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OVERSIGHT HEARING CONCERNING THE MOUNTAIN PINE BEETLE EPIDEMIC IN THE WESTERN UNITED STATES

HEARING

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

UNITED STATES SENATE

ONE HUNDRED TENTH CONGRESS

SECOND SESSION

SPECIAL HEARING

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OVERSIGHT HEARING CONCERNING THE MOUNTAIN PINE BEETLE EPIDEMIC IN THE WESTERN UNITED STATES

MONDAY, MAY 5, 2008

U.S. SENATE,
SUBCOMMITTEE ON THE DEPARTMENT OF THE INTERIOR, ENVIRONMENT, AND RELATED AGENCIES,
COMMITTEE ON APPROPRIATIONS,
Eagle, CO.

The subcommittee met at 8:58 a.m., in the Eagle County Room, Eagle County Courthouse, 500 Broadway, Eagle, CO, Hon. Wayne Allard presiding.

Present: Senator Wayne Allard.

STATEMENT OF SARAH FISHER, COMMISSIONER, EAGLE COUNTY, COLORADO

Senator ALLARD. Before we get started I understand we have the Commissioner from Eagle County who would like to make a few comments.

Ms. FISHER. Good morning, everyone, and welcome to Eagle County. I have the great pleasure and honor of introducing Senator Wayne Allard who's going to speak with us this morning, with a distinguished panel, on the bark beetle.

Before we get into all of the things that are going wrong, I just want to take a minute and acknowledge what a beautiful day it is in the valley this morning, and how very fortunate we are to live in Colorado, how very fortunate we are to be able to all come together and have discussions like this, and talk in a healthy frame of mind, with the desire to try to find some solutions to the problems that plague us.

I want to thank you all very much for joining us, Senator Allard, thank you very much for being here. With no further adieu, let's get this hearing started.

Thank you.

OPENING STATEMENT OF SENATOR WAYNE ALLARD

Senator ALLARD. Well, thank you very much, and I do want to thank some people, first of all, I do want to thank the Eagle County Commissioners and Eagle County for providing us with a lovely facility to have this hearing at.

Also, I thank Senator Feinstein, the chairman of this subcommittee for the effort in preparing to put this together, and her staff—and all staff of the Interior subcommittee in helping put this together—and also my staff for helping organize it. So, it's been a

team effort and we want to thank all of you for all your hard work and effort to get here. Thank you.

Okay. All right, we need to get the—do we need to start over on that, or are we covered?

Okay, okay. Well, first of all—we'll just start over. Thank you for the introduction, and first of all I'd like to thank all of the County Commissioners here in Eagle County, and the County—Eagle County for providing us such a tremendous facility. It's a great place to have a hearing, and we very much appreciate your hospitality.

I'd also like to thank Senator Feinstein who's chairman of this particular subcommittee for all of her efforts in allowing this subcommittee to be put together here in Colorado to delve into the bark beetle problem and epidemic that we're having here in the State, the Rocky Mountain region.

Also, special thanks to the staff of the Interior Subcommittee the majority staff and the minority staff. Also my staff, who's worked hard and helped put this together.

I'm very pleased to welcome all of the witnesses who've agreed to appear before the Senate Interior Appropriations Subcommittee for this very important field hearing. We have a very distinguished group from the Forest Service, local government, and the private sector.

Joining us on our first panel, we have Under Secretary for Natural Resources and the Environment, Mark Rey. The Regional Forester for region 2, Rick Cables, and Barbara Bentz, an entomologist from the Rocky Mountain Research Station.

The second panel includes Glenn Casamassa, the Arapaho-Roosevelt National Forest Supervisor—did I pronounce that right? Casamassa? Casamass?

Then Clint Kyhl, who is the Incident Commander for the Bark Beetle Incident Command Team, and Cal Wettstein, who is on the natural resources staff, and coordinates fire issues for the White River National Forest.

On our last panel, I'm very happy to see familiar faces from local government and industry here in Colorado. We'll be hearing from Jim Ignatius, Teller County Commissioner. As many of you know, Teller County suffered severe losses in the Hayman fire, the biggest in Colorado history. Jim's been a leader in working on the County's community wildfire protection plan.

Also on panel three, we have Nancy Fishering, the vice president of the Colorado Timber Industry. In addition to her work with the association, Nancy serves as a consultant for the last remaining timber mill in the State, in Montrose.

Finally, we have Eagle County Commissioner Peter Runyon, whose county facility we're sitting in today, and thanks for your hospitality, Peter.

It's a pleasure to be here, and I'd also mention that Peter is a local businessman, as well as a county commissioner, and has been working diligently on the bark beetle issue.

Again, thanks to all of you for participating today and I look forward to your testimony, and asking you some questions later in the hearing. I'd like to make a few opening remarks before we begin receiving testimony.

We had an interesting hearing last month in Washington, DC on the Forest Service budget. I pointed out that we're facing a forest health crisis in this country, unlike any that I've seen in my lifetime. There are bark beetle outbreaks affecting millions upon millions of areas in the Southern United States, the Inter-Mountain West, and Alaska.

A recent Forest Service report indicated that over the next 15 years, approximately 15 to 22 million acres of Western forest will experience significant tree mortality from bark beetles.

Yet, in the face of this crisis, the Forest Service is proposing to reduce its Forest Health Program by nearly one-half for this next fiscal year. If I have anything to say about it, this subcommittee is going to restore those cuts to the Forest Service budget, and hopefully add some funding to address the crisis that we're facing here in Colorado, and throughout the Nation.

I hope this hearing today, at the epicenter of the forest health crisis, will shed some light—not only on the epidemic here in our State, but also increases the awareness of what various species of bark beetle are doing throughout our Nation's forest. This is a national problem, and the Federal Government needs to be involved in addressing this issue over the long run.

As a native of Colorado, and one who has hiked and fished in these magnificent forests all my life, it is absolutely heartbreaking to me that experts say within 5 years, all—that's all—of Colorado's remaining lodgepole pine forest may very well be wiped out. That's millions of acres, over the next 5 years.

As difficult as it is to confront these facts, I know that it's impossible to treat all of these acres, or to create a defensive line around these remaining untouched areas, to prevent the pine beetle from killing more trees. The fact is, that the beetle kill is spreading and we can't stop it at a landscape scale.

I hope today, however, that we can talk about some practical ways to prioritize areas for treatment to protect lives, communities and property from fire and hazardous trees—how we can develop markets in areas like biomass energy production, cellulosic ethanol, and traditional salvage harvesting to treat the tremendous volume of dead and dying trees—timber on the landscape; and what we can do to restore these forests in a way that this kind of event does not happen again.

Let me cover a few housekeeping matters before we begin. We're not going to use a timer at this hearing, but if you could try to keep your testimony at roughly 5 to 7 minutes, that will allow time for more questions, which I generally think is most helpful to us in gaining knowledge from your experience, as you testify before us.

The record will be kept open for 1 week following the hearing, so feel free to submit your full testimony, and other materials, to my staff, and they will make sure it appears with the transcript of this hearing.

Thank you.

Under Secretary Rey, would you like to begin?

STATEMENT OF MARK REY, UNDER SECRETARY FOR NATURAL RESOURCES AND ENVIRONMENT, DEPARTMENT OF AGRICULTURE

ACCOMPANIED BY:

RICK CABLES, REGIONAL FORESTER, DEPARTMENT OF AGRICULTURE

BARBARA BENTZ, ROCKY MOUNTAIN RESEARCH STATION ENTOMOLOGIST, DEPARTMENT OF AGRICULTURE

Mr. REY. Thank you. Thank you for inviting me here to discuss the impact of bark beetles on Colorado's national forests.

On this panel, I'm accompanied on my far left by Rocky Mountain Research Station Research Entomologist, Barbara Bentz, and on my immediate left, by Regional Forester, Rick Cables.

As is clearly evident to anyone with eyes, in the mountains surrounding Eagle, the mountain pine beetle is having widespread effects on the forests of Colorado.

We first observed an increase in mountain pine beetle activity in northern Colorado in 1997. This coincided with a number of factors, including drought stress, and warmer than normal winter temperatures. Mountain pine beetle populations grew dramatically across the landscape of primarily mature, dense, lodgepole pine forests.

An aerial survey in 2003 showed that mountain pine beetles have infected 227,000 acres. A 2007 aerial survey revealed that the mountain pine beetle epidemic had infested 1.1 million acres, an increase of 500,000 acres in just 1 year. This represents a mountain pine beetle infestation of about 50 percent of the available host trees in Colorado. Overall, 1.5 million acres of forest land in Colorado have been infested by all types of bark beetles.

Insect epidemics, resulting in acreages of dead trees are natural, cyclical events. What we see today in northern Colorado, is beyond the scope of recent outbreaks, and compromises the safety of people.

Moreover, the primary difference between previous beetle outbreaks and the current epidemic, is that people now live, work, and recreate through the lodgepole pine ecosystem. In addition, the forest products industry infrastructure needed to help address the potential public health and safety impacts is nearly nonexistent within Colorado.

These profound differences—along with the scale of the epidemic—require approaches to reduce the effects of the beetle epidemic on people, while ensuring the forest that replaces these dying trees is diverse and resilient to change across the landscape.

The effects today are being felt directly on the White River, Arapaho-Roosevelt, and Medicine Bow-Routt National Forests, but no one agency or community can begin to address it alone. As a result, many stakeholders, including the three national forests, have been forming collaborative groups.

In 2005, as the infestation spread, people representing many interests formed the Colorado Bark Beetle Cooperative. That cooperative, led by the Colorado State Forest Service, is comprised of Federal, State, and local agencies, counties and communities, timber industry representatives, and environmental organizations. All five counties initially joined the Cooperative, this has since expanded to 10 affected counties.

The purpose of the cooperative is to develop and implement a comprehensive strategy to address ongoing and projected forest mortality, and the resulting impacts. Recently, the cooperative has expanded to include nonprofit organizations, recreational interests, wildlife groups, scientists, and more State and Federal agencies. The core team—composed of elected officials, State and Federal agency leaders, and representatives of environmental, timber industry, and utility groups—work to implement the strategy developed by the cooperative.

The core team recently updated the objectives of the cooperative, and will convene here, in Eagle, on May 20, to further define actions to implement four key objectives—first, to protect homes and communities, second to protect watersheds and water supplies, third to protect infrastructure, and fourth, to develop communities' resilience to adapt to disturbance-driven ecosystems.

Responding to the bark beetle infestation is the top priority for the Rocky Mountain region. Between 2006 and 2007, we doubled the acreage that we treated.

A legislative proposal offered by the administration last year—the Healthy Forest Partnership Act—would greatly improve our ability to cooperate with partners to improve forest health. The proposal would facilitate partnerships between Federal, State, tribal, and local governments, to perform scientifically based forest, rangeland, and watershed restoration projects, or wildland fire risk reduction projects on Federal lands.

It would also promote a reduction of risks on adjacent non-Federal lands, and promote investments in local industry capacity and public infrastructure. A copy of the proposed legislation is attached, it is similar, in many respects, to legislation that you and Senator Salazar introduced earlier this year, and we look forward to working with you, and harmonizing the differences of those approaches, to see if we can add some additional tools to the effort to fight bark beetle.

PREPARED STATEMENT

I'll submit the remainder of my testimony for the record, and now turn to Barbara Bentz, and finally, to Rick Cables. I would be happy to answer your questions, along with the next Forest Service panel.

[The statement follows:]

PREPARED STATEMENT OF MARK REY

Thank you for inviting me here today to discuss the impacts of bark beetles on Colorado's national forests. I am accompanied by Regional Forester Rick Cables, Rocky Mountain Research Station Research Entomologist Barbara Bentz, Bark Beetle Incident Commander Clint Kyhl, Arapaho-Roosevelt National Forest Supervisor Glenn Casamassa, and White River National Forest Acting Deputy Supervisor Cal Wettstein.

OVERVIEW

As is clearly evident in the mountains surrounding Eagle, the mountain pine beetle (MPB) is having wide-spread effects on the forests of Colorado. We first observed an increase in MPB activity in northern Colorado in 1997. This coincided with a number of factors, including drought stress and warmer than normal winter temperatures. MPB populations grew dramatically across a landscape of primarily mature, dense lodgepole pine forests.

The aerial survey of 2003 showed that MPB had infested 227,000 acres. The 2007 aerial survey revealed that the MPB epidemic had infested 1.1 million acres, an increase of 500,000 acres in just 1 year. This represents a MPB infestation of about 50 percent of the available host trees in Colorado. Overall, 1.5 million acres of forest land in Colorado has been infested by all types of bark beetles.

Insect epidemics resulting in acreages of dead trees are natural, cyclic events. However, what we see today in northern Colorado is beyond the scope of recent outbreaks and compromises the safety of people. The primary difference between previous beetle outbreaks and the current epidemic is people now live, work and recreate throughout the lodgepole pine ecosystem. In addition, the forest products industry infrastructure needed to help address the potential public health and safety impacts is nearly nonexistent within Colorado. These profound differences, along with the scale of the epidemic, requires approaches to reduce the effects of the beetle epidemic on people while ensuring the forest that replaces these dying trees is diverse and resilient to change across the landscape.

MOUNTAIN PINE BEETLE ECOLOGY

Mountain pine beetles have long been a regular force of change in western North American forest ecosystems. The MPB occupies a diverse array of habitats, attacking and reproducing in many pine species throughout the western United States and Canada.

Mountain pine beetles has affected more than 3.5 million acres in Colorado during the past 10 years, including forests dominated by lodgepole pine, limber pine and ponderosa pine. Several of the current outbreaks are the largest and most severe in recorded history. A panel of experts at a recent symposium focused on "Bark Beetle Outbreaks in Western North America: Causes and Consequences" suggest that two major factors appear to be driving the current outbreaks: (1) forest history and host susceptibility and (2) changing climatic conditions, especially elevated temperatures and drought.

Over the past century, natural disturbances such as stand-replacing crown fires and blowdowns and human activities such as wildfire suppression and vegetation management have contributed to the existence of large areas of trees that are very similar in size and age. Thus, in many areas there is an absence of a mosaic of stand ages and types which helps to slow an epidemic. The size and age of these old trees make them an ideal food source for the bark beetles. Mild winters have allowed the bark beetle larva to survive the winter and warm temperatures have extended their growing season.

These factors have contributed to the spread of the bark beetle epidemic over the last few years. Because of the extent of the outbreak, we soon realized that we could not stop the beetles or protect the forests from infestation, so we changed our focus from the forest to the people in it. In balancing the efficacy and efficiency of treatments here with other places in the Nation impacted by pests and disease, we are now focused on mitigating the effects of the epidemic on the things that people value, from their homes and livelihoods to their drinking water and recreational pursuits.

THE WILDLAND URBAN INTERFACE

More and more people are moving into homes in the mountains. Over the last several decades, thousands of people in Colorado have built homes in the rural and backcountry areas adjoining national forest lands—what we now call the wildland urban interface.

One consequence of the extensive tree mortality is increased risk of catastrophic wildfires. The threat to life and property is of deep concern to us, and we're working with communities and other partners to reduce fuels and promote concepts that help protect property such as the FireWise program. The top priority areas for treatment are in the wildland urban interface, where wildfires would be devastating to communities, resorts, and infrastructure.

Should fires occur, watersheds would also be threatened. Wildfires can cause severe erosion, dump sediment in streams and reservoirs, and damage water quality. This directly affects the availability of clean drinking water for the 2 million people in the Denver metropolitan area, as well as another 750,000 residents of northern Colorado cities.

An even more immediate public health and safety concern is the hazard of falling trees. The roots of dead lodgepole pine trees start to decay within 3 to 5 years, and eventually the trees fall down. Many trees in northern Colorado and southeastern Wyoming are ready to fall on campsites, picnic areas, roads, trails, power lines,

microwave tower sites, water developments and improvements, ski areas, cabins, administrative sites, and livestock fences.

For example, about 20 percent or 911 miles of the trail corridors on the Medicine Bow-Routt, White River, and Arapaho-Roosevelt National Forests contain dead trees ready to fall. In addition, 40 percent or 3,467 miles of the road corridors on these forests are threatened by dead trees. Nineteen percent of the recreation sites contain significant numbers of hazard trees. Recently, these three national forests closed or had to delay opening 38 recreation sites until hazard trees are removed.

Dead trees also threaten 100 miles of transmission lines, 5 microwave sites, and numerous miles of water ditches, diversion structures, and water storage reservoirs. Ski areas are dealing with thousands of dead trees. We have been working with them to address safety concerns by removing dead trees that could fall on lifts, power lines, structures, and trails; treating high-value trees; and replanting some areas.

PARTNERSHIPS AND COLLABORATION

The scope of the epidemic in northern Colorado is dramatic. The effects are being felt directly on the White River, Arapaho-Roosevelt, and Medicine Bow-Routt National Forests. No one agency or community could begin to address it alone. As a result, many stakeholders, including the three national forests, have been forming collaborative groups.

In 2005, as the infestation spread, people representing many interests formed the Colorado Bark Beetle Cooperative (Cooperative). The cooperative, led by the Colorado State Forest Service, is comprised of Federal, State and local agencies, counties and communities, timber industry representatives, and environmental organizations. While 5 counties initially joined the cooperative, this has since expanded to 10 affected counties.

The purpose of the cooperative is to develop and implement a comprehensive strategy to address ongoing and projected forest mortality and the resulting impacts. Assessments were conducted that identified key values at risk: communities that face increased wildfire threat; ski areas that are losing aesthetic and practical values provided by tree cover; developed recreation areas, where hazard trees threaten public safety; utility and transportation corridors that can suffer damage and interruption of service from fires and falling dead trees; watersheds that can suffer damage from erosion and stream sedimentation; habitat that is damaged by loss of trees that support many species; and commercial timber harvest.

Recently, the cooperative has expanded to include nonprofit organizations, recreational interests, wildlife groups, scientists, and more State and Federal agencies. A core team composed of elected officials, State and Federal agency leaders, and representatives of environmental, timber industry, and utility groups, works to implement the strategy developed by the Cooperative.

The core team recently updated the objectives of the Cooperative, and will convene here in Eagle on May 20 to further define actions to implement the objectives: (1) protect homes and communities; (2) protect watersheds and water supplies; (3) protect infrastructure, and; (4) develop communities' resilience to adapt to disturbance-driven ecosystems. To date, this group has developed programs to encourage cooperative fuel reduction projects; present workshops on topics such as FireWise practices and community wildfire protection plans; encourage emergency management planning; and identify high priority treatment areas and projects.

The Colorado Forest Health Advisory Council is also quite concerned with the mountain pine beetle. Regional Forester Rick Cables serves on the council, along with the Colorado State Forester, the Colorado State Director of the Bureau of Land Management, heads of State agencies, and a number of key stakeholders. The council was established by Governor Bill Ritter this year to identify short-term actions to improve forest health, and develop a long-term strategy to sustain the State's forests.

A legislative proposal by the administration, the Healthy Forests Partnership Act, would greatly improve our ability to collaborate with partners to improve forest health. The proposal would facilitate partnerships between Federal, State, tribal and local governments to perform scientifically based forest, rangeland and watershed restoration projects or wildland fire risk reduction projects on Federal lands. It would also promote a reduction of risks on adjacent non-Federal lands and promote investment in local industry capacity and public infrastructure. A copy of the proposed legislation is attached.

FOREST SERVICE ACTION

Responding to the bark beetle infestation is a top priority for the Rocky Mountain region. In 2004, the region developed an accelerated watershed and vegetation restoration plan that is used to identify funding opportunities within the region to accelerate treatments in high risk watersheds and wildland urban interface areas.

In early 2007, the White River, Arapaho-Roosevelt, Medicine Bow-Routt National Forests and the Rocky Mountain Regional Office chartered the Bark Beetle Incident Management Team to increase communication, coordination, and efficiencies within the agency, with the public, and with our partners. The team worked with partners to develop a 6-year implementation plan, with more than 240 projects planned that will treat more than 100,000 acres through 2012.

The team is helping these three forests accomplish on-the-ground activities that will mitigate impacts from the bark beetle through: (1) vegetation treatments including timber salvage and fuel reduction projects near communities and critical watersheds; (2) reducing the hazard of falling trees to recreation and public infrastructure; and (3) ensuring that the forest which grows up to replace these dead and dying lodgepole pine forests—the "next forest"—is composed of diverse species of varying ages to increase forest health and resiliency.

In fiscal year 2007, the region treated nearly 15,000 acres, including more than 9,000 acres of timber harvest, almost 14,000 acres of fuels treatment, more than 1,000 acres of forest health treatment, and 130 acres of hazard tree reduction along roads and trails, and in recreation areas. This represents more than a doubling of accomplishments from fiscal year 2006.

This spring, the team is focusing on addressing the critical public safety hazard of dead falling trees. The team is also working to streamline processes for timber sale preparation and other activities to treat more acres and is pursuing cost-saving options including the use of prison crews, youth crews, and hotshot crews between fire assignments to fall hazard trees and pile slash. We are mobilizing resources from other forests and regions to assist in these efforts.

The region is using Healthy Forest Restoration Act authorities to expedite environmental analysis with the help of local collaborative groups. The forests plan to increase treatments using this authority in 2008. The region is also using the Colorado Good Neighbor Authority with the State to expedite work in the wildland/urban interface, including timber sales, fuel reduction, treatment and salvage of beetle-infested trees, and thinning. In Grand County, the Colorado State Forest Service is conducting projects under a statewide agreement for which the U.S. Forest Service is providing funding through reimbursement.

