

**FIGHTING FIRE WITH FIRE: EVALUATING THE
ROLE OF FOREST MANAGEMENT IN
REDUCING CATASTROPHIC WILDFIRES**

HEARING

BEFORE THE
SUBCOMMITTEE ON ENVIRONMENT
OF THE
COMMITTEE ON OVERSIGHT AND
REFORM
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C O N T E N T S

Hearing held on March 16, 2022	Page 1
WITNESSES	
PANEL 1	
Randy Moore, Chief, U.S. Forest Service, Department of Agriculture Oral Statement	7
PANEL 2	
Ali Meders-Knight, master traditional ecological knowledge (TEK) practitioner, Mechoopda Indian Tribe of Chico Rancheria Oral Statement	18
Dominick A. DellaSala, Ph.D., Chief Scientist, Wild Heritage Project of Earth Island Institute Oral Statement	20
Michael Gollner, Ph.D., Associate Professor of Mechanical Engineering; University of California, Berkeley Faculty Fellow, Berkeley Fire Research Lab Oral Statement	22
Carole King, celebrated singer-songwriter and land conservation advocate Oral Statement	24
James Hubbard, Former USDA Undersecretary, Natural Resources and Environment Oral Statement	25
<i>Written opening statements and statements for the witnesses are available on the U.S. House of Representatives Document Repository at: docs.house.gov.</i>	

INDEX OF DOCUMENTS

- * Western Governor's Association Policy Resolution 2021-03 National Forest and Rangeland Management.
- * Yellowstone to Uintas Connection Caribou Prescribed Fire Restoration Project.
- * Citizen Comments on Northern Rockies Ecosystem Protection Act Attendance.
- * United Nations Environment Program report, Spreading Like Wildfire; submitted by Chairman Khanna.
- * Yellowstone to Uintas Connection National Forest Environmental Analysis Comments.
- * Citizen Comments on Forest Service Policy.

Documents entered into the record during this hearing and Questions for the Record (QFR's) are available at: docs.house.gov.

FIGHTING FIRE WITH FIRE: EVALUATING THE ROLE OF FOREST MANAGEMENT IN REDUCING CATASTROPHIC WILDFIRES

Wednesday, March 16, 2022

HOUSE OF REPRESENTATIVES
SUBCOMMITTEE ON ENVIRONMENT
COMMITTEE ON OVERSIGHT AND REFORM
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:11 a.m., in room 2154, Rayburn House Office Building, and via Zoom; Hon. Rho Khanna, (chairman of the subcommittee) presiding.

Present: Representatives Khanna, Maloney, Ocasio-Cortez, Tlaib, Krishnamoorthi, Norman, Comer, Gibbs, Fallon, and Herrell.

Mr. KHANNA. The committee will come to order.

Without objection, the chair is authorized to declare a recess of the committee at any time.

I welcome everyone to this hearing. I am grateful to our esteemed panelists for joining us today.

The climate crisis and misguided forestry policies have given rise to catastrophic burning across our western forests, including in my home state of California. For decades, the Forest Service's strategy for managing fires was to suppress all fires. In 1935, the Forest Service established the so-called 10 a.m. policy, meaning they would put out every fire by 10 a.m. the next day. However, fire is a natural part of the landscape in Western forests. Some trees in these forests even need to be exposed to fire to grow and reproduce. In recent decades, fortunately, the Forest Service policy has changed because the landscape was deprived of fire for decades. However, dense vegetation has accumulated. That means when there are wildfires, they burn hotter and create more damage, feeding off the dry brush.

Climate change is also worsening wildfires. Last month, the United Nations called for urgent action and a new report warning that if we continue with business-as-usual climate pollution, we will have 57 percent more wildfires by the end of this century. Drier conditions make it easier for wildfires to spread and increase their intensity. Droughts leave trees with less water to fight off disease and pests. Dead and drying trees are less fire resistant. Climate change combined with the fuel buildup cause extreme wildfires, fire disasters that can be deadly. The top five years with the largest amount of wildfire acreage burned since 1960 were 2006, 2007, 2015, 2017 and 2020. From 2000 to 2018, wildfires

burned more than twice as much land per area than those in the 1980's.

Without objection, I submit the United Nations Environment Program report titled, "Spreading like Wildfire: The Rising Threat of Extraordinary Landscape Fires," into the record.

We are not immune to this problem in my district in Silicon Valley. In 2020, Santa Clara University Complex blanketed my district with smoke and unhealthy levels of smoke for weeks. Land managers, like the Forest Service, had a hard job in addressing this crisis. They must balance, first and foremost, human safety from wildfires, but also the economy, healthy ecosystems, and meeting climate goals. Unfortunately, special interests seek to present industrial management of forests as a solution to out-of-control wildfires. According to public disclosures, industry interest in forestry management spent over \$12 million to influence Congress. Not only do they spend to influence politicians. They work hard to influence the public as well. They spend millions of dollars annually on advertising, defending many states' weak forestry laws.

Special interests are influencing the policy process to acquire more contracts, saying that we can thin and log our way to fires that will be easier to suppress and control. However, this is not the full truth. While some management, including removing brush and small trees, is crucial to returning forests to healthy state, industries too often incentivize to remove the largest trees to sell for building materials and other forestry products. Clear cutting or removing large trees puts communities at greater risks. Our forests evolved alongside fire and older larger trees that are often the most fire resistant. Depending on local circumstances, thinning forests can also increase fire risk if not done cautiously in a science-based manner. Some thinning is necessary according to the science, but it has to be done cautiously in accordance with the principles.

Too much thinning and forests can dry out from exposure to wind and sun and create conditions for high winds. In fact, ProPublica found that public lands that were clear cut in the last five years, burn hotter than Federal land that cut fewer trees. We cannot allow short-term financial gains to substitute for collaborative, careful forest management based on the science.

Another reason it is important to prioritize fire prevention is to help our wildland firefighters, who risk their lives and help each year to protect communities and still aren't paid enough and don't have yearlong healthcare benefits. Wildland firefighters are grappling with longer fire seasons and longer burning fires, which means more overtime and exposure to deadly smoke. Congress must conduct careful oversight to make sure that the U.S. Forest Service has the tools they need to reduce large fires and the resources to pay our firefighters. We don't want to make the situation worse by removing the big trees that store the most carbon and slow wildfires down. We want to have a science-based approach to forest management. We need to listen to the science and pursue a community-driven process that incorporates all perspectives to forge the best way forward for our forests.

I now recognize our esteemed Ranking Member Norman for an opening statement.

Mr. NORMAN. Thank you, Chairman. Chairman Ro Khanna, I appreciate you holding this hearing.

Wildfires are an important issue. In 2021, there were nearly 60,000 wildfires that burned over 7 million acres. That is devastating for so many parts of the country. Ms. Maloney, I met with Carole King yesterday, who I am a fan of. I grew up with her music. She thinks the world of you. We had a great conversation. My questions to her, and we got Sumter National Forest in South Carolina. And my question was, one, do trees have lives? And two, what do we do about the four-foot thatch that has built up, because, mostly, a lot of your fires today are in lands that nothing has been done. And we had, you know, disagreement, but the passion that she has is, I respect, and I would love to have an open debate about that.

These fires that occurred in 2021 were on par with the 5-and 10-year national averages. So why are we now getting around to having a hearing about wildfires? I think the answer is obvious. Last week, we were supposed to have a hearing on how bad the oil and natural gas industry are, but that issue no longer fits to the Democrat narrative. The hearing was canceled, and the Environment Subcommittee needed something to do. Why else would we wait over a year into the 117th Congress to talk about important issues like wildfires? For weeks, the Democrats paraded board members from oil and gas companies to appear before this committee. They even threatened to subpoena witnesses that have been fully compliant with the Democrats' sham investigations. Given the events of recent weeks, namely Russia's invasion of Ukraine, Democrats finally came to the realization that a continued assault on domestic energy production was no longer politically expedient.

Russia's grip on European energy showcases how crucial it is that America expand its capacity for production and capacities for oil and natural gas to secure our own energy independence and assist our allies with energy needs throughout the world. Buying from rogue countries does not make sense, particularly now when we have Russia practicing genocide on the country of Ukraine. What President Biden does not seem to understand is that America stands ready to fill the void on the energy needs of our allies in times of geopolitical crisis. For the sake of national security, we must position our domestic energy resources to protect the freedom of democracy, both at home and abroad.

Some Biden Administration officials think we can drive our way out of this self-inflicted crisis with electric vehicles, but this elitist idea doesn't take into account that the average cost of an electric vehicle is \$55,000. The median household income is 67,000. It is completely out of touch to think Americans can afford to use 84 percent of their annual income on an electric car. For Pete Buttigieg, who is Secretary of Transportation, to say go out and buy an electric car is disconnected from reality.

I got a reality check for the Democrats on this committee and President Biden: Americans are still reliant on oil and gas. Our constituents need them to drive their cars and heat and power their homes and businesses, but Democrats want the American people to risk their livelihoods and way of life. They want to end the use of oil and gas immediately. This is an unsustainable propo-

sition. Unfortunately, they are trying to accomplish this goal by berating American oil and gas companies into submission, constantly holding hearings, demanding mountains of documents, and vilifying an entire industry. Yet none of these actions will change the fact that we need to use our domestic oil and gas supplies now more than ever. The stakes are just too high.

America has demonstrated that we can safely utilize our oil and gas reserves to the benefit of our people and can bring energy stability to a world that is turned to chaos on the whim of irrational foreign actors. America is blessed with abundant natural resources, including oil and natural gas. No, but Democrats don't want to use them to our advantage. I am so tired of the left's notion that we must take a backseat to Russia and China on energy issues.

As for the topics of this hearing today, I am looking forward to hearing from Mr. Hubbard, the former undersecretary for natural resources and environment at the United States Department of Agriculture, who knows firsthand about wildfire responses. The Democrats and the left-wing environmental groups push the narrative that climate change is the sole reason for the worsening fire crisis, but that is just not the case. Science clearly shows that active forest management is the best way to prevent wildfires.

In 2020, 70 percent of the United States' average that burned occurred on Federal lands. That statistic is a clear reflection of the mismanagement of our national forest and public lands. We need to focus on real science-based solutions to ensure that the Forest Service can accelerate the scope and scale of Federal forest management to ensure a sustainable and resilient future. I appreciate the Chief of the Forest Service appearing today before the committee, but I would urge that the Democrats are serious about conducting oversight of this Administration, that they invite more Federal Government witnesses to these hearings.

I thank the witnesses for their participation today, and I yield back.

Mr. KHANNA. Thank you, Ranking Member Norman. And before I give it to the chair, our distinguished Chair Maloney, let me just say we obviously share an admiration for Carole King. There is common ground there. And we also, I think, share a common commitment to standing with Ukraine and President Zelensky and their fight against Putin's unprovoked brutal war. We—I think we are unified in this Congress in making sure no Russian oil comes to the United States shores.

And in terms of the points you raised on gas, I have great respect for the ranking member, but we have genuine sometimes disagreements. But one thing I want to make clear is that I am for, and I think many Democrats are for, a short-term increase in production to make sure gas prices go down. I think that is something we should—there was a proposal to increase buying to fill up our strategic reserves, and I am for increasing short-term production. I think long term the way you defeat the petrostates, like Russia, like Saudi Arabia, like Iran, like Venezuela, is by having a moonshot for renewable energy, but you certainly can respond after. The chairwoman just wanted to, for the record, make that clear.

