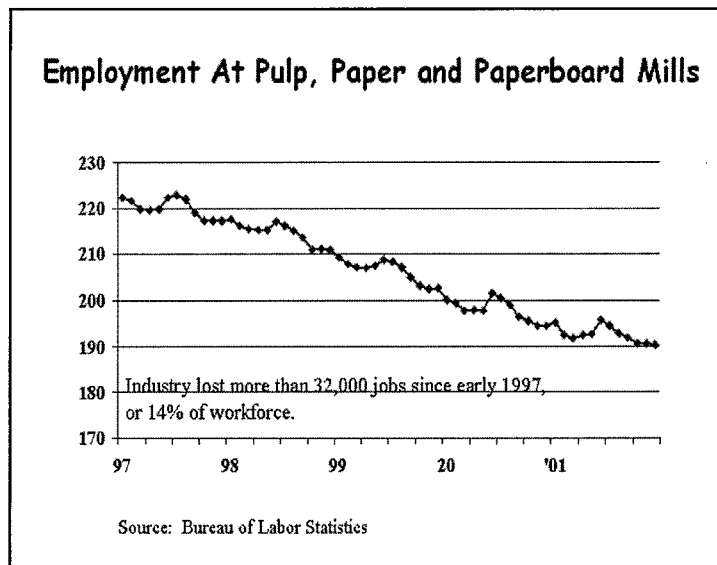
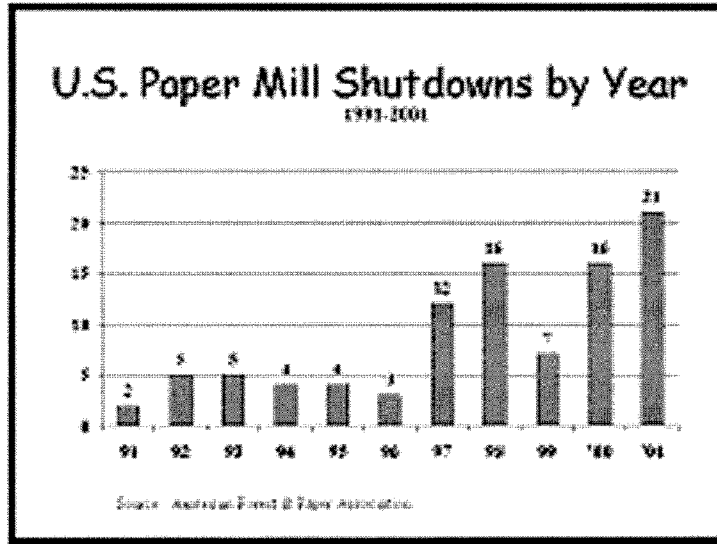


Table 102--Volume and average value of all species of timber harvested from the USDA Forest Service Regions of the Western United States, 1989-2000*

(Volume in million board feet, Sawnware value in dollars per thousand board feet)

Year	Northern Region		Rocky Mountain Region		Southwestern Region		Intramountain Region		Pacific Southwest Region		Pacific Northwest Region--east side		Pacific Northwest Region--west side		Alaska Region	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
1989	1,055.0	68.25	465.0	24.34	459.4	43.69	410.2	41.20	2,044.5	115.30	1,932.8	130.31	2,031.2	164.68	461.9	13.30
1990	804.8	66.55	353.6	20.51	361.7	40.50	403.2	51.55	1,521.1	131.13	1,546.0	122.53	1,541.8	237.53	475.0	35.48
1991	1,591.1	70.64	389.8	37.04	337.9	59.82	369.1	58.93	1,329.2	138.30	1,297.1	137.22	1,494.1	261.15	362.5	14.03
1992	729.3	127.74	277.9	63.35	247.6	103.05	255.9	43.76	1,752.0	215.74	1,619.4	242.36	2,027.6	367.32	527.1	42.50
1993	485.6	180.50	277.8	102.33	194.7	104.26	251.5	141.39	607.6	215.71	523.5	223.75	426.1	367.00	251.0	45.76
1994	323.6	184.72	184.8	120.51	78.0	65.30	215.9	122.72	544.1	205.44	489.3	183.37	320.5	348.65	193.7	69.24
1995	340.1	181.92	194.4	124.78	45.7	53.32	207.0	131.35	521.5	145.83	477.8	195.24	354.1	338.63	197.6	18.14
1996	1,938.1	182.64	147.4	43.12	163.9	36.04	163.9	66.20	423.8	152.64	349.8	64.49	287.0	239.33	121.5	43.20
1997	45.6	132.56	30.3	143.45	15.9	70.22	12.4	54.76	75.0	55.95	65.1	24.77	95.9	192.44	42.0	66.05
1998	26.6	155.94	16.2	176.25	10.3	105.18	10.3	46.18	151.6	103.30	65.8	25.39	78.3	264.08	26.4	33.28
1999	391.5	157.42	50.8	100.30	27.9	48.35	56.1	100.18	137.0	65.29	87.9	77.87	55.4	209.10	43.2	35.62
Total and average	2054.4	149.76	1329.1	118.51	757.7	49.79	1331.1	96.64	441.4	93.54	316.2	79.70	217.2	236.04	153.6	37.63
2000	46.0	164.37	39.9	159.17	19.1	69.04	15.6	79.83	31.8	53.98	49.7	90.55	23.2	167.47	7.2	32.93
20 yr. average	291.6	160.93	247.7	119.19	146.0	69.75	159.0	106.65	53.6	127.73	54.1	75.23	23.9	229.10	49.2	36.30
24 yr. average	73.0	143.42	28.3	66.88	11.9	17.19	46.9	108.44	150.5	65.51	57.1	55.87	61.7	233.33	47.5	43.38
26 yr. average	75.4	128.28	42.5	56.87	27.8	84.01	39.1	106.55	115.7	74.69	80.3	61.26	39.3	218.70	15.5	45.07
Tons and average	254.6	148.95	125.2	101.38	64.8	67.62	107.0	106.63	95.6	67.37	209.3	69.30	154.1	239.89	119.5	39.35

Note: Negative surplage value caused by emergency risk inciteminations.

* Northern Region includes Montana, northeastern Washington, northern Idaho, North Dakota, and northwestern South Dakota. Rocky Mountain Region includes Colorado, Kansas, Nebraska, remainder of South Dakota, and eastern Wyoming. Southwestern region includes Arizona and New Mexico. Intra-mountain Region includes southern Idaho, Nevada, Utah, and western Wyoming. Pacific Southwest Region includes California and Hawaii. Pacific Northwest Region includes Oregon and Washington. Alaska Region is all of Alaska.

Source: Respective Regions of the Forest Service U.S. Department of Agriculture.