CONCLUSION

As you can see, the Forest Service, Colorado State Forest Service, Bureau of Land Management, and other partners are working to reduce the impact of the mountain pine beetle epidemic on people by reducing fire hazards near communities, identifying and treating areas with hazardous trees that pose a public health and safety risk, and working to increase the health and resiliency of the next forest.

This concludes my remarks. I would be happy to answer any questions you may have.

Senator ALLARD. Thank you, Mr. Rey. We look forward to working with you on the legislation. We've already done work already.

Barbara, are you next, Bentz?

SUMMARY STATEMENT OF BARBARA BENTZ

Ms. BENTZ. Yes. I'm going to focus my comments strictly on the mountain pine beetle——

Senator ALLARD. On what?

Ms. BENTZ. I'm going to focus—can you hear me?

Senator ALLARD. Yes, okay.

Ms. BENTZ. I'm going to focus my comments strictly on the mountain pine beetle. As you mentioned, there's a lot of other insects, but——

So, the mountain pine beetle are very tiny, they're less than one-quarter of an inch long, and many people ask the question—how does such a tiny insect kill something as large as a tree? They ac-

complish this through a combination of large numbers of individuals, and appropriate timing.

Hundreds of beetles must attack the same tree within a 1- to 5-day time period to kill it. When the beetle attacks, it ingests tissue from the tree, compounds in the tree tissue are synthesized in the gut of the insect, and produce what we call attractant pheromones. Those are released from the beetle, and when other beetles smell those, they're attracted to the tree. When more beetles are attracted to the tree, more attractant pheromone is produced. We use the term "mass attack" to describe this process.

So, trees stressed by factors such as drought, fire injury, or pathogen infection can have lowered defenses, and require fewer attacking beetles to overwhelm and kill the tree. However, large, nonstressed trees, that are more healthy, provide a greater resource for the developing larvae, which feed on the phloem, which is beneath the outer bark.

So, while stressed trees may trigger an outbreak, population growth is also dependent on an adequate food supply of these larger, nonstressed trees.

So, beetle developmental timing is very important to this mass attack strategy, and over the course of an entire year, in low elevation, lodgepole pine forests, the insect must remained synchronized with the temperature of its environment, to ensure adult emergent from brood trees within this very small window of time.

This developmental timing is driven by temperature. In high elevation forests, where temperatures are cooler, a single generation has typically required 2, or even 3 years—much longer than the 1 year required in the low-elevation forests. These protracted life cycles are not conducive to an outbreak.

In addition to developmental timing, mountain pine beetle mortality can also be significantly influenced by temperature—cold temperature, in particular. To survive cold temperatures, they produce and accumulate what we call antifreeze compounds. These compounds protect the insects from cold that can often approach minus 40 degrees Fahrenheit.

Due to this anti-freeze acclimation requirement, however, it's the fall and spring—when these unseasonable cold snaps occur—when the insect is the most vulnerable.

So, mean—okay, if you can show the slide for me? Mean annual and minimum temperatures have been increasing at an increasing rate since the late 1970s, both globally and in the Western United States. I don't think this is anything new to most people. At high elevations, our research that we've been doing suggests that these temperatures have resulted in a shift from a 2-year mountain pine beetle life cycle, to a 1-year life cycle—this is at the high elevations.

The combination of mountain pine beetle, and the exotic pathogen, white pine blister rust, are devastating many high elevation forests throughout the West. Many of them are at a point where they're being called functionally extinct.

In the low elevation lodgepole pine forests, we hypothesize that the longer growing season and the higher minimum temperatures have increased mountain pine beetle reproductive rates and sur-

vival, although populations in these low elevation forests are still on a 1-year lifecycle—they have not shifted.

A slight shift in survival of even 1 to 2 percent can have significant impacts on the growth of mountain pine beetle populations. They often experience 98 percent mortality, and even a shift of 1 percent, so that they're 97 percent, can really increase the populations.

So, the next slide, please?

Colorado experienced a severe drought between 2000 and 2005. Undoubtedly, many conifers were stressed during this event. As mentioned previously, stressed trees require fewer beetles to overcome their defenses. Although we have no correlative data to prove the association, we believe that a combination of drought stress, which weaken the trees, and warm temperatures, which have a positive influence on beetle survival numbers, have favored mountain pine beetle populations at all elevations.

Even though drought may have subsided in some areas, the warm temperatures continue to drive the mountain pine beetle growth, even in the nonstressed forests. This is a slightly different scenario than the recent occurrence of large areas of pinion pine mortality, across the Southwestern United States. Drought stress and warm temperatures triggered an increase of the pinion ips beetle. However, once the drought subsided, so did the pinion ips beetle populations.

A hallmark of mountain pine beetle population dynamics is the self-amplifying, positive feedback processes that can continue to act, even when the initial trigger is released.

In addition to appropriate climatic conditions, suitable forest structure and age must also exist for bark beetle populations to grow large enough to infest and kill trees at a regional scale. As one of my colleagues from Alaska says, "Widespread, mature forests are the loaded gun for bark beetle outbreaks, and weather is the trigger."

Many conifers in Western North America, including Colorado, have size and age conditions that are highly susceptible to bark beetles. However, although—being most susceptible does not necessarily mean it's the most suitable. As I mentioned, these insects require thick phloem to increase their population size.

So, the contributing factors for the susceptibility vary in relative importance from area to area, include widespread stand-initiating fires, that were both natural and human-set, timber harvesting near the end of the 19th century, and in some areas, lack of new stand initiation, as a result of fire suppression.

Mountain pine beetle have long been forces of change in western North American forests. At the scale of a stand, the impact of mountain pine beetles we see today is probably not all that different from previous events in lodgepole pine forests in Colorado, however, the spatial pattern of the outbreaks across the region have changed.

Evaluating appropriate management responses to this disturbance event require thoughtful consideration of the long-term influence of any management acting on the surrounding landscape. In the self-amplifying stage of the current outbreak, it is difficult to impede population spread.

However, protection of high-value individual trees remains a valid option, and I have some talking points that were developed by Forest Health Protection, describing some of the insecticides that can be used in protecting high-value trees.

The removal of dead trees and other fire fuels have been shown to reduce fire risk in the immediate vicinity of a home or a structure, and is advisable under most circumstances. At the larger regional scale, however, the influence of bark beetle outbreaks on fuel dynamics and fuel behavior is less clear. We know it's a very complicated and dynamic process and can vary greatly, depending on many factors, including pre-outbreak stand conditions, and most importantly, weather.

Climate will continue to change, and it's imperative that we design restoration plans that take into account the effects of new climate on our existing—the organisms that exist in our current ecosystems, including the conifers and the insects.

As temperature continues to increase, mountain pine beetle survival and reproductive capacity will also increase, but only to a point. Our research suggests that unless this insect is capable of rapidly adapting to increasing temperatures, many populations may go locally extinct. This is because of this evolved tight synchrony between the beetle developmental timing, and temperature that I mentioned earlier, that facilitates this mass attack strategy. This could be disrupted as temperatures continue to warm.

To make informed decisions regarding restoration of currently impacted forests, as well as beetle population spread, an understanding of how continued warming will affect mountain pine beetle success is also needed.

Additionally, just as mountain pine beetle is expanding its range into lodgepole pine forests of northern British Columbia, and northern and central Alberta, many aggressive bark beetle species that currently reside in Mexico, in the southwestern United States, could also expand northward as the climate continues to increase—as temperatures continue to increase—they could expand northward to occupy niches that may be vacated by mountain pine beetle.

Those conclude my remarks, and I'd be happy to take some questions at the end of the panel.

Senator ALLARD. Thank you for your very interesting testimony.

Rick, yes?

SUMMARY STATEMENT OF RICK CABLES

Mr. CABLES. Well, first of all, thank you, Senator Allard, for convening this panel, and holding this hearing, and thanks to Eagle County, as well, for hosting it. I think the more attention that we can focus on this, and involve all of the stakeholders, the better off we're going to be.

I moved into this position in 2001, and I've seen dramatic changes in Colorado since I've been here, and Southern Wyoming, as well. Not only with the prolonged drought that was just referred to, but also, in 2002 you will remember—and I remember vividly—the fire season, with the Hayman fire, Missionary Ridge, and the other fires.

So we had the backlash and the issues around that, and then the mountain pine beetle was gaining traction, as well. You mentioned that you like to hunt and fish and enjoy the woods, as do I, and I can remember hunting elk in the Williams Fork several years ago, when all the trees were green, and now they're predominantly all grey, or dead, in that part of Colorado. So, dramatic changes, just in my tenure in this job.

I want to talk about the mountain pine beetle event, itself, and Fran, if you'll pull the slides up. I just want to walk through the years since, I think, Mark mentioned starting in 1996 or 1997. In 1996, and you can see these—these just these little teeny red dots around, this is where our aerial survey picked up beetle activity in spruce beetle, red being pine beetle. Go ahead to 1998, 1999, 2000, 2001, and this blue is from the blowdown on the Mount Zirkel wilderness was bark beetle, and then 2005—I'm sorry, okay, so this is 2003—we had a blowdown in 1997 in the Mount Zirkel wilderness, 20,000 acres, and that's mostly spruce beetle.

Keep going, Fran—2004, 2005, and just in 2007, it increased between 2006 and 2007, 500,000 acres.

Our strategy has evolved from initially, the thought was, well, maybe we can get ahead of the beetles, maybe we can do something to actually stop the tide, or slow the tide, and we were quickly overwhelmed with the scale of this event, as Barbara just talked about.

So, now the concerns evolved more into concern about fire, the effects of fire, and also the blowdown of the trees, and what we're going to do about those sorts of things.

The values that people care about in these communities—first of all, county commissioners and others are very worried about emergency response. So, protecting communities from fire, and protecting this infrastructure—recreation infrastructure, ski areas, campgrounds and the watersheds—and if you'll show the slide on the reach of Colorado and Wyoming watersheds—again, my region includes two—Colorado and Wyoming, and three other States, but—just the mountains in Colorado and Wyoming—and this is Colorado—13 States, and 177 counties—and this is California, Arizona, New Mexico, the Rio Grande System, the Arkansas system—13 States and 177 counties get some appreciable amount of their water from these watersheds that we're talking about right now that are, that are—we're worried about, that have felt the influence of this change. So, just the watershed values alone are huge. You know, full well, the effect in Colorado of the water that comes from the national forest in the high country.

So, what is our response been? These are the values at risk, and this is the event upon us. First of all, this is such a multi-jurisdictional, large-scale event, everyone's affected—the communities, the county commissioners, the conservation, environmental organizations are stakeholders in this. The Northwest COG—Gary Seeverson's here, represents 14 jurisdictions—they care deeply about what's happening in the woods, and in and around their communities.

We've got a four-pronged approach. The first thing we decided, we needed to build collaboratives and constituencies and a spectrum of interests that would hold together and help us solve the

problem. So, just as post the Hayman fire, we started this Front Range Fuel Treatment Partnership roundtable, and all of the groups that are represented in that collaborative are on the back here, to include us, the Department of the Interior, counties, Colorado State Parks, the National Forest Foundation, The Wilderness Society, The Nature Conservancy, Colorado State Forest Service, so—that's the big collaborative on the Front Range, to deal with the post-Hayman event, which is not so much beetle-driven right now, as it is the threat of fire, and that's still very real.

Then you come over the mountain, here, to the—and Mark mentioned in his testimony, the Colorado Bark Beetle Cooperative. I can tell you—our friends in Wyoming, where we have a big chunk of this event is occurring now—are irritated that we call it the Colorado Bark Beetle Cooperative, because there is a tremendous effect on the Medicine Bow National Forest in southern Wyoming, now, from this event.

But that has—that group has been a huge success in working across the spectrum.

The result of both of these large collaboratives has been, I believe, we've got more social license now than any time I can remember, to actually practice forest management. So—and it takes that kind of collaborative set of folks, with everyone working together, to build that social license.

So, the inhibition right now to work on this has nothing to do with public support, we have a lot of public support to do this work.

The second part of the strategy is focus. We've redirected funds to these areas from within the region, you and others have helped us get more funds into the region, and we really appreciate that. I know Mark and the folks back in Washington are highly concerned about this. We've got a Bark Beetle Incident Management team, where we decided—like a fire, when we have a large fire, we create an incident management organization.

Clint Kyhl will be on the next panel, and he's the Incident Commander. We just felt, when it crossed multiple forests and multiple jurisdictions, we needed an incident management-type of a structure. We put that in place several years ago, and they've really been working hard on that.

A third aspect of our strategy is to utilize the whole suite of new authorities available to us. That includes healthy forest—the President's Healthy Forest Initiative, the Healthy Forest Restoration Act, which was promulgated in 2003. Just in that, we've got nine projects under that in Colorado, in the last several years, that have covered 73,000 acres.

We've got 54 stewardship contracts, which is another new authority, that have accomplished work on about 26,000 acres in Colorado. Then we've got the Colorado Good Neighbor Authority, which allows the State forest service to work as an agent for us on Federal lands, and that's been really great. Mark mentioned this legislation, the Healthy Forest Partnership Act, which takes that authority and expands it nationally, and that's an excellent authority.

So, that was the third one, using these authorities. The last prong in our attack, or our strategy's been working with industry

to try to both keep the existing industry as vibrant as we can—and as you said, there's only one large mill left in Colorado—but also incentivize new industries.

Pellet plants, we've got a couple of new pellet plants, I know there's a $30 million Department of Energy grant for looking at cellulosic ethanol that's going to be down in Commerce City, I believe, in Colorado.

Fran, if you'll just take—pop up the last two slides—this is just a chart that shows how we've grown our—just our timber volume—again, to try to keep the industry vibrant and also look for new opportunities, and this is just in Colorado—and the next one, please, Fran—and then just on the three forests that are at the heart of the bark beetle epidemic right now, that's how that looks, in terms of the progression. So, we've been working as hard as we can to focus energy, and do work on the ground, and you'll hear more about that from the next panel.

That concludes my remarks.

Senator ALLARD. I want to thank this panel, and I have a few questions. I'm going to—Barbara, you're the entomologist, so on the—I want to clarify what's happening on the life cycle. We had 2- and 3-year life cycles on the beetle, and now it's converted to a 1-year life cycle? Did I understand that right?

Ms. BENTZ. The 2- and 3-year life cycles were at higher elevations, and in Colorado, that's in limber pine, and across the West it's in white bark pine. At these higher elevations, typically above around 9,000 feet—has shifted to, a large proportion, of 1 year.

In the low elevation pine forests, lodgepole pine, which is most—where most of the outbreak is—it's always been 1 year, and it still is. So, that life cycle has not shifted.

Senator ALLARD. Well, I'm thinking like, in the Routt National Forest, a lot of those trees are 9,000 feet or above, or right at it. That's where we're seeing a lot of our outbreak, and what not.

Now, once that cycle has changed, will it revert back to a longer life cycle at some point?

Ms. BENTZ. It's typical—it's just—it's totally temperature driven. It can change from 1 year to the next.

Senator ALLARD. So, if we had several cold winters, those life cycles would lengthen out, you think?

Ms. BENTZ. The life cycles are more affected by the temperature in the summertime.

Senator ALLARD. I see.

Ms. BENTZ. Because that's when the insects are developing through their life stages. They pretty much just don't do anything in the winter.

Senator ALLARD. Now, they fly about the first part of July, is that right?

Ms. BENTZ. The middle of July, yes.

Senator ALLARD. Yes, the middle of July is when we thought.

Ms. BENTZ. So, it can change—1 year you might have—and I had a student that did this for her Master's thesis, she monitored the population life cycle in high elevations. One year you had 30 percent of the beetles developed on a 1-year life cycle, and then the next year, it was only 60 percent, or it was 60 percent.

So, it can change from year to year, and it's totally dependent on the temperature.

Senator ALLARD. So, the infestation is spread by the—what things have to happen to enhance the spread of it? Of the beetle? How are they spread, I guess, is the basic question?

Ms. BENTZ. The insect itself?

Senator ALLARD. Yes.

Ms. BENTZ. They disburse—they can disburse on wind currents, that's just non—that's passive. Just get brought, taken up into the air currents and taken for quite a distance. Then—but most of their flight is directed to this attractant pheromone that I was mentioning, so that would be within a shorter time.

Senator ALLARD. That's produced by the beetle itself.

Ms. BENTZ. It's produced by the beetle itself.

The beetle takes advantage of the tree, and uses part of the tree to produce this pheromone.

Senator ALLARD. Pheromone, so it's a self-feeding, sort of thing.

Ms. BENTZ. Right.

Senator ALLARD. Now, we had a blowdown up in the Routt National Forest that was pretty severe, and most—we have a prevailing northwesterly wind coming in. Do you think that contributed to the spread of the beetle into Routt and Arapaho?

Ms. BENTZ. So that—the blowdown was in spruce, and so that was spruce beetle that was attacking those trees, and it very well could have.

Senator ALLARD. Okay. So, if we had, I mean, there was a partial decision, if I remember correctly, on that blowdown to harvest some of the downed trees and some of them were left to lay in a natural state. Would that have prevented the spread of the bark—the bark beetle, if they had harvested the whole blowdown?

Ms. BENTZ. Probably not.

Senator ALLARD. So, you don't think the amount of food that would have been available by decreasing the amount of food would have had an impact?

Ms. BENTZ. My impression is that the insects took advantage of what they needed of those trees that were downed. Basically, when the tree is downed, it's kind of like a stressed tree, so it's easy to overcome.

Senator ALLARD. Sure.

Ms. BENTZ. So, they can build up their population levels there.

But once they build up, they're going to go and start attacking live trees. So, I'm envisioning that they didn't need to take all of the trees that were blown down—they didn't need to utilize all of those to build their population levels to start attacking the green trees.

So, I don't think it would have made much of a difference.

Senator ALLARD. So, you don't think that had any difference at all?

Ms. BENTZ. That was such a large—there was a large number of trees downed.

Senator ALLARD. It was a huge blowdown, yes.

Ms. BENTZ. Yes.

Senator ALLARD. Okay.

Ms. BENTZ. Areas where there's smaller numbers of trees down, certainly it helps to take out, you know——

Senator ALLARD. The whole thing.

Ms. BENTZ. Especially if you let the beetles get in them, and then take them out while the beetles are in them.

Senator ALLARD. There's a limited time when the beetle can kill the tree, is that correct?

Ms. BENTZ. To overcome the tree, they need to attack. I mean, I've monitored lots of tree attacks. They mass attack a tree in 1 to 3 days.

Senator ALLARD. This is in the middle of July when they're flying or is it some other point in their life cycle?

Ms. BENTZ. No, this is in—they fly over several weeks.

Senator ALLARD. I see.

Ms. BENTZ. But, enough of them have to be flying over those several weeks that one individual tree can be attacked by hundreds of beetles in 1 to 3 days. That's what overcomes the defenses of that tree.

Senator ALLARD. That happens in a short period.

Ms. BENTZ. That happens in a very short period of time.

Senator ALLARD. Then stress and environmental factors then do have an impact on the resistance of the tree?

Ms. BENTZ. Yes.

Senator ALLARD. It has, okay.

Ms. BENTZ. But again, a susceptible tree is not necessarily the best tree for the insects, because a stressed tree doesn't—the phloem is really thin. The thicker phloem is what provides that net, per capita increase in the population.

Senator ALLARD. Now, let me bring this down to an individual basis. There are individuals that maybe have a high-value tree, I think, I don't know which one of you mentioned in your testimony, it was Rick or you—but we have high-value trees, and some individuals want to protect those trees on their own property or their own forest property next to their cabin. What can an individual do to protect the tree?

Ms. BENTZ. There's three insecticides that are registered for use to protect trees from attack. The tree has to be sprayed prior to being attacked. Once the tree is attacked there's a lot of consulting companies out there that are saying they can save your tree once it's already been attacked, but the tree has to be sprayed prior to attack. There's three insecticides that are registered for that.

Senator ALLARD. Valathyon, and what are they?

Ms. BENTZ. No, it's—sorry, I don't have my glasses on—carbaryl, permethrin, and bifenthrin.

Senator ALLARD. Okay.

Ms. BENTZ. You have to make sure that the entire tree is sprayed—if only a portion of it is sprayed, the insects will still attack it, so it's——

Senator ALLARD. What about pheromones, do they work?

Ms. BENTZ. They—they have——

Senator ALLARD. Or, anti-pheromones, I guess that's the way they're marketed.

Ms. BENTZ. The anti-attractants?

Senator ALLARD. Yes.

Ms. BENTZ. Verbinon—which is probably the one that you're thinking of—has had mixed success, sometimes it seems to work quite well, and sometimes it doesn't. So, it's sort of in the—there's a lot of work that's still being—going on.

Senator ALLARD. Have you determined when it seems to be most effective or least effective on pheromones?

Ms. BENTZ. It doesn't work when the populations get very large.

Senator ALLARD. I see.

Ms. BENTZ. The recommended strategy now, is if you're going to use verbinon, you have to be actively taking—like in a campground—you have to actively be taking the infested trees out.

Senator ALLARD. Now, one bit of new information I got here is that, if it was 30 degrees below zero, or colder, that it would decrease the population of the beetle. But, in your testimony you said 40 degrees, so you've got some new information on that?

Ms. BENTZ. One single threshold cannot be said. It can't be, you can't say it's minus 30 or it's minus 40.

Senator ALLARD. I see.

Ms. BENTZ. Because these insects accumulate these antifreeze compounds, and that accumulation is dependent on temperature. So, the more cold temperature they have, the more they accumulate these antifreeze compounds, and the more tolerant they will be of cold temperatures. So, it's totally temperature driven.

Senator ALLARD. Okay. Let me move——

Ms. BENTZ. It's important in the spring and fall, when they're not acclimated.

