REFORESTATION PROBLEMS ON NATIONAL FORESTS: A GAO REPORT ON THE INCREASING BACKLOG

OVERSIGHT HEARING

BEFORE THE

SUBCOMMITTEE ON FORESTS AND FOREST HEALTH

OF THE

COMMITTEE ON RESOURCES
U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED NINTH CONGRESS

FIRST SESSION

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OVERSIGHT HEARING ON REFORESTATION PROBLEMS ON NATIONAL FORESTS: A GAO REPORT ON THE INCREASING BACKLOG

Wednesday, April 27, 2005
U.S. House of Representatives
Subcommittee on Forests and Forest Health
Committee on Resources
Washington, D.C.

The Subcommittee met, pursuant to notice, at 2:25 p.m., in Room 1324, Longworth House Office Building, Hon. Greg Walden [Chairman of the Subcommittee] presiding.

Present: Representatives Walden, Gilchrest, Peterson, Renzi, Brown, Tom Udall, DeFazio, and Herseth.

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

Mr. WALDEN. The Subcommittee on Forests and Forest Health will come to order. The Subcommittee is meeting today to hear testimony on "Reforestation Problems on National Forests: A GAO Report on the Increasing Backlog."

Under Committee Rule 4(g), the Chairman and the Ranking Minority Member may make opening statements. If any other Members have statements, they can be included in the hearing record under unanimous consent.

That we are celebrating our 131st Arbor Day this Friday reminds us that tree planting and reforestation are issues near and dear to the American people. As Europeans initially migrated to our continent, a typical consequence of that settlement was deforestation, primarily as a consequence of the conversion of forests to cropland. The large majority of Americans during the first three centuries of our history were farmers. Between 1850 and 1910, Americans cleared more than 190 million acres of forests for crops and pasture, while using wood for cooking and heating, home construction, and fence building.

During that time, lumber production grew at twice the rate as the population. By 1850, more than 90 percent of the Nation's energy came from wood. In addition, during the 18th century, virtually all iron produced in the country was smelted using wood charcoal. By 1900, over 15 million acres of forest land were needed just for the production of railroad ties and trestles. Without exaggeration we can say that America was built on wood—but not

without cost. Forest depletion in the East was rampant. One traveler wrote in the early 1800s that he passed only about 20 miles of woodland on the 240-mile trip between Boston and New York. Over time, the resulting impacts on wildlife populations and water quality became painfully obvious.

Much of America's conservation movement sprouted out of the growing awareness of the economic and environmental impacts of deforestation. Names such as Fernow, Roosevelt, and Pinchot and other organizations such as the American Forestry Association and the Boone and Crockett Club encouraged the reforestation and productive management of private forest lands through tax incentives and financial assistance, promoted forest research and the creation of college forestry curricula, helped adopt wildlife conservation laws and promoted the protection and wise use of forests through the creation of Federal forest reserves and the establishment, exactly 100 years ago, of the United States Forest Service. By the 1920s, the 300-year loss of American forest land had virtually stopped. Today, even with the large increase in population, we have about the same number of forested acres than we did in 1920.

Even with these successes and even though our knowledge of forestry and reforestation has grown significantly in the last 100 years, we still find that important issues need to be addressed. Once again, the GAO has aptly assisted our committee in understanding the essential aspects of this subject through the report it is issuing today. In particular, the estimated backlog of reforestation and timber stand improvement needs, primarily on national forests, is addressed in this report. The main reason for today's hearing, therefore, is to shed light on how the backlog is determined, why it is increasing, and how reforestation is funded and potential solutions for addressing reforestation and timber stand improvement concerns.

While reforestation issues, like all forest issues, are complex, most Americans have learned the importance of keeping our national forests forested—for wildlife, for water quality, for scenic beauty, and all the other values that growing, diverse forests provide. I look forward to hearing what the GAO, the agencies, our visiting forest professionals, and others have to offer on this important subject.

[The prepared statement of Mr. Walden follows:]

Statement of The Honorable Greg Walden, Chairman, Subcommittee on Forests and Forest Health

That we are celebrating our 131st Arbor Day this Friday, reminds us that tree-planting and reforestation are issues near and dear to the American people. As Europeans initially migrated to our continent a typical consequence of that settlement was deforestation, primarily as a consequence of the conversion of forests to cropland. The large majority of Americans, during the first three centuries of U.S. history, were farmers. Between 1850 and 1910, Americans cleared over 190 million acres of forests for crops and pasture, while using wood for cooking and heating, home construction and fence building.

During that time, lumber production grew at twice the rate as the population. By 1850 more than 90% of the nation's energy came from wood. In addition, during the 18th century, virtually all iron produced in the country was smelted using wood charcoal. By 1900, over 15 million acres of forest land were needed just for the production of railroad ties and trestle. Without exaggeration we can say that America was built on wood—-but not without cost. Forest depletion in the East was rampant. One traveler wrote in the early 1800's that he passed only about 20 miles of

woodland on the 240-mile trip between Boston and New York. Over time, the resulting impacts on wildlife populations and water quality became painfully obvious.

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While reforestation issues, like all forest issues, are complex, most Americans have learned the importance of keeping our national forests forested, for wildlife, water quality, scenic beauty and all the other values that growing, diverse forests provide. I look forward to hearing what the GAO, the agencies, and our visiting forest professionals have to offer on this important subject.

Mr. WALDEN. I now recognize my friend from New Mexico, Mr. Udall, the Ranking Minority Member, for any statement he may have.

STATEMENT OF THE HON. TOM UDALL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW MEXICO

Mr. TOM UDALL. Thank you, Mr. Chairman. I would like to welcome our witnesses and am looking forward to hearing from them today about reforestation issues on our public lands. In anticipation of Arbor Day, there could not be a more appropriate time for this Subcommittee to look at reforestation.

In April 1885, J. Sterling Morton, the founder of Arbor Day and a resident of Nebraska, delivered the following address to the schoolchildren and townspeople of Nebraska City to mark the first official Arbor Day, and I quote: "Each generation of humanity takes the Earth as trustees to hold until the court of death dissolves the relation, and turns the property over to successors in trust. To each generation, the trust involves the duty of at least permitting no deterioration in the great estate of the family of man. During the continuance of the temporary trust, comprehending thus the dependence of animal life upon contemporaneous plant life, it must be conceded that we ought to bequeath to posterity as many forests and orchards as we have exhausted and consumed."

There is not a more basic act of stewardship and conservation than planting a tree. Trees root us in the earth while they grow to provide shelter and shade. Forests provide clean water, wildlife habitat, and places of recreation and refuge for all of us.

Given our link to the forests, I am troubled by the recent GAO report indicating a growing backlog of reforestation needs on our national forests. Over time, the Forest Service estimates of reforestation needs have fluctuated significantly. For example, after having a significant backlog, the Forest Service in 1985 declared

that the reforestation backlog had been virtually eliminated. However, in March 2004, the agency again declared that it had a backlog of about 900,000 acres of land in need of reforestation.

I am concerned that, like previous GAO reports, this GAO report again finds that the Forest Service lacks sufficient data to accurately quantify reforestation needs. I also draw attention to previous GAO reports and attention from Congress about the use of the various funds for reforestation projects. In 1998, the GAO reviewed the Knutson-Vandenberg Reforestation Fund and found that up to 30 percent of the fund was being charged to indirect expenses.

I look forward to hearing hard numbers from the Forest Service today about where the money is being spent out of the various reforestation funds and specifically the Knutson-Vandenberg Fund. I would also like to draw attention to the importance of prioritization of reforestation projects and the use of ecological principles in reforestation. Our understanding about the dynamic nature of forest ecosystem has evolved since the days of tree plantations. I look forward to hearing the testimony of Dr. Jerry Franklin about these issues.

Again, thank you, Mr. Chairman, and I look forward to hearing from our witnesses today.

[The prepared statement of Mr. Udall of New Mexico follows:

Statement of The Honorable Tom Udall, a Representative in Congress from the State of New Mexico

Thank you, Mr. Chairman. I would like to welcome our witnesses and am looking forward to hearing from them about reforestation issues on our public lands.

In anticipation of Arbor Day, there couldn't be a more appropriate time for this subcommittee to look at reforestation.

In April 1885, J. Sterling Morton, the founder of Arbor Day and a resident of Nebraska, delivered the following address to the school children and townspeople of Nebraska City to mark the first official Arbor Day:

> "Each generation of humanity takes the earth as trustees to hold until the court of Death dissolves the relation, and turns the property over to successors in trust. To each generation the trust involves the duty of, at least, permitting no deterioration in the great estate of the family of man during the continuance of the temporary trust. Comprehending thus the dependence of animal life upon contemporaneous plant life, it must be conceded that we ought to bequeath to posterity as many forests and orchards as we have exhausted and consumed."

There isn't a more basic act of stewardship and conservation than planting a tree. Trees root us in the earth while they grow to provide shelter and shade. Forests provide clean water, wildlife habitat, and places of recreation and refuge for all of us. Given our link to forests, I am troubled by the recent GAO report indicating a growing backlog of reforestation needs on our national forests.

Over time, the Forest Service's estimates of reforestation needs have fluctuated significantly. For example, after having a significant backlog, the Forest Service in 1985 declared that the reforestation backlog had been virtually eliminated. However, in March 2004 the agency again declared that it had a backlog of about 900,000 acres of land in need of reforestation.

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of tree plantations. I look forward to hearing from the testimony of Dr. Jerry Franklin about these issues.

Again, thank you, Mr. Chairman, and I look forward to hearing from our witnesses today.

Mr. WALDEN. Thank you, and thank you for your fine opening statement.

The Chair recognizes the gentleman from Maryland. Do you have any comments?

Mr. GILCHREST. No. Thank you.

Mr. WALDEN. The gentlelady from South Dakota?

Ms. HERSETH. No. Thank you.

Mr. WALDEN. OK. Then we will ask our first panel of witnesses to come forth. Today we have Ms. Robin Nazzaro, Director of Natural Resources and Environment, U.S. Government Accountability Office, as our first witness. We appreciate your participation here. I guess I am supposed to swear you in. So why don't we go ahead and do that.

[Witness sworn.]

Mr. WALDEN. Thank you. We certainly welcome you back to our committee and appreciate the work of your fine agency in evaluating these issues and look forward to hearing your testimony before our Subcommittee. So welcome.

STATEMENT OF ROBIN M. NAZZARO, DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT, U.S. GOVERNMENT ACCOUNTABILITY OFFICE

Ms. NAZZARO. Thank you, Mr. Chairman and members of the Subcommittee. I am pleased to be here today to discuss the reforestation and timber stand improvement program within the Department of Agriculture's Forest Service.

Last March, the agency reported to this Subcommittee that it had a backlog of nearly 900,000 acres of land needing reforestation. Reforestation, whether it is achieved by planting trees or letting them naturally regenerate, is critical to restoring and improving the health of our national forests after timber harvests as well as after natural disturbances, such as wildland fires, outbreaks of disease, or insect infestations.

The success of reforestation efforts often depends upon subsequent timber stand improvement treatments such as removing competing vegetation to allow seedlings to survive. In some parts of the country, without active intervention, it may take decades for disturbed land to return to a forested condition. In other parts, trees may naturally return soon after a disturbance, but the type of regrowth may not be consistent with the Forest Service program objectives such as improving wildlife habitat, enhancing recreational opportunities, and ensuring timber production.

My testimony summarizes the results of our report being released today on, one, the reported trends in Federal lands needing reforestation and timber stand improvement; two, factors that have contributed to these trends; and, three, potential effects of the trends that the Forest Service officials have identified.

As shown on the chart on the screens, the reported acreage of Forest Service lands needing reforestation and timber stand improvements has been generally increasing during the past 5 years.

It might be a little hard to see, but the top line, the blue line, is the timber stand improvement needs, and the bottom red dashed line is the reforestation needs.

Mr. WALDEN. Can you just tell me over what period that is?

Ms. NAZZARO. It is a 10-year period starting 1994 to 2004.

Mr. WALDEN. Thank you.

Ms. NAZZARO. So you will see the biggest increase that we have identified is after the year 2000.

While the Forest Service data are sufficiently reliable to identify these relative trends, we found that the data are not sufficiently reliable to accurately quantify the agency's specific treatment needs to establish priorities among treatments or to estimate a budget. Our reasons for concern include the fact that Forest Service regions and forests define their needs differently. Further, the differences in data among locations are compounded because the reforestation and timber stand improvement needs reported are a mixture of actual needs diagnosed through site visits and estimates. In addition, some regions do not systematically update their data to reflect current forest conditions or review their data's accuracy. Forest Service officials acknowledge these problems, and the agency is implementing a new data system to better track its needs. However, while helpful, taking this action alone will not resolve the data problems we have identified without making changes to agency policies and practices to standardize how reforestation and timber stand improvement needs are defined, reported, and validated.