Attachment D

Pulp & Paperworkers' Resource Council



AWPPW



PACE

PPRC Position on Forest Health**Wood Products Employees Support Aggressive Forest Health Approach****Forest Health Management Requirements:**

- ☛ Restoration of tree species best suited for site.
- ☛ Prevention of unhealthy conditions.
- ☛ Thinning to species composition and stand density.
- ☛ Consideration of impacts of insect infestation, root disease, wildfire, and actions necessary to sustain forest health and long-term productivity.
- ☛ Professional and private foresters need workable management approaches and strategies to sustain forest ecosystem.
- ☛ Encourage local public involvement in forest health decisions.
- ☛ Commercial thinning is useful for reducing fuel loads.

The Pulp and Paperworkers' Resource Council Supports Change and Proposes that Congress Act

- ☛ Commercial thinning needs to be a top priority when the safety of home owners and communities are threatened.
- ☛ Direct the Forest Service to harvest dead and dying timber to reduce catastrophic losses and re-establish healthy viable forests.
- ☛ Protect timber harvest programs from lengthy delay by appeals and litigation.
- ☛ Direct the Forest Service not to deviate from forest plans without proper analysis, public involvement and documentation.
- ☛ Pass legislation to give the needed funding to expand forest health and timber sales. This combined with thinning, pest suppression, and fuel load treatment programs are environmentally and economical responsible.
- ☛ The Forest Service should be run as intended, to provide multiple use and sustainable forestry to meet America's wood product needs now and for future generations.

If the Forest Service was operated as a business, it's net assets would make it a top five United States company. Managed as it currently is, the business would be financially bankrupt.

Mr. McINNIS. Mr. Ack, thank you for coming and you may proceed.

**STATEMENT OF BRADLEY L. ACK, SENIOR PROGRAM
DIRECTOR, GRAND CANYON TRUST**

Mr. ACK. Thank you, Mr. Chairman and members of the Subcommittee, thank you for inviting me to testify here this morning.

My name is Brad Ack and I am the Senior Program Director with the Grand Canyon Trust, it is a regional conservation organization based here in Flagstaff. We have been involved in the forest ecosystem restoration issue for sometime now and we are one of the founding members of the Grand Canyon Forest Partnership. I am the Vice President to Tom's Presidency on the Board of the Forest Partnership. We also serve on the Advisory Board, the Governor's Forest Health Advisory Committee and on the Centennial Forest Advisory Committee.

I want to make three key points in addition to what I have submitted in my written testimony.

First, absolute agreement there is an ecological crisis on the southwestern ponderosa pine forest. I think you have heard that overwhelmingly today and I think there is broad agreement. I differ in saying that it is the result of management, not unmanaged forests. And I think that point has not been made today. We got to where we are today because of the management practices that we have engaged in over the past century, and we need to keep that in mind as we move forward toward solutions.

Secondly, the National Environmental Policy Act is not the problem, from our perspective as an organization that has been working through it for sometime. It is really the implementation and the management of the National Environmental Policy Act that has been a problem. And I am going to talk about that in more detail, and provide some suggestions for solutions.

And then finally, to reiterate Tom's point, building markets and utilization of small diameter wood is going to be absolutely essential to getting restoration done at the scale and at the pace that Dr. Covington spoke of. Without those markets, it will not matter what we do to NEPA, it will not matter what we do to our forest management practices, the wood is not going to come out of the forest.

So first, the ecological crisis, we do urgently need to address it, we all agree with that. But where we are today is the result of some of the past management. We have these very high densities of small trees in the southwest because of exclusion of fire due to the removal of fine fuels, suppression of fire, the removal of the old growth forest structure which people have talked about here, the extirpation of predators, extensive building of roads which has led to much of the invasive weed colonization and so forth. Those are the management practices of the past that have led to some of this crisis and what we recommend and what the Grand Canyon Forest Partnership—Greater Flagstaff Forest Partnership works on is comprehensive ecological restoration; not just thinning and burning, that is an absolutely essential piece, but we have to look at the bigger system, we have to look at the rest of the values across the system, we have to look at wildlife and wildlife habitat, we have

to look at ecological values like springs and rare species and so forth.

That is what we have been trying to do here in the Flagstaff region. We have broad support, Tom mentioned 25 organizations that are part of that effort. And it also means that we do not repeat the mistakes of the past that got us to this present forest condition, and I think that is very important as we go forward in the next century of forest management.

Second point about NEPA, we have found in our experience that the Forest Service—and we have great colleagues on the Forest Service and wonderful working relationships, but they are not adequately staffed to do NEPA at the scale and the pace that we need in this region. We are taking up to 2 years to get environmental assessments and environmental impact statements through the process. That is before we get to any of that potential delay associated with appeals and litigation. That is just doing the documentation. I have colleagues in the Forest Service who tell me they should be able to do it in 3 months, so 2 years versus 3 months.

Our suggestion, and it is in some legislation that we are working on with Senator Jon Kyl, which I hope you all have copies of, proposes better funding and dedicated teams for the Forest Service to do NEPA. We have a pilot project here in the southwest, we call it a Super NEPA team. Essentially is a group of people who do nothing else but environmental planning for forest restoration. And they guarantee a certain number of projects will get through the mill every year, will get 150,000 acres a year or 200,000, 500,000 whatever the number is, will get that number done on an annual basis through the environmental planning process, and will have the staff to do it. They will not be taken off to fight fires, as they are now, five or six months a year leaving the planning process essentially on hold. We will have the right expertise, they do not use lawyers right now on these teams, and we need to have lawyers on these teams. Obviously the legal questions in NEPA are very important. We need to have conservation biology, we need to have GIS.

So we are suggesting better funding of dedicated teams to do NEPA right rather than saying let us throw NEPA out. Let us not throw the baby out with the bath water here. There are problems with the implementation, but it is more, in our perspective, in the management and the allocation of resources to NEPA.

Finally, on markets, we have been studying the market issue in this region for a number of years now. Again as part of the Greater Flagstaff Forest Partnership, we have spent National Fire Plan dollars to look at this situation. There are a number of ways to utilize this material, it is happening in many other parts of the country, many other parts of the world. It is not happening much in the southwest in large part because of the uncertainty. That NEPA compliance team would help deal with the uncertainty. But it is going to take some co-venturing from the Federal Government here. This is low margin investment when you consider the high risk, the high downside. The upside is not so great, we need some co-venturing here and this proposed legislation that we have been working on with Senator Kyl talks about the creation of essentially a small corporation to do co-venturing with the private sector on

establishing small diameter utilization enterprises. We think that that coupled with this more coordinated planning effort and more assured supply of small diameter is going to really make the difference in getting restoration done at the scale and at the pace that we all agree it needs to be done at.

So thank you very much for your attention this morning.