Senator ALLARD. Yes. Now, let me move to just sort of the administration and the management of the forest with this outbreak, and maybe Rick or Mark—either one—can answer.

Do you feel like we're getting good cooperation between the various forests? Roosevelt Forest with the Routt, and between the State of Wyoming and the State of Colorado? Or do you see problems there?

Mr. REY. No, I don't see problems there, I think we're getting excellent cooperation, Senator.

First of all, we initially—as this event was building, we were—we did not put in place the Incident Management Team which looked across all the forests. So, individual forests were taking actions in their local circumstance, and as we—as it became apparent that it was, the scale was large and it crossed the boundaries of multiple national forests, is when we worked together with the local communities—Northwest COG, Colorado State Forest Service and others, and entities in Wyoming, too—to develop a cooperative where all the folks were at the table, and we could really work through the issues.

Senator ALLARD. Yeah, this is the question I bring up, I mean, each Forest Manager just manages his own forest, and just kind of has a very narrow spectrum of that—if we had maybe a little longer view, I mean, more broader view on some of this, I wonder if, perhaps, maybe you wouldn't have gotten—begin to address the problem sooner?

Mr. REY. Well, I think we—we actually put the—this cooperative started working several years ago, and I think if you can, we can look back—and I've thought about this a lot, considering what

could we have done more, or what—and I think that maybe we would have reduced the start-up time of this cooperative, maybe, a little bit, had we started it sooner—and we being the collective "we" of folks being involved in that. But I don't believe any of that would have really changed the course of the event. Because it's just—it's just become big, and as Barbara said, temperature driven, so——

But right now, I'd say, we are working really well with all of the parties, and we're prioritizing where to do work with communities, and the adjacent landowners, and all of the jurisdictions.

Senator ALLARD. I've heard complaints from landowners and sometimes local elected officials that the response of the Forest Service when they want to do something as a prescriptive—cut down around their cabin or slow the—that getting the permit to do that is slow. Can you address that problem?

Mr. REY. Well, I'm not—without having the specifics of that—let me just talk about it, in general.

Oftentimes—well, one of the things that's occurred just recently is, we had under the Healthy Forest Initiative, in what we call Category 10, we had the ability to use categorical exclusions to do projects, which——

Senator ALLARD. Is that the urban forest bill that passed? Maintenance bill? Is that where you got that Categorical?

Mr. REY. No, it was from the President's—it was an administrative——

Senator ALLARD. Decision.

Mr. REY [continuing]. Regulatory change.

Senator ALLARD. It was an Executive Order.

Mr. REY. Yes. Anyway there's a particular category that allowed us to work really quickly, minimizing the energy and the analysis necessary, because these projects are all very similar, and we knew what the effects were, environmentally.

Senator ALLARD. So we don't have anything in legislation that grants you that emergency option? If you need to, you have—you're just relying right now on the Executive Order, is that correct?

Mr. REY. Well, we have two things, we have the President's Healthy Forest Initiative, which was a suite of tools, and then we also have the Healthy Forest Restoration Act, which is another suite of tools. Both of those give us the ability to do things more rapidly, minimize the number of alternatives, for example, we consider in our environmental documents.

But, I was going to say, on the Category 10 area, the 9th Circuit reduced the—or actually struck down our ability at this point in time to use that particular category. So, that's caused a delay in terms of working around in certain projects, close to homes. Especially the smaller projects, where we don't want to do a full-scale, huge NEPA document with a lot of analysis when we're talking about 5-, 10-, 15-acre projects.

Senator ALLARD. Legislatively, if we put the executive order in legislation right now, I guess this executive order would—could alter from administration to administration—would you feel more comfortable if we had that in legislation, where you had that option on an emergency basis to move forward quickly, to clear trees?

Mr. CABLES. That would allow us to utilize that authority again. Presently that categorical exclusion, that particular one, had been enjoined from use by the courts. So, the only way to quickly put it back into effect would be legislatively, as we prosecute our appeals up through the court system.

Senator ALLARD. I see. Okay.

Now let me go to the—your budget. In your budget you proposed to cut the Forest Health Program, the Agency dramatically, about 44 percent as it came to the Congress. I'd like to have an explanation of why you felt that cut had to occur, and then—well, answer that question and then I'll come up with the same question.

Mr. REY. The Forest Health account is 1 of 17 line items that we utilize for funding forest health improvement work, between the Department of Agriculture and the Department of the Interior. So, when we put together the President's budget, and array all of the money that we're going to spend under the Healthy Forest Initiative, there will be seven—in every budget since 2003, you'll see 17 different line items that contribute to the Healthy Forest Initiative.

The Forest Health line item is 1 of the 17, and it's split between work that's done predominantly on Federal lands, and work that's done predominantly on non-Federal lands.

We reduced the work done on non-Federal lands for two reasons—one, because as we were making priority decisions in the tight budget environment, we concluded that we were the ones primarily responsible for Federal lands, and therefore that had to be a priority.

But two, we built both this year's budget proposal for fiscal year 2009, as well as last year's budget proposal for fiscal year 2008, side by side with what we proposed to Congress that should be funded in the farm bill. In the farm bill, we proposed to increase spending dramatically on conservation title programs.

Senator ALLARD. That's mandatory spending?

Mr. REY. That's mandatory spending. To open those programs up to forest landowners, as well as farm and ranch landowners.

Now we're, as you know, in a tight debate over the farm bill right now.

Senator ALLARD. Yes.

Mr. REY. But that debate is not, primarily, surrounding the conservation title proposals. We, and the Congress, have reached, I think, a pretty close agreement.

So, should we be able to resolve our differences on all of the other things—or those other things that are still outstanding—it's our expectation that this new farm bill will make a considerable amount of money available for conservation and forest health improvement work on non-Federal forest lands.

So, that's how we built this budget, in totality.

Senator ALLARD. Now, if you look at the totality—the 17 categories that all contribute to forest health in the various budgets—were the total dollars increased from this year to last year? Because as a member of the Interior Appropriations Subcommittee, we're looking at the figures on Interior.

Mr. REY. Right. The farm bill is being done by someone else——

Senator ALLARD. Yes.

Mr. REY. I understand that.

The total for 2009, which we requested, was $927.5 million, as compared to $1.52 billion, which was appropriated, or enacted, in 2008.

Senator ALLARD. Yes.

Mr. REY. Now, of that $1.052 billion, there was about $80 million in earmarks. We usually back earmarks out for an apples-to-apples comparison.

So, I would concede that our 2009 proposal is slightly lower than the 2008 enacted. But, you have to remember that the 2008 enacted—even without the earmarks—was the highest level of appropriated dollars committed to this in history, which beat 2007, which was previously the highest, which beat 2006, which was previous to that, the highest. So, we're still—we're still requesting budget dollars at a level that suggests that this remains our top priority.

What's different for 2009, and to a lesser extent, 2008, is we're also throwing farm bill resources into the fray—now we're hoping to throw farm bill resources into the fray—assuming that we can reach an accord on the farm bill issues.

The good news, I guess, is that the farm bill will have to be decided one way or another, before you'll have to produce the 2009 Interior bill. So if—if our optimism about, you know, the enactment of a farm bill conservation title that opens up opportunity doesn't prove out, then we'll be happy to sit down with you and Senator Feinstein to re-look at this, in the context of a different set of options.

Senator ALLARD. Now, let's see, for this fiscal year, I was able to secure about $12 million for bark beetle eradication efforts. Rick Cables helped us on that. How have you spent that money?

Mr. REY. We allocated——

Senator ALLARD. Rick can answer or you, either one.

Mr. REY. Yes, we allocated $8 million of the $12 million for fuel reduction work on the National Forest System lands, and the balance—or $4 million—will be distributed by State and private forestry as grants to States for fuel reduction on non-Federal lands.

Grants would be awarded on a competitive basis—I think you've already sent out the solicitation, if I'm right on that?

Senator ALLARD. What areas are you focusing on in the State?

Mr. CABLES. Well, we're focusing about—of the $4 million, we're focusing about 85 percent in the bark beetle counties, and about 15 percent on the Front Range, because we——

Senator ALLARD. So, the bark beetle counties are the high-altitude counties, is that Arapaho, Routt, and off of those?

Mr. CABLES. Right, yes. All the counties in the Bark Beetle Cooperative—there's 10 counties now. But the—you know, Jackson, Routt, Eagle, Summit, Grand—all of those counties. So, that's really the focus of the bulk of the dollars.

There is a little that went to the Front Range, because again, even though we don't have the bark beetle occurring on the Front Range, we do have the same threats—the vegetation condition is the same that it was when the Hayman Fire happened.

We're making some progress, but we're not out of the woods on that one. So, most of it coming to the bark beetle.

Senator ALLARD. Rick, how much do you think you could effectively spend in 2009 to address our beetle problem, here in the State?

Mr. CABLES. Well—and you're going to hear from the subsequent panel—we've got about 100,000 acres worth of projects, through NEPA and ready to go, where we've got public support to move forward. So, last year we treated—in 2007 we treated 15,000 acres in the bark beetle country, which was double what we did the previous year.

So, 15,000 acres we treated in 2007—this year we're going to treat more. We've got 100,000 acres ready to go, so we can treat a lot of country, as far as our resources will take us, that's how much we can treat, and——

Senator ALLARD. So we had 15,000 acres with the extra $12 million, so if we multiply $12 million by—what have we got here—32, six—and that would give us our figure, or pretty close to it?

Mr. CABLES. Yes.

Mr. REY. You will have personnel limitations kicking in, the money would have to be new year money, because you can't spend it at that rate increase.

Senator ALLARD. Well, that's one of the things we're trying to figure out, I mean, we don't——

Mr. REY. Yes.

Senator ALLARD. We want to provide what you can reasonably spend in 2009. How much of a restriction is the personnel?

Mr. REY. Yes, maybe what we ought to do is do a little sharper pencil analysis of that for you.

Senator ALLARD. Okay, why don't you do that, and then, what you can do maybe get something to our—to our subcommittee.

I'm not only interested in the State of Colorado, but I'm interested in the forest health problem all over the country. I would be interested in those figures nationally, as well as the State. I think probably, Senator Feinstein might be interested in California, too. So, if you could kind of bring those States in on an individual basis, I think that would be helpful.

Mr. CABLES. Sure.

Senator ALLARD. For this subcommittee.

Mr. CABLES. Yes.

Senator ALLARD. Okay, why don't we talk a little bit about the forest fires, and how that tends to divert money and resources from forest health—can you talk a little bit about the impacts of having to divert resources from forest management activities to the firefighting situation? The problems you have there?

Mr. CABLES. Well, let me ask Mark to maybe talk about the national situation, first, if that's okay.

Senator ALLARD. Okay, that's fine.

Mr. REY. I think the impact occurs in two respects. One is a funding shift—in severe fire years if we've spent the amount that was appropriated for suppression and for preparedness, and we obviously can't stop fighting fires, so you've provided—Congress has provided us with authority to borrow from any available accounts.

We try to borrow, first, from those accounts where the loss of funding will be the least disruptive to the delivery, the accomplishment of the programs that that money was intended to, so that

you—the Congress, then, has a chance in its supplemental appropriations bill to replenish those accounts.

Senator ALLARD. What are those accounts?

Mr. REY. They're trust funds, if we have outstanding trust fund balances.

Senator ALLARD. Right.

Mr. REY. Or capital accounts, where we're working on multiyear projects and we've set aside the money for the out-year construction work that needs to be done.

Senator ALLARD. I see.

Mr. REY. But it's not going to be done this year, because the project is going to take 2 or 3 or more years to complete. So, arguably, borrowing the out-year money, and then repaying it, won't disrupt the project gradually.

Senator ALLARD. I see.

Mr. REY. So, the money issue has probably been less significant than the manpower issue, in the sense that some of the people that are deployed to fight fires, you know, would otherwise be doing other work during the time that they're deployed.

So, those impacts are a little bit different, there's not a one-to-one replacement there, because the hours that were diverted to firefighting are not hours that you can replenish, as easily as you can replenish the funds. So, the impact occurs in two areas.

Senator ALLARD. Now, we used to have—do we still have the firefighting program where they take in college students and bring them in on a fire——

Mr. REY. Oh, yes.

Senator ALLARD. The training and still bring those in. They don't do regular work in the Forest Service, do they?

Mr. REY. No.

Senator ALLARD. They just get called in on that.

Mr. REY. We have a significant——

Senator ALLARD. But your problem is with the employee that's a full-time employee.

Mr. REY. Right. Upper level fire managers have other jobs in the agency. So, that's where the disruption occurs. I'm not sure there's any good answer to that, because it's not simply shifting money around, it's the fact that——

Senator ALLARD. Yes, you'd have to bring in more of the management side, and it can't be done just overnight.

Mr. REY. Right.

Senator ALLARD. Is your problem. Okay.

That's all I have as far as questions or anything, and so——

Mr. REY. If I could make one——

Senator ALLARD. Yes.

Mr. REY [continuing]. Observation.

Senator ALLARD. Go ahead.

Mr. REY [continuing]. That I think is germane, not just to Colorado, but to these kinds of infestations that we've seen in other parts of the country.

Because one of the questions that is reasonable for people to ask is, "Well, why didn't you move faster? Knowing that this was coming?"

I think what we've seen is that it takes awhile for the social license to develop to do aggressive activity, and that that social license moves more slowly than the bark beetle spreads.

People seem today—if people knew years ago what they were going to see today, arguably there would have been less conflict associated with the kinds of aggressive techniques, the amount of timber harvesting that would be required, if we were going to have a chance of actually stopping an epidemic of this magnitude.

Now, we might not have been able to stop it, anyway, given the size of this particular one. But, I think one commonality that we see across the country in southern California, Senator Feinstein's State and the San Bernardino National Forest and Alaska and other places—is that the social license to do what's necessary develops more slowly than the bark beetle epidemic.

Senator ALLARD. People reluctant to take down a tree, but you sometimes have to do that to have good forest health?

Mr. CABLES. In this particular case, that's the most effective way.

Senator ALLARD. Yes. Okay. Very good.

Thank you.

We'll go to the second panel, please?

Go ahead, Clint.

STATEMENT OF CLINT KYHL, INCIDENT COMMANDER, BARK BEETLE INCIDENT COMMAND TEAM, LARAMIE, WYOMING

Mr. KYHL. Let me just fire up my PowerPoint.

Senator ALLARD. Okay.

Mr. KYHL. Thank you, Senator. My name is Clint Kyhl, and I'm the Incident Commander dealing with the bark beetle across the three national forests in northern Colorado and southeastern Wyoming.

The Bark Beetle Incident Management Team's purpose is to increase communication, coordination, and efficiencies, which we can treat across large——

Senator ALLARD. Sorry to interrupt you, where is your office at? Where are you——

Mr. KYHL. I'm in Laramie, Wyoming.

Senator ALLARD. In Laramie, okay. Their forest service. Okay.

Mr. KYHL. So, increasing those efficiencies across—within the agency, as well as dealing with the public and our partners has been our purposes.

Of course, like a fire organization, we have a small team of, an operations section chief, a planning section chief, and then a variety of division supervisors that are located on the individual forest.

Like an IC—or a good IC—we always want to do maps and the little briefing, and this is the bark beetle across Colorado, and the northern red patch is the area that we're focused on.

So, as we zoom in on that area, again, we're looking at about one-half million acres, with about one-half a million increase from 2006 to 2007. The three forests—of course, the Medicine Bow on the Wyoming side, the Routt, the Arapaho-Roosevelt, and the White River National Forest.

Break out those individual forests, and look at the percent change from 2006 to 2007, they're pretty dramatic. The—a couple of points that stand out is you look at the Arapaho and the White

River that have been kind of the epicenter for the bark beetle, they're—yearly survey acres actually kind of leveled out as they've, basically, running out of food source.

Where we're seeing the biggest expansion is, of course, moving north up the range, into the Medicine Bow in Wyoming, and then that real dramatic number you see in the Roosevelt National Forest as the bark beetle has gone over the divide into the Front Range counties.

Kind of hard to see, here, but again, back to an epicenter location, this is Grand County, Lake Granby, we're seeing that red across the landscape, we're looking at about 90 percent mortality of trees greater than 5 inches.

This is a paired photo, this is Willow Creek Pass, north of Granby. You see some diversity in the landscape, and some speckling of red trees. Two years later you see almost all of the mature trees have been infested.

But I would point out this younger stand, here, where we are getting mortality. So it's not, certainly, based on the age of the tree, but more the size of the tree. If it's greater than 5 inches, it meets the food source for the beetle that's attacking the second row of stands.

So, what are the impacts and the safety issues that the Incident Management Team and the Forest Service are focused on? Of course, fire as we've heard from the prior panel, is one of our biggest, number one priority. There are a variety of projects we're doing in the WUI, or the Wildland Urban Interface, more recently focusing on watershed protection and infrastructure protection of those—in those watersheds.

This is a fire last summer near Suman Ranch, which burned, in bark beetle stands fairly rapidly. You can see that the—the work that they did around those structures were critical in protecting those, and as well as providing a safe environment for the firefighters.

Really, one of our biggest issues that we're shifting gears on is what we believe is really an emergency situation, is the falling tree hazard. This is research in Oregon on pine beetles, lodgepole stands. Basically, after 3 to 5 years, the trees start falling down at a quicker rate—up to 90 percent in the next 14 years, so—those 1.5 million acres out there, and growing, they're ultimately going to fall down, and the question is, what are they going to fall down and impact?

Recently in the newspaper we did come out and have closures on 38 developed rec sites. Of course, being in a place where the public concentrates, we need to remove those hazard trees before we open them. This is kind of the after-treatment look, it's not very pretty. We have to remove all of the dead trees, but then the other issue is, you can see that the remaining live trees that are in the campsite are blowing over, so we've had to come back and actually remove those, so—lodgepole pine is a very shallow-rooted tree, so it's prone to wind-throw.

These are the numbers—total sites for the three forests are 223, we had, again, 38 sites that we had to, at least delay opens or partial closures, as we mobilize resources into those.

But, I would point out that we've had over 100 other sites, that we are removing those trees in time to open for the regular season, so about 50 percent of our developed rec sites have hazard trees in them, but these are the most extreme conditions, where, like those photos showed where, the—mobilized equipment and contracts, actually, to remove those trees.

Focus on trails, this is a blowdown patch, again, with the trees dying, and this happened to be on a ridge top, where it's prone to wind-throw. Notice the snagged tree there, that's actually a trail location—the local district mobilized a volunteer organization, they came in and spent 3 weeks cutting out about a three-quarter mile section of trail. So, a lot of huge work, just look at the volume of material that they had to go through.

Another issue that we're turning our efforts on is dealing with transportation systems—either roads, trails, or any linear facility. This is a motorized trail up in Jackson County—if you look at all of these dead trees around it, and imagine what—as we saw in the previous photo of the blowdown—for us to mitigate and keep this facility open, we need to cut back at least 100 feet, or at least one and one-half tree heights along both sides—it's been a huge job for us to do that.

The Medicine Bow-Routt Forest is in the midst of an environmental assessment, looking at all the roads that pass through that forest, and trails, and doing clearance for those, as far as NEPA.

But, if you look at some of those acres, as well as the miles of those facilities, it's an enormous task. Like the prior panel mentioned, last year we treated 15,000 acres on a variety of projects. Here's a case where we have—and again, this is just one forest of almost 50,000 acres.

You look at all three national forests, and this is of current conditions, and we know the bark beetle's expanding, 911 miles of trails which would equate to about 38,000 acres, almost 3,500 miles of roads, and 82,000 acres—this kind of lumps the campgrounds into an acre, as far as that needs treatment.

Of course, the other issues that we're dealing with—I'm working with the partners, as far as utility companies, we have a variety of transmission lines, which are the high-voltage, WAPA, Excel, and Tri-State crossing through the three forests. We're working with them to facilitate the ability to remove the hazard trees. One of our biggest concerns is dealing with the distribution lines of the smaller companies that provide power to in-holdings or facilities within the forests. They're typically on a very narrow right of way, and those trees being so tall that they could fall on those structures.

Of course, watershed is a big issue, this is of course Lake Granby, and the dead hillside there. If it burns, the sedimentation the could go into the water storage devices. The other issue is the actual infrastructure of the water—either municipal watersheds diverting water, or agricultural ditches. As all that material starts falling into those infrastructures, it's a big job to remove that.

We have livestock fencing across all the three forests, 1,000 miles plus. Again, if you remember that picture of that blowdown, and you imagine those range permittees trying to maintain those fences—again, a huge workload.

So, as mentioned, some of the items that the forests are doing—jointly, of course, the Incident Management Team, which is looking across all three for efficiencies. We, of course, have seen shifting of funding into those three forests. More importantly, the three forests themselves are making those projects higher priority, be it timber and fuels projects, but also recreation roads, trails, range—all our resource areas are focusing on impacts from the bark beetle.

Of course, we have limited funding, so ranking those by priority helps us spend the money in the most efficient way. We are looking at a variety of levels of collaboration, of course, the State just recently formed an advisory council, but we also have regional groups, as far as the Bark Beetle Cooperative, we have the Front Range Bark Beetle Working Group, the Medicine Bow Forest building a cooperative, but then you drop down to county level groups, there's several of those around, primarily the two real active ones in Routt County and Summit County. But then also, if you're using HFRA and the collaborative group at the local project levels.

So, really, all levels of organization in line with collaboration and partnership to figure this issue out. Of course, the Incident Management Team is focused on a variety of things—communication, education is the primary—helps us with the public, and so we've had a lot of workshops, of course websites and newspaper and the media.