According to Forest Service officials, the need for reforestation since 2000 is mainly the result of the increasing acreage of land affected by natural disturbances such as wildland fires. However, funding sources to pay for such needs have remained relatively stable rather than rising in step with the increasing needs. In the past, the need for reforestation resulted primarily from timber harvests, and the timber sales produced enough revenue to pay for most of the related reforestation.

Regarding the need for timber stand improvement, agency officials said that these needs are increasing in part because managers in some forest regions do not emphasize these treatments. They believe that reforestation treatments, which generally must be completed within 5 years after harvesting trees, are more important that timber stand improvement treatments. Another reason for the reported increase in the acreage needing timber stand improvement is that high-density planting practices used in the past to replace harvested trees are creating the need for thinning treatments today.

If future reforestation and timber stand improvement needs continue to outpace the Forest Service's ability to meet these needs and treatments are delayed, agency officials believe their ability to achieve forest management objectives such as protecting wildlife habitat may be impaired; treatment costs could increase; and forests could become more susceptible to fire, disease, and insect damage. While Forest Service officials express concern about these potential harmful effects of delaying projects, the agency has not adjusted its policies, practices, and priorities to reflect this concern and the current environment of constrained budgets.

In our report, we recommended that the Secretary of Agriculture direct the Chief of the Forest Service to take several actions to improve the agency's ability to identify its needs for reforestation and timber stand improvement and ensure funding for the most critical projects. In commenting on a draft of our report, the Forest Service agreed with our findings and recommendations and stated that it was preparing an action plan to address the recommendations.

Mr. Chairman, this concludes my statement. I would be happy to respond to any questions that you or members of the Subcommittee may have.

[The prepared statement of Ms. Nazzaro follows:]

Statement of Robin M. Nazzaro, Director, Natural Resources and Environment, U.S. Government Accountability Office

Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss several issues related to the reforestation and timber stand improvement program within the Department of Agriculture's Forest Service. Last March, the agency reported to this Subcommittee that it had a backlog of nearly 900,000 acres of land needing reforestation. Reforestation, whether it is achieved by planting trees or letting them naturally regenerate, is critical to restoring and improving the health of our national forests after timber harvests, as well as after natural disturbances such as wildland fires, outbreaks of disease, or insect infestations. The success of reforestation efforts, as well as the overall health of the forests, often depends upon subsequent timber stand improvement treatments, such as removing competing vegetation to allow seedlings to survive. In some parts of the country, without active intervention, it may take decades for disturbed land to return to a forested condition. In other parts, trees may naturally return soon after a disturbance, but the type of regrowth may not be consistent with the Forest Service's program objectives, such as improving wildlife habitat, enhancing recreational opportunities, and ensuring timber production.

My testimony summarizes the results of our report being released today on the (1) reported trends in federal lands needing reforestation and timber stand improvement, (2) factors that have contributed to these trends, and (3) potential effects of these trends that Forest Service officials have identified.[1] In conducting our review, we analyzed Forest Service data for 1995 through 2004, interviewed agency officials at all levels, and visited four regions with the largest reported reforestation or timber stand improvement needs. We focused on the Forest Service's reforestation and timber stand improvement program because this program, which covers 155 national forests, is the largest one administered by a federal land management agency. In 2004, for example, the Forest Service reported reforesting more than 150,000 acres nationwide, while the Bureau of Land Management (BLM) within the Department of the Interior, which has the second-largest program, reported reforesting less than 20,000 acres. While our work included a limited review of BLM's program, my testimony today centers on our findings about the Forest Service's program because we found no significant issues to report concerning BLM.

Summary

The acreage of Forest Service lands needing reforestation and timber stand improvement has been generally increasing since 2000, according to Forest Service officials and data reported to the Congress, as well as other studies. Much of the increase in reforestation needs occurred in western regions, where needs associated with natural disturbances, such as wildland fires, began to increase dramatically in 2000. While the Forest Service data are sufficiently reliable to identify this relative trend, they are not sufficiently reliable to accurately quantify the agency's specific treatment needs, establish priorities among treatments, or estimate a budget. The data are limited in part because Forest Service regions and forests define their needs differently, and some do not systematically update their data to reflect current forest conditions or review their data's accuracy. Forest Service officials acknowledge these problems, and the agency is implementing a new data system to better track its needs. However, while helpful, taking this action alone will not resolve the data problems we have identified without making changes to agency poli-

[1] GAO, Forest Service: Better Data Are Needed to Identify and Prioritize Reforestation and Timber Stand Improvement Needs, GAO-05-374 (Washington D.C.: April 15, 2005).

cies and practices to standardize how reforestation and timber stand improvement needs are defined, reported, and validated.

According to Forest Service officials, reforestation needs are accumulating because of the increasing acreage of land affected by natural disturbances—such as wildland fires, insect infestation, and diseases. In the past, reforestation needs resulted primarily from timber harvests, and timber sales produced enough revenue to pay for most of the related reforestation needs. Since 2000, however, needs have been resulting mainly from natural disturbances, and funding sources to pay for such needs have remained relatively stable rather than rising in step with the increasing needs. For timber stand improvement, agency officials said that needs are increasing in part because managers in some Forest Service regions do not emphasize these treatments. They believe reforestation treatments—which generally must be completed within 5 years after harvesting trees—are more important than timber stand improvement treatments. Another reason for the reported increase in the acreage needing attention is that high-density planting practices, used in the past to replace harvested trees, are creating needs for thinning treatments today.

If future reforestation and timber stand improvement needs continue to outpace the Forest Service's ability to meet these needs and treatments are delayed, agency officials believe their ability to achieve forest management objectives, such as protecting wildlife habitat, may be impaired; treatment costs could increase; and forests could become more susceptible to fire, disease, and insect damage. For example, forest management objectives could be impaired if an area previously dominated by forests became dominated by shrub fields, compromising wildlife habitat, recreation, and timber value. While Forest Service officials expressed concern about these potential harmful effects of delaying projects, the agency has not adjusted its policies, practices, and priorities for the reforestation and timber stand improvement program to reflect this concern and the current environment of constrained budgets. Forest Service officials did acknowledge the need to make such changes.

In our report, we recommended that the Secretary of Agriculture direct the Chief of the Forest Service to take several actions to improve the agency's ability to identify its reforestation and timber stand improvement needs and ensure funding for its most critical projects. In commenting on a draft of our report, the Forest Service agreed with our findings and recommendations and stated it was preparing an action plan to address the recommendations.

Background

Historically, the Forest Service's reforestation and timber stand improvement program focused on maximizing timber production. Now, however, the program is intended to achieve a variety of objectives, such as improving wildlife habitat, maintaining water quality, and ensuring sustainable timber production. To achieve these objectives after timber harvests or natural events that damage forests, Forest Service staff identify sites needing reforestation and plan specific treatments. For reforestation, staff either plant seedlings or allow the sites to regenerate naturally as existing trees reseed the area. The latter approach sometimes requires the sites to be prepared by removing unwanted vegetation that could compete with young seedlings. As with reforestation, Forest Service staff identify areas of a forest needing timber stand improvement and plan specific treatments. These treatments are intended to provide better growing conditions for trees and include activities such as removing competing vegetation and thinning forests when trees are too crowded.

In 1974, the Forest Service reported a reforestation and timber stand improvement backlog affecting 3.3 million acres of forested lands. To address this backlog, the Congress included a provision in the National Forest Management Act of 1976 (NFMA) requiring the Forest Service to annually report the estimated funding needed to prevent the recurrence of a backlog on lands available for timber production.[2] The Forest Service primarily uses moneys generated from the sale of timber to reforest areas where timber has been harvested, whereas it relies primarily on annual appropriations to reforest areas affected by natural disturbances. In 1980, the Congress created the Reforestation Trust Fund, which is funded through tariffs on imported wood products, to provide dedicated funding for reforestation and timber stand improvement treatments and to help eliminate the backlog. In 1985, the

[2] Shortly after the Forest Service reported its backlog, the Congress enacted the Forest and Rangeland Renewable Resources Planning Act of 1974, requiring the Forest Service to annually request funds for an orderly program to eliminate backlogs in all Forest Service renewable resource programs. This act was amended by NFMA, which contains more specific direction to address the elimination of reforestation backlogs.

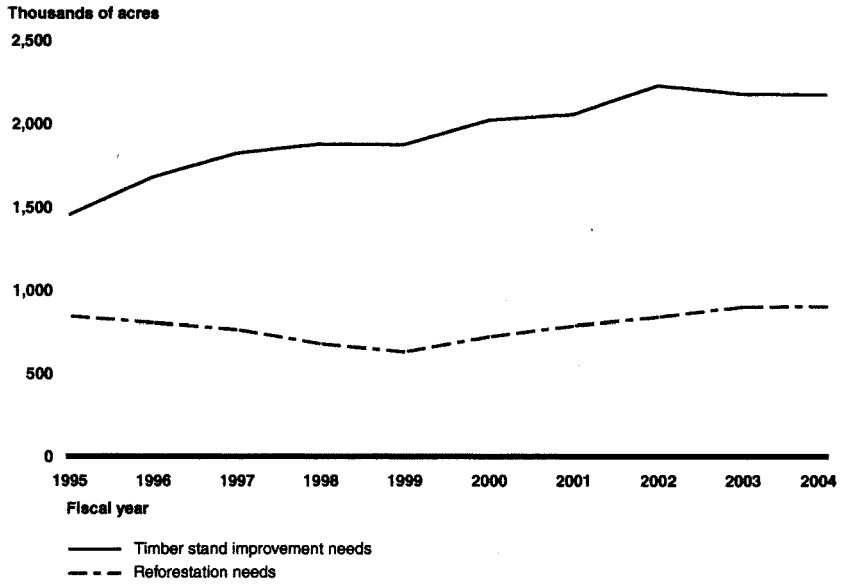
Forest Service declared that it had virtually eliminated the backlog reported in 1974.

The Forest Service's implementation, management, and oversight of the reforestation and timber stand improvement program are decentralized. Its headquarters and 9 regional offices establish policy and provide technical direction to 155 national forest offices on various aspects of the program. District office staff within these national forests are responsible for assessing reforestation and timber stand improvement needs, planning treatments to address the needs, and accomplishing the treatments. Although the Forest Service's Director of Forest Management in headquarters is responsible for reporting agency-wide reforestation and timber stand improvement needs to the Congress, the standards and procedures for collecting and reporting these data are decentralized.

Forest Service Reports Increasing Reforestation and Timber Stand Improvement Needs, but Inconsistent Definitions and Data Make It Difficult to Accurately Quantify Its Needs

Forest Service reports to the Congress show a generally increasing trend in reforestation and timber stand improvement needs during the last 5 years, as shown in figure 1. While the Forest Service data are sufficiently reliable to identify this relative trend, they are not sufficiently reliable to accurately quantify the agency's specific needs, establish priorities among treatments, or estimate a budget. Although the Forest Service is developing a new national data system, the agency does not anticipate making significant changes to its policies and practices to improve the quality of the data.

Figure 1: Forest Service's Reported Reforestation and Timber Stand Improvement Needs for Fiscal Years 1995 through 2004



Source: Forest Service data.

Note: This graph is presented only to illustrate trends in reforestation and timber stand improvement needs reported by the Forest Service. Although the Forest Service data, in combination with other information, are sufficiently reliable for this purpose, these data cannot be used to accurately quantify the agency's reforestation and timber stand improvement needs.

The Forest Service Reports Increasing Needs

Forest Service reports to the Congress show that the acreage of agency lands needing reforestation declined steadily between Fiscal Years 1995 and 1999 but then steadily increased from 2000 through 2004. Much of the recent increase in

reforestation needs occurred in Forest Service regions located in western states. Officials from three of the four regions we visited (the Northern, Pacific Northwest, and Pacific Southwest Regions) expressed concern about the increasing level of their reforestation needs relative to their future ability to meet these needs. With respect to timber stand improvement needs, the Forest Service reports that the acreage of its lands needing such treatments increased most years since 1995. While nationwide timber stand improvement needs generally have been increasing, some regions have reported stable or decreasing trends. For example, the Pacific Southwest Region has reported slightly decreasing needs since 1995, which agency officials attribute in part to an emphasis on thinning treatments associated with the National Fire Plan.[3]

Forest Service Data Are Not Sufficient to Accurately Quantify the Agency's Needs

The Forest Service's reforestation and timber stand improvement data, when combined with other information from Forest Service officials and nongovernmental experts—as well as data on recent increases in natural disturbances such as wildland fires—are sufficiently reliable for identifying relative trends in needs. However, we have concerns about the use of these data in quantifying the acreage of Forest Service lands needing reforestation and timber stand improvement treatments for several reasons.