[The prepared statement of Mr. Ack follows:]

**Statement of Bradley L. Ack, Program Director, Grand Canyon Trust,
Flagstaff, Arizona**

Chairman and Members of the Subcommittee, thank you for the opportunity to testify here today. My name is Brad Ack and I am the Program Director at Grand Canyon Trust. Grand Canyon Trust is a regional conservation organization dedicated to the protection and restoration of the canyon country of the Colorado Plateau. We have a long and proud history of seeking pragmatic solutions to difficult environmental problems.

The Trust has been proactively working to restore degraded and fire prone forests in northern Arizona since 1997. We are very concerned about the risks of catastrophic, or stand replacing fires in this region as they have the capacity to destroy all that we work to conserve. Our efforts on forest restoration include founding the Grand Canyon Forests Partnership (now the Greater Flagstaff Forests Partnership) in cooperation with the U.S. Forest Service in 1997 and subsequently becoming involved in all aspects of ecological restoration—from project design, implementation and monitoring to hiring thinning contractors and providing low-interest loans to local small-diameter wood processors.

Grand Canyon Trust holds seats on the Greater Flagstaff Forests Partnership's corporate and advisory boards and serves on the Arizona Governor's Forest Health/Fire Plan advisory committee and Northern Arizona University's Centennial Forest's advisory committee.

The following testimony is based on our empirical knowledge of what's needed to increase the scale, pace, and quality of ecological restoration in degraded southwest ponderosa pine forests.

This testimony will address (1) causes and symptoms of the current ecological situation, (2) what we should do about it, (3) how we get there from here, (4) obstacles we've encountered and solutions to these obstacles. This testimony is based directly on our six years of experience to achieve forest ecosystem restoration in the ecological, social, and economic environment of northern Arizona. It may or may not be applicable to other parts of the country with different ecological, social, and economic circumstances.

I. There is indeed an ecological crisis in the Ponderosa pine forests of the Southwestern United States.

The causes of this ecological crisis include fire exclusion due to removal of fire-carrying grasses and forbs by livestock; active fire suppression; removal of the dominant old-growth forest structure; predator extirpation; and road building.

The symptoms of this crisis include dangerous accumulations of hazardous fuels; high densities of small trees; too few large and old trees; declining native biological diversity; and increasingly large and severe fires affecting human and ecological communities. Severe fires are but one symptom, albeit the most obvious, of an ecosystem in rapid decline.

II. What Do We Need to Do About This Problem?

We need to place an extremely high priority on restoring degraded and fire prone ecosystems. Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed. We urgently need to undertake that process at a scale that is commensurate to the degradation and fires we are now witnessing in Southwest ponderosa pine ecosystems.

Ecological restoration is not necessarily synonymous with fire prevention or fuels reduction; research has shown that different types of fuel reduction treatments can have different consequences for fire behavior, biodiversity, wildlife habitat, tree vigor and forest health. Except in areas immediately adjacent to communities, fuels reduction strategies need to be consistent with broader ecological restoration goals including conserving the diversity and resilience of native plant and animal communities, safely re-establishing the natural variability of fire regimes and tree recruitment, and facilitating the development old-growth forest structure. Ecological res-

toration should also entail rehabilitation and protection of rare and rich biological communities like springs, riparian areas, and meadows.

Effective solutions address both the symptoms and causes of a problem; reversing the declining health of southwest ponderosa pine ecosystems must also include taking a hard look at those activities that may be contributing to further decline such as livestock grazing, road building and road management, and recreation management. If we are serious about restoring these forests, we need to deal with the fundamental causes of their decline, and not just the symptoms. We should not repeat the actions that got us to this point in the first place.

III. How Do We Get There From Here?

Our experience in the Greater Flagstaff Forests Partnership indicates that in order to be successful, ecological restoration must be ecologically sound, scientifically defensible, socially acceptable, and economically viable. Some key elements of a successful restoration program include:

- Participatory processes based on involving a diversity of stakeholders;
- Developing and then working from a common ecological, social, and economic vision;
- An adaptive management framework with clear science-based guidelines by which to monitor, evaluate, design, implement and improve treatments;
- Erring on the side of caution when faced with uncertainty;
- Focusing on areas of broad agreement, or “the radical center”: for example, we have very broad agreement to do restoration in this forest type when thinning is limited to young trees smaller than 16” dbh.
- Congressional, state, local, university, and non-governmental support of community-based restoration efforts.

IV. What Are the Main Obstacles We Have Encountered?

1. Our experience indicates that agency management of the NEPA process, rather than the regulatory environment of NEPA itself, is a problem.

There are systematic management and personnel problems within the Forest Service unrelated to the regulatory environment of NEPA that affect the quality, effectiveness, and efficiency of planning. These include (1) fragmented and delayed analyses due to personnel transfers and/or re-assignments (most notably to fight fire); (2) inadequate staffing levels and prioritization; and, (3) lack of relevant expertise (law, conservation biology) utilized during the planning process.

These problems result in (1) extremely slow execution of the NEPA process, (2) avoidable mistakes that subject decisions to legitimate and time-consuming appeals and litigation and (3) analyses that are marginally commensurate to the guiding intent of NEPA or to contemporary principles of conservation science.

Our purpose here is not to be overly critical of the Forest Service. Our purpose is to provide an honest assessment so that appropriate solutions may follow. Until these problems are resolved and careless mistakes are prevented, well-intentioned projects will continue to be legitimately appealed, litigated, and delayed—regardless of the regulatory environment in which they occur. Changing or circumventing regulations will not prevent careless mistakes or the appeals and/or litigation that result from them.

Our oral testimony will detail two cooperative projects between the Coconino National Forest and the Greater Flagstaff Forests Partnership that exemplify these problems. The first of these, the Kachina Village Forest Health Project, has taken two entire years to move from initial scoping to final EIS. The second, the Fort Valley Ecosystem Restoration Project, was riddled with avoidable mistakes that resulted in two successful appeals and one successful lawsuit.

Our recommendation: Do NEPA correctly according to existing regulations and authorities by creating a regional NEPA teams whose sole purpose is to ensure efficient, high-quality NEPA analyses for ecological restoration and fuels reduction projects. Such teams would consist of experts solely dedicated to executing NEPA analyses and decisions who would not be available for other duties such as fire assignments.

Our recommendation: Utilize new data and tools for computer-based mapping that can clarify scientific uncertainty, place restoration projects within a larger ecological context, and when employed in NEPA analysis, enhance the quality and transparency of analyses underpinning decisions, thereby also advancing public understanding, dialogue, and support of restoration efforts.

Fires are now occurring at the landscape scale. We need to conduct analyses at similar scales, using the best available science to strategically prioritize restoration projects and understand their effects within a landscape context. Better science will not slow down the process of restoring and protecting our forests. To the contrary,

it will allow us to increase our ability to think bigger and think better at the same time.