Second is mobilizing resources, and that's the one I've been really busy with this spring, as we've brought in Colorado inmate crews, hotshot crews, volunteers, but also a variety of Forest Service folks from across the country to come in and help us deal with the increase of projects, and mitigating the fallen tree hazard.

Efficiencies, there's a lot of these, as far as HEFRA, of course, we're using that, the Good Neighbor Authority, stewardship contracts, we're actually looking at some free use authority, where we can give timber away—this benefits the public, primarily like in campgrounds, for example. This prepping of the timber sales, I mean, we're doing a lot of large-scale assessments across all three forests which help facilitate the need for process—be it the wildlife, or archeological clearance—so there's several benefits we can provide to the three forests by working across the landscape.

Of course, the final and probably most important thing, is the public and health safety, but not only for our public well store employees that we're looking in that.

Implementation plan—that is our, sort of, our list of projects that we're working on. This is a copy of it, it's 15 pages long, over 250 projects across the 3 forests, summarized in each of the different kinds of categories that is mentioned there. Of course, our highest focus area is dealing with hazardous fuel treatments, and that's first in the communities, as well as in water sheds. Of course, timber salvage is a big part of our program. The spring is also there, and there—our fourth area is dealing with the falling tree hazard.

Again, 240 projects scheduled over the next 5 years, 100,000 acres. This really maps that out—the 2006 and 2007 are actual numbers there, as we bumped up—there's these different colors, kind of relate to the, kind of the project—you can see the red bar is one of the dominant bars, because the fuel treatment hazard is one of our priorities. You'll be able to see our timber is ramped up,

as well, the green bar. We do expect the orange bar to ramp up as far as the falling tree hazard.

What this represents is us pushing all of our projects forward in the timelines of the forest, as far as approved NEPA projects. We have no intention—at least my chair is—that we don't want to drop this off. Because we've pulled projects forward to ramp up, we'll be backfilling this down in here with new projects that are hopefully set by our cooperative and partnership relations, as I said, priority projects online for planning and filling those out-years.

So, that's basically the end of my comment. I would say, though, one of the other projects we're focused on is the next forest, and related—this is a large-scale regeneration of the forest, and we're looking at projects that help us improve resilience and forest health so we'll have a healthy forest for our future generations.

STATEMENT OF CAL WETTSTEIN, ACTING DEPUTY FOREST SUPERVISOR, NATURAL RESOURCE STAFF OFFICER, WHITE RIVER NATIONAL FOREST

Mr. WETTSTEIN. Good morning, and welcome to Eagle Center, this is the heart of the White River National Forest. Currently, I'm the acting Deputy Forest Supervisor of the forest, normally, I'm the resources and planning staff officer.

As you've heard, the beetle epidemic is rapidly changing the lodgepole pine forest across Colorado, and actually across much of the West. Clint has shown you the summary of acres infested on the northern Colorado.

This slide shows our eastern part of the White River National Forest. This is Summit County, which is the Dillon District, and this is Eagle County where we are right now, which is the Holy Cross and Eagle Districts.

We have about 100,000 acres infested in those two counties right now.

This map shows susceptible lodgepole pine, that's the blue, that's mature lodgepole pine in Summit and Eagle Counties, the green is susceptible spruce, which we won't talk about today, but gives an indication as to the overall amount that we have susceptible out there.

Now, 100,000 acres sounds like a daunting area to deal with, but as we start to look at what we can actually work on, in there, it narrows done pretty quickly.

This shows the current infestation of the mountain pine beetle as of 2006. One thing to keep in mind as we see these maps, this one's 2 years old, and even the maps of these from 2007—that was—those were trees that turned red in 2007, and there have been additional flights since then, so it's even bigger than it shows, here.

You start to narrow it down, and we lay over wilderness areas, and we had roadless areas, and then areas with steep slopes and unstable soils. For the most part, we won't be doing much work in those areas. So, you can see it narrows down where we'll do actual treatments. Realistically, we think it will probably end up being, at the most, 25 percent of the infested areas, in some places, much less.

One of the consequences of this extensive tree mortality will be an increase in the potential for catastrophic fires. Now, the poten-

tial is bi-modal. There's a current high potential for catastrophic fire where we have red needles on the trees—it's a lot of fine, dry fuels that can fuel a really hot, fast fire.

But as those red needles fall off, over the next 5 to 10 years, the fire potential would decrease, but start to increase as those dead trees—as Clint has shown—the dead trees will start to fall down and create a heavy fuel bed on the forest floor. Again, there's another photo of what that will look like, this is blowdown, currently, but this is kind of the level of fuel loading that you can expect when one of those trees hit the ground.

When those trees go down, you start to see—smaller trees will start to grow up around these, and those smaller trees are what—would create what we call the ladder fuels that will carry fire up into the remaining crowns of large trees. That's when we'll get into this next increase in fire potential—probably three to four decades from now. Those fires will be much hotter, much more difficult to control.

The reason—and I think Clint showed you that slide also—this is what it takes—this is actually opening a trail through some of that blowdown—this is what you visualize the fire crew having to do a direct attack on a fire, cutting a fire line through that kind of a fuel is extremely hazardous, and extremely difficult. This is the kind of situation we're trying to avoid, especially in the urban interface.

As Clint explained, and Rick explained, our top priority areas are the urban interface and other infrastructure, such as ski areas, this is the area around Dillon Reservoir, the Keystone ski area is up in here, Breckenridge is down, just off the map here.

This was a project that we just completed planning on last year, it's already got one stewardship contract underway, up in this corner of the project area.

What we looked at in this area are urban interface treatment units, which are right along the edges of communities and there are some up here in the wilderness, and then some other more general forest health treatment units, kind of back up those urban interface treatments.

What we're using to accomplish the work in this area are stewardship contracts, elsewhere we're using a whole range of tools to do treatments from commercial timber sale to pure fuel treatments, to every combination in between. For planning, we're using the Healthy Forest Restoration Act, it's what we used on this area.

For implementation, you know, we're using stewardship contracts, Good Neighbor grants, using the Wyden Authority, of course, employing a lot of partnership opportunities. Wherever possible, we've been trying to remove trees as a commercial product. In the long run, we know that that's going to help us defray the high cost of fuel treatments, and we know that treating fuel now will be much cheaper than fighting wildfires in the future. Besides just the cost of firefighting, the potential for the loss of property is immense.

So, in order to be as efficient and effective as possible, we're using a number of different wildfire and fuel models to help us prioritize treatments on these large-scale projects. So, on the next

few slides, I'll show you some model results for this particular area, hopefully they're easy enough to see.

This shows fire potential before the pine beetle outbreak. I'll show you the different kind of fire, surface fire, covers most of this area, before the pine beetle outbreak, 83 percent.

Surface fire is relatively innocuous, easy to control, slow moving—we haven't considered it a big problem.

Now, passive crown fire is still moderately—has a moderate rate of spread, it is characterized by torching of individual, or groups of, trees. It can look spectacular, but it doesn't move fast, and can be controlled by ground forces.

The really dangerous fires are active crown fires, and those are the ones that—where the fire gets into the crowns, and the wind-driven events, and are extremely difficult to—to control, there cannot be direct engagement of those. It takes backing off, and air attack and all of the really expensive treatments.

So, by 2022, without treatments around Dillon Reservoir, this is where we can expect an increase in active crown fires. You can see, it starts to get into some of these urban interface units, and into the communities, a little bit up in here.

With treatments, pretty much, you've eliminated the possibility of crown fires right in that immediate interface. You can see we've got passive crown fire in these other treatment units, and that's kind of a tradeoff that we're willing to make. Again, that passive crown fire is slower-moving, and it's controllable by ground forces. So, we'd still be comfortable putting fire crews in to protect these neighborhoods in this kind of a situation.

Now, it really gets interesting by 2057. Without treatments, by 2057, about 60 percent of this landscape has a high fire potential for active crown fire. You can see it's right into a lot of neighborhoods, around Keystone and Frisco.

With treatments, by then we're pretty confident we'll have eliminated passive and active crown fires in the areas, both immediate—meaning the adjacent neighborhoods, plus we've got a good buffer on some of these other areas outside of those urban interface units. It's a much safer and more defensible situation, in case of wildfire.

Now, one thing that you remember is that, here's that other 75 percent of the landscape that I said we probably won't get to. We're still going to have a potential for big fire in those areas. It's just going to be a way of life in future decades.

Let's see—these are just a summary of the acres by 2057, those urban interface units—we've reduced from the potential 50 percent of active crown fire, down to 9 percent. The other forest health units from 70 percent down to 3 percent.

What I want to show you now is a quick video clip. Last, what I want to emphasize—and you've heard this several times already, the importance of collaboration and partnership. This is a clip on an ongoing partnership with the town of Vail, and Eagle County, State forest service, and I think the Upper Eagle Water Authority is signed on now, and Vail Resorts.

This particular operation took place in west Vail in 2007, 2006—just this past fall. It's a helicopter operation, about 7,000 or 8,000 trees directly in the urban interface. The reason we use the heli-

copter is because that area above west Vail is inventory roadless, and it's also got a lot of steep and unstable soils. A helicopter was really the only option.

For this operation, Eagle County contributed about $250,000, the town of Vail, about $250,000 and the Forest Service about $350,000. But it does show, this is the only way to get a lot of these projects done—it's a lot of partnership and cooperation.

So, that concludes my testimony.

Senator ALLARD. Thank you.

Mr. Casamassa.

STATEMENT OF GLENN CASAMASSA, FOREST SUPERVISOR, ARAPAHO-ROOSEVELT NATIONAL FOREST, FORT COLLINS, COLORADO

Mr. CASAMASSA. Thank you, Senator. I appreciate the opportunity to appear before you today to discuss some of the effects of the mountain pine beetle epidemic, and some actions that we're taking on the Arapaho-Roosevelt National Forest. My name is Glenn Casamassa, I'm the forest supervisor of the Arapaho-Roosevelt National Forest, and the Pawnee National Grasslands, and our headquarters is in Fort Collins, Colorado.

We've been addressing this mountain pine beetle outbreak since about 2001, with the goal of reducing the impacts of potential wildfire on the communities and watersheds.

Our focus has been on larger-scale treatments to remove dead and dying trees, reduce hazardous fuels, remove hazard trees, and regenerate forest stands.

As the epidemic has progressed, local communities become more aware and concerned about the condition of the surrounding forests. We have been working closely with local communities directly affected by the bark beetle infestations in Grand, Larimer, Boulder, Gilpin, and Clear Creek Counties.

In the past, some of our local communities expressed concern about actively managing the forests—that really has changed. People are very concerned about the dead trees surrounding their communities, and especially about the ones in their back yards. Clearly, as been talked about previously, the work with the Colorado Bark Beetle Cooperative has been really instrumental to the success we've had in bringing communities and interests together to identify values at risk, and prioritize treatments across the entire impacted landscape.

You'll find that most communities are supportive of the tools that we're using in order to turn the forest to a healthier condition. Along with our active timber sales, I just wanted to go over just several of the projects that we're working on.

This one here is the Arapaho National Recreation Area Stewardship Project. We began planning that in the early 2000s and in around Grand Lake, Colorado our objective was to remove hazardous fuels that reduce the risk of communities within the WUI, and also to provide adjacent landowners a more effective defensible space. This project clearly was planned with a considerable level of public involvement and discussions with local elected officials, input from the Colorado State Forest Service, and the Grand County Department of Natural Resources. The decision was made in 2004 to treat about 2,000 acres to accomplish the objectives.

Work on the project began in 2006, the project combined commercial timber harvest with noncommercial fuels reductions treatments totaling about 1,758 acres.

Another project that we're implementing presently is the Green Ridge Good Neighbor Project. It's a project to treat about 3—300 acres along the forest boundary, adjacent to a highly develop WUI in the Green Ridge area of the Arapaho National Recreation Area.

Treatment acres were designed to be harvested in cooperation with private landowners, given that the only access to the treatment was through the private property. Essentially, accomplishing this effort was to work with the Colorado State Forest Service, who coordinated the private landowners to secure proper access, and administer the contract.

In 2007, the Green Ridge Good Neighbor Agreement was finalized with the Colorado State Forest Service, a contract was awarded and worked again. Currently, the project is nearly complete, with only about 14 acres left to treat during the summer of 2008.

We're also partnering with ski area companies to identify and recommend treatment methods on forest lands within the—our forest ski areas affected by the outbreak. Winter Park Resort, located on the Sulphur Ranger District is treating the effects of the mountain pine beetle since about 2004. They have taken a number of actions—cutting down trees, peeling trees, moving trees by helicopter, and doing some preventative spraying in their high-valued areas.

The ski area operates between an area covering about 4,000 acres under their special-use permit, of which about 1,000 acres is considered mature lodgepole pine—90 percent of the mature lodgepole pine is impacted by the mountain pine beetle. They've invested considerably in the efforts, to date, to curb the effects of mountain pine beetles.

Then, finally, with our developed recreation sites—we're alarmed by the magnitude of the safety threat posed by fallen trees, and clearly our most important concern is the risk of dead trees falling, hazardous trees falling at our developed rec sites.

The national forest affected by the beetle outbreak—we're focusing in on treating areas where people really recreate. This summer, we're removing hazard trees from about 20 different campgrounds, and we expect only about six campgrounds will have delayed openings. It appears that the public really understands the need to take this actions, and they want to recreate in safe areas.

So, in conclusion, we're committed to working closely with communities to prioritize areas to treat. We'll continue to use timber sales as a tool to treat larger acreages, as well as engage in multiple efforts with partners, through the use of a variety of forest management tools. We, along with the other forests, are working as effectively and efficiently as we can to meet our goal of reducing the impact of the mountain pine beetle, to reduce the impact on communities and watersheds.

That concludes my statement, I'd be happy to answer any questions you might have.

Senator ALLARD. Thank you for your testimony.

I'm going to put the first question to Clint Kyhl, and we had to use you very much where the Hayman fire that we had here, I

mentioned in my opening remarks, the largest fire that we've had in Colorado history.

It seems to me, that under the conditions that we have now, it's quite possible that we could end up with a fire that's much larger than even the Hayman fire. Are you able to prepare for such an event?

Mr. KYHL. We are, and it's mostly with our partners, looking at CWPPs around the communities at risk, or where we have high values at risk. We are working in support to the counties, as far as emergency management planning efforts. Some of the work that we're doing as far as our roadside hazard clearing will help us provide some sort of fuel break, with—as we clear road sides of those hazard fallen trees. We'll also see the benefit of a fuel—or at least a defensible line that we could mobilize against a large fire.

Senator ALLARD. So, the fuel break, like what you've talked about by the Dillon Reservoir—that still works, even though you've got all of that infestation? That—I got the impression in the testimony it would be much, much more difficult, at best.

Mr. KYHL. Well, you know, at a large fire like Hayman, you know, we really are falling back to point protection at that point, you know, the—anything less than those megafires, at least provide some safe ground for us to put resources to help fight a larger fire.

The other thing is, we do timber salvage and the stewardship contracts out on landscapes, those also provide fuel breaks for us. As far as the way we structure and design those timber salvage, and also provide us some fuel breaks, so—in the, it is a county by county approach with the sheriff, and as well as the State forest service involved with that planning, so it is a group effort to look at the big picture, as far as a large fire.

Senator ALLARD. How is your readiness from the air? Do you, you're pretty well, we get our planes shifted around from place to place. I know, in California, we had a lot them shifted out.

Now, do we—when you see all of the, they tying force, does that cause you to bring more air support, I mean, closer to those affected forests? Or, do you not have the resources to do that?

Mr. KYHL. Well, I think safety drives our decisions on the kind of resources we'll use with the amount of dead snags out on the landscape now, we're concerned about what kind of initial attack resources we've put on the ground. We are developing guidelines for that, as far as if there's excessive wind conditions, or frontal passages, we may not want to have initial attack crews right out there in those forests with the dead trees.

So exactly—bringing air resources or other kind of mechanized equipment at—operating like a dozer, for example, can be safe and still provide some sort of a suppression tactic against the fire.

Senator ALLARD. So, you're continuing to develop some—with the fuel breaks and that type of thing—your management?

Mr. KYHL. Exactly. We're, you know, looking at a landscape scale now, with all the dead trees, and where to place our limited resources where we can provide the best benefit to our public and our partners, and again the Routt community, soon to be our highest priority. But we are looking at that strategically at a larger land-

scape and where we can provide some sort of fuel breaks, where we can do it.

Senator ALLARD. Now, are we getting some resources pre-positioned in the Colorado/Wyoming areas, where we're having such a high loss of our lodgepole pine?

Mr. KYHL. Well, I think the weather conditions will help us make that decision, if we do start to see humidities, and we were lucky last year, frankly, because we had a real mild winter, and—or mild as far as the heat and good moisture, so—so yeah, I think you know, like all our Federal, or all firefighting resources, we do have the ability to pre-position when conditions warrant, so if we do see drying conditions in Colorado, we should bring resources closer.

Senator ALLARD. Well, some place like Parks, Colorado, I think Steamboat Springs reportedly had record amount of snowfall, that's a fair amount of snowfall, I think, in southern Wyoming, probably not as much as we did in northern Colorado, from what I'm able to ascertain.

Mr. KYHL. Yeah, some of our——

Senator ALLARD. So, are you considering the fire—possibility of fire events in, say, the Granby area, Lake Dillon area, Colorado, Wyoming—you've got a lot of recreation around the Medicine Bow area there. Are you going to be considering that as a high—high area? High-risk area?

Mr. KYHL. Well, the snow pack, we've actually had some conditions that are—we've had a high snow pack, winter moisture years, we've actually had really high fire occurrence because the increase of vegetation, as far as their fire fuels growing the following summer. So, we are monitoring that.

But it—yeah, where our highest values are at risk, as far as the recreation areas, the ski areas, what Cal had talked about—those were all critical areas.

Like our list shows, we have a lot of priorities, just trying to figure out which has the highest need at the time.

Senator ALLARD. If we needed a plane, say, in Rocky Mountain National Park for a forest, I think, yeah, you could do that.

For example—now, I know this is part, but you're all rounded, in that area, but—are there planes available that you could get in there in just a matter of, less than an hour?

Mr. KYHL. There are several tanker bases in Colorado that we could mobilize our limited tanker resources in there. Of course, helicopters—we mobilized some heavy helicopters into Colorado for this coming year, to sort of offset the——

Senator ALLARD. So, you're feeling comfortable?

Mr. KYHL. We're never comfortable.

As much as we can, but, you know, large fires as we've seen across the West the last 5 years——

Senator ALLARD. Well, I'm very uncomfortable.

Mr. KYHL. I never wanted to see——

Senator ALLARD. I worry a lot.

Mr. KYHL. Yeah.

Senator ALLARD. I would hope that you would worry, too.

You probably don't have control over that, but I just wanted to see if you were comfortable with putting resources we might have

to pull in to a fire, I'd see—just when it happens I would expect it to be almost explosive in nature, when that happens.

Mr. KYHL. Yeah. We're definitely concerned about it, and we're monitoring that.

Senator ALLARD. Now, on the market for the beetle-killed trees, somebody mentioned you were putting out contracts that might have been, I don't know, maybe Glenn, you'd be one to answer this. You're putting out contracts for loggers to come in and clear this thing out. Are you having less success in loggers coming in and being willing to pay the price you're asking?

Mr. CASAMASSA. Yes.

Senator ALLARD. For the lumber?

Mr. CASAMASSA. Yes. We—you know, at, for the most part, everything that we've been offering has been selling, particularly around the Grand County area.

Senator ALLARD. Because I was—I've had a couple of timber men say, well, they're expecting this, they pay too much to timber their land, we—the way we get that cleared, the price that they're wanting for that, when you consider the—particularly now, with the cost of diesel, and everything else. Now, are you prepared to adjust your asking price when you market that timber?

Considering that it's timber that's blue wood, and we don't have much of a market there, in fact, it's adversely looked at—are you trying to stay within the market conditions, so you don't run into a situation where timber men just won't be able to pay it?

Mr. CASAMASSA. That's certainly, it is a concern, and we'll—you know, we're looking at when we offer additional sales and appraise the values of those sales? It would be based on, perhaps, some market adjustments.

Senator ALLARD. Who does the appraisal?

Mr. CASAMASSA. We do, at the local level. We work with—we have a contracting officer out of Laramie that we work in conjunction with, in terms of——

Senator ALLARD. Sometimes, you know, appraisals are built on—whether it's houses or businesses or whatever—it's built on past sales or past demand. You know, I can see where the cost of diesel fuel, for example, can have a dramatic impact on demand, in a matter of 6 months. How do you determine?

Mr. CASAMASSA. Well, it—in all likelihood, what would happen is, is that based on the different market conditions that we would adjust the prices accordingly, and perhaps some of the sales that you mentioned—blue wood or salvage sales—would be offered at a minimum rate.

Senator ALLARD. Are you—would you be prepared at some point to say, well, just get it cleared and take what profits you can, and we'll move on?

Mr. CASAMASSA. We still have to work through, you know, in terms of offering timber sales, we still have to work through our appraisal process, calculate a bid price, and then offer that up, so——

Senator ALLARD. Do you see where you might get to the point where the appraisal process says there's no value there, so just get in there and clear it?

Mr. CASAMASSA. Then, in all likelihood, then, it wouldn't be a timber sales if there was no value associated with a particular timber sale offer.

Senator ALLARD. Now, does that disrupt your forest health efforts?

Mr. CASAMASSA. I would say that it could, potentially——

Senator ALLARD. Do that.

Mr. CASAMASSA [continuing]. Disrupt our——

Senator ALLARD. Yeah.

Mr. CASAMASSA [continuing]. Our efforts.