- First, Forest Service regions and forests define their needs differently. For example, the Pacific Southwest Region reports reforestation needs in areas where it anticipates a timber harvest, even though the forest is still fully stocked with trees, while other regions we visited do not report a need until after the timber is harvested.
- Second, differences in Forest Service data among locations are compounded because the reforestation and timber stand improvement needs reported are a mixture of actual needs diagnosed through site visits and estimates. In cases where the needs are based on estimates—for example after a wildland fire—the reported needs may not always be adjusted after the actual needs are known.
- Third, Forest Service regions do not always update the data to reflect current forest conditions or review the accuracy of the data. Moreover, some regions cannot link reported needs to distinct forest locations, making it difficult for them to detect obsolete needs and update the data.
- Finally, Forest Service headquarters staff have not conducted reviews in the last decade to ensure that the data reflect on-the-ground conditions.

These inconsistencies in data and data quality mean that the needs reported at the regional level may be understated or overstated and cannot be meaningfully aggregated at the national level. Moreover, many of these data problems are longstanding and may not be adequately addressed when the Forest Service implements a new data system later this year. Although the new system will replace individual district, forest, and regional systems for reporting needs with a modern agency-wide database, the quality of the data used in the new system will not improve unless the Forest Service addresses how reforestation and timber stand improvement needs are defined, interpreted, and reported. Forest Service officials acknowledge these problems and are preparing an action plan to address them.

Agency Officials Link Natural Causes and Management Decisions to Increasing Reforestation and Timber Stand Improvement Needs

Forest Service officials told us that reforestation needs have been rising largely because such needs have increasingly been generated by causes other than timber harvests, and funding to address these needs has not kept pace. During the early 1990s, the agency shifted its management emphasis from timber production to enhancing forest ecosystem health and, as a result, harvested less timber. Timber harvests, which provided sufficient revenue to pay for related reforestation needs, are no longer the main source of such needs. According to Forest Service reports, beginning around 2000, the acreage burned in wildland fires and damaged by insects and diseases annually began to increase significantly, leaving thousands of acres needing reforestation. Nationally, wildland fires burned over 8 million acres in 2000, compared with about 2.3 million acres in 1998.[4] Similarly, the amount of land damaged by insects and diseases increased significantly, with over 12 million acres of

[3] In 2001, the Departments of Agriculture and the Interior developed a National Fire Plan with state and local agencies and tribal governments to provide technical and financial resources to reduce the risk to communities and ecosystems from wildland fire, in part, by reducing hazardous fuels by thinning trees—one type of timber stand improvement treatment.

[4] These numbers include lands under federal and state ownership, not just Forest Service land.

forest affected in 2003, compared with less than 2 million acres in 1999. As the acreage affected by these natural disturbances increased, so did reforestation needs. However, funding allocated to pay for reforestation did not increase at the same rate, so needs began to accumulate.

For timber stand improvement, agency officials said that management practices have been the primary factor contributing to the increase in acreage needing treatment. For example, some regions prioritize funding for reforestation treatments over timber stand improvement treatments and consequently do not treat timber stand improvement needs as quickly as they are accumulating. These regions follow this practice in part because they are required to complete reforestation treatments within 5 years of harvesting, whereas for timber stand improvement, there is no such requirement. National timber stand improvement needs also are increasing because the Forest Service has expanded the scope of the program, now identifying lands where timber stand improvement work is needed to meet objectives beyond maximizing timber yield, such as improving wildlife habitats or thinning hazardous fuels to reduce fire danger. As the objectives of timber stand improvement have expanded, needs have expanded accordingly. Finally, nationwide timber stand improvement needs are increasing because reforestation techniques favored in the 1980s and 1990s recommended planting trees much more densely than may be currently recommended so that as the trees grew, the agency could keep the largest and healthiest of them for cultivating, and thin out the others. Consequently, many stands that were planted 15 or 20 years ago now need thinning, according to agency officials.

Agency Officials Cite Adverse Effects That Could Result If Needs Are Not Addressed, but Have Not Positioned the Agency to Manage Such Effects

If reforestation and timber stand improvement needs continue to accumulate in the future and the Forest Service is unable to keep pace with the needs, the agency will likely have to postpone some treatment projects. According to agency officials, the agency's ability to achieve forest management objectives may consequently be impaired; treatment costs could increase; and forests could become more susceptible to fire, disease, and insect damage. While Forest Service officials expressed concern about the potential harmful effects of delaying projects, the agency has not clarified its direction and priorities for the reforestation and timber stand improvement program to reflect this concern and the current context in which the program operates.

Achievement of Management Objectives Could Be Impaired; Treatment Costs Could Increase; and Forests Could Become More Vulnerable to Fire, Insects, and Disease

The Forest Service's ability to meet the management objectives defined in its forest plans[5]—such as maintaining a variety of tree species in a forest or appropriate habitat for certain wildlife—could be impaired if reforestation or timber stand improvement treatments are delayed. For example, an area previously dominated by forests could become dominated by shrubfields, compromising wildlife habitat, recreation, and timber value. Such a situation developed in the Tahoe National Forest, where about 750 acres were cleared by a 1924 wildland fire and replaced by shrubs that remained until agency officials replanted the area in 1964—40 years later.

If reforestation and timber stand improvement needs are not addressed in a timely manner, treatment costs also could increase because removing competing vegetation, which is required for most reforestation and timber stand improvement projects, will become more costly as the vegetation grows. In addition, forests would likely become more susceptible to severe wildland fires and damage from insects and disease, according to agency officials. When reforestation needs are left unattended, brush can grow in place of forests, providing dense, continuous fuel for wildland fires. When thinning needs are left unattended, experts believe the tightly-spaced trees fuel wildland fires, causing the fires to spread rapidly and increasing the likelihood of unusually large fires that create widespread destruction. In addition, densely populated forests tend to be stressed because the trees compete with one another for sunlight, water, and nutrients. When insects or diseases infect such forests, they can spread rapidly.

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[5] Under NFMA, each national forest is required to have a forest management plan describing the agency's objectives for the forest, including those related to reforestation and timber stand improvement.

Forest Service Is Not Well Positioned to Manage Potential Effects of Increasing Needs

Although Forest Service officials expressed concern about the potential effects of leaving reforestation and timber stand improvement needs unattended, the agency has not made sufficient adjustments to address these concerns and adapt to the present context in which the program operates. Over the past decade, the Forest Service has shifted its management emphasis from timber production to ecosystem management, sources of reforestation needs have shifted from timber harvests to natural causes, and budgets have become increasingly constrained. The agency, however, has not adjusted the program's direction, policies, practices, and priorities in keeping with these changes, although agency officials acknowledged the need to do so.

While the Forest Service formally shifted its management emphasis from timber production to ecosystem management in the early 1990s, there remains a lack of clarity about agency mission and goals, and more specifically, about the direction and goals for the reforestation and timber stand improvement program, according to agency officials. When timber production was the emphasis, program direction was clearly focused, whereas in the current environment, it is less so. Reforestation and timber stand improvement projects now are done for multiple purposes—such as improving wildlife habitat, protecting streams, and reducing susceptibility to wildland fires—but it is unclear which purposes are more important, if any, and how to allocate limited funds to support such diverse purposes. The lack of clarity is apparent in forest management plans, where objectives are expressed in vague or contradictory language, according to agency officials. The plans are intended to help guide decisions, such as which reforestation techniques to use, but agency officials said it can be difficult to interpret the plans because of the problematic language.

In the absence of clear, up-to-date program direction, there are priorities, policies, and practices remaining in place that reflect outdated management emphasis. For example, a 2001 report had recommended that the Pacific Northwest region change its priorities by diverting some of its reforestation funds to pay for timber stand improvement. Doing so could help reduce the impacts of wildland fire, and thereby reduce the reforestation needs created by such fires, the report argued. Nevertheless, regional officials we talked with did not all agree with the recommendation, and the region has instead continued to prioritize reforestation over timber stand improvement as it has done since the inception of the timber program. Similarly, in the Pacific Southwest region, when officials reforest an area, they almost always rely on planting—a more expensive method than natural regeneration. This approach may have been appropriate when timber production was the emphasis and timber revenues were higher, because natural regeneration can be slower and less productive than planting. However, the region continues to avoid natural regeneration because they have always done so and, according to agency officials, this practice has been reinforced by the regional culture.

Conclusions

Although the Forest Service annually reports its reforestation and timber stand improvement needs to the Congress, the agency has not developed a tally of these needs that accurately reflects the condition of our national forests. While we recognize that the systematic collection of accurate data may take resources away from reforestation and timber stand improvements in the short-term, such an investment could lay the foundation for the Forest Service to provide a credible picture of our forests' needs to the Congress. With the advent of a new agency-wide data collection system, the Forest Service has the opportunity to improve the consistency and accuracy with which its data reflect on-the-ground conditions in our national forests. Consistent, accurate data would help the agency to build a well-founded budget case for funding reforestation and timber stand improvement needs.

However, the Forest Service must recognize that in the current, fiscally constrained environment, even well-supported needs may not always be funded. The agency needs to update its goals and policies for the reforestation and timber stand improvement program to reflect the current fiscal environment, as well as its current emphasis on ecosystem management. Until it does so, it will be difficult for the Forest Service to identify the best investments to minimize adverse effects on the lasting health and productivity of our national forests.

To address these issues, we recommended in our report that the Secretary of Agriculture direct the Chief of the Forest Service to standardize guidance for reporting data on reforestation and timber stand improvement needs and improve the data's accuracy in time for congressional deliberation on the Forest Service's 2007 appropriations request. We further recommended that the Secretary direct the Chief to

clarify the program direction and policies, and establish criteria for prioritizing the agency's use of program funds. The Forest Service, on behalf of the Department of Agriculture, concurred with our findings and recommendations.

Mr. Chairman, this completes my prepared statement. I would be pleased to respond to any questions you or other Members of the Subcommittee may have at this time.

GAO Contacts and Staff Acknowledgments

For further information about this testimony, please contact me at (202) 512-3841 or at nazzaror@gao.gov. Bill Bates, David P. Bixler, Christy Colburn, Sandy Davis, Omari Norman, Cynthia Norris, Jena Sinkfield, and Jay Smale made key contributions to this statement.

GAO Highlights

Why GAO Did This Study

In 2004, the Forest Service reported to the Congress that it had a backlog of nearly 900,000 acres of land needing reforestation—the planting and natural regeneration of trees. Reforestation and subsequent timber stand improvement treatments, such as thinning trees and removing competing vegetation, are critical to restoring and improving the health of our national forests after timber harvests or natural disturbances such as wildland fires.

GAO was asked to (1) examine the reported trends in federal lands needing reforestation and timber stand improvement, (2) identify the factors that have contributed to these trends, and (3) describe any potential effects of these trends that federal land managers have identified. This testimony is based on GAO's report Forest Service: Better Data Are Needed to Identify and Prioritize Reforestation and Timber Stand Improvement Needs (GAO-05-374), being released today.

What GAO Recommends

In its report, GAO recommended that the Secretary of Agriculture direct the Chief of the Forest Service to take several actions to improve the agency's ability to identify and prioritize its reforestation and timber stand improvement needs. In commenting on a draft of the report, the Forest Service agreed with GAO's findings and recommendations.

What GAO Found

The acreage of Forest Service lands needing reforestation and timber stand improvement has been generally increasing since 2000, according to Forest Service officials and data reported to the Congress, as well as other studies. While the Forest Service data are sufficiently reliable to identify this relative trend, they are not sufficiently reliable to accurately quantify the agency's specific needs, establish priorities among treatments, or estimate a budget. The data's reliability is limited in part because some Forest Service regions and forests define their needs differently, and some do not systematically update the data to reflect current forest conditions or review the accuracy of the data. Forest Service officials acknowledge these problems, and the agency is implementing a new data system to better track its needs. While helpful, this action alone will not be sufficient to address the data problems GAO has identified.

According to Forest Service officials, reforestation needs have been increasing in spite of declining timber harvests because of the growing acreage of lands affected by natural disturbances such as wildland fires, insect infestation, and diseases. In the past, reforestation needs resulted primarily from timber harvests, whose sales produced sufficient revenue to fund most reforestation needs. Now needs are resulting mainly from natural causes, and funding sources for such needs have remained relatively constant rather than rising in step with increasing needs. For timber stand improvement, the acreage needing attention is growing in part because high-density planting practices, used in the past to replace harvested trees, are creating needs for thinning treatments today and because treatments have not kept pace with the growing needs.

Forest Service officials believe the agency's ability to achieve its forest management objectives may be impaired if future reforestation and timber stand improvement needs continue to outpace the agency's ability to meet these needs. For example, maintaining wildlife habitat—one forest management objective—could be hindered if brush grows to dominate an area formerly forested with tree species that provided forage, nesting, or other benefits to wildlife. Also, if treatments are delayed, costs could increase because competing vegetation—which must be removed to allow newly reforested stands to survive—grows larger over time and becomes more costly to remove. Further, without needed thinning treatments, agency

officials said forests become dense, fueling wildland fires and creating competition among trees, leaving them stressed and vulnerable to insect attack and disease. While agency officials expressed concern about these potential effects, the agency has not adjusted its policies and priorities for the reforestation and timber stand improvement program so that adverse effects can be minimized. Forest Service officials did, however, acknowledge the need to make such changes.