Now let me yield to our distinguished Chairwoman Maloney.

Chairwoman MALONEY. Thank you, Chairman Ro Khanna and Ranking Member Norman, for your leadership on this issue and for holding this very important and timely hearing this morning. And I would like to be associated with the words of Mr. Ro Khanna. President Biden has called upon the American oil industry, which we are proud of in many ways, to pump more oil, and we are hopeful that they will respond and pump more oil. They do have that oil, so we should pump that oil. He has also called for a release of oil from the strategic reserve. We all support that also.

And we all just came from a heartbreaking meeting, bipartisan, by Zoom with President Zelensky. And the most moving part for me was not only his plea for unity and help as he fought for freedom and justice in the world and in Ukraine, but he showed beautiful pictures of Ukraine and then the destruction of it with the bombs and the fires, and how it was destroying their way of life. And I think all of us love the forests that we have in our country. There are too many fires. Maybe we will understand more what is causing them, but whatever is causing them, we have got to join hands and work together to preserve our wildlife, preserve our forests, and it is important to our environment.

As our country continues to experience increasingly frequent and severe wildfires and other natural disasters, the climate crisis has never been more dire. The United Nations report issued last month detailed how climate change and poor land use decisions will make wildfires more frequent and intense. All seasons will be fire seasons, and extreme fires will be more common, increasing by up to 30 percent by 2050 and by up to 50 percent by the end of the century. The U.N. report called on all nations, including the U.S., to change how we think of wildfires. Our emergency service workers and firefighters on the frontlines are crucial to our response, and they need more support.

In addition to fire suppression, we need to prioritize fire mitigation. We have a responsibility to invest more in fire risk reduction, to work with local and indigenous communities who know the land, and to strengthen our global commitment to fight climate change. That is why I am grateful that today's witnesses who are joining us to explain what Congress, the Forest Service, and vulnerable communities can do if we work together.

First, we must act to address climate change. The United Nations has found that nations' current climate pledges fall far too short of what is necessary to avert disaster. If current trends continue, global warming will exceed 1.5 degrees before the middle of the century, a point at which scientists say our planet will suffer irreversible damage. To avert this disaster, we need to immediately cut fossil fuel emissions by 3 to 4 percent each year and rapidly transition to net-zero carbon emissions. Second, we also need to protect our forests, which absorb carbon emissions out of the air and lock them in trees and soil, helping our environment. Our forests are precious ecosystems that support all kinds of diverse plant and animal life. They also provide essential natural resources from food to medicine. Forests also support the lives and livelihoods of local communities.

Despite their clear benefits and natural beauty, our forests are under attack. Whether it is due to climate change, or timber indus-

try, or other reasons, we continue to lose our forests, along with the animals and plants that live in them. Many want us to believe that forests thick with trees fuel bigger and more destructive blazes, but that I am told by scientists is not true. That is why I introduced H.R. 1755, the Northern Rockies Ecosystem Protection Act, or NREPA. NREPA is the kind of sweeping systemic solution our Nation needs to preserve pristine lands and benefit our environment. My bill would designate approximately 23 million acres of wild lands in the continental Northwest as wilderness. It would also designate approximately 1,800 miles of rivers and streams as wild and scenic rivers.

This legislation would bring us significantly closer to President Biden's goal of protecting 30 percent of our lands and waters by 2030. My bill would also help us meet the goals of the Paris Agreement by preserving large swaths of forests and help cancel out our Nation's carbon pollution emissions. And it will allow generations of Americans, including our children, our grandchildren, to continue to enjoy these pristine, beautiful wild places.

I want to thank our Forest Service chief, Randy Moore, and each of our witnesses for their testimony today and their service, and I am particularly grateful to the songwriter and great singer, probably the greatest in our time, Carole King is with us today. She is one of the few singers who is in both the Songwriters Hall of Fame and the Singers Hall of Fame, but she is here today as an environmentalist. She has been a champion for our public lands and for the struggle to preserve them for future generations. And I am very thankful for her leadership and advocating for the Northern Rockies Ecosystem Protection bill. Together, we will pass this bill and help our country meet its goals of protecting our country, our lands, our shared waters, and combating fires, combating climate change.

I look forward to this hearing and the important topics that will be covered today. I want to thank, again, the chairman and the ranking member for calling this hearing, and I yield back. And a very special welcome to Mr. Moore, and thank you for your public service, and we look forward to your comments. I yield back.

Mr. KHANNA. Thank you, Madam Chair, and thank you for your leadership and helping make this happen and the conversations you have had with Carole King and others. And you have been a great leader on this topic, so thank you. Ranking Member Norman, I want to give you, out of fairness, if you or anyone on your side wants to say anything. If you don't, that is fine, too.

Mr. NORMAN. No, thank you, Chairman Ro Khanna. I would just say that the horse before us now, is—what we are discussing today is important, but it is pale in comparison to what is going on with this Administration. And, you know, getting from the strategic oil reserves is not going to do it. We have got to open up what he has shut down, which is the Keystone pipeline, and the oil from Alaska, and oil from Canada. And to buy it from OPEC, which is 15 countries made up of Iraq, Iran, Venezuela, these countries do not have our best interests at heart. So why are we not self-sufficient like we were under the Trump administration? We were exporters of energy.

We are just feeding the beast that is conducting genocide on an innocent country that, as Mrs. Maloney said, we saw heartbreaking pictures today of children. The people of Ukraine did nothing wrong other than want freedom. And to be attacked, and then for this country to be beholden to countries that are aiding and abetting Russia is simply wrong. And President Biden either doesn't understand or is totally disconnected from reality to keep these oil and gas reserves shut down in our country. And I call on him now open back up the reserves. Let's get this country back up and running. Let's quit buying it from OPEC.

On the wildfires, 70 percent come on forests on the natural Federal lands that are managed by the Federal Government, and, as I mentioned before, all you got to do is walk it. And, Mr. Moore, I would be interested to hear your comments. The thatch is three feet. One match would strike the whole fire. And then as I learned from Carole King, who, again, I like and the doctor that was with her, they would let good sal timber trees die because it holds carbon. We, America, makes one-sixth of the carbons across the world now—one-sixth. Yet China is building a coal plant every week, so it doesn't make sense. And as Greta Thunburg said when I asked her what are you going to do about China, she said best we ask them to be nice. That is not acceptable in a world today that we are seeing the horrors of the countries that are run by socialists and communists, and we got to fight it.

I yield back.

Mr. KHANNA. Thank you, Ranking Member. Now I would like to introduce our witness, Mr. Randy Moore, chief of the U.S. Forest Service. The witness will be unmuted so we can swear him in.

Sir, please raise your right hand.

Do you swear or affirm that the testimony you are about to give is the truth, the whole truth, and nothing but the truth, so help you God?

Mr. MOORE. I do.

Mr. KHANNA. Let the record show that the witness answered in the affirmative. Thank you.

Without objection, your written statements will be made part of the record.

With that, Mr. Moore, you are now recognized for your testimony.

**STATEMENT OF RANDY MOORE, CHIEF, U.S. FOREST SERVICE,
U.S. DEPARTMENT OF AGRICULTURE**

Mr. MOORE. Chairman Khanna, Ranking Member Norman, and members of the subcommittee, thank you for the invitation to testify before you today.

Caring for the land and serving people, that is what we are really all about. We cannot fulfill this mission without successfully combating the wildfire crisis that is occurring. Our job is to sustain the healthy, resilient landscapes for all the benefits of the people, both now and for generations to come. Nationwide, more than 60 million people living in 3,400 communities across 36 states depend on the national forests and grasslands for their drinking water. This includes great cities like Portland, Denver, Atlanta, San Francisco, Los Angeles, and many more.

The National Forest System is a tremendous source of jobs and economic opportunities for hundreds of millions of Americans. In 2020, for example, the National Forest System supported more than 370,000 jobs and contributed more than \$37 billion to the GDP, and that is a very conservative number when you look at the value of water that flows through and off National Forest System lands. That is many times more than the annual budget of \$8 billion that the Forest Service received. All of this is now at risk on forests and grasslands nationwide. Changing environmental conditions have lengthened fire seasons into fire years and worsened wildfires across the West. Drought has contributed to outbreaks of disease and insects that have killed 10's of millions of acres of forests across the West.

At the same time that our forests are getting evermore overgrown and unhealthy, developers put in evermore homes into fire-prone landscapes in the wildland urban interface and increasing wildfire risk. Altogether, it is a recipe for a catastrophic wildfire, especially in the West. We face a national wildfire crisis that has been building for decades. Over the past 20 to 40 years, we have seen growing fire sizes, more extreme fire behavior and fire seasons lengthen into fire years. In 3 of the last 7 years, more than 10 million acres burned nationwide. That is more than six times the size of Delaware. This unprecedented scale and extent of wildfire threatens key ecological values, including carbon storage, species habitat, soil stability, and watershed function, in some cases even resulting in long-term deforestation.

Unless we do something about the wildfire crisis, it will only get worse. Based on decades of science and experience, we know what to do. To protect communities and natural resources, we need to restore healthy, resilient fire-adapted forests. In overgrown forests, we need to use mechanical and other means to restore the landscape to something approaching historical stocking levels. Then we need to return low intensity wildland fire to those fire adapted forests. In the right places at the right scale, our thinning and burning treatment works. We have case after case and study after study to prove it. Last year, the Caldor fire in California blew right through scattered small treatments on the Eldorado National Forest, then hit an area of treatment at scale at on the Lake Tahoe Basin Management Unit. These treatments at scale modified fire behavior enough for firefighters to keep the fire from burning into South Lake Tahoe.

For decades, we have been putting fuels and forest health treatments into place but rarely at the scale needed. It will take a paradigm shift to control the wildfire crisis facing the Nation. The old paradigm is to use limited funds and capacity to scatter treatments randomly across the landscape to the best of our limited ability. The new paradigm is to step up the pace and scale of our treatments to match the actual scale of wildfires across the landscapes. We need to put that paradigm into action, and that is what we are here to discuss.

We work with scientists, states, tribal governments, and partner organizations to prepare a 10-year strategy and draft implementation plan for confronting this crisis. We plan to dramatically increase fuels and forest health treatments by up to four times the

current treatment levels in the West where the wildfire risk to homes and communities is highest. We will fully sustain treatment levels in the South, the Midwest, and the Northeast.

We deeply appreciate Congress' passage of the bipartisan infrastructure law, which provides a significant downpayment on the work we intend to accomplish under this strategy. We now have the science and tools we need to size and place treatments in a way that will truly make a difference. Less than 10 percent of fire-prone fires in the West account for roughly 80 percent of the fire risk to communities. We will focus on the high-priority fire sheds where the risk to life, homes, communities, and natural resources is greatest. Under our 10-year strategy, we will place treatments over and above our current treatment levels. We will treat up to an additional 20 million acres on National Forest System's land, and we will work with partners to treat up to an additional 30 million acres of Federal, state, tribal, and private lands.

The Forest Service cannot succeed in this alone. The wildfire crisis facing the Nation confronts us across ownerships. This is not just about the National Forest Systems. We are all in this together. Fortunately, we have decades of experience working through partnerships and shared goals and shared landscapes. So, in closing, I am grateful to the leaders from across the country for stepping up to help us finalize, through planning, for our wildfire crisis strategy. I am grateful to our partners for stepping up to help us carry out this strategy. And finally, I am grateful to you all for your interest and your support.