Senator ALLARD. You think that needs some evaluation?

Mr. CASAMASSA. Not at this point, no.

Senator ALLARD. So, if there's no value there, you don't think you should practice any forest health management procedures?

Mr. CASAMASSA. Well, certainly we would use a different tool at that time, then, in all likelihood, it would be a service——

Senator ALLARD. Could you do a prescription burn? Is that what you would do?

Mr. CASAMASSA. Well, we could do some service contracts where we would then—then have to treat those sales, and—treat those areas and then pay for that, you know, associated with——

Senator ALLARD. I see.

Mr. CASAMASSA [continuing]. With no value. Or, another tool that we could use is, to a degree, some prescribed burning.

Senator ALLARD. You're prepared to do that? You have some financial resources to do that? Or do you think you need more financial resources, where you would have to pay to clear trees?

Mr. CASAMASSA. We are doing, in combination with some—with the timber sale offerings, we do have a number of service contracts that we're putting out, as well. Where we're paying for the removal of, primarily, wood fiber off the landscape we're treating. So, we're doing both.

Senator ALLARD. Okay.

Now, on the recreational impacts, we—the forest of Colorado, with their campground closings, I saw an article in USAToday, and do you anticipate any more closures in the recreational areas of the pine beetle infestation in Wyoming and Colorado, and I don't know who's prepared to answer that.

Mr. CASAMASSA. I guess we can all——

Senator ALLARD. Okay.

Mr. CASAMASSA. I'll answer it.

Certainly on the Arapaho-Roosevelt National Forest—as I had made mention—we are taking out hazard trees within our campgrounds. We have some delays that would occur, but we would not anticipate any closures at this time.

Senator ALLARD. Okay.

Mr. KYHL. Across the three forests, like Glenn mentioned, we are working hard to get all of them open as early as we can. The snow pack is actually hurting us by not allowing us to get equipment and machines in there quick.

We are plowing some roads open, and we are bringing in a variety of crews, including Colorado inmate crews, some of our hotshot crews, before they get called off on fires. So, we have the resources, basically, we're waiting for the snow to clear for us.

Now, granted, the bark beetles continue to expand. We had it in 100 campgrounds, we'll probably see it continue to grow, and of course, using our resources to try to deal with it in the fall so we can open in the spring is kind of a shift.

Senator ALLARD. Yes.

Mr. WETTSTEIN. Yeah, on the White River, we've either already treated campgrounds, or they're under contract or they're—they've gone through the planning phase, they're all accounted for, and work's underway.

Senator ALLARD. We get a Memorial Day break, that's—I think that kind of sets off the summer in most cases. So, you feel that local communities that have had to rely on these campgrounds can pretty much expect a flourishing business that's centered around Memorial Day, and that would stem from the campground activity? You don't see any real economic downturns here?

Mr. KYHL. There's going to be a few that will need some more time to get cleared, but that's only a small—I'd say, 5 percent.

Senator ALLARD. Yeah, like you say, we have a lot of snow that may not be cleared in time. Particularly if it's on the sunny side of the—or the northern side of the mountain, where they don't get a lot of direct sun.

Mr. WETTSTEIN. Yeah, we're really shooting to get—Fourth of July weekend is—even for our hardest sites, to have them open by that weekend.

Senator ALLARD. So, are you going to have, for those that are being reported as closed now, do you think you're going to have those open for Memorial Day? Or are they going to—or have they been closed for a long period of time?

Mr. KYHL. The ones that we have on the list to be closed are the ones that it's going to take us a field season—or at least several months—to get it cleared, because it's such a—5,000 or 10,000 trees to be removed kind of project, so——

Senator ALLARD. Yes.

Mr. KYHL. But again, that's just a small number, the rest of them we will have——

Senator ALLARD. You have the resources to meet your needs there, you think? In the three—in the three forests that you have under your authority?

Mr. KYHL. Yes, we are—the region did mobilize financial resources to the three forests to deal with this, and so we are putting that—those funding for resources.

Senator ALLARD. Okay, let me just look here, briefly.

Maybe you'd be best to address this, Cal, I think we have—what about municipal water supplies? You know, what we've had, we've had so much silt and everything getting down into the lake there, from—the Hayman fire mostly affected Denver's supply. Could you describe the potential for damage to water supplies as the landscape becomes overstocked with dying trees?

Mr. WETTSTEIN. Sure. It is one of our highest priorities. As Rick showed you, the importance of Colorado headwaters for a lot of municipal water supplies. As we get in and prioritize projects, and specifically, the Dillon Reservoir, that was one of the high priorities—one of the reasons we're doing treatments around that, besides just the urban interface protection.

Senator ALLARD. So, you're doing thinning treatments around the lake?

Mr. WETTSTEIN. Where we can. Basically, we're not thinning at this point. A lot of those treatments are going to be clear cuts, because we've got close to complete mortality in there.

Senator ALLARD. Okay.

Mr. WETTSTEIN. But the—yeah, watershed protection is one of the critical priorities for us.

Senator ALLARD. Of course, I'm trying to think back, I don't see any terrain—I'm trying to think of terrain around the Dillon Reservoir that would, maybe, prevent you from getting equipment in there, but you could, I suppose—I'm thinking back—that most of that's terrain that you'd get to——

Mr. WETTSTEIN. Some, yes—most. Yes. So, it—a lot of that then comes down to——

Senator ALLARD. Have you started that work yet? Around Dillon?

Mr. WETTSTEIN. Oh yeah, yes. County Commons in Frisco is completed, it was a stewardship sale. We've got another stewardship contract that we awarded last fall, it's been working—they worked most of the fall and they're back in, now. We're about to award another contract this summer, for another third of that project, around the Keystone area.

Those stewardship sales—back to your questions about the timber values and appraisal issues—those timber sales—they're stewardship contracts, they all involve a lot of commercial wood. So, we're using the value of that wood to offset the cost of those fuel treatments. So, that's——

Senator ALLARD. Yeah, I understand that, but it's one of the complaints I'm getting—there's not much value to the wood, that the cost of moving the wood out of there——

Mr. WETTSTEIN. Well, right—and that's why in some of these stewardship sales, or stewardship contracts, we're actually paying those contractors. The value of the wood does not——

Senator ALLARD. Justify.

Mr. WETTSTEIN [continuing]. Justify the fuel.

Senator ALLARD. The expenses.

Mr. WETTSTEIN. So——

Senator ALLARD. Yes.

Mr. WETTSTEIN. Yes. We're ending up spending money on it.

Senator ALLARD. You know, I think with, well, look what happened, with what's happened with our economy, it's just that that bears really close monitoring and watching very closely. I filled up my pickup the other day and it's $99. It's a diesel. So, I can imagine was some of that big, heavy diesel machinery is going to cost, when we're running it per hour, it can get expensive.

Okay. Now are you working with local utilities on, like, in the Dillon Reservoir, for example, you've got to work with the Denver Water Board, I suspect——

Mr. WETTSTEIN. Right.

Senator ALLARD. Everything else. Do you feel like you've got an open line of communication—understand where you're going, and—have they expressed any concerns to you?

Mr. WETTSTEIN. They're very involved, and Denver Water is very involved. Power line utility companies have been at the table with us, so we're getting good cooperation with all of the parties.

Senator ALLARD. What can we do to make things better as far as working with the utilities, and working with power lines—is there anything that we can do, at the Federal level to make things better for you? Can you use more money?

Mr. KYHL. I'm sure the utility companies could say yes.

A lot of our work has been focused on efficiencies to allow them to do the work. A lot of them want to do stuff, they have their own resources, and under some of those—most of those permitting facilities on the forests, they do carry more of the responsibility versus the public.

Where we come in is to try to get them expedited or at least as fast as we can, get them approval so that they can remove those hazards—especially the power lines. They have certain—front range of Colorado and the grid across the west, so we are working with them under agreements, MOUs, other ways.

Senator ALLARD. Do you think the permitting process is sort of frustrating because it's slow? Or do you think it's okay? Or, what's your view of the permitting process?

Mr. KYHL. Well, our NEPA process is——

Senator ALLARD. Cumbersome?

I don't mean to put words into your mouth.

Mr. KYHL. Well, I think those are all good rules to looks at, and impacts to the environment, and I can't say those aren't appropriate. You know, where we can be efficient in dealing with those is where we're trying to focus our resources.

Like the power lines—rather than having the power line come in and deal with one district, and then they jump to another forest, we've—you know, the efficiency of the management team is that we're looking across all three forests, giving them one permit, so they don't have to go door to door, getting that permission.

Senator ALLARD. Well, that's a good news story.

Mr. KYHL. Yes.

Senator ALLARD. Yes.

Mr. KYHL. So, those kind of things is a—but yeah, they're concerned about fire, as well, so it's not only the hazard tree falling within their right of way corridor, but they also worry about large fires taking out the line. That's a little more complex, because then they're going off the right of way and looking at treatments, so—again, hundreds of miles. So it spans a huge landscape for them.

Senator ALLARD. Yes, I know some of them are requiring 120 offsets on each side of the power line, or looking at that as their—as a requirement. That has to move them off of their current right of way, onto forest property.

Mr. KYHL. Sure does. Especially if they're—where the line is located, if it's uphill from the dead trees and the dead wood, it's going to bring heavy smoke, and which can bring down their lines just as well as the fire——

Senator ALLARD. It is a problem, yes.

Mr. KYHL [continuing]. Itself, so——

Water infrastructure is another important—working with them to mitigate the sediment potential in those intakes and——

Senator ALLARD. So, do you, then—what do you do around those intakes? Are you clearing out the older trees and putting something in there to kind of hold the soil?

Mr. KYHL. Well, the utilities that the water providers are looking at—designing a debris flow, catchments, the kind—like after the Hayman fire they, it was almost too late, by the time they got in there——

Senator ALLARD. Yes.

Mr. KYHL [continuing]. Rains came and flooded with debris and sediment. So, if there's some structures they can put at the inlet of their impoundments that can filter out those things——

Senator ALLARD. Yes.

Mr. KYHL [continuing]. A kind of preventative approach. We're looking at ways to start the permitting process in that, so we can get ahead of the curve, in case there is a large fire.

Senator ALLARD. Well, I guess if we have a wilderness area designation where you can't move a CAT or something in there, you're really out of luck, aren't you? Right now?

Mr. KYHL. Yeah. Where the water—yeah, that's—that's an issue.

Senator ALLARD. Okay, that's all the questions I have. Thank you.

We're ready for the third panel.

Okay, on the third panel we have Nancy Fishering, vice president of the Colorado Timber Industry Association and we have Jim Ignatius, Teller County Commissioner, and then we have Peter Runyon, thank you.

Thank you all for being here, and I'm looking forward to hearing what all of you have to say—who wants to start off?

Nancy, do you want to go first?

STATEMENT OF NANCY FISHERING, VICE PRESIDENT, COLORADO TIMBER INDUSTRY ASSOCIATION AND CONSULTANT FOR INTERMOUNTAIN RESOURCES

Ms. FISHERING. I'd be happy to.

Senator ALLARD. Give the industry perspective, here?

Ms. FISHERING. You bet.

First, thank you for inviting us to testify, and I will be speaking both for the largest sawmill remaining in Colorado that's a conifer sawmill, as well as the membership of the Colorado Timber Industry, that's 136 members, statewide.

I'd like to begin by thanking the Forest Service for setting the stage so well on what some of the challenges are.

When I look at, from the perspective of the industry, however, I look at it Colorado-wide—and we have been increasing our efforts in the forest health arena, as opposed to what we used to call green timber sales, since 2002, the year of the fires that we've mentioned—you mentioned Hayman—but that year we had over 2,000 fires that affected over 500,000 acres throughout the State of Colorado.

You've heard the other numbers on the mountain pine beetle, but what we also have to keep in context, I believe, in Colorado, is what's happening elsewhere. We've got 98,000 acres of spruce, some of that was up in—by the Steamboat area. We also have a big outbreak down by Wolf Creek Pass in the southern part of the State.

We had 350,000 acres of sub-alpine fir decline, where the fir that's interspersed within the spruces died. We now have a current new problem, called the aspen decline, and we have 334,000 acres of aspen decline. We have many, many other acres affected by various defoliators, ips, engravers, budworms, et cetera. So, it's not the only issue that we have in Colorado. For our out-of-State guests, I'd like to provide some context.

We have seen an increase in timber and vegetation management over the past several years, you saw several charts. Prior to that, though, let me just give you the history going right into 2002, when our forest health issues emerged.

Saw timber from the national forest—largely linked to budgets—declined 82 percent from 1989 to the year 2000; 2000 was our low point, when we had—some of the charts before were in CCF, I do it in MBF—but in 2001, we went down to a low of 20 million board feet provided through the Federal Timber Sale Program off of est. Two thousand two, ironically, it was the end of three of our largest mills in Colorado, closed, in 2001 and 2002, simply from a supply—and a budget—related issues. As well as, there's some national market issues that happen at all times, but national set budgets are a big part of our stability.

Only one large sawmill remains in Colorado, that does over—we do a 40—the sawmill in Montrose—does about 40 million board feet a year. We have many—some people would have been alarmed to hear that we're the only sawmill—there's a lot of mom and pops, a lot of them that do 1, 2 million board feet; we have aspen mills. Seventy-five percent of the infrastructure, however, is in southwest Colorado, because this part of the State, where the mountain pine beetle was, has declined in terms of industry over the years.

So, that's just kind of the context of where industry is. But, I would like to say that we think we've stepped up to the plate. We increased our treatments on the Arapaho, which is Glenn Casamassa's territory, by 99 percent. We only treated 200 acres in 2004, and last year we treated over 20,000 acres.

We're doing treatments on both private and Federal. Oddly enough, we don't have a lot of private land in Colorado. That's somewhat different for out-of-State areas, because in other areas, they have Bureau of Land Management (BLM) land, they have State land, they have a lot of private—but we have a considerable amount of our forested acres—over 75 percent—is on national forest. So, that's a key part of any kind of supply issue for our industry.

We have raised the hazardous fuel prescriptions—you'll find loggers doing almost any of those treatments. Some of them are just paid service contracts, some of them are still being paid to do commercial sales, which pays for treating campgrounds and that type of thing. Just as a result of the mountain pine beetle, our sawmills and loggers—I inventoried them last year—they invested over $5 million in increased capacity, just since the mountain pine beetle began.

The partnership response is amazing. Because, for so long in the timber industry, we were the ones trying to convince the public they needed us, and it has been a huge response from community leaders from every walk of life—the environmental community,

hunters, recreationists—everyone stepped to the front to give you the social license that was referred to by both Rick Cables and Mark Rey.

Our local governments—they'll speak for themselves—but they spent $2.3 million last year in local tax dollars and treatment areas around their communities, and the jurisdictions that surround Eagle.

The public outreach and education—if the timber industry goes out there and says, "We need you to cut trees," they're not going to listen to us. It took the community to step up to the plate, to get that social license, so I'd like to recognize them.

State legislature is something that we didn't talk about much today, but they've been a huge player for us, and a big partner. We also couldn't do it—one of the partnerships was mentioned briefly, but they're all collaboratives, were the community wildfire protection Plans. For Senator Feinstein, we actually sent a group out to California, to look at San Bernardino, to see how did they deal with it? How did they do their emergency response?

So, we try not to reinvent the wheel. We have great ideas, we have great partners, but I still believe we have funding issues.

I list—very briefly, I'm not going to go into it—the 2008 State legislature passed eight bills to try to address this on their side. So, we're not just coming to the Federal Government saying, "We need money, our hands are out." The State of Colorado stepped up, big time. They've done resolutions; they've got an interim committee set up to study more of the wildland urban interface issues.

You talked specifically about the watersheds—there's a very innovative bill that, when my industry nationwide—I'm part of national groups of Federal timber purchasers—when they saw this, they go, "Wow, how inventive is this?" But S. 221 is an authority for the Denver Water Boards to be able to bond—to be able to bring in bonding money and create their own forest restoration—either preventative, around the watersheds, or it can be used for mitigation after a fire—but that's where the locals are putting money on the plate themselves, to partner with the Forest Service.

The other thing you talked about—some of the use of the blue stained wood—there's a bill that passed this year that's going to give us State tax exemption, if you use blue stained wood.

So, every level of government and the community are stepping up to try to get things done. Which is why I think, your part—in making sure we have adequate money coming from the Federal budget, to make sure our national forest partners have the money—I think it's key.

So, then I get to my bed of concerns. Going into the 2008 budget—and I look at, and we mentioned that there's some 17 line items that we use to fund forests and forest health projects, vegetation treatments—the one that the timber industry, the folks that are doing the—buying the big equipment, the de-limbers, and the trucks and the extra equipment in the sawmills—we have to look at what is the NFTM, what the national forest management line item.

Last year, after going into—after all of this partnership, after all of this documentation of the issue, and the challenges being faced in the State of Colorado—Region 2 looked at a 31.6 percent cut in

NFTM. That's a huge wakeup call for industry, going, "What is going to happen to us?" We saw what happened to our budgets, going into 2001. We saw it closed down the industry. We look at that key line item again, and we're going, "Thirty-one point six percent cut?" We were shocked.

We know a lot of the answers. Part of it was funding log land fire; part of it was funding the northwest forest Plan. But we feel like there was absolutely nothing in any—either at the Washington office or the Congressional level—that gives an allocation for catastrophic defense. It just doesn't seem to be a priority at that front end.

Now, I talk about the 31 percent going in, but I have to say that's not where we ended up. We'd like to thank you—and our congressional delegation who supported you—for coming up with the extra $12 million. Some of it, as we mentioned, isn't timber management dollars. Some of it got reprogrammed to timber management dollars, some of them were grants. But, our bottom line is, after all of the voodoo that happens in the Washington office—and I don't know how all of that happens—the cut at the end of the year, by March—and that budget doesn't come out until March, halfway through the fiscal year—was an 8 percent cut. For an area that has met their targets, reduced their unit costs, have documented our challenges and our issues, and it's very concerning for us, from industry, to see a budget cut coming in the area that's our bread and butter.

We think it's our survival that that doesn't continue to happen—you can die from one big cut, or a lot of little cuts. So we're going to be watching that very, very carefully. We know that there's 100,000 acres ready for next year, but that was a lot of money that you brought last year. We got it again this year, but it's not part of that stable thread that we see in the budget process, from Washington. We see reduced budgets in some of these line items as being a reduced timber supply that helps us—those are the numbers we take to the bank. Those are the numbers that we're getting the loans to buy the new equipment or the capital expansions.

We'd also like to remind people that region 2 is already one of the lowest-funded regions in the entire country. So, when you give us a budget cut, I think it hurts us more than it hurts other areas.

I will take your time to go through a, kind of, a silly illustration. But I just took it against the number of employees that different regions have in the country. Region 2, for example, we have 1,964 employees. If we had a 31.6 percent cut, we would lose 620, and that would leave us with 1,300 employees, to manage 22 million acres.

Region 6 is a very large budget region. They got a—they're——

Senator ALLARD. Where is region 6?

Ms. FISHERING. Pacific Northwest.

Senator ALLARD. I assumed it was, but I just wanted to get it on the record.

Ms. FISHERING. Sorry. My industry, folks, I have to say that they know as well as I know, that region 2 is one of the under funded regions in the country.

But, if you did the same 31 percent cut there, they would still have double the number of people to manage their 24 million acres of National Forest.

So, I just—Colorado, and region 2, is unique. We're already in a disadvantage, and I don't see any effort at the national level, you know, congressional. We don't have a lot of congressional delegates, and I think sometimes that's why, maybe it isn't weighted as much as other States.

I'd also like to mention that most of what's left in Colorado—whether it's loggers, whether it's the truck drivers, whether it's the sawmills—are family owned. We don't have this multi-national, big deep pocketed timber industry in Colorado. So, I don't ever like to be compared to region 6, because we're totally different in Colorado.

So, I just—those are the kind of folks that they're putting everything at risk. We have one of our other members, here, Forest Energy of Colorado—they're one of the pellet groups, that are trying to put in pellets—but every one of us are challenged to come up with capital for expansion.

We're vulnerable, at this point, you mentioned the markets, you mentioned diesel fuels—those are huge on the horizon right now. But we believe we're an asset in Colorado—and to the country, actually, because a healthy forest industry gives you a cost-effective tool to do the expensive WUI treatments, to do some of the expensive hazard tree removal. Our guys are gearing up to do almost any kind of project you can throw at them; they're ready to do it.

We don't believe we come with just—saying we have issues. We believe have some solutions. We very much like the House of Representatives bill 5541, which is the FLAME bill, which would put aside an emergency pot of money to kind of take some of the firefighting funds out of the everyday budget of the Forest Service. We think that would help, somewhat, as long as that money was kept within the Forest Service and didn't end up going somewhere else in the USDA.

We believe that there maybe could be a congressional process to recognize catastrophic events, and get funding for them. Katrina—when they had the Hurricane Katrina, extra money went to Katrina. We have our own Katrina going. Senator Salazar calls this "the Katrina of the West." We didn't get any special appropriations, like other areas have.

We believe that with—even within constrained budgets, we'd like to see some stable forest management along that line item.

One of the things we talked a lot about today was stewardship contracting. Stewardship contracting is—I think we've been successful in Colorado. They mentioned 158 contracts, but we believe the cancellation of the liability reserves is key to expand that stewardship theme. It's that requirement to have a pot of money to reimburse if something happens in the middle of a contract—it's a huge hurdle, because it makes the Forest Service keep money on the table that we'd rather see being used in treatment.

So, we believe—not just Colorado, this is—every purchaser I know in the country is concerned about that issue.