Mr. WALDEN. Thank you very much. We appreciate, again, the work of your agency in doing this research for us. It certainly helps guide us in our policymaking decisions, and every member of the Subcommittee has a copy of the full GAO report. So we appreciate that.

Ms. NAZZARO. Thank you.

Mr. WALDEN. I noted in the report that there is a discussion about timber stand improvements, and I know some dispute even the term "timber stand improvement." But the report indicated timber stand improvement needs reported by the Forest Service's Pacific Northwest Region covering all of Washington and Oregon were the highest of any region during 4 of the last 5 years.

Can you tell us why that is?

Ms. NAZZARO. I do not believe that I have that information. I could provide it to you, though. If that was included as part of our audit, we could provide that for the record.

Mr. WALDEN. I would be interested to know more about that. It seems like your report really focuses on an issue that has been before the Congress multiple times, and that is the quality of data that we are getting out of the Forest Service. And you have indicated the Forest Service agreed with your recommendations and is going to prepare a response. Did they give you any time line?

Ms. NAZZARO. No. There is a requirement that they provide within 90 days an action plan to do this, but we have not heard from them yet, other than the official comments in the report that said that they were developing this new data system. However, we are concerned that the data system itself will not be enough because what we need is to make sure that the data that is going into that system is accurate. What they are doing now is automating what previously was done manually, so it could be bad data in, bad data out. We still will not know if it is overstated or understated without having quality data that has been validated.

Mr. WALDEN. What do you recommend to us to figure out, to help them figure out how to get good data in? What should we be looking for? What should we change?

Ms. NAZZARO. Well, we made a number of recommendations in that area, and particularly we are requiring data validation by all the regions. In some cases, as I noted in my statement, they had done site visits to try to validate the accuracy of their data. In other cases, they told us these were just estimates. So they really do not know how accurate the data are themselves.

Mr. WALDEN. I sort of ran into this in trying to acquire some data on the work being done on healthy forest restoration, the thinning projects and all, and I wanted to get it as close to the ground, to the smallest unit as possible. And it was odd that I could get statewide numbers, but I could not get localized data.

Now, I am a journalism major, not a mathematician, but I could not figure out how you get to the total without all the little things

in between. And it sounds like that is part of the problem here, that they can give you sort of a global number, but that may not reflect what is really happening on the ground.

Ms. NAZZARO. And, actually, I think we are seeing maybe just the converse of that, that some of the localities were able to give us what they perceived as accurate data, although they do not have criteria that is used uniformly across all of the localities. So then when you wrap it up, you really have suspect data because they have used different criteria for the input to that total number.

Mr. WALDEN. Now, it looked like, too, that the laws that were passed in 1974 and later helped the agencies be able to get at this backlog issue and virtually work it down to virtually no backlog. And now we are seeing a trend the other direction again.

Am I correct in reading the report that in part that is due to a lack of funding, in part that is due to stands that were replanted very densely after harvest in anticipation of future thinning that have not been thinned? And then the third issue really is the really terrible wildfires we have seen over the last 5 years.

Ms. NAZZARO. You are correct in that. The reforestation is definitely what they have told us as a result of the increase in wildland fires, which we were able to validate that that increased trend has occurred. For timber stand improvements, it is that the forests were planted very densely, and now they have not done the thinning necessary.

Mr. WALDEN. And certainly in some forests, it makes perfect sense to allow natural regeneration. I do not think anybody is talking about single species regeneration, some plantation deal. But it looks to me like from this report and others that we can make a choice to get in and replant a mixed group of trees to reflect what was there before. And you can do that cheaper and faster and restore the habitat, protect watershed, and all that quicker if you get in faster, or you can delay and get a brush field, and it may take a decade or two or more to get to the same place or to get back into a natural forest regenerated.

Is that in keeping with what your report found?

Ms. NAZZARO. Definitely, that it would take longer.

Mr. WALDEN. And cost more?

Ms. NAZZARO. And cost more, right. What we are seeing is that—and you could also have a change in habitat as well. So there is a lot of different consequences of just letting the natural habitation or the vegetation regrow. It could be that you are going to have different species of trees growing, so that would be inconsistent with what was already decided that this forest should have. But it could also affect recreation needs, habitat needs, watershed concerns.

Mr. WALDEN. One final question and then I will turn it over to my colleague from New Mexico. Did you find any downside to more rapidly going in and doing reforestation work after a fire? Did your folks look at that? Did anybody that you talked to say, gosh, you ought to just let it do what it is going to do?

Ms. NAZZARO. No, we did not. I didn't recall any in the report. I just wanted to make sure. No.

Mr. WALDEN. I did not see it in what I read either. All right. Thank you very much.

I will turn now to the Ranking Member, Mr. Udall.

Mr. TOM UDALL. Thank you, Mr. Chairman.

This must be a little bit frustrating for the GAO. I note here, here is a 1991 report that says better reporting needed on reforestation and timber stand improvement. Then here we have a September 1994 report that says management of reforestation program has improved but problems continue. And then you have the report that we are having the hearing on today. And the Chairman I think probed into this a little bit, but is there any suggestion you have on how we can get this right, get the Forest Service to get it right?

Ms. NAZZARO. The bottom line certainly is the need for better data. What we are saying is they need to be able to prioritize so that at least we know where the money is being spent and if it is being spent effectively. But they will not know that unless they have the right data. And they have agreed with our recommendations. As I said, they are developing this new data system, although we are concerned with the data quality.

Mr. TOM UDALL. Thank you.

On page 22 of the current GAO report, it states, and I quote, "While reported reforestation needs have been rising, funding allocated for reforestation and timber stand improvement has not."

In researching this report, did your agency take a close look into the various reforestation funds and where the funds were being allocated, specifically in reference to the Knutson-Vandenberg Fund?

Ms. NAZZARO. We did not look into that issue as to how the funds were being spent. We did note that they have asked for an increase in funding in 2006, but we have not looked at how prior funds have been used, no, sir.

Mr. WALDEN. Please, for the benefit of the committee members that may not be familiar, could you detail, or somebody, maybe staff, what the Knutson-Vandenberg Fund is and how the money goes into that? Because there may be members that do not know that.

Ms. NAZZARO. Actually, I am not familiar with it.

Mr. WALDEN. You cannot? All right.

Ms. NAZZARO. I do not believe we have anybody here that has a detailed knowledge to give you a primer on it.

Mr. WALDEN. We have Forest Service here.

Ms. NAZZARO. I would defer the question to the Forest Service.

Mr. WALDEN. It is a very important part of this.

Mr. TOM UDALL. I agree, Mr. Chairman.

Are you aware of the previous congressional concerns about one-third of the Knutson-Vandenberg Fund not being used for reforestation activities as initially intended?

Ms. NAZZARO. No. As I say, we did not look at all into how any of the appropriated funds have been spent. Again, you may want to defer that question until you have the agency up here.

Mr. TOM UDALL. OK. And I think you are probably going to say no to this, too, but did you find instances where funds collected for reforestation in individual sale areas did not cover the actual reforestation cost?

Ms. NAZZARO. No, but the issue was raised when we talked about salvage logging as to whether the costs were going to be able to—that the costs—excuse me, the receipts received from those sales,

whether they would be able to cover all the associated costs. And they did talk about administrative costs that needed to be factored in as well. So it was unclear that the Forest Service had any data to show us how cost-effective any of these measures were.

Mr. TOM UDALL. Just for the record, in 1998, the GAO reviewed the Knutson-Vandenberg Fund and reported that up to 30 percent of the fund was being charged to indirect expenses. This report led to a successful amendment to prohibit the use of Knutson-Vandenberg funding for indirect expenses during the consideration of the Fiscal Year 1999 House Interior spending bill, and Mr. Chairman, I yield back to you.

Mr. WALDEN. Thank you, and I appreciate your raising those issues on Knutson-Vandenberg and we will—because that was an issue that you all raised, that it was like 30 percent of the fund, questionable expenditures, and we will get an answer as to how it is being spent now.

The Chair now recognizes the gentleman from Maryland, Mr. Gilchrest, for 5 minutes.

Mr. GILCHREST. Thank you, Mr. Chairman.

Ms. Nazzaro, could you tell us—and maybe the Forest Service might want to focus on this or tell us as well—when the Forest Service collects data throughout the country in all the different regions, assuming there is specific criteria or purpose for the kind of data they are looking for, do they do it with satellites, airplanes, walking on the ground? How do they collect that data?

Ms. NAZZARO. We documented two methods: one, doing site visits, that they had gone out and actually viewed these sites; and the other was that they just did estimates.

Mr. GILCHREST. So there are no flyovers or satellite data that would be pertinent to the kind of data they are looking for?

Ms. NAZZARO. You might want to ask the Forest Service about that. We did not document any of those methods being used.

Mr. GILCHREST. As you were going through this with BLM and the Forest Service, is there any similarity—the refuge system has volunteers that do a lot of data collecting for all the refuges, Federal refuges. Does the Forest Service have any counterpart to those kinds of volunteers that collect this kind of data?

Ms. NAZZARO. No, we did not document any performance like that. Again, you might want to ask the agency whether they do. I don't know whether they do or not. We did not experience that.

Mr. GILCHREST. I see. You also mentioned in your report that land managers—and I am assuming that is the Forest Service—cite adverse effects that could result in reforestation and timber stand improvement needs not being addressed. Some of the adverse effects resulting from the lack of reforestation is that there seems to be an expansion of priorities in different regions, whether it is for fuel reduction or some other purpose.

Is there any way—and I think the Chairman made mention to this earlier. Does your report say that the Chief of the Forest Service should be specific about the goals or priorities of each region, giving less independence to each manager for a different region? Or is it good that each manager has independence in each region?

Ms. NAZZARO. We did not specify exactly that they needed—at what level they needed to do it. We asked that they clarify the

direction and the policies for reforestation. We feel right now that the Forest Service has a multifaceted mission. I mean, you are asking them to address issues of wildlife habitats, recreational uses, timber production, in addition to dealing with the issues from the wildfires. So we really feel that there needs to be some kind of program direction as to what goal are they trying to achieve, what are their objectives. And that is where we talk about the need to set some priorities. And it could vary certainly from location to location. Not all locations are set with the same goals in mind.

Mr. GILCHREST. In your research, does the Forest Service have a list of priorities for each region, such as wildlife habitat, such as timber harvesting, such as water quality? Are those things listed out there that you could see?

Ms. NAZZARO. They do have forest plans, but our view there was that the plans were vague and contradictory. So I would say no, they do not have the clear direction.

Mr. GILCHREST. So if the plans are vague and contradictory, who determines the kind of data that you are going to collect to ensure that the priorities, which might be contradictory, are achieved?

Ms. NAZZARO. Right now we do not see that the Forest Service has those directions or policies to tell them what criteria they should use.

Mr. GILCHREST. I see.

Ms. NAZZARO. We found some that were using criteria based on existing needs; some were projecting needs into the future. So there is not a uniformity, at least in the Forest Service, like we saw at BLM. BLM has a criteria that the need had to exist within a 5-year time—within the last 5 years, and they do not project to the future. They have much more solid criteria.

Mr. GILCHREST. In any of the regions that you went to, the Forest Service or the BLM, one of the goals would have been economic value placed on ecosystem services provided for that forest, is that in—in other words, water quality has a certain economic value. Wildlife habitat has a certain economic value. Carbon sequestration has a certain economic value. Was that in any of the regions that you visited, economic value of the ecosystem services provided by the forests?

Ms. NAZZARO. I did not see that analysis discussed in our report, no.

Mr. GILCHREST. Thank you.

Thank you, Mr. Chairman.

Mr. WALDEN. Thank you, Mr. Gilchrest.

Before I go to the gentlewoman from South Dakota, on page 7 of the GAO report, at the bottom is a good explanation of the Knutson-Vandenberg Act of 1930: establish a trust fund to collect a portion of timber sale receipts to pay for reforesting areas from which timber is cut. The reforestation projects eligible for such funding include growing trees for planting, planting trees, sowing seeds, removing weeds and other competing vegetation, and preventing animals from damaging new trees. The Act was amended in 1976 to allow the Forest Service to use these funds for other activities such as creating wildlife habitat.

So I don't know about you all, but I have been on committees where they buzz right through all the buzz words, and you never

quite know what they are talking about. So I thought that might help.

Now I recognize the gentlewoman from South Dakota, Ms. Herseth.