Thank you for this opportunity, and I will be pleased to take any questions that you may have.

Mr. KHANNA. Thank you, you Chief Moore. I now recognize myself for five minutes of questioning.

In January of this year, the Department of Agriculture announced a 10-year plan to address our wildfire crisis. The plan calls for treating an additional 20 million acres on national forests and grasslands and 30 million acres on other government and private land. Chief Moore, how will you accomplish the targets laid out in this ambitious long-term strategy to confront the wildfire crisis?

Mr. MOORE. Our first goal is to represent our partners across the many different landscapes. So we have put together this 10-year strategy, as you have mentioned, 20 million Federal forest service lands and another 30 million other lands where there are other Federal tribal lands or private lands. And what we are trying to focus on initially is to look at those fire sheds that are high risk and put communities at the highest risk of fires. Now, this bill, this bipartisan infrastructure bill, gives us a really good downpayment on trying to address those communities that are at risk. And so our goal by this spring is to release the projects that we have chosen to start this process.

Now we are having to make some choices, some tough choices in some locations, because while the bipartisan infrastructure legislation is a good shot in the arm, it does not address all of the communities that are at risk. I mentioned the 3,400 communities that are at risk from that, but we will start that selection process this spring, probably in April. And then we intend to have projects on

the ground and actually working toward the 10-year strategy this year.

Mr. KHANNA. Chief Moore, do you have enough resources and funding to carry out this plan, or do you need more resources, and do you need more resources? I understand a lot of the wildfire firefighters, you know, get paid maybe 40 grand a year putting their lives at risk, do not have a health care at the time they are not doing it. What do we need to do to pay them more?

Mr. MOORE. Well, in the bipartisan infrastructure legislation, it does lay out some things that we want to do for firefighters. One is to hire 1,000 additional firefighters between Forest Service and Department of Interior. The other thing is to really look at the minimum pay for our firefighters, particularly down to lower scales, the entry-level type positions. And then also, the bill also allows us to create a firefighter series to put them in as a special pay series. So we are working with DOI as well as OPM trying to get that implemented, and there is a sense of urgency to get that in.

Mr. KHANNA. Would more resources help?

Mr. MOORE. Yes, more resources would certainly help.

Mr. KHANNA. Now I want to turn to thinning because a lot of the issues on these hearings will be about that. Do you acknowledge there are times—I understand there are times that the thinning is needed, but the science—do acknowledge that there are times that contractors with thinning may leave behind more flammable material, like dead branches, or go into large fire-resistant trees and increase the fire intensity if it is not done properly.

Mr. MOORE. Yes, the problem we have—one of the problems we have on our National Forest System lands is that we need to create new and different markets than what we currently have. The vast majority of the material we have out there is what we call low-value, small-diameter woods. And so we need to work with industry and others to help create new industries to utilize that material. In some cases, we are having to pay to remove it out of the woods because it would become a fire hazard for our firefighters who are responding to fires in the future, but also for our publics that are visiting a National Forest. And so we do need to find a source to use this material.

Mr. KHANNA. But you agree that there are times we should not be thinning large trees, for example, right, big trees?

Mr. MOORE. Well, you know, that requires really a complicated response. You know, what we need to be looking at is the scale of this fire. We need to treat the scale of the problem at a landscape scale. And so while I talk about small diameter, low value materials, we do not want to limit ourselves about what is needed. And I think we need to be realistic about the industry that we do have in this country and look at how we can balance how we make that landscape help—

Mr. KHANNA. I guess, Chief Moore because my time is about to expire, let me just ask this. Would you be committed to sitting down with some of the other advocates who are concerned about the thinning process? And, you know, I understand there are different signs here, but there are some consensus and concern that sometimes the thinning may go too far. Would you be willing to sit

down with all of the communities, including the indigenous communities, to see how we can have the best science dictate our policies?

Mr. MOORE. Absolutely, I would.

Mr. KHANNA. I now recognize Ranking Member Norman for five minutes of questions.

Mr. NORMAN. Thank you, Chairman Ro Khanna. Chief Moore, in 2020, 70 percent of the acreage burned in the United States was on Federal lands. This seems like a clear reflection of the state of our national forest and public lands. Can you explain why a large majority of acreage burned is on Federal lands, not on private lands? And as I mentioned earlier, and as Chairman Ro Khanna mentioned, I got the impression from Ms. King and the doctor with her, they just were not cutting any size tree at all and were willing to, again, let the thatch buildup 2 or 3 feet. And all it takes is walking the land to see that is a fire hazard. That is one of the reasons why, and I think they and I asked them, they thought the atmospheric conditions of the land that is privately owned started the fires.

Now, by having a conversation on, at some point, cutting trees rather than there is an economic benefit to this country, whether it is thinning it or not, but trees have lives, am I not right? And can you discuss some of this?

Mr. MOORE. If I understand your question, Congressman, let me start by saying that everyone is right in their position, but a lot of the times, there is no context with it. And when I look at the problem that is really occurring out there, let us start with the fact that 90 percent of the fires that have started are human caused—90 percent. A lot of those fires do not start on National Forest System lands. Now, the fact that those fires that start on National Forest System's lands, we have a 98-percent success rates in suppressing those fires before they turn into large fires. So what we are really talking about here are the two percent of the fires that grow into large fires, and they are devastating, and they are catastrophic, so I do not want to downplay the significance of those fires. What is happening, though, is that we have conditions out on the landscape that are ripe for catastrophic fires, and we need to remove a significant amount of material off the landscape.

Mr. NORMAN. How do you mean remove it?

Mr. MOORE. We need to take it off the landscape because right now, if you look at the, you called it, I believe, brush.

Mr. NORMAN. Thatch.

Mr. MOORE. When you look at the thatch, that is a southern term, which I am familiar with, out West is a small material, well, the shrubs or whatnot, but be that as it may, that is kindling for a fire. And what happens is that when that fire starts on the ground, it climbs up the ladder of the different levels of vegetation until it gets into the crown of the trees, and then the wind carries it significantly.

Mr. NORMAN. Does the thatch or the tree limbs, whatever you want to call it, does that contribute to it?

Mr. MOORE. Yes, of course it does.

Mr. NORMAN. And if you can't cut logs and pass through the forest, which most environmentalist are not for any type of access to it, does that not drive up the cause of these catastrophic fires?

Mr. MOORE. Yes, there is a cause that is driven to that. I mean, like I said, the problem is a lot more complex than that, you know. We do have very sensitive and dangerous species that we need to be concerned about, and so we have to consider that. Let's take a look at 1935 when we had the 10 a.m. policy, where we will look to put the fire out before 10 a.m. the next morning. And part of that is because of the significance that the forest played in helping to build this country, and that was the right decision at that time. But 100 years later almost, we look back at that decision, this country has changed significantly, is more populated, more urban and interface influence, and so we can't allow those fires to burn because there is too much at risk. And so what we have to do now is really not do away with the traditional industry. We need that. We need to carry that forward. And at the same time, we need to be looking at new industries, new markets, to look at how do we utilize that material that doesn't have a lot of value, you know. That material that is not a sal log, but inclusive of sal log and all the material that is out there, how do we make use of that to create job opportunities in a small rural community? And that is the challenge I think that we have, and that is what we want to pursue.

Mr. NORMAN. I have got 28 seconds. Does that not mean when the timber gets to a certain diameter that you cut, whether standing in on the thatch? Does that not mean getting logging trails through this, you can get the timber out and also get the thatch out? I have got 10 seconds.

Mr. MOORE. OK. So maybe we can come back to that, but, you know, we have a forest plan, and in that forest plan, we have a desired condition. And it is almost like a section out all across the forest, and we want to try to achieve certain desired conditions out there. So we use our Silviculture prescriptions to get at that desired condition that we describe in the forest plan. And so in some cases, we do want to go ahead and do exactly what you say. In some cases, recreation is the emphasis, and the Silviculture prescription may be different for that. In some cases it is by country, some cases it is roadways, some cases it is wilderness, and each one of those areas have certain desired conditions and require certain management types to take place to keep that desired condition out there.

Mr. NORMAN. Great. Thank you so much.

Mr. KHANNA. Thank you, Ranking Member Norman. I now recognize Representative Gibbs for five minutes of questioning.

Mr. GIBBS. Thank you. Thank you. First, I want to comment on your brief colloquy you had at the beginning, Mr. Chairman, when talking about the encouraging oil production. You talked about, short-term, that is new development, for me. But the problem is the other side of the aisle keeps recently talking about windfall profits, tax on oil and energy companies. That is not encouraging investing in this country because to put a well in takes millions of dollars and short-term investment. I don't know what your definition of "short term" is, but if it is months or even a year that is not going to make it happen, and it is really sad. We had the Ukrainian thing today that the President saw what was happening. And we could solve all of our problems if we warp speed

our energy production in this country, and it puts Putin behind in everything. And we can solve a lot of problems, and we can create a lot of jobs, and we can do it in a lot environmentally friendlier than the rest of the world. So I just want to get my two cents in on that.

Mr. Moore, you know, talk about forestry management. And I have seen pictures where we have had major forest fires in a forest, public lands, and then right next door would be a private managed land, and the fire didn't seem to get ahold. And so is some of that because they are timbering in that and they are managing it better? And I guess that leads into my couple of questions. What supports the policy, the Forest Service, when it comes to timber harvesting and controlled burns? What is your policy?

Mr. MOORE. Well, policy around timber harvesting, I mean, we certainly have a policy and a program to look at having a viable timber program. I want to say—you know, I mentioned context earlier. I want to say that we have to go back a little ways where what has happened to the Forest Service that we are not managing the forest to the level that we used to in the past. And a part of that has to do with, you know, how fire has significantly grown in this country. And as fire has increased and the season that turned into fire years, you know, we have had to put a lot of our resources to fire. And what has happened is that over the last few years, and it has been growing. We are about 40 percent below our natural resource professionals. And those were the professionals who put together timber sales, who put together a lot of the resource areas to keep the forest healthy. So we are down about 40 percent of resources where we used to be in order to manage the forest at a much higher level.

And so with the bipartisan infrastructure language and the legislation, we are very hopeful to start filling those positions. In fact, we have just filled hundreds of positions, and we currently have 200 forestry positions out there that we are looking to fill now. And so this bipartisan infrastructure legislation has given us a really good shot in the arm to try to recover some of those resources, some of those positions that we have lost. Now, we are not going to try to get back to the way we were, I mean—

Mr. GIBBS. I mean, so you are saying we haven't been doing enough timber harvesting because we didn't have the personnel in place to put the contracts together. So that, you know, that could be a policy change that came from Washington, DC, to discourage timber harvesting?

Mr. MOORE. You know, I would look at it as though it is not so much timber harvest as it is managing the vegetation on the forest. And managing that vegetation on the forest, you know, you have a number of products that come off. Timber sales is certainly one of those products that we use to help manage the forest. And so we still need to do more of that because we have so much material on the landscape. I will give an example if I can. When you look at conditions back at the turn of the century and even before, and when you look at a Ponderosa Forest or a mixed conifer type forest—these are adapted ecosystems—you probably had about 60 trees per acre. Today, you could have 800 trees per acre on that same piece of land.

And so when we talk about trying to get that piece of land back to a healthy, resilient system, it means removing a lot of material that is out there now because it contributes to these catastrophic fires that we are seeing across the country. Now, it is not all that. It is that plus the conditions from drought, the conditions from disease and insects that have taken over in many places. California, where I came from, we had over 160 million trees that were affected through climate change, through disease and insect infestations, and it creates these types of conditions wherever we go. And so that is why we need to talk about vegetation management.