Again, we talked about the CAD, Category 10. We saw that go away as a tool for a lot of the quick removal kind of things; to be

able to use for stewardship contract and some small timber sale. A lot of people said that stopped logging, it really is more of that service contract, small activity, to run in and do a hazardous fuel removal, and that's been stopped under that 9th Circuit Court.

The last thing is, some of your comments—you talked about, are you paying attention to the market? Are you paying attention to diesel? We believe—and I'm not sure that this really is something the Appropriations Committee could do, but we believe short-term contract relief to the purchasers—because some of the timber sales that we bought, we bought 5, 6, 7 years ago. Especially in Colorado, we've moved those to the back to get to these high priority acres, as we are losing merchantability of that timber. They're very expensive logs, and at very low market, with very quickly increasing diesel prices.

So, contract relief is something that we're very much interested in getting, to get us through this downturn in market caused by the sub-prime loan and the housing crisis. The diesel conditions—it's just a very difficult time to—we're not making money. We're just trying to survive this short-term, market-driven event. We're not asking for permanent contract relief, we're looking at short term.

Everyone knows, when the sub-prime issues quit, there's going to be the demand for lumber that we used to have. We intend to survive, and be there. Our pellet mills that are going in, know that the supply is going to be there, but we need the short-term relief.

PREPARED STATEMENT

So, that concludes my comments, and we very much hope that we can come up with solutions that moves us from a fire service, to a more balanced natural resource-based organization again.

Thank you for your time.

Senator ALLARD. Thank you, Nancy.

Ms. FISHERING. Again, I appreciate it.

Senator ALLARD. Thank you.

[The statement follows:]

PREPARED STATEMENT OF NANCY FISHERING

Dear Madam Chairman, Ranking Member Senator Allard, and members of the subcommittee. Thank you for prioritizing your time to hold this hearing in Colorado to learn about our forestry issues. Thank you for inviting me to be a part of this hearing.

The prior panels have outlined the scale and severity of the issues facing us on our forested land in Colorado, and I will just highlight the implications from the perspective of local business—specifically the timber industry.

Forest health events have been growing in severity during this decade. The 2002 season brought our biggest year for fires when we had more than 2,000 fires burning 502,000 acres (2002 Report on the Health of Colorado's Forests). Sawmills and loggers shifted operations to address fire salvage sales across the State in 2002–03.

Following this event and recognition that the heavily populated front range of Colorado was dominated by overly dense, fire prone ponderosa pine forests, the State moved into escalating mountain pine beetle (MPB) populations. From 2004 to 2008 the MPB infestation grew to a 1.5 million acre issue while simultaneously outbreaks of smaller insect and disease events affected 98,000 acres of spruce, 350,000 acres of subalpine fir, 334,000 acres of aspen decline, and a near complete decimation of the pinyon in southwest Colorado.

This litany of issues pushed forest health to the forefront in Colorado at the local, State, and national forest levels. In visits last year to the Forest Service (FS) Wash-

ington office we heard that Colorado issues were among the top three forest health issues facing the agency.

While Colorado forest health issues were exploding exponentially, the timber management budgets to region 2 and specifically Colorado were dropping.

Clearly a problem for Colorado is (1) the lack of congressional appropriation process that targets forest health, and (2) a similar lack of criteria within the FS allocation process that prioritizes or targets forest health events similar to these Colorado issue. We were horrified to see a 2008 preliminary region 2 timber management budget that was a 31.6 percent reduction from 2007. There was considerable reworking and the March timber budget resulted in a smaller 8 percent reduction. Budget cuts during extraordinary events are very hard to swallow.

The 2009 President's Forest Service budget shows the same inattention to major forest health events. During the recent, April 1 testimony from the Chief of the Forest Service before the Appropriation Committee regarding the 2009 budget, an outline was given of the funding and priorities for healthy forests. Specifically "implementation of the Healthy Forest Initiative and the Northwest Forest Plan are key initiatives which receive increased or similar levels of funding compared to fiscal year 2008." Other priority areas mentioned was "establishing or improving over 2 million acres of forest and rangeland vegetation, 1.5 million acres of hazardous fuel reductions . . . and capital improvement and maintenance of roads." All these priorities are important, but sadly, we didn't hear any evidence that would improve the vegetative management budgets toward addressing the immediate and drastic challenges posed in Colorado forests. Likewise correspondence between the Chief and the region 2 congressional delegation mentions that "report language include both House and Senate direction supporting the administration's priority for funding the full timber capability of the Northwest Forest Plan, leaving little flexibility to address needs elsewhere."

Line item	2006	2007	Initial 2008	Final 2008	2009
NFTM + SSSS	$22,640	[1] $26,807	$18,329	[2] $24,569	TBD

[1] Add CWK2.
[2] Add PEVG. Reprogram some WFHF.

Our observation is that not only does the budget "flexibility" disappear, but businesses, landscapes, and communities are being placed at greater risk. It's clear that a variety of factors affect timber management funding, and we acknowledge the constrained budget process that currently exists. We are aware that this subcommittee has heard testimony regarding the increases in the wildland fire management program that now commands 48 percent of the agency's discretionary budget request. The combination of these issues is proving to be a major issue for proactive forest management.

On behalf of my industry I'd like to publicly thank and point out that Senator Allard and the region 2 delegation were able to identify and channel additional funds to region 2 and Colorado. Some dollars were added to the vegetation management budget and some became available for grants through the Colorado State Forest Service (CFSS). Every dollar is greatly appreciated, and ultimately additional treatments will be available. Every investment in forest management will help reduce the probability and severity of future forest fires and insect epidemics, thus reducing future costs of responding to catastrophic events.

We would reiterate that the problem remains that no mechanism exists within the FS budget process to address extraordinary events like our MPB epidemic. Well designed, fair, and stable budgets that allow the region to address the myriad priority issues is key to both the effectiveness of forest management and the industry's ability to play an effective role in meeting forest health objectives.

Juxtaposed to the budget woes, the bright spot is the amazing response of our Colorado community. Many partners including many local governments, the CSFS, Bureau of Land Management (BLM), environmental groups and user groups have joined together to develop consensus on the scope of the problem, the acres to be treated, the commitment to community wildfire protection plans, and the need for alternative financing.

Local governments surrounding Eagle County where we are holding this hearing played a critical leadership role in developing consensus. Fourteen jurisdictions committed $2.3 million in local dollars in 2007 with a similar investment allocated in 2008. Countless hours have been spent in meetings, and official resolutions of support have been passed and shared with Washington officials.

The State legislature has passed numerous bills addressing treatments on the land including a resolution of concern about the Federal budget allocations including:

—*Resolution*.—HJR08–1033 Concerning healthy forests and the budget.
—SJR 25 Creating an interim committee to investigate wildfire issues in wildland urban interface.
—SJR 010 Concerning stewardship contracting.
—HB 1318 MPB mitigation on State lands.
—HB 1269 Five-year tax exemption to incentivize purchase of MPB products.
—HB 1110 Income tax reduction for wildfire mitigation work.
—SB 071 Concerning extension of the forest restoration pilot program and making an appropriation.
—SB 221 Authority of the Colorado Water resources and power development authority to issue bonds to fund watershed protection and forest health projects.

Both the national forest and Colorado approach is to address the challenges comprehensively. We try to mix hazardous fuels dollars with timber dollars, we use community wildfire protection plans to prioritize State pilot projects, we use goods for services to pay for campground treatments. We use stewardship contracts to accomplish goals in the wildland urban interface, and we are using State and local dollars to identify treatments along national forest projects to attain landscape scale results. We are careful to protect the resource, but there is an urgency to do more, remove more fuel, and operate on a more efficient level. The frustration appears at many of these levels about the lack of additional funding resources from the Federal Government.

Each of these efforts and issues meld together as both an opportunity and challenge for the industry in Colorado. Industry in Colorado declined throughout the 1980s and 1990s with three of our largest multi-national mills closing in 2001 and 2002. Adequate timber supply was one of the major factors in the decisions to close these mills. The remaining small and medium sawmills and the clusters of loggers throughout Colorado and southern Wyoming depend largely on Federal timber since approximately 75 percent of the forested lands are on national forests. region 2 is unique in the degree of reliance on the national forests for a supply. Unlike other States, there is not an abundance of forested ground on BLM, State, or private lands.

The combined timber budgets for all Colorado national forests have been providing a 4-year rolling average of 40–45 million board feet (MMBF) of timber per year. This is a minimal level of supply when one considers that the Intermountain Resources conifer mill in Montrose requires 42 MMBF annually for just a one-shift operation. The MPB epidemic issues and the concerted response effort by the Colorado communities and the National Forests successfully increased the sale program in 2006 and 2007. Tools such as the HFRA allowed the FS to ramp up the speed on projects, CE's were helpful until removed from the toolbox by court action, and numerous NEPA-ready projects were prepped and sold on an accelerated basis. The future scale of operations remains in question again largely due to the competing imperatives within the FS budget and the uncertainties of the appropriation process.

Genuine business opportunities hinges on FS funding. The toxic recipe of (1) decreasing FS budget levels; (2) increasing diesel costs; and (3) falling lumber markets (resulting from the housing and subprime loan fiasco), creates a difficult environment to raise capital and invest in additional capacity, value-adding technology or biomass conversion to alternative energy. We know the lumber markets will improve. The projected 50 percent increase in U.S. population over the next 50 years assures a long-term demand for lumber. The farm bill and energy bill provide pieces of the funding equation for converting biomass to energy; however private capital remains necessary to make any new investment feasible. Banks and investors then look to the timber supply and business health of the industry prior to investing capital. The biggest "unknown" is the FS funding piece of the puzzle. The Federal budgeting process for timber management becomes our biggest obstacle to becoming more efficient and expanding investment into alternative uses for woody biomass.

In conclusion, we hope that some of the FS budget issues might be resolved when the wildland fire management issue is addressed. We are greatly encouraged by the recent support of HB 5541 the FLAME bill. The concept of a separate fund for major fires is important, but the FS dollars need to be focused on proactive vegetative management practices. Specifically, in Colorado, funds are needed on hazardous fuel removal projects, timber management along power lines and reservoirs, and hazard tree removal along trails and in campgrounds. The timber industry can be a tool for any and all of these projects; 1.5 million acres of standing dead trees create a significant public health and safety issue in many, many places.

We believe that region 2 needs and deserves a commitment to a stable budget. In this regard, we are not unique and many regions are concerned about the declining timber management budgets. However, we also believe that in times of extraordinary events like the MPB epidemic extraordinary investments are needed from the FS. Senator Salazar likened Colorado to the "Katrina of the West". Well, extra appropriations were made to assist the Mississippi forests to address the down-timber and hazardous trees that posed risks to public health and safety. No true increase in management funds has made it to Colorado to deal with "our Katrina."

We believe that the smaller FS programs suffer disproportionately from budget cuts. Large FS budgets like those found in region 6 have a buffer during budget cuts. Case in point region 6 oversees 24.6 million acres and has 3,833 employees, while region 2 oversees 22 million acres and has 1964 employees (2006 budget analysis). region 2 is one of the lowest funded regions in the country while facing one of the largest forest health events in the country.

Thank you again for the opportunity to testify. We appreciate the complexity of the problem, but believe that the Colorado experience can shed some light on the challenges and perhaps unintended consequences resulting from the current budget process.

Senator ALLARD. Peter.

STATEMENT OF PETER RUNYON, COUNTY COMMISSIONER, EAGLE COUNTY, COLORADO

Mr. RUNYON. Thank you. My name is Peter Runyon, I represent Eagle County, where I'm chairman of the board of county commissioners. I also represent Northwest Colorado Council of Government—Northwest COG. It's five counties of Eagle, Grand, Jackson, Pitkin, and Summit, and indeed, we are at the epicenter of this current outbreak.

It's—I'm also a member of Colorado Counties, Incorporated, CCI, public lands subcommittee, as well as a member of the public lands subcommittee of NACO, the National Association of Counties.

Thank you for allowing me to testify, and thank you for taking your time from your busy schedule to see for yourself, your devastated forests. I know you, Senator Allard, are well aware.

Eagle County, as I said, is a member of Northwest COG, and members of the Northwest COG have been on the front lines of the bark beetle epidemic for 5 years. The natural environment is at the core of our economy, so understandably, we have been working very hard, dedicating many local resources to battle the negative impacts of the die-off of up to 90 percent of our forests.

We've learned a few lessons—our priorities should always be the protection of human life, first and foremost, public infrastructure, critical water supplies, and personal property. Because the beetles know no boundaries, we've learned that the best use of our citizens' tax money is to apply our limited resources collaboratively, to address those priorities.

Collaborative approaches to address such an overwhelming problem as the bark beetle epidemic, is the only way to achieve success. Eagle County has demonstrated its financial and political commitment to this fight over the past several years.

We've adopted wildfire regulation, instituted a CWPP—community wildfire protection plan—we've partnered with other local governments, spending $250,000 just this last year creating a 55-acre fire break in the area surrounding West Vail, and the town of Vail also contributed $250,000 and the Forest Service was a partner, as well.

We integrate environmental sensitivity in all of our projects, turning dead trees into wood pellets for heating during the winter.

That's just Eagle County. Over the past 2 years, member jurisdictions in Northwest COG have spent nearly $5 million of local sales, use and property tax to address the beetle epidemic. Two years ago, the town of Vail alone committed to spending $250,000 each year for the next 10 years.

We've been working hard with our State legislators, as Nancy just showed, some of those bills—we passed two of them in 2007, and in the current session, as she said, there are eight on the table, and the current wisdom is that five of those will pass.

Northwest COG, as you know, Senator, has traveled to the District of Columbia. many times to plague you and to plead our case to you. Commissioner Rich has brought his little plastic chainsaw and put it on your desk, I believe, to say that we need some work.

Just this last February, the CCI, public lands team successfully convinced the NACO Public Lands Committee and their members to support the Colorado delegation, bipartisan bill, in concept. In general, not—they didn't want it Colorado specific, but all of the elements of it they support, because as you know, this is broader than just Colorado.

So, that's what we're doing on the local level, and truth be known, it's pretty inadequate. The epic scale of this infestation is overwhelming, and that's why we need help. One can probably argue, successfully, that we have exceeded the sustainable holding capacity of these high mountain valleys. But, beyond the ground reality is that we are here. Eagle County's latest assessed valuation was $3 billion, which translates into over $30 billion of market value in Eagle County. The five Northwest COG counties are probably, cumulatively, three to four times that total.

I would argue that our mountain resorts are the single-largest economic driver to the success of Colorado, as a whole. Our mountain tourist industry is what sets Colorado apart. I might even stretch this a little bit further to include the mountains as one of our national icons. Indeed, "America the Beautiful", was written by Katherine Lee Bates atop of Pikes Peak.

It has been argued that this epidemic is part of the natural cycle of nature. That is absolutely true. But visitors—our tourist base—do not want to come here to renew their souls on a burned, sterilized forest.

Remember, caterpillars and grubs are also part of our natural environment, but they have no appeal. But when they turn into butterflies, magic happens.

To stretch the analogy, we need to accelerate the larva stage of our forest, to allow the next forest to emerge. If we do little or nothing, most predictions are that we will have a series of catastrophic wildfires. This sounds very similar to the earthquakes in San Francisco. It is never a question of if, but when. Tell me—if you had a chance to mitigate the severity of future earthquakes in San Francisco, wouldn't you take it?

PREPARED STATEMENT

So it is here. Had we invested millions in prevention before Katrina struck, we would surely have saved billions of taxpayers' dollars in reparations. So it is here.

Thank you very much.

Senator ALLARD. Thank you for your comments.
[The statement follows:]

PREPARED STATEMENT OF PETER RUNYON

My name is Peter Runyon. I represent Eagle County where I am chair of the board of county commissioners. I also represent the Northwest Colorado Council of Governments (NWCCOG) comprised of five counties: Eagle, Grand, Jackson, Pitkin, and Summit as well as 23 towns and municipalities. I am also a member of Colorado Counties Inc. (CCI), CCI Public Lands Subcommittee as well as a member of the National Associations of Counties (NACO) Public Lands Subcommittee.

Thank you for allowing me to testify, and thank you for taking time from your busy schedule to see for yourself our devastated forests.

Eagle County and the members of NWCCOG have been on the front lines of the bark beetle epidemic for 5 years. The natural environment is the core of our economy, so understandably, we've been working very hard, dedicating many local resources to battle the negative impacts of the bark beetle die off of up to 90 percent of our forests. We've learned a few lessons.

Our priorities should always be protection of human life, public infrastructure, critical water supplies, and personal property.

Because the beetles know no boundaries, we've learned that the best use of our citizen's tax money is to apply our limited resources collaboratively to address those priorities. Collaborative approaches to address such an overwhelming problem as the bark beetle epidemic are the only way to achieve success.

Eagle County has demonstrated its financial and political commitment to this fight over the past several years. We adopted wildfire regulations and instituted a CWPP. We've partnered with other local governments spending $250,000 last year creating a 55-acre fuel break in areas surrounding the town of Vail who also contributed $250,000. We integrate environmental sensitivity in all of our projects, turning the dead trees into wood pellets for heating during the winter.

That's just Eagle County. Over the past 2 years, member jurisdictions in NWCCOG have spent nearly $5 million of local sales, use, and property taxes to address the beetle epidemic. Two years ago, the town of Vail, alone, committed to spending $250,000 per year over the next 10 years.

We've been working hard with our State legislators to pass laws that will allow the State and local governments to obtain increased funding and work more cooperatively. In 2007, two bills were passed and in the current session we expect the passage of five more bills.

NWCCOG has traveled to Washington, DC, many times over the past 3 years, as Senator Allard knows all too well to promote the bipartisan Colorado delegation forest health bill. Our CCI public lands team, just successfully convinced all of NACO to support the intent of the bill.

So that's what we're doing at the local level, and truth be known it is pretty inadequate. The epic scale of this infestation is overwhelming, and that's why we need help.

One can probably argue successfully, that we have exceeded the sustainable holding capacity of these high mountain valleys. But the on the ground reality is that we are here. Eagle County's latest assessed valuation is more than $3 billion yielding a market value of approximately $30 billion. The five NWCCOG counties are probably three to four times that total. I would also argue that our mountain resorts are the single largest economic driver in the success of Colorado as a whole. Our mountain tourism industry is what sets Colorado apart. I might even stretch this a bit further to include our mountains as one of our national icons. Indeed, "America the Beautiful" was written by Katharine Lee Bates atop of Pikes Peak.

It has been argued that this epidemic is a part of the natural cycle of nature. That is true. But visitors don't want to come to renew their souls in a burn-sterilized forest. Remember, caterpillars and grubs are also a part of the natural environment, but they have no appeal—but butterflies are magic. So it is with our forests. To stretch the analogy, we need to accelerate the larval stage of our forest to allow the next forest to emerge with wings of green.

If we do little or nothing, most predictions are that we will have a series of catastrophic wildfires. This sounds very similar to earthquakes in San Francisco—it is never a question of if, but when. Tell me, if you had a chance to mitigate the severity of future earthquakes in San Francisco you would take it? So it is here. Had we invested millions in prevention before Katrina struck we would have saved the taxpayers billions. So it is here.

Thank you.

Senator ALLARD. Jim Ignatius.

STATEMENT OF JIM IGNATIUS, COUNTY COMMISSIONER, TELLER COUNTY, COLORADO

Mr. IGNATIUS. Good morning, Senator.

Senator ALLARD. Good morning.

Mr. IGNATIUS. Again, as all of the panels have said, thanks for being here.

I'm a retired firefighter/paramedic from Chicago, and I moved to Teller County in 1995. I've been a commissioner since just after the Hayman fire.

I'm a member, with Peter, on public lands at CCI, and also represent Colorado at the Federal level at NACO with respect to public lands, and I set on the board of directors for the State's emergency fire fund, as well as the Colorado Healthy Forest Advisory Council.

I'd like to share a little bit about Teller County from a local's perspective. It's not quite as big as Eagle County. Teller County is about 600 square miles, 50 percent of that is public lands, all of which are in the wildland urban interface. We are rated in the red zone, the whole county, by the U.S. Forest Service, and we are mostly a ponderosa forest, with tree densities approaching 10 times historic levels. To the west of us is 15 miles of uninterrupted fuel that has not burned in the Hayman fire.

Teller County is home to the Hayman fire, Colorado's largest fire, with 137,000 acres to burn in June 2002. Our watersheds, Denver's watershed, our property values, and our economy took a direct hit with the Hayman fire, of which we are still recovering. Approximately 20 percent of our annual transportation budget—our budget is about $4.5 million—goes to repair the same 3 percent of our roads every single year, due to flooding from the Hayman Fire.

Teller County is one of the first in the State to complete a county-wide community wildfire protection plan. We began the plan just after the President signed the Healthy Forest Restoration Act, and we finished it in the spring of 2005.

In 2001, Teller County was mitigating fuel loads on less than 600 acres, annually. We didn't have community buy-in—people loved our trees, as was mentioned before. It's very difficult to change the culture, but after 5 years of working on it, I think we're just about there.

In 2007, we've indicated, over 4,000 acres, one-half of that on public lands, one-half of that on private lands. We have an education program, we have a not-for-profit that assists us with over 4,000 volunteer hours annually. We have a very active Community Wildfire Protection Commission. We have a slash/mulch program, and the county adopted new land use regulations in December 2007, which addresses defensible space, and we try to keep the issue on the front page of our local papers, as often as we possibly can.

As far as major issues, most of them have been said earlier through different panelists. Regulations—when it takes years to complete the NEPA process and the categorical exclusion, that would be very helpful if that was shortened. Time is money.