Ms. HERSETH. Thank you, Mr. Chairman, and I appreciate that guidance where I can refer to in the report. And I appreciate your testimony here today and all the work, Ms. Nazzaro, of your staff and your office in preparing the report. And I am going to save most of my questions for our friends from the Forest Service who will be following you, but let me just flesh out a few things and follow up on some of the questions that my colleagues have posed here. I am going to, by way of background, just give you a sense of where I am coming from here.

I represent South Dakota, and if we use—you had mentioned that funding is part of the problem here, and maybe we can compare the problems we have there today versus what we were able to successfully do, as Chairman Walden pointed out, in the 1970s, the lack of uniformity of the data, as Mr. Gilchrest has pointed out.

But if we use the Black Hills National Forest in South Dakota as an example, and let's say the normal total annual budget for the forest there is $20 million, for timber sales, campgrounds, fuel reduction, wildlife habitat, et cetera. Now then let's say there has been a major fire, as we have had numerous ones in the last 5 years, as have other national forests. And they estimate that the planting needs will cost $25 million. That is assuming 50,000 acres and $500 an acre.

Now, the current system would have the Black Hills National Forest budget the $25 million out of their annual $20 million operating budget, and then consequently the only way the national forest could fund the tree planting would be to reduce their budget for timber sales, campgrounds, et cetera, and not surprisingly, that is not happening. So when we look at the possible solutions, whether it is to do something as we did in the 1970s as part of the National Forest Management Act, where the Forest Service was required to determine the reforestation backlog and then to reforest the backlog acres within a certain period of time that seemingly worked, or if we had something separate from the Knutson-Vandenberg Fund or we had a separate line item in the budget, is it your opinion based on the findings in your report that without the uniformity in the data available that we cannot really make what we made work in the latter part of the 1970s work now to address the backlog?

Ms. NAZZARO. I guess it depends how much money you are willing to spend, if you are willing to take at face value that they have 900,000 acres that need reforestation and get an estimate of an average cost per acre and that is what you appropriate to them, although I cannot imagine that those kind of funds are available. So what we are saying is that you need to set priorities to make sure—because, as was mentioned earlier, some areas can be allowed to naturally regenerate themselves; some areas need reforestation. So until you set those priorities—but to set the priorities, you have to have the data to support the existing condition. And we are feeling right now we cannot tell whether the 900,000 acres is an overestimate or an underestimate.

Ms. HERSETH. And did your report break down by region based on management in different forests how the data was being collected? I think Mr. Gilchrest was getting at this point of whether they are estimates, whether it is on the ground, whether it is any other method that is being used to collect the information?

Ms. NAZZARO. No. The short answer is no. It is not—our first attempt was to try to validate that number of the 900,000 acres, and when we saw all the problems, we just tried to characterize the types of problems that were existing, so that led us to the type of conclusion then as to what needs to be done to correct the problem. But we didn't by location say this site uses this method versus that site. It is just inconsistent, and it needs to be done in a consistent fashion.

Ms. HERSETH. Thank you. I yield back.

Mr. WALDEN. Thank you. Thanks for your comments.

The gentleman from Pennsylvania, Mr. Peterson.

Mr. PETERSON. I thank the Chairman. Welcome, Robin. Nice to have you here.

In your opinion, what are some of the probable consequences of not addressing the backlog of stand improvement needs?

Ms. NAZZARO. Well, right now you would certainly be—I guess probably the largest problem we see or the most prevalent problem for timber stand improvements is that you are creating an ecosystem that is more susceptible to wildland fires.

Mr. PETERSON. That is the major issue, you think?

Ms. NAZZARO. That's what I would say would be probably the largest issue.

Mr. PETERSON. Has the Administration budget request taken into account the increased needs for reforestation and stand improvement?

Ms. NAZZARO. Could you restate that again?

Mr. PETERSON. Does the current proposed budget adequately reflect the need for reforestation?

Ms. NAZZARO. Since we couldn't verify or validate what their actual needs were, there is no way we can tell whether their budget request is adequate or inadequate.

Mr. PETERSON. Well, I think the answer is obvious.

[Laughter.]

Ms. NAZZARO. That is why I asked you to restate the question, to make sure I understood what you were asking. Thank you.

Mr. PETERSON. The GAO report notes that the Western Region has expressed concern about their future ability to meet reforestation needs. What are the primary reasons given for their concern?

Ms. NAZZARO. For the reasons why they need more funds for reforestation?

Mr. PETERSON. Yes.

Ms. NAZZARO. The primary concern is because of the increase in the wildland fires since the year 2000, that at least that we are able to support that that would justify an increase in the trend data that we provided.

Mr. PETERSON. OK. But there are a lot of other reasons, but that is the overriding one, you would think. OK. Thank you.

Mr. WALDEN. Mr. Brown?

Mr. BROWN. Mr. Chairman, do you have an accounting of the balance in that fund now for reforestation?

Mr. WALDEN. I do not, but we can get that for you.

Mr. BROWN. All right. Let me preface my question then by saying that I represent South Carolina, which is the Francis Marion National Forest, you know, which is about 250,000 acres, and so we have a little familiarity with that process. And I do not know about trying to address these 900,000 acres that we have got outstanding. How many acres do we have today that are under reforestation? I noticed in the 1920s—you know, we have got as many trees growing today as back in the 1920s. How does that match between the national forest and the private land holders?

Ms. NAZZARO. I am sorry. I don't have that information.

Mr. BROWN. OK. Let me go to the next question, then. In addressing trying to meet the needs to find the funding for those 900,000 acres—that is the reason I wanted to find out what the balance in that account was, but are there any alternative methods that we are looking at to do the reforestation? Are we doing it all in-house, or are we looking to do some outsourcing? How is the reforestation being accomplished today?

Ms. NAZZARO. This report did not cover the process by which the reforesting—to look at the adequacy or the inadequacy of their methods. That was not addressed.

Mr. BROWN. OK. Who would address that area?

Ms. NAZZARO. I would imagine the agencies can give you some idea as to what extent they are outsourcing or to what extent they have their own staff doing the reforestation.

Mr. BROWN. OK. Because, generally speaking, in the process we always tend to follow the same stream, and when times get tough, we have to look for better ways of doing things. And I am just wondering if we have got the best and cheapest—you know, best practice that is available today to be able to address those needs. So you don't have the answer to that?

Ms. NAZZARO. No, sir. We did not look at the extent to which they're contracting, but I would imagine the agencies should be able to tell you to what extent they're contracting, and with the increase and the backlog that they're claiming they're having, they should be able to tell you to the extent that they're now outsourcing.

Mr. BROWN. OK, because it always seems like if we had more money, we could get the job done quicker or better, you know. But we are living in some tight times.

Ms. NAZZARO. Well, and that is our concern, that we are not advocating just giving them more money. We're saying you need to know exactly what the backlog is using uniform criteria, and then set your priorities given the funds that are available to be spent and make sure that money is well spent.

Mr. BROWN. OK. Thank you very much.

Thank you, Mr. Chairman.

Mr. WALDEN. For the record, Mr. Brown, the minority crack staff is right there with the Knutson-Vandenberg Fund numbers.

[Laughter.]

Mr. BROWN. It was tough following the gentlelady from South Dakota, when she had all those numbers. It really was amiss to what I was going to ask, to be quite honest.

Mr. WALDEN. You know, both of you being from "south," you have different accents, too.

[Laughter.]

Mr. BROWN. You are right. That is a common connect.

Mr. WALDEN. She needs to work on hers.

Just for the record, since you asked, the Knutson-Vandenberg Fund program level and budget authority in 2000—I will go back a couple of years here. It was as high as, in 2002, $241 million. And then in 2003, it was $73 million.

Now, understand that we borrow out of that fund to go fight fire, and then it gets repaid. So the numbers jockey around a bit. But in 2003, it was $73 million program level; 2004 was 63; 2005 was 87; this year is projected 87. The budget authorities are all over the place, from $44 million to $213 million one year to 60 in the last two.

The reforestation trust fund is paid for on a duty of imported lumber that comes in, and it has pretty much stayed at $30 million going back to 1990. So it has just been a constant $30 million, which I think is obviously what GAO found as well, this constant money coming in, and yet the need because of the wildfires have been so great in the last 5 years, constant funding for reforestation and yet a more dramatic need. Brush disposal has sort of been in the $14, $15, $20 million range over the last 10 years. So it has been sort of constant.

Mr. BROWN. And I guess my concern is not just fighting those forest fires but having some preventive technique to try to do some control burns and some other preventive measures to keep that cost down. And so that is the information I guess I am seeking, Mr. Chairman, just to be absolutely sure that money is not the end product, as maybe some other processes that we can address to make it work even with the funds that are available.

Mr. WALDEN. And I am reminded as well that the K–V fund can only be spent within timber sale areas. So when you are talking about the Knutson-Vandenberg Fund, monies out of that can only be used to do work in timber sale areas. And if you note in the GAO report the volume of timber—and I don't remember the years now, but it is basically half what it was, and we are generating a third of the revenue we were generating, so you have gone from 4 billion board feet to 2 billion board feet in harvest and from $600 million in revenue to $200 million in revenue. So the revenues off what we are cutting is less than what it used to be and so less money is coming in.

Mr. BROWN. So we cannot use that South Dakota revenue to enhance my South Carolina trees, then, right?

Mr. WALDEN. No, but it would sure help in Oregon. We will take all your South Carolina revenue.

[Laughter.]

Mr. WALDEN. Run it there. Take the South Dakota revenue, too. Thank you.

And, Ms. Nazzaro, thank you again for your work. Your reports have been most helpful. I know we have been somewhat like a

plague of locusts on GAO with all our requests for reports, but I really think it is important to get a factual understanding of these issues so that we can then craft policy that will help America's forests for the future. So thank you. We appreciate your testimony.

Ms. NAZZARO. Thank you.

Mr. WALDEN. By the way, we will keep the record open for 10 days if members have other questions, but we appreciate your testimony.

Mr. WALDEN. Now let's have our second panel come on up, and as you are coming up, I will tell you they have notified us we may have a couple of votes here at any time, so we will start and we may have to recess momentarily.

On panel two, we have Joel Holtrop, Deputy Chief of the National Forest System, U.S. Forest Service, and Ed Shepard, Assistant Director, Renewable Resources and Planning for the Bureau of Land Management.

Gentlemen, since I swore in our first witness, I think we will do it throughout today's hearing. So if you would rise and raise your right hand?

[Witnesses sworn.]

Mr. WALDEN. Let the record show they agreed, and I will remind you of the 5-minute rule, but we appreciate your being here. Your full testimony will be in the record, and with that I would like to recognize Mr. Holtrop for his statement. Good afternoon and thanks.

STATEMENT OF JOEL HOLTROP, DEPUTY CHIEF, NATIONAL FOREST SYSTEM, FOREST SERVICE, U.S. DEPARTMENT OF AGRICULTURE

Mr. HOLTROP. Thank you, Mr. Chairman and members of the Subcommittee, and thank you for the opportunity to testify today concerning the Forest Service reforestation program.

Historically, one of the most important responsibilities of the Forest Service has been to establish forests to regenerate forest lands following timber harvest and natural disturbances.

Reforestation programs have been integral to the management of national forest resources since the agency's inception, as reflected in key legislation such as the Organic Act of 1897, the K–V Act of 1930, and the National Forest Management of 1976. Timely reforestation following harvest or major catastrophic events to restore forest cover on denuded lands is vitally important to maintaining forest ecosystems and deriving associated ecological, social, and economic benefits. Reforestation provides a means by which we ensure that these values can be enjoyed by future generations.

There are many issues regarding reforestation, but I want to focus on three issues. First is the ability to predict treatment needs. In the latter half of the 20th century, reforestation treatment needs were closely associated with regeneration harvest activities connected with the timber sale program. This close association was beneficial both from the standpoint of utilizing K–V authorities to collect funds to do the necessary reforestation work and because reforestation programs could be planned and predicted. This afforded the opportunity to schedule and complete the many tasks needed to assure regeneration success. Much of this program

predictability is lost when wildfire and other natural events become the predominant causal factor giving rise to reforestation needs. Since the location and magnitude of these events cannot be predicted from one year to the next, this makes the job of planning orderly programs of work to complete reforestation treatments more difficult, and we must rely on appropriated funds that were requested as much as 2 years prior to the disturbance event in order to undertake this work if K–V funds are not available for this purpose. Moreover, this lack of predictability can also make it very difficult to plan for and to secure tree seed from appropriate seed sources in sufficient quantities to address reforestation needs.

The second issue is delays in removing salvage material. Reforestation activities following catastrophic disturbances may sometimes necessitate removal of trees. Some harvest prescriptions are designed to achieve wildlife habitat objectives. Others are designed to couple the objective of leaving large tree structures in place while removing other dead and dying trees to expedite the establishment of a new forest. Trees may also need to be removed to reduce the potential for losses to reforestation and other capital investments. Salvage operations can also be beneficial for economic reasons. However, the removal of this material must be done promptly if economic benefits are to be derived.