Mr. GIBBS. So are we doing any controlled burns in certain areas where—

Mr. MOORE. Yes, we certainly do controlled burns. In fact, last year, we burned right at about 1.5 million acres totally across the country, and we have treated about 3 million acres across the country.

Mr. GIBBS. And just a quick question. I am out of time. But these controlled burns, is that done while fighting a major wildfire, or did you do controlled burns when there is not a fire present to do the management?

Mr. MOORE. I believe you may be referring to fire for resource benefit wildfires. And do I have time to answer?

Mr. GIBBS. Go ahead and answer, yes.

Mr. MOORE. So that is different, and it is one tool in the toolbox. And we try and give that tool to the incident commander, the IC of the fire, as well as the regional forest and forest supervisor about making that decision about what tool is needed. That is not a tool that we use all the time. We only use it when the conditions warrant it and when the conditions are right on the landscape where we can use that. Our scientists are telling us that we do need to introduce more fire on the landscape, but we need to do that in a way where conditions are right to handle a fire. And in many cases, we need to go in and do mechanical thinning on the landscape before we put a fire on that landscape. Otherwise, you have created a disaster.

Mr. GIBBS. Thank you.

Mr. KHANNA. Thank you, Representative Gibbs.

I now want to recognize Representative Fallon.

Mr. FALLON. Thank you, Mr. Chair. I have a question for Chief Moore. Chief, the Infrastructure Investment and Jobs Act included several new authorities, and that includes a CD for fuel breaks, which applies to fuel brake projects up to 1,000 feet wide near roads, and trails, and utility lines, and encompasses up to 3,000 acres, and an emergency situation determination authority, which allows for salvage of dead and dying trees, controlled harvests for insect and disease infestations, hazardous trees, hazardous fuels rule up to 10,000 acres. Can you provide an update on how the Forest Service intends to utilize these new authorities?

Mr. MOORE. Yes, sir. Thank you, Congressman. You are right. The bill allows a couple of things and for napalm. One of those is a new categorical exclusion for linear fuel breaks, I believe, what you might be referring to. So we are in the process now of developing the guidance and send out to the field so that we have alignment, and we have an understanding of what we intend with this

new language and these new opportunities that we have. So we are working on that now, of course, with the Department getting ready to send that information out, quickly.

Mr. FALLON. Do you have a timeline, Chief? I mean, when you say “quickly,” are we talking weeks, months?

Mr. MOORE. Well, you know, we want to start looking at projects this spring. And so we want to have that out before we start the project, selection and implementation. So, you know, I can’t give you a time, but it will be the spring.

Mr. FALLON. OK, thank you. Thank you, Mr. Chair. I yield back.

Mr. KHANNA. Thank you, Representative Fallon. And now I would like to recognize Representative Herrell.

Ms. HERRELL. Thank you, Mr. Chair. I wasn’t quite ready. Thank you, Mr. Keith Moore. It is so good to meet you in person. We have talked on the phone, so I really appreciate it. And this could be really your lucky day because I am listening to you talk about some of the tools and some of the items that you need in order to have healthy forest.

I have introduced a bill called the BIOCHAR Act, and I am really asking you to take a look at it because what it does, and in short, is it takes the small-diameter, low-value, ground cover and small timber, uses it for biochar, which retains moisture. We can use it in our ag operations for fertilizers. So it has a lot of applications that can be beneficial but also create jobs for these rural communities in these forests. I grew up in the Lincoln National Forest, so I am very familiar with this ground cover.

But I would really like for your office to look at that because this could be an opportunity. And I thank you for mentioning the number of trees because we have seen that where the tree growth has been in the hundreds per acre, and what that does to the underlying watershed is devastating, especially for an arid state. But I also want to talk a little bit about, and you touched on it just a little, is the Endangered Species Act. The listings there that have really been complicated and hard for my constituents. And especially when it comes to like the New Mexico meadow jumping mouse or the Lesser Prairie chicken, some of these, it doesn’t feel like there has been much interagency help or communication as it relates to. And these are allotments. These are forest areas. What I would like to know is, is there any way to improve interagency communications with Fish and Wildlife, especially at the local and regional level, to achieve a workable solution to mitigate the impact of ESA, whether it is the jumping mouse or the spotted owl, et cetera?

Mr. MOORE. So, Congresswoman, we are always trying to find that balance, and I am pleased to say that we do have a wonderful relationship with the U.S. Fish and Wildlife Service. And so your challenge, of course, we accept, to get together to try and work through some of these concerns. Also, please understand that under the Endangered Species Act, we are obligated to manage for the species, to protect them, and we are obligated through legislation by Congress, of course, and so we will work to find that balance and how we do that. It is so complicated when we talk about endangered species, whether they are threatened or endangered, and when you look at how that potentially impacts our lives as we

are now, and there is no easy answer. And a lot of times, you know, we are just in stark disagreement with how to do that, and we have to continue to try and work and find that balance in that discussion. But it is a tough, tough decision.

Ms. HERRELL. OK. And we would like to work with you on that. I also know that grazing on Federal lands is both a forest and wildlife management tool. It is also—it is an economic necessity for rural communities, basically, especially in the West. Are there any plans that the Forest Service has to improve grazing access for ranches and to repopulate grazing allotments that have been left vacant?

Mr. MOORE. Yes, Congresswoman. Thank you for that question. One of the problems we have had, I mentioned earlier, is that we lost 40 percent, right, 40 percent of our resource professionals, and with this bipartisan infrastructure law, we are hopeful to start gaining some of those resources back so that we can start addressing some of these really significant issues we have, particularly in the West when it comes to grazing. And so we will look forward to working with you as we began to build our capacity internally, but also, you know, increase our partnership levels externally.

Ms. HERRELL. I appreciate that and still look forward to seeing you in New Mexico. I know when we talked, you offered to come out. And we would love to show you around our state and visit with you, so we will followup with you on that. But thank you so much for your information today. I yield back.

Mr. KHANNA. Thank you, Representative Herrell. Thank you, Chief Moore, for your testimony today and for your continued leadership.

We have an entry, of course, ranking member of the committee at large, Representative Comer. Let me yield to you, Representative Comer.

Mr. COMER. Thank you, Chairman Khanna. Chief Moore, thank you for being here today. I wanted to take a moment to discuss with you a unit of the Forest Service in my congressional district, Land Between the Lakes National Recreation Area, also known as LBL. LBL has a long and unique history. As you know, before its formation, it was home to Native Americans and known as land between the rivers, and in the 1930's, the area was acquired by the Department of Interior. Later, the Tennessee Valley Authority formed the rivers into Kentucky and Barkley Lakes for a hydroelectric dam project. This project displaced and forcibly relocated former residents. In 1998, Congress passed the LBL Protection Act and transferred the management of LBL to the Forest Service.

Today, LBL is the sign of a great historical and emotional significance for many former residents and their families in my congressional district. Around two-thirds of the U.S. population lives within a six-hour drive, making it one of the most accessible national recreation areas in the U.S. It encompasses 170,000 acres of forests and open lands and attracts visitors from all over the world to ride ATVs, hunt fish, boat, and simply enjoy nature.

Unfortunately, LBL has suffered from several deferred maintenance projects and chronic understaffing. LBL has also suffered from a shortage of law enforcement officers to cover the extensive Federal lands. The LBL advisory board's recently expired charter

compounds these issues. This prevents the advisory board from meeting with the Forest Service to share their expertise on the cultural and historical context of the area. I greatly value my constituents' and local stakeholders' input on LBL, I trust and rely on their advice regarding what aspects of LBL management need to be improved and appreciate their advocacy. As the Oversight Committee, obviously we want to ensure the Federal Government is properly managing the Federal funding provided for the management of LBL.

So, Chief Moore, will you commit to working with the valuable local partners and elected officials in Kentucky and Tennessee, because it covers part of Tennessee, to ensure that the Forest Service is efficiently managing and addressing issues within LBL?

Mr. MOORE. Yes, I would, Congressman.

Mr. COMER. Can you also commit, sir, that Federal funding provided LBL is used to address property maintenance and recreation projects in consultation with the advisory board and local elected officials, as required by Federal statute?

Mr. MOORE. Certainly, yes.

Mr. COMER. Well, thank you. And one of the issues that we have had there, it is such a huge amount of land, as I described earlier, so there are no taxes being paid to the local government as this is Federal land. But yet, because of the staffing shortages of law enforcement, anytime there is a wreck or a call, there has been no Federal law enforcement agents there. So we have had to use local law enforcement, which is very expensive, and they don't get the tax base there because that section is off the tax rolls. So there are required law enforcement officer quotas for patrolling that area that haven't been met for many, many years. So we want to make sure that the funding is used to make sure that there is appropriate law enforcement protection for the tourist and the local residents of that area.

Mr. MOORE. Yes, thank you for that, Congressman. Since the last time we talked, I have looked into that, and we have made a commitment to hire up to six additional law enforcement personnel there. So that is completed now. Also, I committed to send our director for law enforcement out to meet with the locals there. That meeting has been set up, and I believe it is somewhere around April or somewhere in there. So that is in motion, and we now have six law enforcement personnel there on that unit.

Mr. COMER. Great. Well, thank you very much. I look forward to working with you on this in the future. And, Mr. Chairman, I yield back.

Mr. KHANNA. Thank you, Representative Comer. Chief Moore, thank you for coming here today and your testimony and thank you for your continued leadership on this important issue. The first panel is now excused, and we will pause for a moment while we get the second panel ready. Now I would like to introduce our second panel witnesses.

Our first witness will be Ali Meders-Knight, who is a traditional ecological knowledge practitioner and Mechoopda tribal member. Our second witness will be Dominick DellaSala, chief scientist, wild heritage, Project of Earth Island Institute. Our third witness will be Michael Gollner, associate professor of mechanical engineering,

University of California Berkeley. Our fourth witness is Carole King, internationally celebrated singer, songwriter, and land conservation advocate. Finally, we have James Hubbard, a former undersecretary for natural resources and environment at the Department of Agriculture.

The witnesses will all be unmuted so we can swear them in. Please raise your right hand.

Do you swear or affirm that the testimony you are about to give is the truth, the whole truth, and nothing but the truth, so help you God?

[A chorus of ayes.]

Mr. KHANNA. Let the record show that the witnesses answered in the affirmative. Thank you.

Without objection, your written statements will be made part of the record.

With that, Ms. Meders-Knight, you are recognized for your testimony.

Ms. MEDERS-KNIGHT. Good morning.

Mr. KHANNA. Good morning.

STATEMENT OF ALI MEDERS-KNIGHT, MECHOOPDA TRIBAL MEMBER, TRADITIONAL ECOLOGICAL KNOWLEDGE PRACTITIONER

Ms. MEDERS-KNIGHT. Members of the committee, my name is Ali Meders-Knight. I am a basket weaver, mother of five, and the master traditional ecological practitioner for the Mechoopda Indian Tribe in Chico, California. I was born in Falls Church, Virginia, which is not too far from the Capitol right now where you are sitting, but I am indigenous to California, which is the No. 1 economy in the whole United States and the fifth largest economy in the entire world.