Thanks to support from Senator Jon Kyl and the Northern Arizona University Ecological Restoration Institute, Northern Arizona University's Sisk Laboratory for Conservation Biology and Landscape Ecology is developing such a capability for Southwest ponderosa pine forests.

2. Lack of markets for small diameter wood

While restoration cannot be expected to fully pay for itself, offsetting the costs of implementation by creating value from small logs can determine the economic viability of projects. Our experience clearly indicates that without the development of a new sector based on the utilization of small diameter wood in the Southwest, we will not get the restoration work done at the scale and pace we need it to be done, and the Forest Service will continue to need to cut large trees to finance fuels reduction work. This is certain to cause serious conflict and delay, while also being unjustifiable ecologically.

Our recommendation: Create a Small Log Enterprise Development Center to provide financial and technical assistance to nonprofit organizations, small enterprises, and individuals throughout Northern Arizona to promote the creation of enterprises that use, and provide value-added processing for, small diameter logs that are removed from covered forests through fire risk reduction and forest restoration efforts. Help to create an adequate site for such businesses to co-locate and share infrastructure resources. Without government assistance, private sector money is unlikely to flow into this needed enterprise.

These recommendations are the subject of a draft piece of legislation formulated by the staff of Senator Jon Kyl and ourselves. It is entitled the Forest Health, Restoration and Small Enterprise Development Act.

Thank you for inviting me to speak in front of the Committee today.

Mr. MCINNIS. Mr. Ack, I especially appreciated your comments in regard to the teamwork, community effort, the corporation. You have got some excellent ideas, thank you for your testimony.

I now ask that the panel—sorry to do this to you, but if you all would not mind standing by the podium up there. And Mr. Chairman, you can begin the questioning. Members, we have 30 minutes, so I think we can go five or 6 minutes, if you would like.

Mr. POMBO. Thank you, Mr. Chairman. I will just tell you this is some of the best testimony that I think I have ever heard on this issue, from this panel. You all did a fantastic job.

I would like to start with Dr. Moore, if I could, and talk a little bit about the management of our forests and what is involved with doing. I think in my mind and what we have tried to come up with in producing legislation on the healthy forests is a way of taking all of the ideas that we have heard here this morning and putting those together and stepping in and trying to manage some of the mismanagement that has occurred in the past. And I know that you have quite an extensive environmental background in protecting our world's resources.

How do you feel about taking a lot of these ideas and putting it together in a management plan that is developed locally, that you are bringing local people and making them part of the process, both the process of planning it and the actual work that has to be done in making that work on a local basis so that when you look at it on a macro basis, it is actually working?

Mr. MOORE. I strongly believe that short of transferring ownership of Federal lands, that it is very important to devolve the management authority and the management planning down to a more local level. In other words, national forests and BLM land should be grouped into geographically reasonable sizes that can be managed at more the state level. Of course, there has to be rules that

the landlord puts on that you cannot go outside of, but the management plan should be done at the local level.

One of the biggest flaws institutionally with the Federal land is the ownership structure and the fact, as I mentioned, that the people are in the east, the land is in the West and when it comes to votes in Congress, it is almost always satisfying often distant priorities and it is easy to make yourselves look green when none of your constituents suffer from the decisions you are making. And that is what has happened time and time again.

On the other hand, the Forest Service, being this huge national organization with people moving from one district to another through their careers, the question is who is the steward? It is not the contractors in the private sector because they are just bidding on jobs. And it is not the Forest Service in many cases because the individuals in the—I mean you to go Europe and Canada, my home country, very often you will have an individual forester managing the same area of land for their whole career. Then you get institutional memory being built into the system. Whereas, if you try and manage the thing on a Federal level, you often lose the ability to have a steward in the system.

Mr. POMBO. Thank you. I think I would prefer that we break it down even further than what you are suggesting, and take smaller regions and manage them in a very small region, where you do have the mayor or the chairman from the local tribe, and the local environmental group, and you have these people that actually live and work in that community that get together and develop management plans. And we do have a national standard, and I do not think anybody is talking about doing away with the national standard. But the actual planning process, bringing in people who actually live and work in that community, to make those decisions. And how do they meet that national standard and have a healthy forest locally.

I am sure that in your years of experience in this, that you have found that the people who care the most about that forest or that environmental problem are the people who actually live there. That is why they are there.

Mr. MOORE. That is often the case, but I just point to the Quincy Library Group as a classic case of people organizing at a local level, but without going into the byzantine nature of the situation, it has still been very difficult for them to move forward in the way they should because of the complexities of the Federal laws and the Forest Service institution itself. It has got to be streamlined, is really what it comes down to.

So the two main themes I would stress are devolution of the management authority to a more local level and streamlining the process so that we can get on with the job that everybody seems to know has to be done.

Mr. POMBO. Thank you very much.

[Applause.]

Mr. MCINNIS. Thank you, Mr. Chairman. Mr. Gibbons.

Mr. GIBBONS. Thank you very much, Mr. Chairman, and to our witnesses, thank you for appearing here today.

I have—or would like to begin questioning Mr. Gibson because I think of anybody here who has the expertise to decide on how to

create a small business market with regard to small diameter trees, you, more so than we in Congress or any of the experts with Ph.D.s, could give us some insight on that.

So what would you recommend? How can we help create a small diameter local tree market that would utilize the experience of the industry to help with all of this, and are there certain roadblocks that you have experienced in your history or your background, such as regulations or whatever, that we need to remove? What would you suggest we do to create a local small diameter tree market?

Mr. GIBSON. Well, first of all, there is an unfriendly attitude toward industry as a whole. Industry is vilified as the bad guys. If you say logger, it is a bad word to a lot of people. So you have to have a philosophy change that says hey, these guys are trying to help us, so what can we do to help. Can we give them, you know, contracts that last long enough to pay for their investment. Those kind of things are difficult to get at this time because we do not know where we are going to get our resources from. And so before you can put out those kind of investments, you have to have guarantees.

Mr. GIBBONS. Are lawsuits a current threat and a problem to you?

Mr. GIBSON. Lawsuits are not a current threat to me, but to the industry as a whole, I think they are a major problem.

Mr. GIBBONS. Thank you, Mr. Gibson. Let me turn a quick question over to Dr. Kolb, I appreciated your testimony.

With regard to the pine bark beetle, Doctor, once these beetles are found in trees, as we see here in this local community, what is the proper treatment?

Mr. KOLB. Well, once beetles are in a tree, that tree is dead, you cannot pump any kind of insecticide into the tree, even though some people try to sell you on that. It is not effective. Once there are large numbers of beetles in a tree, that tree is dead. The best thing to do is to rapidly cut that tree down and treat the wood and the branches in a way that the beetle larvae that over-winter in the tree will be killed.