The removal of salvage from public lands is a controversial issue. Salvage sales continue to be the focus of numerous appeals and legal challenges. Often by the time these challenges are resolved, values for this material may be insufficient to cover the costs of their removal, much less result in timber sale deposits to help cover the cost of needed reforestation treatments.

The last issue is data integrity. Forest Service policy has been to require our regions to identify and report all reforestation needs, including those resulting from forest fires or other natural disasters, on an accurate, consistent, and timely basis. With the increases in fire and insect and disease killed forest acreage over the last few years, we have become aware of inconsistencies in some of the ways some forests have been reporting reforestation needs. I will now describe the actions we have and will take to address these issues.

When the needs report was first established, a primary focus of the report was to foster timber production goals. We believe that we can provide Congress a more accurate statement of needs not only for fiber production but restoration of forest conditions to meet wildlife, soil, water, and recreation objectives as well. We are in the process of revising current policy and definitions for reforestation needs and plan to put this direction in place before the end of this fiscal year.

Currently, our reforestation needs information is contained in nine separately managed regional data bases. We will replace these regional data bases with a single national application by the end of this year. We have also restructured the budget and accounting framework to enable us to better link resource needs to reforestation needs. We will develop guidance to assist the regions in setting reforestation priorities, to weigh critical reforestation work in relation to other important work they must do consistent with land management objectives. We believe that, taken together, these

changes will result it improved data consistency, accuracy, and utility of needs information.

This concludes my prepared remarks. I will be happy to answer and address your questions.

[The prepared statement of Mr. Holtrop follows:]

Statement of Joel Holtrop, Deputy Chief, National Forest System, U.S. Forest Service, U.S. Department of Agriculture

Introduction

Mr. Chairman. Thank you for the opportunity to testify today concerning the Forest Service reforestation program. The decision to commit resources to reforestation comes about primarily under two conditions; one arising from a planned timber harvesting program, and one following catastrophic natural events such as wildfire, wind, ice, and insect and disease infestations. Under planned activities we have a statutory requirement to complete reforestation activities within five years following harvesting. While this statutory requirement is absent in the case of a catastrophic natural event, we are still obliged, as responsible land stewards, to assure forest restoration including reforestation where it is needed.

Background

Historically, one of the most important challenges and resposibilities of the USDA Forest Service has been to establish forests on lands that are unstocked as the result of natural catastrophes, excessive cutting, fire, insects or farming practices of the late 19th and early 20th centuries.

Reforestation programs have been integral to the management of national forest resources since the Agency's inception. The Organic Administration Act of 1897 explicitly provided for the establishment of national forests to improve and protect forests to secure favorable conditions of water flows and to furnish a continuous supply of timber. The Act provides for reforestation work in support of these aims. The Weeks Law of 1911 provided for the acquisition of forested, cutover, or denuded lands within watersheds to regulate the flow of navigable streams or for the production of timber, enabling the Secretary to conduct reforestation work on the acquired lands.

Tree planting programs conducted on the national forests during the early 1900's were primarily concerned with the re-establishment of tree seedlings following large wildfires. The Wind River Nursery was established in Washington State in 1901 to ensure a reliable source of tree seedlings to reforest large burns in the Pacific Northwest. The Bessey Nursery was established in 1902, in an early collaborative effort involving Chief Forester Gifford Pinchot and Professor Charles Bessey of the University of Nebraska to restore pine seedlings to the Sandhills region, these efforts led to the creation of what is now the Nebraska State Forest and portions of the National Forests of Nebraska.

The Knutson-Vandenberg (K–V) Act of 1930 explicitly provided for the establishment of forest tree nurseries and also authorized the Secretary to require timber sale purchasers to make deposits to cover the cost of reforestation and related work within timber sale boundaries. The K–V Act continues to be a primary means for ensuring our reforestation treatment needs are met within timber sale areas.

Timber harvested on National Forests during the first half of the 20th century utilized selective harvesting practices primarily in green timber stands. Regeneration needs within the timber sale area were commonly addressed by using natural regeneration methods and could generally be addressed using K–V deposits arising from the timber sale. The national forests were, for the most part, well positioned to address their reforestation treatment needs using these deposits and by requesting additional appropriated funds to address the needs associated with sporadic wildfire, insect and disease attacks.

Following World War II, timber harvesting practices began to shift to increasingly favor regeneration harvest methods, such as clearcutting, during the mid- to late-1960's on many national forests. Timber sale revenues remained generally sufficient to address reforestation treatment needs within timber sale areas throughout this period.

The Forest Service identified and reported understocked areas in the early 1970's. Restoring forest cover to these areas was a desirable action to promote timber production goals in support of sustained yield requirements. Congress amended the Forest and Rangeland Renewable Resources Planning Act of 1974 with passage of National Forest Management Act (NFMA) in 1976. Under the Act as amended, the Forest Service was required to identify the amount and location of forested lands

that had been cut over, denuded, or otherwise deforested, as well as all lands with stands that were not growing at the best potential rate. In its initial report, the Forest Service reported a backlog in need of reforestation totaling more than 3.1 million acres predominately associated with old brushfields and other areas that had been in an understocked condition for several decades. NFMA required the Forest Service to eliminate this reforestation backlog within 8 years and to annually report its progress toward this goal. During this time, the Forest Service conducted treatments that permitted it to report at the end of Fiscal Year 1985 that the agency had reduced the backlog to approximately 46,000 acres. The Forest Service further reported it would carry this amount into its current maintenance needs for reforestation. In that same year, the Forest Service reported to Congress lands needing reforestation from ongoing operations totaled 827,109 acres.

Title III of the Recreational Boating Safety and Facilities Improvement Act of 1980 provided an additional means of funding reforestation work on the national forests. This legislation established the Reforestation Trust Fund enabling the annual transfer from the U.S. Treasury to the Forest Service of up to $30 million from tariffs received from the import of selected wood products.

Since 1992, the use of the clearcutting method of regeneration harvest was deemphasized on the national forests. This change, coupled with a general decline in timber sale program levels, led to sharp reductions in regeneration harvest practices and associated K–V receipts on many national forests. These reductions led to a general decline in reforestation needs that continued through the late-1990s.

As a result of the buildup of hazardous fuels over the last 100 years, unnaturally intense wildfire n has become the predominant causal factor giving rise to reforestation needs on many national forests, particularly in the West. The scale and severity of these events is of a magnitude that often leads to devastating impacts to forest resources and a variety of post-fire recovery needs and has resulted in sharp increases in reforestation needs on many national forests in recent years.

Why Reforestation Is Important

America's richly, diverse forests provide vital products and amenities to our society including: quality habitat for wildlife, biodiversity of plant and animal communities, clean water, aesthetic benefits, and recreational opportunities. Timely reforestation following harvest or a major catastrophic event to restore forest cover on denuded lands is often important to maintaining forest ecosystems and deriving associated ecological, social, and economic benefits. Some recent catastrophic wildfires, severe wind and rain events, and other natural disturbance events have resulted in significant losses to critical wildlife habitat, imperiled fisheries and watersheds and municipal water sources. These events also threaten the long-term productivity of forest soils, through erosion and changes in soil properties, as well as many other resources. Reforestation is one element of a land stewardship ethic that includes growing, nurturing, and harvesting trees to meet specified resource objectives while conserving soil, air, and water quality in harmony with other resource management concerns. Reforestation following harvest or areas denuded by catastrophic fire or other natural disaster is often important to ensuring forest sustainability; it is a top priority for national forest management. On many occasions, natural regeneration can serve to meet forest management objectives. However, in other instances active reforestation actions such as planting seedlings may be necessary. For example, many species of wildlife, such as quail, rabbit, deer, elk, moose, ruffed grouse and wild turkey, and some threatened and endangered species can be found using newly established forests for food, shelter and nesting. Moreover, through reforestation treatments we can hasten the development of large tree structural components in late-successional habitat areas needed by late-seral dependant species like the spotted owl.

The Forest Service reforestation program has four major goals: (1) to maintain all forest lands within the National Forest System in appropriate forest cover; (2) to improve the quality and yield of the timber resource; (3) to accelerate the attainment of desired species composition and stocking objectives in a cost-efficient manner; and (4) to develop and demonstrate successful reforestation methods and techniques, and encourage their use by other landowners.

Restoring forested ecosystems following a large scale disturbance typically involves a series of steps: (1) emergency stabilization to prevent threat to life, property, and further damage to watersheds; (2) rehabilitation of resources affected by the disturbance that are unlikely to recover without human intervention; and (3) longer term restoration treatments, including reforestation, that span many years and are needed to restore functioning ecosystems. All of these steps are completed consistent with the direction contained in individual forest plans.

Successful reforestation involves a sequence of carefully planned treatments that begins with the selection of an appropriate regeneration harvest method that is suited to the unique ecological characteristics of the site. Regeneration success is also dependent on the establishment of a suitable growing environment for young seedlings from appropriate local seed sources. Control of competing vegetation is sometimes necessary to maintain acceptable rates of seedling survival, as well as to control damaging agents.

The Role of Research

The tools utilized by silviculturists to determine reforestation needs and reforestation techniques, have been developed over the years by forest scientists, and this research continues as needs change. In the past, research studies initiated following major disturbances focused mainly on the most immediate recovery needs such as soil stabilization, water runoff control, ground cover vegetation and shrubs, and wildlife needs, and less on the reforestation goals. Reforestation techniques generally utilized (natural or limited direct seeding and planting) were those already well-researched and readily available by implementing guidance in Forest Service Silvics and Silviculture Systems manuals.

Practices, such as salvage logging to prepare sites for regeneration and provide the funds for restoration activities, have been studied and some results synthesized. In their paper titled "Environmental Effects of Post-Fire Logging: Literature Review and Annotated Bibliography", Forest Service research scientists, McIver and Starr reviewed the existing body of scientific literature on logging following wildfire. Twenty-one post fire logging studies were reviewed and interpreted. McIver and Starr concluded that while the practice of salvage logging after fires is controversial the debate is carried on without the benefit of much scientific information. They also concluded that the immediate environmental effects of post fire logging is extremely variable and dependent on a wide variety of factors such as the severity of the burn, slope, soil texture and composition, the presence or building of roads, types of logging methods, and post-fire weather conditions.

We realize that there are gaps in what we know about post-fire restoration and we are working hard to fill those gaps. Forest Service researchers, in collaboration with other scientists, are working to increase our knowledge of how ecosystems respond to fires and how management actions can affect desired outcomes.

In recent years, reforestation goals on many national forests have changed to restore forests to a previous level of condition and complexity (e.g., multiple rather than single tree species, perhaps eventual uneven aged structure, emphasis on noncommodity objectives), and to do this at landscape scales. New research is needed to accomplish those objectives, and to better understand the long-term results.

One useful collaborative product emerging from Forest Service research and our National Forests Systems applications group has been the Forest Vegetation Simulator, and the Fire and Fuels Extension model that enables resource managers to visualize and project through time the development of reforested areas following wildfires and treatments.

Issues Affecting Reforestation Programs

Predicting Treatment Needs

In the latter half of the 20th century, reforestation treatment needs were closely associated with regeneration harvest activities connected with the timber sale program. This close association was beneficial both from the standpoint of utilizing K–V authorities to collect funds from timber sale purchasers to do the necessary reforestation work, and because reforestation programs could be planned and scheduled to coincide with harvest activities under a timber sale contract with a finite contract period. This afforded the opportunity to schedule and complete needed site preparation work, collect cones and seed from appropriate sources, sow this seed at the nursery, grow these seedlings to desired specifications, prepare them for outplanting, and plant the seedlings and complete the other work needed to assure regeneration success.

Much of this program predictability is lost when the principal causal agent creating reforestation treatment needs is a natural disturbance event, particularly those on a catastrophic scale. Since the location and magnitude of these events cannot be predicted from one year to the next, this dynamic makes the job of planning orderly programs of work to complete reforestation treatments more difficult. When the economic value of salvageable material is insufficient to cover the cost of needed reforestation treatments using K–V collections, the situation is made more difficult as forests must rely on appropriated funds that were requested as much as two years prior to the disturbance event in order to undertake this work. Moreover, this

lack of predictability can also make it very difficult to secure tree seed from appropriate seed sources in sufficient quantities to address reforestation needs.

Recent trends in the severity of wildfires, particularly in the West, have made it much more difficult in recent years for managers to plan and program their needs to complete reforestation treatments.

Delays in Removing Salvage Material

Reforestation activities following catastrophic disturbances may sometimes necessitate removal of trees. Silvicultural prescriptions which are developed after a catastrophic event are designed to achieve specific land management objectives. For example, some are harvest prescriptions to achieve wildlife habitat objectives; others are designed to couple the objective of leaving large tree structures in place, while removing other dead and dying trees, to expedite the establishment of a new forest. Trees may also need to be removed to reduce the potential for losses to reforestation investments and resources within the treated area that may result if the trees are left in place.