Northern California tribes rarely get credit for their role in this very successful economy, but every bit of value from the soil, water, timber, real estate in California's beautiful landscape is built on the backs of thousands of years of our ancestral presence here. Tribal tending and management set up California's ecosystems for resilience. And this is resilience from volcanoes, floods, droughts and, of course, wildfires. And for 40 million years, since the Sierra Nevada Mountains were created, California's ecosystems have been defined by extreme destruction.

There will always be fire on this landscape. You can either have a little bit of fire or a lot of fire, but you will never have no fire. And over thousands of years, tribes learned how to live in this place using fire, and harvesting and cultivating resilience in plants, because plants are what make us resilient. We have learned that there is good fire. There is good smoke. Good fire and good smoke bring water in the form of rain and sequestered carbon in the soil and make healthy plants that have been adapted to good fire for thousands of years.

In just 180 years, colonial destruction in California's forests, wetlands, and watersheds have re-plumbed this complex ecological cycle to create a monopoly on water, land, and plants as a commodity. And over 33 million acres, and out of the over 33 million acres of forest in California, 19 million are Federal Forests. And 70

percent, as we have heard before, of wildfires burn on Federal lands, costing billions of dollars of damages and Federal aid and disaster aid.

And so in 2018, the Camp Fire that destroyed Paradise, California, started in Jarbo Gap named after Walter Jarboe, one of the most notorious Indian killers in the state, and during the Gold Rush, he was paid by the Federal Government to kill over 300 natives in this area, and now his name bears the legacy of 86 people killed at the Camp Fire. The irony of this example is the ignorance of these legacies. Most people do not know the history of this name, and they also do not know the ecosystems and the conditions that led to this destruction.

Apocalyptic wildfires are spreading in California forests, and every single fire burns on unceded tribal territory. The BIA oversight and fraud of California's timber trust is a well-documented theft of native land that gave timber industries power to reshape the ecosystem. They were maintaining and they are producing a vast amount of timber land in California and in tribal territories. What they do is they create a lot of density of forests with a very few species of plants. And this is compromising not only the provisions of care and wellbeing of tribal citizens, but this is also stepping in and the safety and health of the United States citizens are also at risk. But as major that disasters take place in tribal territories and in Federal trust lands, we now have an opportunity, Nation to nation, to invest in long-term land management. These projects can positively impact the environment, but also positively impact the economics in America.

To spell it out simply, tribal nations are sovereign governments and federally recognized entities that are able to create work force and employments on Federal lands. So when tribes have the ability to restore lands around them through long-term stewardship contracting, the results are outstanding. The scope of work matters in forest management. Indigenous methods and approaches of tending forest ecosystems have objectives to cultivate biodiversity based on long-term place-based observation and well-known outcomes. Biodiversity is the presence of many species of plants, and insects, and birds that work together in an ecosystem, and from a climate change perspective, biodiversity is an insurance policy for resilience. If one species is impacted, another species will step up and take its place to keep the system going.

But contracting today in so-called forestry does not allow for biodiversity. There is a limited amount of species, high densities of trees, and this creates wildfire problems over and over, decade after decade. And tribes must have self-determination in the planning and scoping of reforestation. Our California oak woodlands are unique to the world, adapted to fire, floods and droughts. Their contributions to a healthy forest are beyond measure. They hold an economy of food, seed, and carbon that make their value superior to any monocrop timber forest. And in Northern California, 98 percent of our oak woodlands have been removed for the timber industry. But we are still here, tribally led work forces certified and trained to restore healthy forest.

We can have a huge opening in rural communities that suffer from lack of employment and education debt. We can restore Fed-

eral forests with fire-adapted ecosystems, trees, flowers, and shrubs. Tribally led work forces with excellent skill sets, including tribal knowledge is a nation-building endeavor, and it can rightfully and effectively address climate change solutions.

Thank you.

Mr. KHANNA. Thank you very much. Now I would like to recognize Dr. DellaSala. You are recognized.

**STATEMENT OF DOMINICK DELLASALA, CHIEF SCIENTIST,
WILD HERITAGE, PROJECT OF EARTH ISLAND INSTITUTE**

Mr. DELLASALA. Thank you, Chairman. And my name is Dr. Dominick DellaSala, and I am a survivor of the 2020 Almeda Fire that destroyed half my downtown area of Talent, Oregon on the California-Oregon border. I bring direct experience living with wildfire and a professional background of over 300 science publications books on climate change, wildfires, and biodiversity. My main message to you today is you are not hearing all the facts.

[Slide.]

Mr. DELLASALA. Recent increases in wildfire activity—please show the first slide—are driven by extreme drought, hot temperatures, and high winds caused by climate change. The left side of the graph is the early part of the last century when it was hot and dry. Notice the amount of fire activity. The middle of the graph is mid-century. There was a cool-down period globally at the same time. Thousands, if not millions, of homes were being built in unsafe territory. The right side shows how climate change has been heating up the planet and the Western part of the United States, resulting in greater fire activity. At the same time, we now have over 40 million homes built in unsafe terrain because they believe the Forest Service could put out all fires, which they were doing pretty much during the mid-part of last century during the cool down. That is no longer the case.

[Slide.]

Mr. DELLASALA. If you switch to the next slide, this graph shows money that is being spent that is not contributing to the solution but is contributing to the problem. So both acres burning and expenditures in fire suppression are increasing because the approach is to focus on the effect fire and not the cause, climate change.

[Slides.]

Mr. DELLASALA. These next slides are really going to tell you the story of what is going on in the woods. You did not hear that from the chief today. You will not hear that from the minority witness. What is really happening is not some benign activity of removing material off the landscape. These are large trees marked in the blue paint that you see there. The most fire-resistant materials in those forests are being logged to pay for the removal of small trees. That is increasing the fire hazard, not lowering it.

The slide you see on the right there are big trees that were taken from a post-fire salvage operation. All of that carbon that was in those trees for centuries will eventually be released to the atmosphere, causing more of the problems that you saw in that last graph.

The slides on the bottom—the next slide, please.

[Slide.]

Mr. DELLASALA. What you see there is a forest, on the left, in the Santa Fe Watershed. What you see on the right are so-called restoration treatments. Those are no longer forests. They are weed-infested fields that are going to burn hot. The soils have been damaged by burning piles. The large trees have been taken off the site. The fire hazards have gone up. This is commercial timber operations on Federal lands. It is not some sort of benign restoration treatment. It is making the situation worse.

[Slide.]

Mr. DELLASALA. And I want to switch to this next slide because this is my hometown, and it took a day to devastate 3,000 structures in my hometown—a day. That fire had nothing to do with lack of thinning. It went structure to structure. I lost friends' homes, businesses that I frequented for over 20 years because all the money was being spent in the back country on logging when the problem was these communities are not prepared for the new climate abnormality that we are in. These are structure-to-structure fires. The only science that we should be doing on fire preparation is home hardening and defensible space. That is what will get these communities ready, not logging in the back country.

And I want to also mention I heard a lot about 70 percent of the fires on national forests. Well that might be true. However, the recent study at Oregon State University showed that most of the fires impacting homes and towns like mine are spilling over from private lands, not Federal lands. And it is because private lands have industrial logging that interacts with extreme fire weather that then spills over and causes the kinds of problems that you are concerned about.

And I want to just kind of close with what I think really needs to happen here. And first and foremost, we have got to redirect more resources to home hardening and defensible space. That is what will help communities like mine prepare for the eventuality of fire. We are not going to shut the fire spigot off. We have got to learn to coexist with it, and we have got to treat the root cause. The root cause is climate emissions. It is carbon pollution contributed to a large part by commercial logging, which is the kind of activities that are increasingly being funded to do the work that the Forest Service did not tell you about. This is not just some benign treatment. It is increasing carbon pollution. We are in a climate and a biodiversity crisis. We have very little time, precious time to solve this problem, and one of the ways you could solve it is store more carbon in natural ecosystems like forest, old forests, big trees.

[Slide.]

Mr. DELLASALA. This last slide is what I would like to close on because there is a lot of concern about whether, you know, we don't have enough management, enough forest, and whether that is contributing to the more severe fires. What you see on the right side of that figure, and this is the largest study ever done on this question, is that the areas that had the most logging burned in the highest fire intensity. That is what you see in the red bar on the right.

On the left of the figure are protected areas like national parks, wilderness areas. They have lower amounts of high-severity fire. And it is because those industrial log landscapes have left fuels on

the ground, the most flammable part of the trees, the branches, the twigs, the least flammable, the large trees have been taken off the landscape, and that is what is giving you these big fires. You are not going to hear that from the Forest Service, and you won't hear that from the minority witness today.

Thank you.

Mr. KHANNA. Thank you very much. Dr. Gollner, you are now recognized.

STATEMENT OF MICHAEL GOLLNER, ASSOCIATE PROFESSOR OF MECHANICAL ENGINEERING, UNIVERSITY OF CALIFORNIA, BERKELEY, DEB FACULTY FELLOW, BERKELEY FIRE RESEARCH LAB

Mr. GOLLNER. Thank you, Mr. Chairman, and distinguished members of the committee. Thank you for the opportunity to appear today to discuss opportunities to prevent future wildfire disasters in our communities. My name is Dr. Michael Gollner, and I am an associate professor of mechanical engineering at the University of California-Berkeley and run the Berkeley Fire Research Laboratory. I have over a decade of experience carefully studying the physics of spreading wildfires, with a particular interest in those fires that move beyond our forests and range lands into the wildland-urban interface, or WUI, where these fires spread from vegetation into our community.

During my testimony, I will discuss the causes of our current crisis, as well as solutions we have available to safeguard our communities and preserve our natural lands. These opinions expressed in my testimony today are my own and don't necessarily represent the views of the University of California.

Over the past few decades, we have seen a dramatic increase in the frequency and severity of destructive wildfires. The effect large wildfires have on people, lives loss, communities destroyed, and critical natural resources wiped out is a large part of what transforms a natural process into a human disaster. Increasingly, large populations are affected by wildfires even indirectly by health effects from smoke exposure, large preventative power shut offs, and post-fire landslides. However, wildfires are a natural process that have occurred across our landscapes for millennia. Indigenous peoples utilize fire as an important cultural practice and resource management tool. Starting in the early 1900's, a series of large wildfires pressed the Federal Government to eradicate fires from our forests. By suppressing every small fire, we left a massive buildup of fuels that is less resilient to change and has, therefore, led to more severe wildfires in long term.

Climate change has further exacerbated this crisis, leading to prolonged droughts and severe fire weather conditions, and is only projected to get worse. Increasing development in the wild and urban interface means an increasing number of residents are now threatened during these events. While wildfires will always occur, wildfire disasters are preventable when the right strategies are applied before a fire begins. Focusing on better management of our landscape, including adding prescribed fire, reducing hazardous fuels near communities, and allowing some fires to burn under mild conditions, will lower the intensity of fires our communities

are exposed to. There are many challenges here as there is always some risk from a fire, even under controlled conditions.

There is often public backlash from reducing fuels and landscapes, significant regulatory hurdles, local smoke exposure, and the above-mentioned risk from any fire. But without this, we will be forced to contend only with the most extreme fire events on our landscapes. While fuels management is a critical practice necessary to preserve our forests, this alone is not sufficient to prevent disasters within our communities. We must work to make it harder for these fires to spread into and within urban areas.