Some of the guidelines that I attached to my testimony go over how one might do that. You can pile that material and burn it, you can debark it so the phloem that the beetles live in dries up and that will kill the insects in the wood.

Mr. GIBBONS. Sounds like an expensive process.

Mr. KOLB. Well, it is. For a homeowner that has a few high value trees that they want to protect or for a campground. If the trees are not attacked, you can spray the trees with the proper insecticide. The spraying has to be done by a licensed applicator, it is fairly expensive also; it runs \$50 to \$80 per tree locally. And people are doing that when they have high value trees that they want to save. But once a tree is attacked, none of that will work.

Mr. GIBBONS. Thank you, Dr. Kolb. Dr. Covington, I appreciated your comments with regard to the acreages that you experience or believe need to be treated.

The Ninth Circuit Court of Appeals, which includes the Arizona area, Nevada, Utah, California, most of the West, has recently ruled that a maximum of 5000 acres can be treated before you have to go through this long delay, full blown EIS process.

In your opinion, is there anything magical about a 5000 acre limitation? Is that something that has some scientific connotation to it that would allow the Court to make that decision?

Mr. COVINGTON. I am unaware of what their logic was. All I can—what I can say though is that if we are limited to 5000 acre treatments, there is no way we are going to get on top of this problem. We really do need to be looking at the scale of hundreds of thousands of acres as treatment units.

Mr. GIBBONS. So you feel, as most of us who look at it from a layman's point of view, but you from a scientific point of view, that it was an arbitrary limitation.

Mr. COVINGTON. Again, I do not know what their rationale was. But, you know, if we were in 1950, a 5000 acre treatment unit for planning and analysis and treatments might work, you have got enough time to do it. But in 2003, 5000 acres, these are just postage stamps in huge landscapes that are at threat.

Mr. GIBBONS. Thank you. Thank you, Mr. Chairman.

Mr. MCINNIS. Thank you, Mr. Gibbons. Mr. Walden, you may proceed.

Mr. WALDEN. Thank you, Mr. Chairman.

First, I wanted to thank—is it Ms. Cassatt? I wanted to thank you for your comments on noxious weeds, an enormous problem in my district and throughout a lot of the rural west, so I appreciate your suggestions and your comments and I know in the President's budget, there is a significant increase this year over last year in funding to deal with this issue. So hopefully we can make some progress there.

I wonder if I could ask a question of both Dr. Covington and Dr. Kolb. One of the issues that is moving forward here deals with diameter size and I know as we get into some of these management projects, I begin to hear, well, we want to save certain diameter width and I have seen some displays where there are old growth trees, and the concept is to manage to old growth, the LSR situation in Oregon and all. And yet, we have suppressed fire for 100 years and a lot of these trees are about 100 years old, so we have been in play, as Mr. Ack would say, in terms of interfering. Now you have got 100 year old trees next to each other. How do you choose among them and do you, and is diameter of the trees at breast height really the best way to manage for forest health? And if not, what is?

Mr. COVINGTON. First, the diameter—there is no widespread rule of thumb about what diameter trees should be removed or should be left. The point that Tom made in his testimony is something that I have been pretty fervent about for some time, is that the old growth population crash has occurred at about the same pace that the post-settlement population eruption has occurred. So as young trees have increased, old trees have died due to competition and fire and logging operations.

So I think it would be unwise to try to set any kind of national diameter limit.

Mr. WALDEN. So would you manage to a specific area within a forest, so area-by-area, pre-fire suppression, pre-settlement; is that the best way to do this?

Mr. COVINGTON. That is a starting—a starting point should be reference conditions, the kinds of conditions that were present before fire regime disruption was put into place. And then you would deviate from that for specific reasons. You might leave more or less trees to achieve specific management goals.

So, you know, I think what we have to realize is that the diameter limit is mostly related to commercial value, and most of the people that are arguing for diameter limits are really more concerned about the development of the wood products industry with the possibility that once the trees that need to be removed for forest health restoration, once those have been removed, that then there would be pressure to remove even more trees, to start removing the trees that are needed for conservation purposes.

Mr. WALDEN. Can we hear from Dr. Kolb as well, and then I have a final question for Mr. Ack.

Mr. KOLB. Well, one thing that Wally has taught me is that one way to spot old growth ponderosa pine trees very easily is they are trees that have yellow bark and big plates on them. And if you do that in this area, you are almost always talking about a tree that is 120-plus years old. Oftentimes, they are 200 to 300 years old.

In our Greater Flagstaff Forest Partnership projects, we do not cut those trees ever, because they are valuable and they are easy to identify.

I guess the other point I would add is I think there is probably far too much energy spent debating about guidelines to use in cutting trees that are 16 to 20 inches in size. We spend a lot of energy talking about these issues, but biologically on most projects, it really does not matter whether you draw that line at 16, 17, 18, 19 or 20 inches, it is just not that important. It is an important hot button issue for some environmental groups because of the issues that Wally just raised about the fear that we are going to have industry addicted to large diameter sawlogs again and it is going to cause management problems in the future.

That is my perspective on it.

Mr. WALDEN. Mr. Ack, if I could ask you, you raise this issue of NEPA appeals and the need for more staffing, and I will read through the bill that you and Senator Kyl are working on obviously.

But my experience has been that no matter what the professional foresters do, no matter how much time they put into a NEPA document, EA and EIS, the litigation appeals flow endlessly, regardless of what they do.

So my question is, is there a way to break that cycle of litigation? We are trying to do it through some of the legislation we are proposing for better disclosure, more involvement up front, time limits on the amount of appeals, and requiring those who want to appeal to actually participate up front in the process, in order to have standing to appeal, to end the postcard appeal that caused so much problem.

But I would appreciate your comments on that.

Mr. ACK. I think those are all worthy solutions or worthy proposals. One thing is stick to areas where there is broad social agreement and there will be much less appeals. And this issue of large diameter trees versus small is a social issue more than a bio-

logical issue, as I think you have just heard from the two forest ecologists. But it is an important social issue and every time we put it on the table, we are going to attract people who are willing to do whatever it takes to stop the project.

We can get 90 percent of the way there if we stick to small diameter trees and boy, with the government, 90 percent is a great distance. So I think that—

Mr. WALDEN. That is how much we have shut down now, so yeah, it would be nice to reverse that.

Mr. ACK. Absolutely.

Mr. WALDEN. Let me close with one comment, that we had an appeal in my district of 50 trees that were cut by the firefighters to fight a fire, and when they went to simply take those that had already been cut, out and get some value out of them, that was appealed. I mean this system is out of control right now and it has got to be changed.

[Applause.]