Salvage operations can also be beneficial for economic reasons. However, the removal of this material must be done promptly if economic benefits are to be derived because deterioration begins immediately after these trees die and deterioration rates are rapid for the size of trees being removed in typical salvage operations on the national forests.

As I have said, the removal of salvage from public lands is a controversial issue. Salvage sales continue to be the focus of numerous appeals and legal challenges. Often, by the time these challenges are resolved, stumpage values for this material may be insufficient to cover the costs of their removal, much less result in timber sale deposits to help cover the cost of needed reforestation treatments.

Meanwhile, on many disturbed areas, shrubs, noxious weeds, and other unwanted vegetation can out-compete native species, increasing the cost and complexity of reforestation operations. In the case of wildfires, there is another ecological cost that must be considered if salvage operations are not conducted. The standing dead trees that were killed by the fire may remain standing for a decade or perhaps two, but they will eventually fall to the ground and create a very significant dead fuel component that, with subsequent wildfire events, could consume the young stand that becomes established within these areas. Because taxpayer funds are not unlimited, forest managers must make decisions that appropriately consider land management objectives, sustainability, and other priorities in their decisions regarding the allocation of available reforestation resources. These factors can influence where managers choose to make investments in reforestation treatments, and where they will choose to rely principally on natural mechanisms to re-establish forest cover.

Data Integrity

Forest Service policy has been to require our regions to identify and report all reforestation needs including those resulting from forest fires or other natural disasters on a consistent and timely basis. Since 1992 Forest Service policy has been to estimate the net acres in need of reforestation treatments and program these areas for treatment immediately following wildfires or other natural disasters. This policy also requires forests to include stands that will require reforestation treatment following salvage operations in this estimate, and to make adjustments to reflect actual reforestation needs as detailed reforestation prescriptions are completed. With the increases in burned and insect, and disease killed forest acreage over the last few years and other factors, we have become aware of inconsistencies in the way some forests have been reporting reforestation needs. I will describe the actions we have and will take to address this issue.

Agency Actions

A primary focus, when the needs report was first established, was to foster timber production goals. While timber production remains important, we believe that reforestation and timber stand improvement needs also provide an expression of the management activities needed to promote broader goals in promoting the health and sustainability of forests. We believe that we can provide Congress a more accurate statement of priorities, not only for fiber production, but restoration of forest conditions to meet wildlife, soil, water and recreation objectives as well. We are in the process of revising current policy and definitions for reforestation needs and plan to put this direction in place before the next reporting period.

Currently, our reforestation needs information is contained in nine separately-managed regional data bases. In 1997, we began developing a single national application to replace these nine regional data bases, and we will have this application in place by the end of this fiscal year. We believe this change will result in improved data consistency and accuracy in reforestation needs and treatment data.

As part of our efforts to achieve the goals of the President's Management Agenda, we are working to improve budget and performance integration. We believe these changes will better link resource needs to reforestation priorities while also providing Congress with better information on the reforestation activities being planned.

We will develop guidance to assist the regions in setting reforestation priorities. This will provide the field units with a better framework for prioritizing critical reforestation work in relation to the other important work they must do. In doing this, we intend to provide managers with the flexibility to ensure that the unique resource considerations, the objectives for management articulated in the forest plan, and short- and long-term management objectives and unique attributes of the site can be weighed in prioritizing treatments.

This concludes my prepared remarks. I would be happy to address your questions.

Mr. WALDEN. I appreciate that. Can you just read the caption for me there on that slide? Because I cannot.

Mr. HOLTROP. That is a 43-year-old ponderosa pine plantation in the Tahoe National Forest that was planted in March of 1961 following the volcano fire.

Mr. WALDEN. All right. Thank you. I appreciate your testimony.

I now recognize Mr. Shepard for his statement. Thank you and we are delighted to have you here today.

STATEMENT OF ED SHEPARD, ASSISTANT DIRECTOR, RENEWABLE RESOURCES AND PLANNING, BUREAU OF LAND MANAGEMENT

Mr. SHEPARD. Mr. Chairman and members of the Subcommittee, thank you for the opportunity——

Mr. WALDEN. I believe your microphone may not be turned on.

Mr. SHEPARD. Maybe I'll pull it closer. Is that better?

Mr. WALDEN. I think so.

Mr. SHEPARD. Thank you for the opportunity to participate in today's hearing on reforestation on National Forest and Bureau of Land Management public lands. As noted in the GAO report, reforestation after timber harvest is a key element in the BLM's forest management regimes, not only in the 2.4 million acres of the Oregon and California lands, managed primarily for timber production, but also in the forests and woodlands that cover nearly 53 million acres of our public domain lands. Overall, BLM has a history of successful reforestation in harvested areas and in areas damaged by wildfire.

Last summer, I testified before this Subcommittee on BLM's activities for post-fire rehabilitation and greatly appreciate the Subcommittee's continued interest in this vital agency activity. At the request of the Subcommittee, the remainder of the statement discusses primarily BLM's post-fire reforestation and restoration activities.

Experience has shown that restoration actions taken soon after—as soon as possible after a fire are the most successful. Professional resource specialists start evaluating an area for reforestation needs while the fire may still be burning. Depending on the management objectives found in the resource management plans and the condition of the site, the interdisciplinary team may prescribe treatments including pre-planning site preparation, planning of seedlings adapted to the site, post-planning stand maintenance and protection of desirable vegetation, grass seeding, stream

enhancement and timber salvage to reduce future fuel loads or recover the economic value of the resource.

While actions undertaken soon after the fire are most likely to be the most successful, delays in implementing treatments may jeopardize reforestation and successful restoration of the forest resource. In some areas where low-severity burns have occurred and on some lands that have burned with moderate severity, natural processes may satisfy land management objectives and reforestation objectives. And on this slide, you will see areas that had low to moderate severity and probably would have little activity in those areas.

But in other areas where high-severity burns have occurred, such as this slide, we know that without management intervention, the site conditions of the forest may not return for many decades.

In some parts of the country, particularly in western Oregon, recent court decisions blocking proposed salvage sales following wildfires have reduced BLM's ability to aggressively reforest a burned area and recover the economic value of the fire-killed timber. Litigation has made it very difficult for the BLM, even after conducting extensive NEPA analysis, to implement comprehensive fire salvage and restoration activities.

In some cases, such as the 1987 Bland Mountain Fire in western Oregon and the 2004 French Fire in northern California, the BLM was able to implement salvage sale, reforestation, and other restoration activities within the first year. In other cases, such as the 2002 Timbered Rock Fire in western Oregon, litigation over proposed salvage sales has resulted in the sales being enjoined.

The Bland Mountain Fire in 1987 burned approximately 10,000 acres, and, tragically, two individuals lost their lives in the fire, and there was significant property destruction.

BLM's restoration activities, which included salvaging 55 million board feet of timber, was done under an Environmental Assessment, which is a lower level than an EIS. The reforested stands are current 15 to 30 feet tall, although part of this area did re-burn in 2004, and further restoration activities are going on.

The French Fire of 2004 in northern California burned 13,000 acres of BLM/Park Service land and private and State land, and emergency stabilization measures were employed, and we have ongoing salvage, and it should be completed by this year and the reforestation completed next winter.

The Timbered Rock Fire in southwest Oregon burned in 2002 at the same time the Biscuit Fire was burning. It burned 27,000 acres, 12,000 of that managed by the BLM. Because this fire was in a late succession reserve under the Northwest Forest Plan, we prepared a rigorous Environmental Impact Statement for two salvage sales to recover approximately 17 million board feet of timber on 800 acres, or 8 percent of the burned area. We also plan to conduct a lot of erosion control and other restoration activities.

This EIS was developed in cooperation with researchers from Oregon State University, and the intent of that was to study a lot of the post-salvage operations and the effects of different activities. Litigation has delayed implementation of that activity.

To conclude, successful reforestation following a catastrophic event is best achieved by immediate action, and delays in

implementing treatment after a catastrophic event in some areas may jeopardize reforestation and successful restoration of the forest resources for several decades.

Mr. Chairman, that concludes my statement, and I will be glad to answer any questions.

[The prepared statement of Mr. Shepard follows:]

Statement of Ed Shepard, Assistant Director, Renewable Resources and Planning, Bureau of Land Management, U.S. Department of the Interior

Thank you for the opportunity to participate in today's hearing on issues surrounding reforestation on National Forest and Bureau of Land Management (BLM) public lands. The report, "Reforestation Problems on National Forests: A GAO Report on the Increasing Backlog," focuses on the U.S. Forest Service and has recommendations for the Secretary of Agriculture. In an Appendix to the Report, the GAO briefly discusses the BLM's reforestation and related forest health treatment activities in the 2.4 million acre-Oregon and California Grant Lands (O&C) in western Oregon. I would bring to the Subcommittee's attention that the BLM's reforestation and forest health efforts encompass both the O&C lands and the public domain forestry program on 53 million acres of BLM-managed forests and woodlands outside of western Oregon.

The GAO reports that BLM eliminated its backlog of post-harvest reforestation on the O&C lands in 2002, and has since kept pace with its reforestation and growth enhancement needs on the O&C lands. Elimination of the backlog in 2002 was due to a combination of factors, including reduced harvest levels, increased funding, and management actions taken by the agency.

The GAO's comments on BLM's reforestation activities describe reforestation as a regular management practice, which most often means post-harvest. In discussions with Subcommittee staff, we were asked to also provide testimony on the BLM's reforestation and restoration activities in the aftermath of wildland fire. Last summer, I testified before this Subcommittee on BLM's activities for post-fire rehabilitation, and greatly appreciate the Subcommittee's continued interest in this vital agency activity. At the request of the Subcommittee, the remainder of this statement discusses the BLM's post-fire reforestation and restoration activities on all BLM-managed lands.

When forested areas managed by the BLM experience fire or other catastrophic events, our highest priority is public health and safety. In the immediate aftermath of a fire, the BLM addresses short-term impacts to local communities, such as threats to public health and safety from fire-damaged hillsides and watersheds. After public health and safety needs are addressed, we turn our attention to the steps needed to stabilize and restore the forest resource as well as salvage to provide economic opportunities to local communities and economic recovery of the timber. Our experience has demonstrated that the sooner after an event we undertake restoration actions, the more likely our efforts will be successful in restoring the resource. Conversely, delays in implementing treatments after a catastrophic event may jeopardize reforestation and successful restoration of the resources.

Reforestation and restoration actions are determined on a site-specific basis. In addition to management objectives for the resource, the BLM factors into its locally based decision-making process the scope, intensity and severity of the event; the possibility of further on-site or off-site damage; the potential economic value of the resource; the timeframe desired to meet resource objectives; the likelihood of success; and the cost of failure. BLM considers several types of post-fire restoration treatments, including:

- Seedings to reduce erosion and invasion by exotic species.
- Reforestation to hasten forest reestablishment. Reforestation and stand maintenance and protection are treatments which have the objectives of reforesting lands following disturbance events such as timber harvest, wildfire, windstorms, and insect outbreaks. Treatments include pre-planting site preparation, tree planting, post-planting maintenance and protection of desirable vegetation, and genetic tree improvement. The BLM's four seed orchards provide superior seed of native species used for reforestation of western Oregon forests.
- Timber salvage to reduce future fuel loads, recover the economic value of the resource, provide for the safety of forest workers, and prepare the site for future resource conditions to meet RMP objectives.
- Stream enhancements to repair damaged streambanks.
- Structures to control erosion and runoff.

If salvage is an option, the BLM must consider how much timber to remove and how much to leave for wildlife habitat, nutrient cycling, and other ecological functions. Again, this is a site-specific determination. If too much material is removed, site productivity can be affected. If too much material is left, there is a risk of insect and disease attack as well as potentially heavy fuel loading that may drive future wildfires.

The BLM believes that reforestation and all restoration tools, including salvage logging, should be available for use by our resource managers. To be successful, restoration tools must be employed to meet land and resource management objectives in a timely, cost-effective, and efficient manner.

I would like to illustrate this process by describing three examples of the BLM's reforestation and restoration activities in the aftermath of wildland fires: the Bland Mountain Fire of 1987, the Timbered Rock Fire of 2002, and the French Fire of 2004.

Bland Mountain Fire, 1987

This fire, near Canyonville in southwest Oregon, started on July 15, 1987. Approximately 10,000 acres burned, including 4,000 acres of BLM-administered land and 6,000 acres on private lands. Two individuals lost their lives in this fire, and significant property destruction occurred.

The BLM was able to implement restoration treatments within the first year after the fire, in large measure because we were able to rely on documents included as part of our land use planning process in developing an Environmental Assessment (EA) of our proposed restoration treatments.