The recent Marshall Fire outside of Boulder, Colorado, burned through grass, middle of winter, but still destroyed over 1,000 homes, highlighting this is not solely a forest management problem. Mitigation was focused on structures and critical infrastructure alongside fuel treatments. Modifications to homes can be made to prevent ignition from embers, such as screens on vents, non-combustible building materials, and constant maintenance, removing flammable litter. This is often called hardening. Defensible space can also help fires keep from getting close enough to ignite structures and give firefighters a safe place to protect those structures as a fire approaches.

Our understanding of how fire spread into it within communities is improving, but there are still many unanswered questions. Small flying embers have been recognized by investigations by NIST and the U.S. Forest Service as key mechanisms of spread from wildfires into communities, but much of this understanding is still in its infancy, from sprinklers to home spacing. We know there could be more improvements here but struggle to quantify the best designs possible. Most deaths occur while people are evacuating fires. However, little attention has been paid to evacuation and notification.

Despite the incredible importance and potential lifesaving outcomes of this research, the U.S. still lacks the necessary dedicated infrastructure to test buildings against wildfire exposure. Dedicated research facilities, multidisciplinary centers of excellence, sustained support, and interagency coordination are still needed in this area. If we could develop minimally invasive ways to retrofit existing structures and communities and incentivize these changes to happen, we could potentially make a widespread change, saving lives while minimizing costs.

Implementing these recommendations on a broad scale is a challenge that takes extensive cooperation between residents, first responders, private industry, and public policymakers. Federal grants and support could play a large role in increasing the capacity of these local programs to implement changes that ultimately will prevent disaster.

Thank you, Mr. Chairman.

Mr. KHANNA. Thank you very much. Ms. King, you are recognized.

**STATEMENT OF CAROLE KING, CELEBRATED SINGER-
SONGWRITER, LAND CONSERVATION ADVOCATE**

Ms. KING. Thank you, Mr. Chairman, Madam Chairman, Ranking Member Norman, and Mr. Gibbs. I am a 44-year resident of Idaho.

For 38 years, I lived in a rural county where my nearest neighbor was a national forest. I have been an advocate for the Northern Rockies Ecosystem Protection Act for 32 years because it was bold and visionary in protecting species and habitat on a large scale. Later, I learned that a forest also stores carbon, which is what we need to solve the climate crisis and address fires, so NREPA is also a climate solution. Coal, oil, and gas get a lot of attention, but logging is also a huge emitter of carbon, and taxpayers have been subsidizing clearcutting in our national forests under multiple presidents from both parties for decades. It is institutional.

The Forest Service loses nearly \$2 billion a year on timber sales, yet they continue to facilitate felling mature trees under the guise of Orwellian euphemisms: “thinning,” “fuel reduction,” “salvage management,” and the ever-popular “restoration,” and I learned a new one today, “fuel breaks.” In the United States, annual emissions from logging are comparable to the amount emitted from coal, and most commercial logging is now mechanized. So it is not about jobs because a single operator of heavy equipment, called a feller buncher, can saw through a living tree, strip the branches, and set the former tree on a pile of logs in little more than the time it took me just to tell you this. Note the size of the big trees and the trees in Dr. DellaSala’s slide. They are not thinning.

Before the infrastructure law was enacted, more than 200 independent scientists—independent—wrote a letter asking House Committee chairs to remove the logging provisions from that law. Their data led them to write that thinning can often increase fire intensity, while protected forests are more likely to lower the intensity should a fire occur. When humans manage a forest, they often clear cut, leaving the unprofitable parts to dry out. Clear cuts are tinderboxes. You can see that on the slide. Logging emits eight times more CO₂ per acre than the combination of wildfire and insects combined. Forest degradation accelerates climate change, yes wildfires are getting worse, not because we have too many trees, but because of extreme climate-driven weather events accelerated by removal of trees. Trees store carbon.

Independent scientists not funded by the Forest Service or companies that profits from logging tell us that the most effective way to protect homes is to harden them with fire-resistant materials and create defensible space. When other scientists promote removing trees beyond 100-feet from a home or a community, which logging companies do, the headline becomes “scientists disagree.” This confuses the public. Let me clear up the confusion. When a scientist tells you that the solution is to remove even more trees from our national forests, look for who is paying that scientist.

I am asking Congress to do four things: pass NREPA, pass a law requiring the Forest Service to incentivize preservation over timber sales, repeal the logging provisions in the infrastructure law, allocate some of that money to help people harden homes and use the rest to help American families. Look, I know it is not easy to over-

come decades of timber industry influence, money, and misinformation, but our kids and grandkids are calling us to action. We need to take action.

I want to thank this subcommittee for the chance to educate members and the public. If you don't know, now you know. Thank you.

Mr. KHANNA. Thank you, Ms. King.

I now want to recognize Undersecretary Hubbard for your testimony. Undersecretary Hubbard?

Mr. HUBBARD. Yes, thank you, Mr. Chairman.

Mr. KHANNA. Go ahead.

Mr. HUBBARD. All right. I will.

STATEMENT OF JAMES HUBBARD, FORMER UNDER SECRETARY, NATURAL RESOURCES AND ENVIRONMENT, DEPARTMENT OF AGRICULTURE

Thank you, Mr. Chairman, and members of the committee. I am here today as a retired individual, so I am only representing myself, and I am only offering you what I learned over 50 years of dealing with these issues.

You are hearing a lot of perspectives on the issue, a lot of different elements of the issue. All of that factors into the decisions that need to be made, but when I try to approach what can be done, what is reasonable, it comes down to what is driving this. Well, what is driving it is clearly the forest condition, and it is a major factor. Yes, it is complicated by the weather. The less precipitation, the higher temperature, the lower humidity. That is something we are experiencing. But during my time working, I would debrief the 17 Type 1 incident commanders each year that went out to fight fire. This Type 1 was our highest level. These are individuals that have 25, 30 years of experience at this, and what has been happening the last 10 years is that during those debriefings I would hear from them, "we have never seen anything like this before."

So things have changed, and what can we do about it? There are a lot of things that could contribute to it, but what can the Forest Service, what can the land management agencies do about it? Change the condition. That, I advocate, requires active management. There are all kinds of forms of active management and choices to be made as to what options you pick. I also believe in the science that is available, that we can change fire behavior by changing the forest condition. And I think what we do and where we do it is important, and those are decisions that have to be made in a collaborative way. I don't think the Forest Service or any agency should make those decisions on their jurisdictions by themselves.

The scale of this problem is across the landscape and, yes, defensible space near community is important. Hardening the community is important. I don't know what the Forest Service can do about some of that because it is not on Federal land, so everybody has to be a player in this if it is going to be successful. Fire spreads oftentimes from the forest to near the community, to within the community, and home-to-home, so it is everybody that is involved in those jurisdictions. And I would advocate those jurisdictions

have to collaborate, and they have to have a unified approach that they all agreed to. That won't happen everywhere. A lot of times the disagreements will lead to "we are not ready for this." If they are not ready for this, there is not a lot of change that can be accomplished.

What Congress has provided over the years is increments of policy that contribute to a solution. The infrastructure bill provided an influx of funding that gave a shot in the arm to the Forest Service. Forest Service has now developed a plan that the chief described as to how they are going to go forward in implementing this. Prioritization and strategic long term has to be a part of that. Where people are ready to address the risk and where they can address the risk, which is not everywhere, there are places on the land that we won't touch with active management activity. We may touch it with the use of fire, like in the wilderness. So all kinds of options, but those have to be chosen and everybody has to agree to what those are.

I thank you for letting me appear, and I am happy to discuss anything I said and what I didn't say.

Mr. KHANNA. Thank you, Undersecretary Hubbard, for your testimony.

I now recognize myself for five minutes of questioning.

To make up for decades of over-aggressive fire suppression and the effects of climate change on U.S. forests, the Forest Service and Department of Interior carry out prescribed burns and thinning treatments to reduce the amount of combustible fuel in forests. Dr. DellaSala, you testified that logging projects can affect wildfire severity. You also heard Chief Moore's testimony that he was saying they don't really remove the big trees in ways that are harmful. What do you say in terms of the thinning? Are they doing it consistent with the science, or is it your view that they are doing certain things that are making the situation worse?

Mr. DELLASALA. Yes, thank you for that question. I guess to simplify my response, I would say this. The Forest Service has been in charge of a lot of this research. This would be like putting the coal industry in charge of climate change research. This would be like putting the tobacco industry in charge of lung cancer research. They cherry pick the data. They don't provide any kind of research that disagrees with their position. Normally that is shunted aside. It is not considered. They do what is called categorical exclusions, which bypass NREPA so you don't get protection of those big trees. You get large swaths of so-called hazard tree removal along roads, salvage operations, which take out those big trees you saw in my photos after fire. All that carbon eventually goes into the atmosphere. They don't protect the big trees.

Thinning is hardly ever described as what it really means. It is not defined. Active management can mean anything. It can mean anything, bypassing NREPA, bypassing the Endangered Species Act, by passing the Clean Water Act. These are not benign activities. I wish they were. I wish they were targeting the small trees that Mr. Norman referred to as thatch, but that is not really what happens in these so-called thinning operations. They take the most fire-resistant large trees to pay for the timber sale, and they have to come back every 10 or 15 years because the vegetation grows

back. And so they don't do that because they can't pay for the timber sale because took out the big trees in the first go round.

So I just want to emphasize that what the Forest Service is doing is making this situation worse. They are as bad as the coal industry is making our climate worse because a lot of what the chief was talking about—new markets—referred to biomass utilization of the small material. And we know that a lot of those biomass plants in the Southeast, for instance, are located down the airsheds of communities of color, of disadvantaged people, of people that have health problems. You talk a lot about smoke. A real problem with that small material is it is being manufactured into bio pellets that are burned as so-called clean renewable energy, and it is affecting down airshed people of color in the South that are having to deal with increased pollution in their airsheds as a benign thinning activity. So I really don't think you are getting the full picture from what you heard today.

Mr. KHANNA. Thank you. Dr. Gollner, I want to bring you in. Do you believe that there is any harm caused when thinning removes large trees, and if so, what is that harm? And then, because my time is running out, I just want Ms. King to explain, you know, Ms. King, you have so many things you have done. Where does your passion for this issue come from? And can you talk about the importance for communities and homes to invest in defensible space for wildfires? Maybe we will have Dr. Gollner and then Ms. King.

Mr. GOLLNER. Thanks, Chairman. I would start by saying, you know, I am not a forestry expert in the field, but what I understand from fire behavior as a fire behavior expert is that we are primarily interested in removing, I believe as a representative said earlier, the thatch and the smaller fuels on the ground. Those are the fuels we often call ladder fuels, which then spread fires into the crown and increase fire behavior, and it is these smaller fuels that often drive fire behavior. And so, a great way to remove them is often prescribed burning.

There may be some mechanical means necessary to get a forest in a state to where prescribed burning can be introduced, and that is one of the tools in a toolbox that scientists research and that fire managers and the Forest Service need to consider. I believe that it was said earlier there are large number of scientists at the U.S. Forest Service, Department of Interior, and elsewhere that work on these problems and have a range of advice. I am a little disturbed by what we saw in some of the earlier photos, and it certainly doesn't represent the type of forest management that I would envision as being good. We want to remove those smaller fuels that are driving fire behavior. Thank you.

Mr. KHANNA. Thank you. Ms. King?