The industry—most mills have closed up. We, in Teller County, still ship all of our logs to Montrose. With the price of diesel the way it is today, I don't know when that will become less cost effective or when it won't cash flow, but my guess is, we're probably there now.

Longer stewardship contracts—we have folks that are interested in putting in biodiesel pellet plants, but unless that stewardship contract is extended beyond what it currently is, they don't want to expend the dollars. Funding—it all comes down to funding—Federal, State, and local.

PREPARED STATEMENT

Education—changing the culture at the local level has been key—we don't have a lot of dollars, so we take advantage of board meetings, presentations, and things of that nature. We try to spend our dollars very strategically, by treating acres with respect to ridgelines, roads, valleys and other strategic areas.

That concludes my presentation, thank you.

[The statement follows:]

PREPARED STATEMENT OF JIM IGNATIUS

TOUCH OF MYSELF, TELLER COUNTY, AND MAJOR ISSUES

I'm a retired firefighter/paramedic from the Chicago area and moved to Teller County, Colorado in 1995.

I've been Teller County Commissioner since 2003.

I'm a member of the Public Lands, Land Use, and Wildlife Steering Committees at Colorado Counties Inc., which critiques legislative issues at the State level.

I also represent Colorado at the Federal level through NACo (National Association of Counties) with respect to public land issues.

I sit on the board of directors for the States Emergency Fire Fund.

A LITTLE BIT ABOUT TELLER COUNTY

Teller County is 600 square miles, 50 percent of that is public lands all of which is in the wildland urban interface. We are mostly a ponderosa forest with tree densities approaching 10 times historic healthy forest densities.

Teller County is home to the Hayman fire—Colorado's largest forest fire at approximately 40,000 acres.

Our watersheds and Denver Water's watershed took a direct hit with the Hayman fire.

Approximately 20 percent of our annual transportation budget (from 2002–2007) has been spent mitigating road damage due to flooding on 3 percent of our roads in the northern part of Teller County (the Hayman area) at the expense of the other 97 percent.

Teller County was one of the first in the State to complete a county-wide community wildfire protection plan. The plan began in 2004 and was completed in 2005.

In 2003, Teller County was mitigating fuel loads on approximately 600 acres. We did not have community —people love their trees. It was very difficult to change the culture. In 2007, we mitigated over 4,000 acres, half of that on public lands and half on private lands. We have a education program; we have a not-for-profit that assists us; we have a very active community wildfire protection commission, we have slash/mulch program and we try to keep the issue on the front page of our local papers as much as possible.

MAJOR ISSUES

Regulations.—(when it takes years to complete a NEPA process it adds to the cost and reduces the effectiveness). We need to remove the gridlock to harvesting wood.

Industry.—(most mills have closed up, Teller County now transports its logs to Montrose).

Longer stewardship contracts with private industry.

Funding.—Federal, State, and local (incentive based such as HB1110 income tax deduction, grant based at the local level such as HB07–1130 Colorado Water Con-

servation dollars). One size does not fit all. This legislation allows for flexibility at the local level.

Forest improvement districts sounds like a good idea, but I come from a county, like many of you, that will never pass a blanket mill levy increase.

Education/changing the culture at the local level is key (we don't have a lot of money so we take advantage of our board meetings and presentations).

Spend dollars strategically we don't necessarily treat all the acres we treat ridgelines, roads, valleys, and other strategic areas.

From the county's perspective local government is already working on methods that work for their community, so I would encourage this subcommittee to take into account the flexibility that the local level offers because one size does not fit all.

Senator ALLARD. Thank you, Jim. We've been kind of looking forward to your testimony, because you're a former firefighter, in addition to being involved in local government.

What do you think are the most important things we can do, given the devastation right now that we're facing with the pine beetle to prevent a fire catastrophe?

Mr. IGNATIUS. Well, as we had said before, we have to—in Teller County, with respect to our fuel loads, we have got to reduce the fuel loads. We have, like I said, from Woodland Park to Wilkerson Passes, almost 15 miles of uninterrupted, high-density, dry fuels. If we can let—assist with the market a little bit by having longer stewardship contracts, less regulations and funding at the Federal, State, and local levels, I think that would help tremendously.

Senator ALLARD. Now, I see you were instrumental in helping develop the Teller County's community wildfire protection plan. Unfortunately, not all of the communities in the west have followed your lead. What can be done to encourage other communities to develop community wildfire protection plans?

Mr. IGNATIUS. Well, Senator, I think that the foundation is there, because as was mentioned earlier, the Healthy Forest Restoration Act provides an incentive if you do have a community wildfire protection plan, you can steer your efforts, in cooperation with the U.S. Forest Service, State forest service, and all the grant opportunities through the State government—you can, the incentive is there, and you jump ahead of the pack as far as getting funding for all of those.

So, being that that is a prerequisite for all levels of mitigation, I think it's there. I think you don't have to reinvent the wheel as a community, whether it be a county or a smaller-type community wildfire protection plan, because ours in on the website, now Eagle County's—you can take that format, plug in the data from your area, work with your local forest district, the State forest district. The tools are there to create the plans. Being that you can't get anything without the plan, I think the foundation is there.

Senator ALLARD. What do you think are the current obstacles and issues that prevent us from having healthy forests in the West?

Mr. IGNATIUS. Again, it's just what was mentioned before, I think the longer stewardship contracts—we would have private industry pop up with a biomass, or—woody biomass, similar to the one that's going up in Kremlin, if there was longer stewardship contracts and they can assure something greater than 10 years.

Less regulations—I know that our local forester has his challenges, like all of you folks do—with the NEPA process and the categorical exclusions, so if that could be streamlined in some way—

when we have to wait 2 to 3 years to cut a tree down, time is money.

Then, the last thing, of course, is funding.

Senator ALLARD. Thank you.

Mr. IGNATIUS. Thank you.

Senator ALLARD. Nancy, how long is the timeframe that the trees retain their commercial value once they're infested with beetles?

Ms. FISHERING. It varies. We're finding some trees—we're looking at a 5- to 7-year window on some of the trees. It depends on elevation, depends on the aspect of the—which side it is—south-facing, west-facing. Because some—they start to check, is what happens, Senator Allen. They stand there dead on the stump, and if they get wet in the winter, especially on the hot, south-facing slopes, get very baked, and then the tree starts to twist a little bit. So then, little cracks go into the tree, and so every year that diameter, where it might look like a 10-inch diameter, or a 7-incher, you're losing diameter, every year.

But one of the things that—the investments that have been put in, in Colorado, is we're pretty used to getting small diameter, we can take at the Montrose sawmill down to 4¾ inch tops. For example, right now, we don't say 4¾ inch tops when we're in Glenn Casamassa's territory, because it can't be smaller than 7 inch now, because it's already checked.

So, you're getting some value, all the way down. We're actually not even able to get an 8-foot section of wood out of some of them, now, and we end up a lot more 4-foot sections. The mill just bought a finger jointer, last week, oddly enough, in this market, but that's because someone else went bankrupt, and we bought their equipment, good cents on the dollar. So, now we'll be able to finger-joint two 4-foot sections together.

So, we're constantly doing these kind of efficiencies to be able to continue to use the smaller diameter material.

So, it does vary, but we can get up to 7 years. So, the prevailing wisdom in some places in Canada is, they're not getting that kind of—but it's an elevation issue, apparently.

Senator ALLARD. Their elevation is lower?

Ms. FISHERING. It just varies. I can't explain it, I don't—and that's techie to me. I can only go so far teching, and then I'm out of my range.

But we do find some that, in 3 years, we're very challenged to have a merchantable tree left.

Senator ALLARD. Yes, the wood pellets, you know, I hear that they burn more efficiently, and there's less emission from wood pellets and what not. Is there a market out there? Is it struggling? Where are we at on wood pellets, as far as——

Ms. FISHERING. We've got one operational mill that's actually running, we've got several investors ready to go. Our sawmill has looked at co-gen from pellets, all the way to actually partnering with our local utility. The price of those kind of plants go from $2 to $10 million. Cash, right now, in this capital—markets are very—it's difficult to come by, partially—when people come in and look at funding you, they also look at Forest Service budgets. So, it's really concerning to me.

But, there is a market for it, there's different markets. There's the residential market, and then there's a commercial market, and then there's—how can we incentivize people to put in, for example, some schools. Large commercial could use a lot of pellets. It's a less-refined product that they can use, it's a little rougher product they can use.

But we still run down to, what's diesel fuels going to be doing, in terms of where the market is, how far out do you have to go to find markets? Again, I think that the Colorado sales tax exemption may help people to start saying, "Well, I'm going to buy a Colorado pellet," and help find our own markets right here at home.

Senator ALLARD. Define to me, define—I can see the commercial market. I'm having a hard time seeing the domestic market out here for the noncommercial side.

Ms. FISHERING. My understanding is it is more challenging to get that—into that residential market. We did give a presentation to the Forest Service Forest Supervisors in September, because we have a mill up in South Dakota that does the residential market, and they find it very hard to use dead trees.

Dead trees, as they dry out, they have less lignites in the tree, so they have to add a polymer to it, to keep them together as a pellet. Polymers create clinkers. So, in a residential market, that makes it a little trickier to sell.

So, residential might be the challenge, commercial we know you can use—it's just a bigger operation, so they can handle the dead pellets. There's good markets there if we developed our own markets here in Colorado.

Senator ALLARD. Now, you commented about the aspen—some of the die-off in the aspen. I've heard various theories I don't know if anybody's come up with any specific reason why the die-off, I've heard everything from a virus to just old stands and the root system is just given out, so the whole stand is going.

Ms. FISHERING. Well, actually they call it sudden aspen decline—and before they put that label on it——

Senator ALLARD. That doesn't mean anything.

Ms. FISHERING. Well, I'm going to just tell you—before they label it that, there's two ips beetles, two bores, and a canker working on the same stand of aspen.

Senator ALLARD. So, you see it as a combination of issues.

Ms. FISHERING. It is a combination of issues. So, that's what makes it unique from what we see in other aspen issues. We've been working collaboratively over on the western slope, with—what does this mean? What's the new challenges? We do have three large aspen—the second-largest mill in the State of Colorado's an aspen mill. We have, that again, three-quarters of that investment's in the Southwest part of the United—of Colorado.

Senator ALLARD. I see.

Okay, blue stained wood, is that moving?

Ms. FISHERING. We are—we're doing 100 percent blue stained wood. We've had to—early on, we had to create new markets for it at the Montrose mill. We turned it into decking, sold it up to Minnesota, it got treated in Minnesota, and it's being sold east, because they don't care about the color, and they treat it.

Now we're selling it because it's structurally sound, there's no reason not to use it, and we've actually overcome a lot of our marketing, because we sell 100 percent of what comes out of our mill, today, is blue stained wood.

Senator ALLARD. Okay, now, the last question I have has to do with Range Fuels—have you ever heard of Range Fuels? The company Range Fuels? They have developed a process—I visited their plant a couple, 3 weeks ago—where they take wood chips, and they process them into ethanol. Some of the ethanol that they process goes back into running equipment, so they are almost a standalone.

They tell me that in this climate, they're not going to be able to meet the needs to produce ethanol, because of the time it takes to mature a tree in this climate is so much longer than it is in Georgia. So, they're building a Georgia plant. Do you want to comment on that?

Ms. FISHERING. I am—now that you explained what you're referring to—Excel Energy sent out an RFP in November 2007, asking for anybody to do a renewable energy powerplant that could create 50 megawatts of power. We got phone calls, just nonstop, of people trying to figure out are we the renewable side that—mill, Intermountain produces 400 green tons of biowaste per day. So, these folks—even the $30 million plant that—I don't know where Rick is, now. He mentioned they got a $30 million DOE grant, and they're going to take seven truckloads of wood, daily. We do 42 trucks of wood, daily. It really is not the answer for the landscape-scale issues we're talking about.

But, we did look at it at Intermountain, and the $10 million proposal that we had on the table is working with our local electric utility, where we would do nonethanol, but turn it into electricity. That's part—would meet their goal of having renewable energy, they have a goal of 25 percent by 2025. So, that's $10 million, so we're all sitting there going, "Can you guarantee a supply that will pay off a $10 million investment?" That's the stumbling block for folks.

But we also talked to the folks about the ethanol, and what we were being told, that technology is 3 years out. The equipment—to buy the equipment is 3 years out.

So, it's not really a short-term answer for the issues that we're dealing with in Eagle County today.

Senator ALLARD. Peter, you're last in questioning—you want to talk a little bit about how you think the healthy forests have an impact on the tourism industry? You're a local business person, and, you know, you're here in the middle of the tourist economy and what not, do you want to comment a little bit about how you see it impacting the tourist economy?

Mr. RUNYON. Sure. Yes, I sell postcards and souvenirs from Estes Park to the Four Corners region, all of the ski areas in between—I pretty much cover the country.

It's—people come here because it isn't like back home. I mean, it's—it's the same thing with the beach resorts, and it's—I mean, I look at it two different ways. One is, we've still got the mountains. It's still beautiful, it's still spectacular. You could say, "Well, you know, maybe it's just sort of like changing a jacket from green

to orange to grey," but that's trying to put a little too nice a spin on it.

I think it will affect us, particularly if we have these catastrophic wildfires. That's going to make an incremental difference.

In Eagle County, we're a little luckier than some of the other counties in that, at least at this point, our percentage of lodgepole pine is a relatively small percentage, but if we have the SAD in the aspen and the spruce beetle, and it starts going further, it could truly be catastrophic.

Within the ski areas, there is—there are issues of—one of the things that trails cut through the forests do, is they separate skiers. So, there's a greater sense of isolation, when in fact, if those trees weren't there, you would get a lot more people skiing side-by-side, and arguably you would be minimizing that sense of being at one with nature that you get when you ski.

It's going to be a problem as we work forward, and the key thing, as several people have mentioned is, what we need to do is accelerate the next forest. If we remove the dead trees—and the reality is, in a tourist sense, we need to remove the ones the people can see. If they're on the other side of the hill, it's less important. Get that—the beauty of nature is that it does renew. We'll get new forests coming up.

I kind of waffled around that question. Sorry.

It's not an easy answer.

Senator ALLARD. Yes, well, I didn't expect it to be. But I knew you're very adept at dealing with tough questions, so I thought I'd give you that.

Mr. RUNYON. Thank you.

Senator ALLARD. What can—you know, it's kind of hard to visualize, I guess, what the landscape might look like 10 years from now. So, in terms of restoration, what do you think the Forest Service can do to restore our forests? That's open to all members of the panel, that question.

Ms. FISHERING. I'd like to just weigh in, just for a moment, because part of the usefulness of a collaborative is back to getting everybody at the same table, and answering that together. So, if you want to watch us wrestle that question, we're doing it as we speak.

Because the new BIT team, the Beetle Implementation Team that's going to be looking into the next forested acres, that's right on the front of our conversation. I think we need to emphasize how much that there is that we can do that we all agree on. We have numerous representatives of environmental groups here today that—they're right there with us. We're trying to figure out how do you prioritize it, and how you design that new community.

Part of it is, the whole conversation you brought up before about, how do you protect your reservoirs? How do you protect your power lines? Those are all the conversations we're having as, what does that need to look like? How do you get the communities to react so we're not in this position 50 years from now?

So, all I'm saying is, we're in that process right now, I don't have an answer for you. But the collaboratives, I think, are key to getting us there.

Mr. RUNYON. I think as we move forward, and as Cal Wettstein showed so well, is the double-hump camel, which is the fire risk

going up in the red area, and then going down, and then back up over the long term.

The good news is that if we can minimize that first hump, then we have a longer time period to start dealing with this. In situations like the town of Vail, committing investment over a 10-year period, we can chip away at it. I think it's—but we've got to keep it in mind, we can't push it off, it's like a slow-speed tsunami that is coming in very gently, rather than all at once. But, pretty soon, the water is up to your nose, to extend the analogy.

So, what it will look like will be an ongoing dealing with the issue. Obviously, the first and foremost is dealing with the WUI, the wildland urban interface—those close areas where the fire risk is greatest. I think that Senate bill, Colorado Senate bill 2210, is very important in that it's incentivizing the water providers to step up and take advantage.

It—right now we're up here in the mountains, we're a small community, and the Denver Water Board, we both testified, Denver Water Board, and Eagle County, in favor of that bill, and it's sort of strange bedfellows, because we've——

Senator ALLARD. Do you think the cities, or the counties, would look at maybe tree planting as part of their program, with volunteers? Is that, locally, is that something that you'd look at? Or do you think just the natural regeneration of the forest, with the seeds and everything that are brought about with germination because of the forest fires is adequate?

Mr. RUNYON. I think the experts would say that the forests are doing the regenerating themselves, once we take the dead out. Of course, when the dead, at first, block the Sun, so that doesn't help regeneration. But they would be better equipped to answer that.

But, where it's not, then we obviously should step in and do that.

Senator ALLARD. Jim.

Mr. IGNATIUS. I think our biggest challenge is tree density. If the—if we keep suppressing the fire that used to go in and reduce that tree density—because of the housing, because of the wildland urban interface, because of all of the issues that Teller County faces, the beetles will take care of it, or the mistletoe will take care of it, or whatever Mother Nature can throw at it, will reduce the tree density. So, if we don't do it mechanically, it's going to happen on its own.

So, I think it's——

Senator ALLARD. Well, what do you think about—what type of restoration program—let's say we have a fire, like the Hayman fire, I mean, what do you think, seeing what happened with the Hayman fire, is there anything you think we can do to improve our restoration approach after a fire like that?

Mr. IGNATIUS. Unfortunately, local government gets stuck holding the bag on a catastrophic event like that, when a—with respect to property values, with respect to roads, with respect to drainage. Like I said before, it's been almost 6 years now of that happening on an annual basis.

I think as far as the cost goes, I mean, the Hayman fire, on the Federal side of it, has been over $200 million for suppression and for restoration. That doesn't include lost property values, the watershed, as far as Denver Water pumping about $8 million into

their sedimentation basins every year, to reduce that sediment that's going into Cheesman Reservoir, and our local transportation issues.

So, if you just take the $500 per acre times 130,000 acres, it's one-quarter of that value to treat it up front, as opposed to suppressing it and rehabbing it.

I think they've done a pretty reasonable job on the area of the public lands, as far as the U.S. Forest Service, but like I said, what falls through the cracks is what falls onto local governments. That is the transportation issue, the loss—our economy is 100 percent dependent on tourism, also. So, when they closed Pike National Forest, most of Pike on the northern part of Teller, Park and Douglas Counties, it affected our economies tremendously in 2002, and beginning of 2003.

I hope that answers the question.

Senator ALLARD. That's a good shot.

Mr. IGNATIUS. Okay.

Senator ALLARD. Thank you.

I'm going to bring the hearing to a close. I want to thank the three panelists for coming and testifying.

The record, now, will be open for 1 week, so we can still take additional comments.

There might be questions to be submitted from the subcommittee to you. I just ask that you respond to them in a short period of time.

Ordinarily in 10 days we ask them to get back to the subcommittee. We'll take electronic comments which would probably be the best, and then you can work with the staff to find out the proper email address.

Then again, thank you to Eagle County for providing us for——

Mr. IGNATIUS. Thank you.

Senator ALLARD [continuing]. A very nice facility. It's been great to be able to work with your staff and everything, putting together this hearing. I hope we haven't been too much of a bother for you.

Mr. IGNATIUS. Not at all, it's our pleasure.

Senator ALLARD. Then, also, I want to thank all of you for being here and taking a specific interest in this very serious problem that we have, throughout the West—it happens to be Colorado's—one of the States—and we just—your input is helpful as we try and determine how we can proceed from here. So, I want to thank you for all of that.

ADDITIONAL SUBMITTED STATEMENTS

Now, any groups that would like to submit comments can send comments electronically to our staffs, and these comments will appear in the record for your hearing, here. Okay?

PREPARED STATEMENT OF MARK UDALL, U.S. REPRESENTATIVE FROM COLORADO

Senator Allard, thank you for convening this field hearing regarding an issue that I have been working on for a number of years—the forest health and community impacts of the bark beetle epidemic that is affecting many parts of the western United States, but especially the central and northern mountains of Colorado.

When this epidemic was just taking off in the early part of this decade, I contacted the Federal Emergency Management Agency (FEMA) to help communities prepare for fires and floods that would come from the large stands of beetle-killed

trees, and was successful in convening a meeting with the affected communities and regions with FEMA last year in Granby, Colorado. As early as 1999, former Representative Joel Hefley and I worked together to introduce legislation easing restrictions on thinning projects in our national forests, and I also supported the Healthy Forests Restoration Act, which streamlined the process for identifying and implementing forest treatment projects to reduce fire threats to communities and watersheds.

In 2005, Representative John Salazar and I convened a meeting with local communities and affected interests in Winter Park, Colorado, in the fall of 2005 to explore potential congressional responses to the bark beetle epidemic. That meeting lead to the introduction in 2006 of the Rocky Mountain Forest Insects Response Enhancement and Support—or Rocky Mountain FIRES—Act, a bill designed to provide the Forest Service and Interior Department with more tools and resources to respond to this serious problem. Portions of that bill were later incorporated into the Colorado congressional delegation bill, H.R. 3072, the Colorado Forest Management Improvement Act of 2007, which was introduced late summer of last year to help provide additional resources to address the threats from beetle-killed trees. I appreciate that you and Senator Ken Salazar have introduced the Senate companion (S. 1797) of this important legislation.