Mr. MCINNIS. We need to move on. Mr. Walden, I completely agree with you. We somehow have got to condition society to move from emotional management of our forests to scientific management of our forests. I noticed your comment, let us go to an area where it is socially acceptable. I have yet in my term of chairmanship ever found anything, when you mention thinning, that is socially acceptable to certain sects out there, groups out there. You may respond to that very briefly and then we will move on.

Mr. ACK. The only response is you can also do the documents in a way that the appeal takes 30 days to run its course and it is denied and there is no further follow up, if you do not make any mistakes in the documentation.

Mr. MCINNIS. You are right, and that is why that team work, and I like the concept in your bill of putting a team out there, and I like the concept—well, I happen to be an attorney, I think there is some housecleaning that needs to happen out there, and I do like the concept of putting some people on the ground with some legal expertise to try and get it done right the first time.

[Applause.]

Mr. MCINNIS. Mr. Hayworth.

Mr. HAYWORTH. Thank you, Mr. Chairman, and I thank Brad Ack, I thank my friend from Oregon for really highlighting the issue. Brad, thanks for working proactively with Senator Kyl.

But I share the lament, having worked on these issues for the better part of a decade, in a time when we were simply discussing in theory around here what happened, and it is even now, with the salvage of dead trees, a group from New Mexico, not even Arizonans, have filed suit to stop the process. And there reaches a point where you hear all sorts of terms bandied about, but I think it is fair to ask, who is the extremist in this instance, when you ignore forest health and safety of a population. It seems to me a context of reasonableness, what the reasonable person test is, and sadly, some evade all reason, no matter how noble the efforts are to get the legal documents to perfection. There is no reasoning with those who will not reason. And that has brought us to where we are today.

Let me turn to Dr. Covington very quickly. Wally, some years ago—and I mentioned it in my opening remarks and I think it might bear some amplification—you talked about a scenario where the fire, the incendiary fire storms of Dresden that we saw in World War II, the horrific nature of the bombing that went on there and the storms whipping up of their own volition after the fires were started—that type of scenario could be visited on a city like Flagstaff. If we took the nature of the acreage affected by the Rodeo-Chediski fire, what would that fire have done to Flagstaff?

Mr. COVINGTON. Well, I actually have a graphic of that back up here on the wall. If you take—maybe I will just wait until I get that.

[Pause.]

Mr. COVINGTON. Thank you. This is a half million acre, centered in the fire shed of Flagstaff, so the greater Flagstaff ecosystem or the greater Kachina Peaks ecosystem, whatever you want to call it. So the fires come up from the southwest out of Sycamore, Oak Creek Canyon, burn up threatened 500,000 acres. This is the San Francisco Peaks, this is the City of Flagstaff, Williams, Navajo Army Depot, and this would entail three wilderness areas, three national monuments, four cities, Cochina, Mountain Air, all of that area could reasonable be burned in a fire of that size.

And what we have to understand is this is not a theoretical scenario, this absolutely is going to happen unless we do something about it. And we do not have much time.

I was staggered by last year's fire season. I really did not think we would see half a million acre fires for about another 20 or 30 years, as the landscape filled in. But it is here, this is our reality today.

Mr. HAYWORTH. Thank you, Dr. Covington.

Let me just close by thinking my friend Kent Gibson, long time constituent until the realignment, now Mr. Renzi's constituent.

I just want to thank everyone for coming and for offering positive solutions and I think the challenge is to find what is reasonable and like minded or good hearted people with this intent, I think can agree on what is reasonable and the time does call for bold action.

Thank you very much, Mr. Chairman.

Mr. MCINNIS. Thank you, Mr. Hayworth. Mr. Renzi, you may proceed.

Mr. RENZI. Thank you, Mr. Chairman. I want to thank the panel also for your testimony, in particular Dr. Covington, for a statistic that you gave us, which is that five to ten million acres of forest needs to be treated in order for us to get back to a healthy forest and to a balance, a holistic balance in our environment.

Mr. Gibson, your testimony was compelling. The idea—I think we all agree that the timber industry must work in partnership with the local communities and with the environmentalists in order to strike a balance that we can get there together, is an absolute.

I also want to point out that in northern Arizona, we have got to fund a way to bring back a reasonable timber industry. It is absolutely important for our economy and our jobs and in order for small businessmen to make those kind of capital investments that it is going to need, they are going to need the guarantees of 10 to

15 years worth of products. In order to have 10 or 15 years worth of products, we have got to free ourselves from the environmental lawsuits that year in and year out are used to obstruct.

Therefore, Mr. Ack, it is encouraging to hear you talk about having a super NEPA team, including legal experts that I am guessing would somehow be able to draft legislation or would have some sort of binding mediation so we do not end up in this litigious society that we see ourselves in right now.

Mr. ACK. Well, the team, the way it is set out in that draft legislation, would have the legal skills to be able to know what the case law is, to avoid the simple mistakes that the people who want to obstruct these processes hang their hats on. It is really not that hard when there is gaping errors made or glaring errors because the case law changes quickly and the Forest Service staff, as has been pointed out I think by Dr. Moore, clearly move around, they have different responsibilities and they are not legal experts. So our proposal on that team is that the lawyers are there to help craft documents that are legally defensible, so if it does get litigated, it gets dismissed at the first hearing rather than going through a case on the merits that drags on for 2 years.

Mr. RENZI. Thank you.

In addition, one of the nexus of the arguments, one of the big rubs that we are seeing in our community is not only on the argument of the diameters and the size, but whether or not we should be thinning the forests out in the outland, in the back country. I have got a good friend in this community, Bobby Orr, who helps run one of the fire departments here, and he taught me early on about what is firewise in our community and how private homeowners need to be able to keep their own property thinned.

And yet the idea that we take that thinning and move it out into the back country is opposed by some people. They want to say that we should be treating and thinning only within the urban/wildland interface. But it really would be a last stand to ask our firemen to put themselves in harm's way right when that fire is on our doorstep.

So the idea, Dr. Covington, of being able to thin in the outback, of being able to provide defensible perimeters is an absolute, particularly when you look at the fire season that approaches Flagstaff and the idea that you told me that a fire that starts in Oak Creek Canyon in the morning could sweep through and be in Flagstaff by the evening and because of the topography and the wind, we could have an overtake fire here that our good firemen would not be able to stop.

Would you like to comment on that, please?

Mr. COVINGTON. Yes, I think that scenario is a likely scenario. And not just in Flagstaff, you can look throughout the western United States, we have got communities that are just sitting ducks.

So from a fire protection standpoint, it is important. It is also important from a habitat standpoint. As came out in previous testimony today, no one wants to live in Flagstaff with a half mile buffer of live forest around it. You know, it's the greater ecosystem, it's the habitat why we are all here.

Mr. RENZI. Yeah, I do not want to see our Flagstaff become an ashtray.