Ms. KING. Not sure which button. I guess this is the button. OK. You asked about how I got my passion for this. As I mentioned, I lived right next to a wild forest. It was not protected at the time. It is now wilderness as part of the bill. I don't know what it was called. I think the Boulder-White Clouds Wilderness Bill. And I don't live there anymore, but for 38 years, I got to observe the natural forest processes, and one of the things that was mentioned was the insects. When I lived there, a lot of the time, I don't remember what years, but the pine bark beetle turned whole hill-

sides into what we called grey trees because the needles were dead and they appeared grey, and they were that nobody took them out. Nobody did anything with them. They either fell down, but they provided so much habitat for woodpeckers, for the beetles which other species eat. I got to see so many species interact, and that became really important to me.

As far as fires, we didn't know at the time, where I lived, on the ranch where I lived, it was long cabins. We didn't know about defensible space, but we created it anyway. It made common sense. We created it around the homes. We didn't need to go into the forest. And Dr. DellaSala speaks about the science, but from personal experience, the forest has taken care of itself for so long. And when you talk about managing a forest that is a euphemism for logging. They go in and they take these trees. All these euphemisms deal with how they can persuade the public, that this is good and right.

Mr. KHANNA. Thank you, Ms. King. And I want to recognize our ranking member, Ranking Member Norman, for your five minutes of questioning.

Mr. NORMAN. Thank you, Chairman. Thank each one of you. I enjoyed our meeting yesterday. I see your passion. Ms. King, you mentioned hardening of the houses. What is the cost of that? Do you know?

Ms. KING. I don't. I don't. I am about to do some of it, but I don't know. I am going to replace my roof. I live in town now. The roof has a cedar shake. It is made of cedar shakes, so.

Mr. NORMAN. OK.

Ms. KING. It is pretty expensive, and some people who live in the wildland-urban interface can't afford it. Some can, and that is why I am saying instead of paying so the timber companies can go in and log, allocate some of that money to help folks who need the money.

Mr. NORMAN. So I am asking, do you recommend that the taxpayers to pay for the hardening of the private houses?

Ms. KING. Where it is in communities, where they don't have the resources to do it, yes, I think that would be appropriate. And you could reroute some of the funds that are going to subsidize logging.

Mr. NORMAN. OK. And you are against any kind of logging?

Ms. KING. I am not against any kind. I used to be like, oh, go ahead and log in the multiple use areas of the forest, but now that we have a carbon climate crisis, I don't think we should log in our national forest. We can't tell people what to do on private land. They are going to do it. That is fine, and there is plenty of it too, but in our national forest, we need to preserve them.

Mr. NORMAN. OK. I mean, we have houses being built out of wood. We have paper being manufactured because of wood. The Federal lands have got great trees that can be thinned, that can be used other than just letting it go, and I understand your opinion. Mr. DellaSala, you mentioned yesterday that the planet has got 12 years to, am I right, to exist? Would you expand on that?

Mr. DELLASALA. I don't think I said to exist, but I enjoyed our visit yesterday, by the way. Thank you for taking the time. And what I said was the latest study, the study that were published by the Intergovernmental Panel on Climate Change, gave us an accelerated warning. They said that time was running short. We had

about 10 years to transition out of burning fossil fuels into clean renewable energy in order to keep the parts per million in the atmosphere, carbon dioxide, close to 350 million. So if you think of that as kind of the safety network, 350 is what most scientists are saying that is where we need to be. We are at about 417 right now, so we are this far off of that safety net.

The further away we get from that, the more extreme we are going to see climate change events, including super hurricanes, including megafires, sea-level rise affecting mainly coastal populations, the permafrost melting, affecting mostly Alaska native communities that have to relocate. I mean, we are talking about major, major global disruptions like we have never seen before. And no one knows exactly when that is going to happen, but the further away from that safety net we get by burning fossil fuels and deforestation and forest degradation, the more severe those impacts are going to be.

Mr. NORMAN. Where does—and in 12 years, if we stay like we are now, what is going to happen?

Mr. DELLASALA. We are going to see more extreme events like what we have been getting and more frequent. Mega droughts are now happening in the Southwest. We are seeing the largest sheet of ice breaking off of the Antarctic continent right now. When that happens, it could be as a little as 3 to 5 years. It could be a little longer. That is going to accelerate sea-level rise. There are billions of people living in coastal areas that at some point are going to have to relocate.

Mr. NORMAN. I guess, where does this rank in the priorities that this country has as far as dealing with China, dealing with the genocide, dealing with our debt, dealing with all the issues America face? Where does climate change and what you are talking about take priority—top, bottom, middle?

Mr. DELLASALA. They are all important. They are all important.

Mr. NORMAN. You can't pay for so many. How would you fund, too, for what you are talking about? I assume it doesn't include any gas or any what the President is doing now: no gas, no oil exploration, pretty much just cutting everything off.

Mr. DELLASALA. I didn't say that, but I think it would have been great if Congress could have passed the Build Back Better Act because there was a lot of funding in there to help accelerate innovation in renewable clean energy sources. And I just want to maybe underscore this, one impression I took away from our meeting yesterday is, like me, you have got grandkids, and I am worried about my grandkids. I have got two daughters that I love very much. I have got three grandkids that are toddlers, and when they are adults, I worry about the planet that we are leaving them, and I know you care about your grandkids too. And in the long run, that is really the priority, isn't it, our families?

Mr. NORMAN. Our families, and you and I have the same passion for protecting them. But as far as where we go with our national issues that we are facing now with socialism, communism coming, and with this Administration doing what it is doing to this country, it is a crying shame. Thank you so much.

Mr. DELLASALA. You bet.

Mr. NORMAN. I yield back.

Mr. KHANNA. Thank you, Ranking Member.

I now want to recognize our chair, Chair Maloney.

Chairwoman MALONEY. Thank you, Mr. Chairman. And, Mr. Chairman, the logging industry spends millions of dollars every year trying to influence lawmakers, Congress, and the public, trying to convince us that chopping down trees is good and right. They use buzzwords like “the truth about logging.” I would like to ask our witnesses about some of the industry’s favorite terms. Ms. King, does the log industry use the word “thinning” to mean chopping down trees?

Ms. KING. That is what happens, yes.

Chairwoman MALONEY. And how about do they use the term “hazardous fuel reduction” to mean chopping down trees?

Ms. KING. Yes.

Chairwoman MALONEY. Can “fire risk reduction” mean chopping down trees?

Ms. KING. Yes.

Chairwoman MALONEY. And what about “active forest management?” Can this be another term for chopping down trees?

Ms. KING. Yes. And there are so many of those, you know, reforestation, vegetation management, forest health. What they end up doing is they go in, and whatever it is they say they are going to do; they log more. And as has been pointed out, they take the most profitable trees, which are the big ones, and then they leave all the branches on the ground to dry out, which exacerbates fires. And in Montana, for example, you know, we didn’t include the photo, but there is a photo of a huge clear cut, and then behind it are mountains with many, like, bald spots. And you just look at them and you just go, where is our forest? What are they doing? And it is all justified by these euphemisms. So definitely, that is a thing that they do to persuade the public.

Chairwoman MALONEY. Well, the industry may call this “managed forest,” or an example of fire risk reduction, or any of the other terms you used, but to me, it looks like a forest that was cleared for profit, plain and simple. And we have collaborated very closely to pass the Northern Rockies Ecosystem Protection Act. And I would like to ask you, why do you believe wilderness bills like NREPA or the Northern Rockies Ecosystem Protection Act are better paths forward for so-called commercial logging?

Ms. KING. I can’t say I am not against. I don’t have an opinion on commercial logging on private land. In our national forest, we own them. Your constituents paid for the subsidies that are in the infrastructure law, and every state’s constituents pay for that, and we should not be paying for that. Preservation—right now, preservation is the solution. It is, like, 30 by 30, is a big deal, and that is one way that we can mitigate climate change. That means leave the forest alone. And that is why the Northern Rockies Ecosystem Protection Act is so important because it protects 23 million acres of wild intact ecosystems, forest ecosystems. And there is an interaction, like I mentioned, about the pine bark beetles and the trees that leave them standing. And if they burn, that is the forest’s way of taking care of itself. So, I mean, I could go on, but.

Ms. MEDERS-KNIGHT. Excuse me. I think it is important to—

Chairwoman MALONEY. Reclaiming my time. Reclaiming my time. The logging industry wants us to believe it shares our desires for safe communities and healthy forests, but I think they should stop misleading the public and start telling the truth about what is responsible thinning can amount to chopping down trees. And I would like to say that I support President Biden's directive, his executive order to protect 30 percent of the land by 2030. That is going to help our environment. That is going to really help it for our children and our grandchildren, as many of you said. And preserving forest will also advance our efforts to combat the climate crisis by locking carbon in the ground. This hearing starts the conversation to get to the truth of what the industry is up to.

I look forward to the committee's continued efforts to make sure the logging industry understands that public land belongs to the public, today, tomorrow, and in the future, and the best way we can preserve it is to literally preserve it. And that is why I support the Green New Deal, and NREPA, and every law, effort of anybody, to preserve our public land for public use, public enjoyment, and that is by preserving it.

I thank all the witnesses for their insightful statements. I wish I had time to question everybody, but I now yield back. My time has expired. I thank the Chairman for holding this committee meeting and for his leadership in this area. I yield back.

Mr. KHANNA. Thank you, Madam Chair. Before we go to Representative Tlaib, Ms. Meders-Knight, did you want to say something?

Ms. MEDERS-KNIGHT. Yes, I do want to say something. I think it is important to get an indigenous perspective. Everywhere you are in the United States, you are on someone's indigenous territory. There is native territory everywhere in United States, and every forest and every personal property is native territory. Now, we were talking about terms attending and managing land. I don't think that we literally want to say that "wilderness" is a colonial term, "management" is a colonial term. If you are deeply colonized, you are not going to really have any understanding on how to tend a forest. You are colonial. You only know what you know based on the programming of being an American and not interacting in the forest as a part of it, as part of the forest ecosystem.

So it is really important to understand the terms that we are throwing out about tending to a forest, or managing a forest, doing those things. There are indigenous terms of working in a forest for thousands of years that even some song singer, writer, that is just looking at the forest cannot testify to because they do not know these terms as an actual act of forest tender. So for us to understand that, let me just leave it right here. In our language, we don't have a word for "wild" because we are indigenous. We live in this landscape for thousands of years. We don't have a word for "wild," so there is no word "wilderness." We tend to everything because everything is home. Thank you.

Chairwoman MALONEY. Thank you.

Mr. KHANNA. Thank you. Representative Tlaib, you are recognized.

Ms. TLAIB. Well, thank you so much, Chairman. I think my question is to someone that can answer, and this really is a sincere

question about how much do we subsidize. Is it \$2 billion that we subsidize for private companies to destroy, cut down our trees on our lands? Is it around that much? I don't know who can answer that question.

Ms. KING. I can answer it. Just I can't break it down as to how much of it literally goes to logging, but I am guessing that most of it does go to logging—by the other names. Yes, I had somebody tell me, oh, we are putting in lot of money for restoration. Restoration is one of those euphemisms, so it is—

Ms. TLAI. No, I think, Ms. King, what my struggle, as I was listening to this, I wasn't planning on asking a question. And I am really just distraught that you were talking about being able to protect people's homes, where they live, and who is going to pay for it. I am wondering who is paying right now for the subsidies? Who is paying—

Ms. KING. Taxpayers. Everybody.

Ms. TLAI. That is right. So we are basically subsidizing, or I don't know. I hate that word because Americans, we are basically paying people to make money off of destroying our land. And from what I understand and what I have read in the past is U.S. forestry loses money every year, millions of dollars every year because of that. Is that correct?