In addition to this delegation bill, I have introduced three other bills this year to help address the implications of this beetle epidemic and help communities better mitigate, respond to and address the potential fires, floods and other impacts associated with large-scale tree mortality. These bills include:

—H.R. 5216, the Wildfire Risk Reduction and Renewable Biomass Utilization Act, would revise the definition of renewable biomass established by section 201 of the Energy Independence and Security Act of 2007 so as to facilitate and encourage the use of biomass removed from certain additional forest lands as an energy source, in order to reduce the risk of severe wildfire to communities, infrastructure, and water supplies. This biomass would include trees killed by the bark beetle.

—H.R. 5218, the Fire-Safe Communities Act, a companion to Senator Dianne Feinstein's S. 2390, would provide incentives for at-risk communities to adopt a new model Fire Safe ordinance that will set national standards in building codes, creation of "defensible space" around homes, and reduction of hazardous fuels. It also would authorize new Federal grants to help communities integrate fire-resisting aspects into local ordinances, and would authorize increased Federal reimbursement of firefighting costs to participating communities.

—H.R. 5241, the Colorado Forest Insect Emergency Response Act of 2008, which would amend the Healthy Forest Restoration Act of 2003 to allow certain forest treatment projects (such as thinning) in areas hard hit by the bark beetle and within community wildfire protection plans to be categorically excluded from environmental reviews under the National Environmental Policy Act.

These bills promote preventative measures—actions that will help reduce damaging wildfire threats. Preventative measures—such as reducing fuel loads—are vastly more cost effective than fighting fires once they start. Fire suppression costs are consuming an every increasing part of the budgets of the Forest Service and the other land management agencies. These costs are only likely to increase given the spread of the bark beetle, drought and other factors.

That is why I support another bill, H.R. 5541, the Federal Land Assistance, Management and Enhancement Act or FLAME Act. This bill would provide a supplemental funding source for catastrophic emergency wildland fire suppression activities on Department of the Interior and national forest system lands and to require the Secretary of the Interior and the Secretary of Agriculture to develop a cohesive wildland fire management strategy. It would create a fund that would be separate from the budgeted and appropriated agency wildland fire suppression funding and be used only for catastrophic, emergency wildland fires. The Federal land management agencies will continue to fund anticipated and predicted wildland fire suppression activities within their annual budgets.

By establishing this separate fund, the bill would help free up funds so that the Federal land agencies can perform all the other missions and activities we demand of them as well as help fund additional preventative forest health treatment measures and projects.

Senator Allard, as you know Colorado and other Rocky Mountain States face a very real risk of severe wildfires in our forest lands, which directly threaten many communities and critical resources, including water supplies.

There are several reasons. One is drought. Another is past management that overemphasized fire suppression, even though fire is an inescapable part of the ecology of our western forests, with the result that in many parts of the forests there is an

accumulation of underbrush and small-diameter trees greater than would be present if there had been more, smaller fires over the years. They provide the extra fuel that can turn a small fire into an intense inferno.

The problem has been made worse by our growing population and increasing development in the places where communities meet the forests—the "wildland urban interface." And when you add the effects of widespread infestations of insects, you have a recipe for even worse to come.

Many species of bark beetles, such as the mountain pine beetle, are native to our forests. They place stress on trees by burrowing through the bark. If a tree is healthy, it can defend itself by producing sap to repel and expel the invaders. But if the defense fails, the insects lay their eggs in the woody material below the bark. Once the eggs hatch, they feed on the tree's fiber and disrupt the flow of water and nutrients from the tree's roots to its needles and branches. In addition, the invading insects bring in fungi and other invaders that further damage the tree. If enough insects are able to penetrate the tree and lay eggs, the tree dies. The offspring then mature and fly to another tree and the cycle begins anew.

These insects help to balance tree densities and set the stage for fires and thereby the generation of new tree growth. And when forests are healthy and there are adequate supplies of water, the insects' effects are relatively low-scale and isolated. But under the right conditions—such as drought, unusually warm winters, or when there are dense stands of even-aged trees—the insects can cause large-scale tree mortality, turning whole mountainsides and valleys rust red.

That is what is happening in many mountainous areas in Colorado. And more and more our mountain communities find themselves in uncomfortable proximity to acres of dead trees, turned rust red by the insects and adding to their concerns about the danger of very severe wildfires.

All Coloradans were reminded of this earlier this year when the Federal and State foresters reported that the beetle infestation first detected in 1996 grew by a half-million acres last year, bringing the total number of acres attacked by bark beetles to 1.5 million, and has spread further into Front Range counties east of the Continental Divide.

We cannot eradicate insects from our forests—nor should we, because insects are a natural part of forest ecosystems. Instead, we can and should act to reduce the wildfire threats to our communities—and their residents' lives and property—as well as to promote research on ways to improve the health of our forest lands. All of the bills I have mentioned have been in response to this epidemic and the larger issue of forest health. We need to continue to work together—at the local, State and Federal level—to respond to these issues and make our communities safer and protect lives, property and water supplies. The economy and environment of our State demand no less.

PREPARED STATEMENT OF THE COLORADO STATE UNIVERSITY FOREST SERVICE

Colorado is experiencing the largest mountain pine beetle (MPB) outbreak in our State's recorded history. Beetle infestations are a natural part of forest ecosystems, but the old age of many of the State's lodgepole pine forests makes them susceptible to large-scale epidemics. Old forests, drought, lack of forest management, years of fire suppression, and warm temperatures all have a role in fueling this epidemic.

Since the infestation began in 1996, it has been intensifying and spreading to new areas. To date, approximately 1.5 million acres of lodgepole pine have been infested in Colorado. Nearly 1 million acres of lodgepole pine were infested in 2007 alone, and more than half of these acres occurred in areas that were previously unaffected. The total acreage affected represents the vast majority of the State's pure lodgepole pine forests. However, not all of the infestation is occurring in stands comprised of predominately lodgepole pine; some of the MPB-infested acreage is in mixed forest types that have a lodgepole pine component.

The dead, dry fuels resulting from beetle-killed trees pose a wildfire threat to mountain homes, communities, and economies that depend on recreation and tourism. Impacts from the current epidemic also can pose a serious and costly threat to watersheds that provide drinking water. In addition, roads, power lines, critical infrastructures, wildlife habitat, and other natural resources also are at risk, making the epidemic a matter of public and economic concern.

A reliable source of wood that sustains a viable forestry industry will allow forest management to occur on a meaningful scale over the long-term. Industry can use the resource that would otherwise become fuel for future forest fires. Industry capacity also can help reduce the cost of forest management for landowners in and near communities at risk to mitigate wildfire hazard. The costs of wildfire mitiga-

tion and forest management projects can be prohibitive, thus limiting implementation.

Thank you for the opportunity to provide testimony.

The Colorado State Forest Service (CSFS) provides leadership in forest management coordination across Federal and non-Federal lands to help ensure that landowner assistance, treatment, and outreach efforts are focused on protecting communities at risk. The main goals of the CSFS are to:

—Protect life, property, critical water supplies, and public infrastructures;

—Concentrate resources and increase forest management activities on the highest priority areas identified by local communities in their Community Wildfire Protection Plans, State land plans, county fire plans, local fire plans, forest management plans, and other critical documents;

—Promote and facilitate wood utilization; and

—Promote long-term sustainable forest management to help reduce the impacts of insect and disease outbreaks, and foster a resilient, healthy forest condition.

CSFS participates in and supports the efforts of the Colorado Bark Beetle Cooperative. We believe in a collaborative approach that demonstrates collaboration and consensus in achieving the desired goals. The Cooperative has shown accomplishment not only in treating acres, but in collectively fostering awareness and action around bark beetle-related efforts.

Thank you for the opportunity to provide testimony.

PREPARED STATEMENT OF THE NATURE CONSERVANCY

The Nature Conservancy is an international, nonprofit organization dedicated to the conservation of biological diversity. Our mission is to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. Our on-the-ground conservation work is carried out in all 50 States and in more than 30 foreign countries and is supported by approximately 1 million individual members. The Nature Conservancy has protected more than 117 million acres of land and 5,000 miles of river around the world. Our work also includes more than 100 marine conservation projects in 21 countries and 22 U.S. States.

In Colorado, The Nature Conservancy is dedicated to conserving the State's rich natural heritage and our way of life. We have worked with local communities for over 30 years, and have protected more than 600,000 acres of forests, prairies, canyons and wetlands. The conservancy works to achieve lasting results by finding common ground with diverse partners. Our approach is based on sound, scientific analysis that accounts for the needs of people as well as ecosystems.

SUSTAINING COLORADO'S FORESTS

Many of Colorado's 22.6 million acres of forestland are on the cusp of dramatic change. In Colorado's high country, a multiyear bark beetle epidemic is transforming the face of lodgepole pine forests. On the Front Range, millions of acres of dense, even-aged ponderosa pine are poised to regenerate through fire. Throughout the West Slope, aspen forests are dying by the thousands of acres due to sudden aspen decline, likely a result of drought and changing climate. Along riverways, precious riparian forests are being crowded out by the aggressive invasion of tamarisk.

There is broad agreement in Colorado that forest restoration is essential and, in many landscapes, that restoration treatments can benefit both ecological and human communities. However, the demands of effective treatment far exceed both the jurisdiction and the resources of any individual agency or landowner. To be most effective, forest management in the State must be implemented at a landscape scale, across ownership boundaries, and with the support of local communities.

There are several community-based forest collaboratives actively working in Colorado to improve the health of our forests. Groups such as the Front Range Roundtable, Colorado Bark Beetle Coalition, Public Lands Partnership and Culebra Community Coalition have established priorities for forest treatment in their respective landscapes that are science-based and provide social and economic benefits as well as ecological improvement.

State and local entities have spent significant resources on implementing priority projects on non-Federal lands, but in order for forest management to occur on a meaningful scale in Colorado the Federal land management agencies, particularly the U.S. Forest Service (FS) and Bureau of Land Management, must also engage and invest in accomplishing these collaborative goals.

Over the past decade, Federal agencies in Colorado have struggled to obtain the resources needed to carry out pro-active forest restoration and community protection

treatments because of funding formulas at the national level and the growing demand to pay for costly wildfire suppression. In addition to this challenge, Federal agencies have not had adequate incentive to prioritize landscape-scale forest management projects that involve multiple ownerships, are supported by local collaboration, and offer opportunities to reduce costs and contribute to local economies through utilization of woody biomass. While this type of project may involve greater complexity due to scale, ownerships and time-frame, the ultimate result on the ground is often much more significant than an isolated project that is implemented on a single ownership and without local involvement or support.

As the subcommittee considers how to respond to the current mountain pine beetle epidemic in the western United States, as well as the need to address other pressing forest health challenges, we respectfully suggest the following actions to increase both the resources and the effectiveness of Federal activity in the forests of Colorado and throughout the Nation:

—*Increase Funding for Pro-active Forest Management and Community Protection by 10 Percent* [1].—FS line items for hazardous fuels and State fire assistance support pro-active wildfire risk reduction and forest restoration projects that improve conditions for both communities and the environment and can reduce the need for costly wildfire suppression. When invested strategically, these funds can address priority forest health challenges in diverse forest types and on multiple ownerships.

—*Provide Relief for the Wildfire Suppression Funding Crisis*.—The Federal cost of extinguishing wildfires continues to grow exponentially to the detriment of other critical agency missions. The partitioned funding approach being considered in Congress could provide relief to this situation and free up essential dollars for priority forest management.

—*Set Clear Priorities for Hazardous Fuels Treatments*.—Hazardous fuels treatments must be carefully targeted in the face of increasing wildfire and limited resources. The recent introduction of the Forest Landscape Restoration Act (S. 2593) in the Senate and House would further improve prioritization by directing investment to large-scale, collaboratively supported projects that maximize ecological, social and economic benefits.

—*Provide Funding To Address Tamarisk Invasion in Riparian Forests*.—Colorado's 232,000 acres of riparian forest provide essential water quality and wildlife habitat benefits disproportionate to their size. Nearly a quarter of these forests are threatened by aggressive invasion of tamarisk. Full funding of the Salt Cedar and Russian Olive Control Demonstration Act (Public Law 109–320) is needed to mitigate the spread of this noxious weed.

—*Incorporate Conservation in Climate Change Responses*.—The Lieberman-Warner Climate Security Act (S. 2191) contains critical provisions for funding of wildlife, habitat and other conservation as part of a proposed cap-and-trade program to address climate change. These dedicated resources could assist species and ecosystems that are placed at serious risk by changing environmental conditions.

FUNDING FOR PRO-ACTIVE FOREST MANAGEMENT

Both the Colorado Bark Beetle Coalition and the Front Range Roundtable have called for increased treatment of hazardous fuels to reduce the risk of wildfire to communities and watersheds and to restore greater resilience to current and future forests. When combined with responsible cost containment measures, including the use of managed fire to reduce fuels, this type of pro-active forest management is among the most effective ways to reduce wildfire suppression costs in the long-term.

Using hazardous fuels funding provided through the national fire plan, Federal agencies have treated 24 million acres in the past 6 years. These national fire plan accomplishments demonstrate that it is possible to accelerate treatments to reduce hazardous fuels and improve forest health at a nationally significant scale.

The current investment in fuels treatment is about $500 million per year for both the FS and the Department of the Interior, but this amount is small in comparison to the more than $2 billion per year that has been required for fire preparedness and suppression in recent years. We recommend a 10 percent increase in hazardous fuels funding to maximize restoration of forest health and resiliency and to reduce future fire suppression costs.

The State Fire Assistance Program in the FS and the Rural Fire Assistance Program in the Department of the Interior provide companion funding that enables

[1] See attached Fiscal Year 2009 Wildfire Appropriations Briefing Paper for a summary of The Nature Conservancy's detailed recommendations regarding Federal wildfire funding priorities.

State and local officials to reduce hazardous fuels and implement other community protection measures on non-Federal lands. These funds also support State and local fire response organizations, FireSafe Councils and the development and implementation of community wildfire protection plans. We recommend a 10 percent increase in State fire assistance funding as a means of reducing large fire costs through investments in partnerships and community safety.

In Colorado, increased hazardous fuels reduction funding would enable Federal agencies to work with groups like the Colorado Bark Beetle Coalition and Front Range Roundtable to implement collaboratively prioritized forest management projects to restore forest health and benefit local economies. Additional State fire assistance dollars would help communities affected by bark beetles put fire protection zones in place and support community wildfire protection planning in other high risk areas such as the wildland-urban interface on the Front Range.

RELIEF FOR THE WILDFIRE SUPPRESSION FUNDING CRISIS

The United States Department of Agriculture's Forest Service spent $1.5 billion on fire suppression in 2006, the sixth time in a decade that its annual suppression costs exceeded $1 billion. Fire suppression expenditures as a proportion of the FS budget have grown with alarming speed. In fiscal year 2008, the FS is spending 46 percent of its budget on wildfire suppression compared to 13 percent in 1991. The requirement to fund the suppression costs associated with such expensive fires reduces sharply the agencies' ability to fund its other resource programs. The negative impacts on conservation are significant and lasting, as vital land management programs and needs are neglected.

The concept of "partitioning" the FS budget, as proposed in the Federal Land Assistance, Management and Enhancement (FLAME) Act (H.R. 5541) and related bills, offers a promising solution to the financial crisis facing the agency. Funding the predictable, fixed costs of fire suppression through regular appropriations and creating a separate fund for emergency expenses to fight large-scale, long-duration events would relieve the need for the FS to borrow funds from other programs to pay for suppression costs. Partitioning would enable the FS to devote its nonfire program funds to the multiple purposes for which they were intended, while assuring the necessary financial resources to aggressively suppress wildfires that threaten life, property and important natural resources.

In addition to establishing a separate emergency suppression fund, we urge you to consider a comprehensive solution that includes robust cost containment measures and comparable Federal investment in hazardous fuel reduction, forest restoration and community fire assistance as recommended in the Nation's forest health blueprint, the Ten Year Comprehensive Strategy and Implementation Plan (TYIP). Even with a separate emergency suppression fund in place, the Federal agencies will need to continue their efforts to contain fire costs and ensure the best use of taxpayer funds. Current budget constraints must also be addressed to enable the Federal agencies to direct available dollars to priority forest management needs beyond wildfire.

The Nature Conservancy strongly supports the efforts of Congressional members to seek solutions to the fire-suppression funding crisis for the benefit of forests in Colorado and across the Nation. Without action to stabilize fire suppression funding, we risk sacrificing the management of our immense and irreplaceable system of National Forests, as well as the benefits and services provided by the agency's State and Private Forestry and Research branches, for years to come.

PRIORITIES FOR HAZARDOUS FUELS TREATMENTS

In the face of tremendous need and limited resources, hazardous fuel reduction treatments should be prioritized for areas where high fuel loads and significant human populations intersect. Whenever possible, costs should be reduced through the use of managed fire rather than mechanical treatment and through the utilization of any timber or other woody biomass produced.

The FS and Department of the Interior improved their ability to set clear national priorities for fuels treatment in fiscal year 2008. Using the newly available LANDFIRE data as a foundation, the FS developed an Ecosystem Management Decision Support tool to guide the allocation of treatment funding. The Department of the Interior will use the same tool in fiscal year 2009.

The proposed Forest Landscape Restoration Act (S. 2593) would enable Federal agencies to further prioritize up to $40 million in hazardous fuels dollars, through a competitive process, on large-scale forest restoration projects that involve a strong science foundation, collaboration, and utilization of woody biomass.

This approach would ensure that available resources are invested in areas where there is diverse agreement on the actions needed, making long-term success more likely, and where implementation can occur on a meaningful ecological scale. The multi-year timeframe for these projects would also facilitate more effective engagement and investment by local forest industries and related businesses, thus reducing the overall cost of forest treatments.

The Nature Conservancy urges continued emphasis on prioritization of hazardous fuels treatment funds, based on collaboration and the best available data, and supports passage, implementation and funding of S. 2593.

FUNDING TO MITIGATE TAMARISK INVASION

Colorado's 232,000 acres of riparian forest consist primarily of cottonwood, willow, and shrub species which grow along rivers, streams, and creeks throughout the State. Benefits provided by these forests include maintenance of water quality and quantity, recharging of groundwater, reduced potential for flooding or erosion, and provision of critical wildlife habitat.

Vast infestations of the nonnative shrub tamarisk have seriously compromised the viability of these riparian systems. Negative impacts of these infestations include habitat degradation, increased risk of flooding and severe fire, reduced forage and access to water for livestock, and extensive nonbeneficial use of water.

The Nature Conservancy has identified tamarisk control as a cornerstone in the success of several river restoration initiatives, particularly those related to the iconic Colorado River. While action is underway, estimates show that more than $36 million is needed over the next 5 years to address both control and maintenance of tamarisk infested areas in the upper Colorado River basin. The challenge in other parts of the State is equally large.

The Colorado Department of Natural Resources, with support from the General Assembly, has established a Tamarisk and Russian Olive Control Cost-Share Grant Program to encourage local community participation and on-the-ground action in tamarisk control efforts. But in order for tamarisk to be addressed at a meaningful scale, significant Federal investment is also required.

The Salt Cedar and Russian Olive Control Demonstration Act of 2006 (Public Law 109–320) provides the framework and the authority for Federal agencies to work together in assessing the extent of tamarisk infestation in the West and carrying out five demonstration projects that model and test control techniques. We believe it is essential that local, State and Federal partners proceed with these projects as quickly as possible and urge the full funding of this act at $15 million for fiscal year 2009.

ATTENTION TO CONSERVATION IN ADDRESSING CLIMATE CHANGE

The Rocky Mountain Climate Organization issued a report in March 2008 showing that the American West is being affected by a changed climate more than any other part of the United States outside of Alaska. According to the report, titled "Hotter and Drier: the West's Changing Climate", our region has heated up even more than the world as a whole.

According to the Intergovernmental Panel on Climate Change (IPCC), warming temperatures are significantly affecting ecosystems and wildlife. A recent IPCC assessment warns of extinctions of 20–30 percent of species without significant action to address climate warming. Colorado's forests show the symptoms of this large-scale change in the form of increases in the size and occurrence of wildfire, a dramatic proliferation of bark beetles and the rapid mortality of aspen trees.

Reducing emissions of the greenhouse gases that are triggering climate change is essential to stave off mass extinctions and major disruptions of ecosystems, but it is not sufficient. Even with immediate action to reduce greenhouse gas emissions those effects will continue for decades to come. For this reason, there is growing interest in addressing the resilience of ecosystems, and ensuring funding is available to develop and implement adaptation strategies for human and natural systems in a changing climate.

The Nature Conservancy is strongly supportive of the commitment to conservation and wildlife and habitat protection reflected in the Lieberman-Warner Climate Security Act legislation (S. 2191), in particular the inclusion of language directing revenues from a cap-and-trade program toward science, planning and the development and implementation of natural resources adaptation strategies by Federal and State agencies and their conservation partners.

SUMMARY

Colorado's forests are central to the State's identify and quality of life. The stewardship of our forests depends on coordinated action across ownership boundaries at a meaningful scale. Federal land management agencies are essential to this equation and must be provided with the direction and resources they need to effectively implement priority forest management projects. We believe that targeted increases in funding for community protection and ecological restoration, combined with relief from the current wildfire suppression funding crisis, will enable significant progress toward greater resiliency for the forests of Colorado and other Western States. We also encourage you to incorporate resources for mitigation and adaptation strategies related to climate change into funding for forests, wildlife and watersheds, to ensure that the potential for negative impacts is pro-actively addressed.

CONCLUSION OF HEARING

Senator ALLARD. All right, well, thank you all for being here. That concludes our hearing.

[Whereupon, at 11:42 a.m., Tuesday, May 6, the hearing was concluded, and the subcommittee was recessed, to reconvene subject to the call of the Chair.]

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