Sarah, could I ask you just real quick, thank you for your testimony, very, very interesting and very unique, particularly we have not heard that kind of testimony on a panel.

What are the two most non-native and noxious species of weeds in our area that we need to deal with?

Ms. CASSATT. I think one of the worst ones throughout much of the West is the spotted knapweed. There are a couple of knapweed species, but that species, basically nothing eats it, it usually forms monoculture stands, it has sharp stickers, it is really a nasty plant that is hard to get rid of.

Secondly, here, there is actually a group of three or four species, I cannot remember if I put them in there or not.

Mr. RENZI. That is OK.

Ms. CASSATT. I could get you a list of the high priority species that have been identified for Arizona.

Mr. RENZI. All right. I just want to point out that if we are able to move forward with the stewardship projects, the slash piles that you talked about which contribute to the weeds would not be there, because those small diameter fuels would actually be harvested. So that would be a way to work together.

Thank you, Sarah. Thank you, Mr. Chairman.

Mr. MCINNIS. Thank you, Mr. Renzi. I might add, Mr. Renzi, in regards to your statement in regard to urban interface, which is absolutely correct, back in the outback, which is where I happen to live, the watersheds are back there, the wildlife is back there, the air pollution and for these people to think that you can handle this by going back—we actually had, as you know, some of our colleagues on the panel actually said half a mile or quarter of a mile—quarter of a mile back and then you would not treat. Geez—anyway, the watersheds are awful important, but to wrap up our questioning, Mr. Shadeegg, you may proceed.

Mr. SHADEGG. Thank you, Mr. Chairman.

I simply want to begin by thinking all of these panelists. It makes me proud that we have right here in Arizona cutting edge expertise in addressing this problem, which is a national problem.

Dr. Covington, I note and I think it is very significant that your change in the No. 1 threat from the fire itself to our failure to respond to the conditions that are creating the fire. And I do not think there is disagreement with Brad Ack that it is a problem with management. We managed wrong before is how we got ourselves into this mess. And I think that point is well taken.

I want to thank you, Dr. Covington, for all your work, but I also like—it is always nice when you give us specific recommendations and you conclude your testimony with four things Congress can do. Often we do not hear actual suggestions and I will tell you, I am committed to the No. 1 suggestion, which is we have got to advance treatments and we have got to do it at a much faster pace.

Mr. Kolb, I was fascinated by your testimony and I want to express my appreciation for it. Knowing, for example—I just went into Bradshaw last weekend with my son and saw devastation of bark beetles there, and knowing that thinning will help fight the bark beetle problem is an important fact for me to try to get out to my constituents and understand.

You made the point about limiting thinning to the urban interface is bad public policy. I will tell you when we were fighting this issue last year, the Chairman of the Subcommittee and my colleague, Mr. Walden, and I, every day we met this fight that just said well, all we need to do is the interface, all we need to do is the interface, all we need to do is the interface. And I am thinking, you know, some day I want my great grandkids and their great grandkids to be able to go someplace deep into the forest and have it still be there. And if we never treat the deep forest, that will not be true. So I appreciate that and I hope your colleagues around the country will listen to you.

Your encouragement of the markets for small diameter trees, I strongly believe in that and Mark Rey has brought products in front of us and shown how you can use small diameter trees to do that.

I thought your points about salvage logging were well taken, but I have a theory; if in fact—and I think you acknowledged this in your testimony—if in fact, the forest is overgrown to begin with, then allowing every tree, following a devastating fire, to remain is allowing too many trees to remain. It seems to me, if the premise is we have allowed our forests to get too thick—when this lawsuit was filed to stop the salvage timbering that is supposed to go forward right now in Arizona, the group that filed it issued a press release in which they said they believed every single tree burned in the Rodeo-Chediski fire should be allowed to fall where it is. And what I heard you say is that some of those trees should be allowed to fall, but not necessarily every single one of them, where it is too thick.

And I do want to note that in the proposal from the Forest Service, there are, I think, 25,000 board feet of timber that would be removed by helicopter, and I want to make sure I understood your testimony correctly.

Mr. KOLB. Well, clearly there are severe wildfire situations where we do not have to leave every tree onsite. I advocate leaving many dead trees onsite, and I think the best thing that could happen in terms of restoration of those sites is send crews out to cut them and leave them on the ground, get them on the ground quickly so that soils will be stabilized, they will start—trees will start to decompose more quickly on the ground because there is more moisture down there. This will help recovery in the long term, but—

Mr. SHADEGG. Where the forest was excessively dense, would you not also agree some of those trees can come out?

Mr. KOLB. Well, there are cases where to pay for those activities probably some of those trees have to come out, unless taxpayers are going to subsidize that or someone else is going to subsidize that.

To answer your question exactly, it depends on the situation, it depends on how much soil damage there is, it depends on how many trees are remaining, so that is where foresters come into play, they can assess those conditions on a site-specific basis.

Mr. SHADEGG. I am going to lose my time, I want to make one last point. Brad, I compliment you and the Grand Canyon Trust, on all of the work you do. I think you have shown a great spirit.

If every environmental group were as open-minded and engaged in as productive a dialogue—I am going to pick a nit with you. You said NEPA is not the problem. I think maybe a more accurate statement would be if we had enough money, NEPA would not be the problem. But the reality is, I do not think we have the money to do as much—as deep an analysis as quickly as needs to be done, and I want to associate myself with Greg Walden's comments. NEPA does allow a single environmental extremist to file a lawsuit to block the will of the majority and the consensus of all the expertise in this room.

I assume that you do not necessarily completely agree with the President's healthy forest initiative, that this could be done by a categorical exemption. I guess I would like to know if that is true, No. 1, and No. 2, is there a middle ground between addressing it as a categorical exemption and requiring a full-blown NEPA process which I believe is going to cost too much money and take too much time, and at the end will still result in the lawsuit that Greg has talked about.

Mr. ACK. Well, it is a difficult question. I think our proposal of this team is that if you have a team that is working on multiple projects, that maybe encompass 200, 300, 400,000 acres of 10 different projects, you are going to get some real economies of scale and efficiencies of scale, rather than having 10 different teams doing that. And you can avoid the mistakes.

I do not believe the categorical exclusions exempt lawsuits, they exempt appeals, if I am not mistaken.

Mr. SHADEGG. Yes, I think you are right.

Mr. ACK. So you still—if you do not do a project well, you are still going to face—you save 45 days of appeal and 30 days of response, but you still have lawsuits. And I just do not believe that we want to exclude the right of citizens to address grievances through the courts if we do not have to abridge that right. That is kind of a fundamental right of this democracy.

Mr. SHADEGG. With regard to areas of social agreement, we may come to social agreement on large diameter trees, the sad part is I do not think we are ever coming to social agreement on the dense forests where some of your colleagues say only do the urban interface.