Ms. KING. Yes, \$2 billion a year. That is an Economist study that I have looked at.

Ms. TLAI. And so I think it is really important that when we talk about who is going to pay for things that we also talk in consensus, who is paying for this now, who is paying for the destruction now, and it sounds like the American people are. And that is unfortunate because I think many would agree that that is not where they want the money spent, especially on for-profit entities that, again, are destroying land.

You know, it is really hard, as someone that lives in frontline communities, that, you know, for many of my residents, we really don't feel seen or heard when much of these discussions are held. And it really does matter when we hear folks say who is going to pay for things, as we have seen the fact that we are paying for pollution in communities like mine. We are paying for dirty water, dirty air. And in this essence, as we center around the destruction of our lands across our Nation, that it is the American people that need to be aware that is who is paying for it. So when community and folks are actually coming to the table and saying, look, we need your help, because what you all are doing is destroying our livelihood that we are hesitating and asking who is going to pay for it. And so, I just wanted to be able to say that Chairman. Thank you so much for allowing me to do that, even though I wasn't scheduled to, and I really sincerely appreciate the panelists.

And Ms. Meders-Knight, that is why you are here. I want you to know I hear you, and I will yield a minute or so that I have left for anything that you think any of my colleagues need to hear about the impact on our Native-American and our indigenous communities.

Ms. MEDERS-KNIGHT. Yes, I wanted to talk about the 2018 Camp Fire, and when we live in this area, all of that took place in our Mechoopda tribal territory. And Tetra Tech was a major corpora-

tion that was able to move in and get all the funding, the contracted funding, the tree removal, hazard tree, everything. We had local groups and local community members that we all got trained. And then I created a training program through the Mechoopda Indian Tribe to train folks on how to manage not only forest health, but how to do wetlands, how to do meadows, and these are what would be considered fire breaks.

So I have to use language that is used by the timber industry and also by the forest industry, but I have a unique language of my own as a traditional ecological knowledge practitioner. And I have been doing this for 20 years, and I usually teach children because children are actually way more open-minded than Congress. And so what I am really telling you is that the management of these Federal forests really need to be done in cooperation with every tribal nation in the United States. You have a lot of hands-on deck, and you have a lot of economic investments in each of those tribal territories that allow for work force development. These work force development can also hire and train non-native folks to work in the area. I think it is really important to strive to have work force development when we are coming into this discussion instead of any other finger pointing. But I also think that we also have to understand the terms that I use also because I need to cross-reference between the colonial world and the world that I live in today.

Mr. KHANNA. Thank you. Representative Ocasio-Cortez?

Ms. OCASIO-CORTEZ. You so much, Chair Khanna. You know, so many of these principles that we are discussing today, whether it is directly confronting the realities of climate change, land use, creating high-paying jobs in order to protect our public lands, advocacy for indigenous sovereignty, all of these things are core Green New Deal tenets. But I want us to zoom out a little bit because when we were first drafting the Green New Deal and many other pieces of environmental legislation, very often there were so many folks, well-meaning, well-intentioned deeply studied, that said it makes no sense to consider issues of justice and injustice with decarbonizing our economy. And they said, we need to stick to the science of the problem and worry about all of the injustice stuff later or separately. And I think it is important for us to take the opportunity, Ms. Meders-Knight, to actually discuss how injustice and colonization is part of what has led us to this climate crisis today.

In 2021, the United States experienced record-breaking wildfires, like the Dixie wildfire in California that burned nearly 1 million acres of land, an area larger than New York City, Chicago, Dallas, and Los Angeles combined. Millions of acres of land across the United States were once indigenous, and we now call them national parks. And we know that there is so much of the indigenous stewarding and practices that were going on for millennia, including the controlled deliberate burns that cleared out dead underbrush without catching fire to taller trees.

Now, Ms. Meders-Knight, what are some of the benefits of native controlled burns to the ecosystem and overall land?

Ms. MEDERS-KNIGHT. You are going to have carbon sequestration, carbon stored into the soil. You are going to have healthy fire-

adaptive plants, and you are going to have a thriving ecosystem that has lots of biodiversity, which is natural selection, natural mortality that is chosen by the fire.

Ms. OCASIO-CORTEZ. And, Ms. Meders-Knight, despite the benefits that you just outlined, when the United States forcibly displaced Native-American tribes, Federal fire policy then banned native-controlled, millennia-long burning practices that took care for the land, and instead promoted explicit fire suppression designed to protect watersheds and commercial timber supplies. Is that correct?

Ms. MEDERS-KNIGHT. Yes. They also prohibited our cultural practices up until the 1970's, and cultural burning is one of those prohibited practices that was part of our ceremony and part of our lifestyle.

Ms. OCASIO-CORTEZ. So up until the 1970's, the colonization and the displacement of indigenous peoples in the United States included banning a practice that we now know explicitly sequestered carbon. And would you say that it is fair to say, Ms. Meders-Knight that the colonization of indigenous peoples in the United States and the consequences of that have contributed to carbon emissions?

Ms. MEDERS-KNIGHT. Contributed immensely.

Ms. OCASIO-CORTEZ. So is it accurate to say as well that when controlled burning was banned over decades, the land grew thick then with vegetation and it dried out every summer, essentially creating huge kindling stocks for extreme and even more devastating forest fires than otherwise?

Ms. MEDERS-KNIGHT. As well as that, they also included planting acres and acres of non-native conifers that don't belong in that ecosystem to put on top of that fire hazard as well.

Ms. OCASIO-CORTEZ. So as was covered earlier in this hearing, the Federal Government has authorized the Forest Service and the Bureau of Land Management to conduct stewardship contracts to do a number of things, but they have actually contracted many corporations to sell timber instead of more straightforwardly stewarding the land, correct?

Ms. MEDERS-KNIGHT. It is called goods for services, yes.

Ms. OCASIO-CORTEZ. And what are some of the proposals, and what are some of the ideas that you would recommend the committee entertain in order to right that wrong?

Ms. MEDERS-KNIGHT. It goes directly to the goods for services and expand it to be more complementary and applicable to a economy that is placed based in that area. Say, for instance, California has acorns. We also have a limited amount of native seeds to re-seed or re-vegetate these burn scars. And so it is really important to create these seed banks because that becomes the capital that is in all of your Federal forest that is shared between tribes. It is focusing on the capital of goods for services. And those goods can be seeds, those products can be food, and those products can be sequestered carbon as well as food that is also brought up, the floor that is processed in each, I would say, in each area. So a lot of stuff that comes off of a forest floor on the Pacific Coast will be different than the East Coast, but, of course, those products are goods for services that the tribe knows how to procure.

Ms. OCASIO-CORTEZ. Thank you.

Mr. KHANNA. Thank you. And now I would like to recognize Representative Krishnamoorthi.

Mr. KRISHNAMOORTHY. Hey, thank you, Chair Khanna. This is a terrific hearing, and I would like to direct a couple questions to Carole King. Ms. King, thank you so much for visiting my office with your colleagues to explain kind of background on the particular issues that we are talking about today. I guess the first question I wanted to ask you is, would you like to say anything that you haven't had a chance to share up to this point in this hearing?

Ms. KING. Well, I think I want to say, highlight the fact. Again, so many people talk about their concern for climate, which is so overwhelming, the figures that Dr. DellaSala gave, like, how over what we are supposed to be we already are. But the focus has been on coal, oil, gas as part of the problem, and emissions. But I just want people to really recognize that we are logging in our national forest at a rate equal to the emissions from burning coal, that logging needs to be part of the discussion and more than just discussion. I think that is the main point I wanted to get across.

And the other is the misuse of our Federal funds going to subsidized, subsidized, pay-for. We are paying for the roads that go in and for the logging, all the damage to our forest. We need to re-route that money to help people harden homes that cannot afford to do it, and to protect communities like the ones that Representative Ocasio-Cortez spoke about and that Representative Tlaib also spoke about.

Mr. KRISHNAMOORTHY. Ms. King, what if I am an individual at home and I am watching this hearing, and I am just thinking, gosh, I don't see how I could do anything to help, one person can't make a difference, what would you say to that, and what would you tell them to do?

Ms. KING. That is a great question because that applies to every issue that everybody cares about. People need to become involved, and more important even than becoming involved, or equally important, is become informed. And don't just get your information from one source. Use critical thinking. Look at what is being said, and who is saying it and why, and who is paying whom to say it, and I think that is what I would say to people certainly about this issue. When you hear the scientists, don't just say, oh, I am confused. You know, really dig, take a moment or two to just like, say, OK, I am going to look past my usual source of information. Politics matter. You don't have to run, although if you want to, you should. But people should just be more involved because it is life for us. It is how our lives are going to be, how your life is going to be, how your family's life is going to be.

Mr. KRISHNAMOORTHY. I think that running for office is terrific, and running for Congress is terrific. Just please don't do it in the 8th Congressional District of Illinois, please. But apart from that, we would be delighted. Let me ask you another question, which is, tell us a good news story, a story of what a community or city, municipality, a state, or even a country has done with regard to the issues at hand and what can we learn from that list.

Ms. KING. Well, I am in trouble thinking of a good news story on this. I would perhaps ask my colleague here, my panelists, my fellow panelists.

Mr. KRISHNAMOORTHY. Yes, sure. Please jump in.

Mr. DELLASALA. Well, I got a couple of examples because I work around the globe on forest issues, that Costa Rica has a thriving economy that is based on ecotourism, and they have saved about 25 percent of their tropical rainforest, and it is driving their economy. We could do the very same thing. And one thing I wanted to share with the subcommittee is we have got these new numbers that we are going to be publishing soon based on the largest inventory of mature and old forest across the United States. We have got the first map and nationwide inventory of how much of these forests are left, and what we are seeing is that the ability of those forests to store carbon is massive. We have some of the most carbon-dense forests on the planet. They are storing the equivalent of eight times the U.S. global emissions.

Now, we got to get off the fossil fuels. We have talked about that. The President also at the COP26 signed a pledge to deforestation and global forest degradation. Lead by example. We have an opportunity to lead by example to the international community, so we become that beacon of light, that beacon of hope that we need to get through this climate and biodiversity crisis that the planet is in right now. So I would like to get our Nation into that leadership position, and I am very pleased to hear what I heard today. I am sorry Representative Ocasio-Cortez left. I wanted to thank her for the Green New Deal and all the work that she is doing in that regards. I want to thank the Chairwoman as well for mentioning 30 by 30. That is an extraordinary pledge that hasn't come to fruition yet, and we have got to get there as soon as possible so that we are the world's leader, leadership on conservation and climate change, because our forests are a natural climate solution to the crisis.

Mr. KRISHNAMOORTHY. Thank you. I yield back.

Mr. KHANNA. Thank you. It looks like we have had the members who wish to ask questions. In closing, I want to thank our panelists for their remarks, and I want to commend my colleagues for participating in this important conversation. I want to thank our chair again for helping convene and give us the impetus to have this hearing, and all of the panelists for your passion, your testimony. I know it will make a big difference. And we will be following up with the Forest Management Service as we got a commitment from Chief Moore to meet with everyone and make sure all the perspectives are considered.

With that, without objection, all members will have five legislative days within which to submit additional written question for witnesses to the chair, which will be forwarded to the witnesses for their response. I ask our witnesses to please respond as promptly as you are able.

Mr. KHANNA. This hearing is now adjourned.

[Whereupon, at 12:27 p.m., the subcommittee was adjourned.]