Mr. ACK. Well, I am completely in agreement with working on the broad ecosystem. Our mission is the larger ecosystem, not the urban interface.

Mr. SHADEGG. I will be happy to yield to my colleague, Mr. Renzi.

Mr. RENZI. Thank you very much. On the issue that you talked about with leaving trees or salvage trees in the woods, I need to point out to you that many of the trees, if left standing and not fallen will provide, what we call the widow-maker effect. So it is unsafe for the kids to go into the woods, it would be unsafe.

So with the idea that we are able to go in and salvage, particularly those trees that are on Rodeo-Chediski and the Indian fire in Prescott, the idea of leaving them standing does not allow us to go in and replant or fertilize and restore.

So under the widow-maker concept, I would like to just point that out.

Mr. KOLB. My verbal and written—

Mr. MCINNIS. Just a minute, Doctor, let me tell you that we have got to wrap it up.

Mr. KOLB. OK.

Mr. MCINNIS. So make your comment in 20 seconds and then we will wrap it up.

Mr. KOLB. I can do it. My verbal and written testimony clearly indicates that for safety purposes, salvage logging is certainly justified near trails, roads, houses. Also, the trees do not stay standing that long; we have been watching trees that burned catastrophically in 1996, after about 5 years, they start the break in half and come down.

Mr. MCINNIS. Thank you. Mr. Chairman.

Mr. POMBO. Just a concluding statement for this, and you guys can sit down. What we should have done is we should have had to stand up for as long as you were and then it would have probably hurried it up.

But just a concluding statement on this, I want to again thank Congressman Renzi for hosting us, the City of Flagstaff for allowing us and being such a great host, to hold this hearing. Taking over as Chairman of the Resources Committee, one of my goals is to do this a lot more often, and to bring Congress out to the people, not only to allow us to hear from people out in the real world, but also to give you the opportunity to educate us.

So I thank Chairman McInnis for bringing this hearing out here, I think this is extremely important, I think what all of you heard, what the Committee heard today, was some extremely valuable testimony as we move forward in what we hope to be a consensus effort to have a balance in protecting our forests for future generations.

So I thank you, Mr. Chairman, I thank Mr. Renzi for hosting us in this hearing, and thank the City again.

Mr. MCINNIS. Mr. Renzi, I also extend our thanks to you and your staff for helping coordinate this, asking for it. I think you were well rewarded, we have got some help for the tribe, we got an announcement from Mr. Rey, so on and so forth.

I also want to stress that what we are attempting to do here really is truly move from an emotional argument. And frankly the testimony about the influence in the East versus the West, Doctor, is exactly on point. And that is how it has managed to move from scientific management to emotional management, because of the numbers.

I also want to thank the City and the law enforcement personnel and the other agencies of the City that helped us put this together. I want to especially thank the witnesses who have come from across the country. I thought your testimony was great and that is exactly the intent of having these kind of hearings. Most of all, I want to thank the audience. I thought this was a—you were very polite, very professional and we should note that this is probably the longest time that any of you have sat in a crowd this size and not heard cellphones for 3 hours.

[Laughter.]

Mr. MCINNIS. It is kind of a nice pleasure.

On behalf of the Committee, thank you, the City of Flagstaff, and thank you to our audience.

[Whereupon, at 1:04 p.m., the Subcommittee was adjourned.]

Statement of The Honorable Jeff Flake, a Representative in Congress from the State of Arizona

Thank you Chairman Pombo for providing the opportunity for this field hearing today. I also thank Congressman Renzi for his part in requesting this hearing on issues so vital to Arizona.

There is a crisis in the national forests. Fires have blazed through at unprecedented rates in the last few years, treatments have been delayed or halted, droughts have contributed to the severity of fires and dozens of timber mills that can provide assistance through thinning have been driven out of business or prevented from working. Today, the President's Healthy Forest Plan is being looked at by Congress in order to address this crisis situation.

Last year alone, wildfires burned over 7.1 million acres of public and private land. To put this in perspective, Secretary Norton has told us in the past that this is an area about the size of the states of Maryland and Rhode Island combined. Over 460,000 of those burned acres were part of the Rodeo-Chediski fire here in Arizona. Hundreds of communities felt the impact through road closures, evacuation, burned homes, burned structures, temporary displacement and loss of valuable property. Yet the problem persists.

For years the work of the Federal land managers has been hindered and delayed and the lands have suffered. Now, over 75 million acres of forestlands are at an unnaturally high risk for catastrophic wildfire. Some of that acreage at high risk includes already burned areas that haven't been cleaned up yet.

Environmental extremists have prevented the U.S. Forest Service from implementing several forest management plans. There have been many frivolous lawsuits along with a widespread concert of effort that has spread the agency's budget thin. In the Southwestern region alone (Arizona and New Mexico), 15 decisions to implement fuels treatments were appealable decisions. Of those 15 decisions, 11 were appealed and two were litigated. This is a number well beyond allowing for productive land management.

Even closer to home is the example of the Apache Sitgreaves and Tonto National Forests, site of the Rodeo-Chediski fire. The Forest Service awarded three timber contracts to remove dead and burned timber from those forests—necessary cleanup on those lands—and on January 10, 2003, the Forest Conservation Council filed a lawsuit against the efforts. If the dead trees are left much longer, the U.S. taxpayers, through the Forest Service, will be footing the bill for any future cleanup efforts because all value of the timber will have been lost.

Finally, if these Forest Service projects are able to continue, there are few places to turn for commercial work. Sawmill and pulp and paper mill operations have significantly decreased and closures have skyrocketed over the past several years. According to statistics from the American Forest and Paper Association, the West has been severely impacted since 1989 when 400 mills in the West closed over 378 of those were lumber and panel mills. This idled some 36,000-factory workers. Another 36,000 logging jobs were lost as well, bringing the total direct jobs lost to over 70,000 within the industry alone. These numbers show how reliability of forest related jobs is low and further hinders necessary treatments.

The President has introduced the Healthy Forest Initiative, which will counter the catastrophic impact of last year's wildfire season on communities and environmental resources. Focusing on legislative and administrative proposals to empower land managers to better deal with the crisis conditions and allowing for certain fuel reduction projects on Federal lands under accelerated procedures, the proposal hopes to address the plethora of concerns. Congressman Shadegg, Hayworth, myself and others have also introduced legislation to improve the situation for communities susceptible to wildfire.

Land managers are only expected to treat about 2 million acres this year of the 75 million acres at unnaturally high risk to catastrophic fires. The Forest Service needs both of its tools used in maintaining forestlands: the removal of trees and prescribed burning to effect change and contain the threat of catastrophic wildfire to local communities. It is time to think long-term about how current policy should be changed to prevent a continuation of the threat of wildfire to public lands and nearby communities.