Reforestation and other restoration activities included: tree planting on all burned BLM acreage; grass seeding on 790 acres of stream side areas; creation of 140 waterbars; creation of one 8,000 cubic yard capacity sediment pond; seeding and mulching of 27.3 miles of roads and fire trails; creation of 320 temporary sediment catch basins and check dams; and 55 million board feet of timber salvage. Reforestation has been generally successful on both BLM and private lands. Trees planted post-fire are currently between 15 to 30 feet tall.

Timbered Rock Fire

The 27,000-acre Timbered Rock Fire of 2002 covered nearly 12,000 acres of public lands managed by the BLM Medford District in southwest Oregon. The fire burned the same time as the 500,000 acre Biscuit Fire. The BLM proposed two timber salvage sales to recover approximately 17 MMBF of burned, but still merchantable, timber on approximately 800 acres (8 percent of the burned area). As addressed in the Timbered Rock Fire Salvage and Elk Creek Watershed Restoration EIS, after completion of the salvage, about 95 percent of all trees (green and fire-killed) would remain. In preparing the EIS, the BLM sought public involvement to identify the desires, expectations, and concerns of interested and affected publics regarding this project and the use of available resources. A letter seeking input on the EIS was mailed to 780 individuals, landowners, organizations, tribal governments, and government agencies. A website specific to the Timbered Rock EIS was published on the Internet. Two public meetings, attended by about 40 people, were held during the scoping period. A total of 50 comments were received at the meetings and by e-mail, telephone, and fax.

The Timbered Rock project also contained a science element, developed in cooperation with researchers at Oregon State University, to look at the influences of post-fire salvage and salvage intensities on wildlife species. There continues to be scientific controversy about the impacts of salvage activities on burned lands. Salvage of dead trees has been of particular interest because of the potential economic benefits of harvest activities and the influences of salvage on risk of future fire and insect outbreaks. Salvage also has been highly controversial because of known or hypothesized environmental impacts on soil, water, and biodiversity. A large number of questions remain about basic relationships between salvage and ecosystem response in different ecosystem types. A key issue related to salvage activities concerns potential influences on wildlife and wildlife habitat. The complete EIS is available online at: www.or.blm.gov/Medford/timbrockEIS/index.htm.

The BLM's proposed salvage projects in the Timbered Rock EIS were challenged in court (Oregon Natural Resources Council Fund, et al. v. Brong, Civil No.04-693-AA, U.S. District Court for the District of Oregon). On June 10, 2004, the court issued a temporary restraining order that halted salvage logging, and on November 8, 2004, the BLM was permanently enjoined from implementing salvage activities under the EIS.

This litigation delayed implementation of the salvage and other restoration activities proposed in the Timbered Rock EIS. It is nearly 3 years since the fire, and

salvageable material has decayed to the point where much of the value has already been lost. The Department of Justice, at the request of the Department of the Interior, has filed a notice of intent to appeal the case, maintaining the option of asking for review by the Ninth Circuit Court of Appeals. Since we were not able to implement the Timbered Rock EIS, however, the opportunity to study some of the issues surrounding salvage activities was lost.

French Fire

The French Fire, in north-central California, started on August 14, 2004, and burned for six days before containment on August 20, 2004. The final fire perimeter was in excess of 22 miles, with over 13,000 acres burned. The fire area included BLM, National Park Service, state, city/county, and private lands. An Interagency Burned Area Emergency Response Team was convened and prepared an Emergency Stabilization Plan with detailed recommendations and information.

After implementing emergency stabilization measures following the fire, the BLM began planning a timber sale to salvage approximately 4 MMBF of dead and dying timber on some 1,930 acres. An EA was prepared, and the French Fire Salvage Timber Sale was sold on March 8, 2005. The precise treatments to be applied to different areas of the sale were selected on the basis of the intensity of the fire and the level of tree mortality. The harvest of this sale will be completed before the timber volume and value is negatively affected by insects and decay. The timber harvest has begun and is planned to be completed by July of this year. Approximately 240 acres of reforestation is planned in areas of the fire that had the highest fire intensity and tree mortality.

Conclusion

As illustrated in the Timbered Rock EIS, litigation has made it very difficult in some instances for the BLM to implement comprehensive fire salvage and restoration activities. Delays in implementation of restoration activities may result in lost value of the resource, not only to the government, but also to local communities. Perhaps the most significant potential harm from delays in implementation of restoration activities and reforestation is additional damage to the resource from, for example, widespread insect infestations that often follow forest fire. As land managers, restoration of ecosystem health following a fire or other catastrophic event is a high priority. We have been successful in implementing treatments in many instances, and new tools provided through the Healthy Forests Restoration Act and other legislation should increase our odds of success. But delays can, at times, jeopardize reforestation and successful restoration of the resources.

Thank you again for the opportunity to testify. I would be glad to answer any questions.

Mr. WALDEN. I want to thank both of you for agreeing to testify today. We appreciate your service, the BLM and the Forest Service, to our country.

I guess maybe for both of you—those were very provocative slides, by the way, and I think really from my perspective detail kind of what we are facing, whether you go in fairly rapidly and environmentally sensitively and get a new forest growing or whether you wait.

Some have called agency reforestation efforts "plantation forestry." Do you think that is an accurate portrayal of what you are doing? And what is even meant by plantation forestry?

Mr. HOLTROP. First of all, I would say I don't think that that's an accurate reflection of what it is that the agencies do. I would assume what they mean by "plantation forestry"—and that's how I'm responding to this assumption—is that perhaps that plantation forestry is just row upon row of single-species plantation and——

Mr. WALDEN. Is that what you all do?

Mr. HOLTROP. It is not what we generally do. And even if we were to plant a single species in a reforestation situation, the natural regeneration that occurs in association with that, by the time the—in most instances around the country, we're going to have a mixed stand of species.

Mr. WALDEN. Mr. Shepard?

Mr. SHEPARD. Well, I would agree with Mr. Holtrop's assessment. In the past, particularly on BLM's O&C lands, which we manage primarily for timber production, we were closer to plantation forestry than in many areas of public land management. But we grew pretty much away from that as we have gone to managing not only for the timber resource but the other ecological values. We are planting multi-species. Now we are planting at lower densities than we did in the past, encouraging the growth of hardwoods in some areas, where in the past we excluded hardwoods. We are really looking more at providing a diversity of values and species out there rather than——

Mr. WALDEN. It seems to me, too, on some of the tours I have been on out in the forest, it is not just trees you are looking at but the regeneration of natural grasses—I mean, there was a whole operation in Bend, I think the Bend Pine Nursery, part of which goes on today, I think, with seeds from grasses and brush, to try to replicate what was there. Is that not what your goal really is?

Mr. SHEPARD. Yes, that is accurate. We are trying to look at—in fact, our nurseries have gone away from growing exclusively tree species to where we are growing a lot of brush and forb species at the nurseries.

Mr. WALDEN. All right. The Beschta Report and the more recent literature review by McIver and Starr recognized that the effects of post-fire activities in some forest types are well-known, while in others more information is needed. So what are you all doing to fill in the gaps in research and data in this area?

Mr. SHEPARD. I am sure the scientists are never going to come to complete agreement on what is right out there and that, you know, we will always have questions. We are working with universities and with the experiment stations, research stations at the Forest Service to try to answer some of the questions that have come up, whether we should be doing post-catastrophic event harvesting and salvage at all, or whether we should be letting nature take its course through a passive approach.

The unfortunate point about the Timbered Rock Fire is that part of the project there was to do experimental designs that were put in by Oregon State University to look at salvage levels and what the impacts of salvage and different reforestation activities were on soil compaction and wildlife habitat and other values. And, unfortunately, we are not able to implement all of those actions.

Mr. WALDEN. And why is that?

Mr. SHEPARD. Because of court injunctions.

Mr. WALDEN. All right. Mr. Holtrop?

Mr. HOLTROP. I also agree and would just say that a lot of the research needs are not only focused around what are the effects of salvage, but just what are the effects of our immediate emergency burned area rehabilitation work that we do and which of those practices are most effective. And we are doing research on that and continue to find opportunities for more.

Mr. WALDEN. All right. Many name economic return as the primary reason for man-induced reforestation. But aren't there a lot of other factors at work here, including soil, water, wildlife habitat restoration? Isn't that just as important or more so?

Mr. SHEPARD. Yes, and I would add that economic return is also an important consideration.

Mr. WALDEN. Why?

Mr. SHEPARD. Particularly where we're managing for our mandate in the O&C Lands, is to manage for timber production for the stability of local communities and industries. And so if we can do that in an ecologically sustainable way and the most efficient and effective way, that's the best way to go about it.

But we are trying to meet other ecological objectives out there, and following many of our fires, we have planted hardwoods and stream banks and things like that to provide shading. One fire in southwest Oregon, the Quartz Fire, we went in and did aggressive reforestation to more rapidly restore spotted owl habitat.

Mr. WALDEN. My time has actually expired, so we will have to come back.

Let me go to Mr. Udall, and for the other committee members, we are in the middle of a vote. I think we will have time for Mr. Udall to ask his questions, and then we will recess and come back for the other members.

Mr. Udall?

Mr. TOM UDALL. Mr. Holtrop, you heard me ask earlier about these three GAO reports over a series of years and why the Forest Service has not been able to get it right. Could you give us an explanation here?

Mr. HOLTROP. I would say that in response to each of the GAO reports, we have responded. I would say we have information now from—based on the 1991 report, we established a process that has improved the situation. But as our response to the draft GAO report that we had seen indicates, we concur with the recommendations of GAO. We believe that there are things that we can do, should do, and will do in order to improve our data management of both our TSI and reforestation so that we can be more responsive to the types of questions that you're asking and the types of questions that we're asking ourselves.

Mr. TOM UDALL. A report by the GAO in 1998 found that the Forest Service sometimes used up to 30 percent of the Knutson-Vandenberg Fund for indirect expenses. Can you discuss how this could potentially impact the reforestation backlog?

Mr. HOLTROP. Well, if we were continuing to utilize up to 30 percent of the K–V funds for indirect costs, that would, of course, have a compounding effect on our ability to meet our reforestation needs. Ever since that report in actions subsequent to that, we have been working steadily at reducing that, and we are now much closer to 15 percent of the K–V funds are used for indirect costs.

Mr. TOM UDALL. And in the previous report, things were purchased like office furniture in these indirect funds. Are you trying to more closely link it, at least, to the specific reforestation projects?

Mr. HOLTROP. Absolutely.

Mr. TOM UDALL. Mr. Chairman, I would yield back at this point and thank both the panelists.

Mr. WALDEN. OK. Ms. Herseth, do you want to go ahead for 5? I think we still have time. We just have to keep track.

Ms. HERSETH. Yes, just a follow-up, and I think, Mr. Holtrop, you in your statement and in response to Mr. Udall's question got at a little bit what I was going to ask, but let me just say at the outset I have had a number of very productive and good meetings with members of the Forest Service, a number of Forest Service officials from the prior tenure under a previous superintendent to the current officials there and sympathize with the challenge that they face with limited resources, particularly with the wildfires that we have had, with some of the litigation that we have had in the past, although it is a much better situation now because of the advisory committee's rule, and the drought conditions that we have had in western South Dakota. So I want to say that at the outset.

But it sounds—again, using the Black Hills National Forest here, which is generally blessed with an abundance of natural regeneration that we have spoken about following a timber harvest or even some of the wildfires, many of those forest fires over the last 4 years have left a number of areas that don't regenerate naturally.

And so I would like to separate policy from implementation for a minute and would like for you to clarify for me, in addition to what you have already provided, the Forest Service policy on reforestation of suitable timberlands following a forest fire. So, for example, is it Forest Service policy that suitable timberland should be reforested within a prescribed amount of time after a forest fire? And what is the Forest Service policy regarding when a national forest should determine and document reforestation needs following a forest fire? So, in other words, if I went out and met with some of our forest fire officials, Forest Service officials in the Black Hills National Forest this weekend—I am going to be out there this weekend, and I am not yet meeting with them, but maybe I will—and just asked them about reforestation needs after a fire, what should they be able to tell me at this point? I know you are going to do more, as you have indicated, to provide some clarification. But at this point, based on the current status of Forest Service policy, what should they be able to tell me are their guidelines?

Mr. HOLTROP. Well, since the question is referring to post-catastrophic event, a natural event is what you are referring to, they ought to be able to tell you that they are looking at what their Forest Plan direction is and whether that Forest Plan direction is giving them an indication of the various resources that they need to manage that piece of land for.

I think there are many reasons why reforestation—if natural regeneration, natural reforestation of trees is not going to occur, there are many reasons, such as the Chairman's question earlier indicated, many reasons, not just economic and not just timber production reasons, why replanting to trees is an appropriate thing to do. But there are also circumstances in which there are other values in other things that can be learned from a wide variety of situations as well. And I just think that what our expectation of the local land managers in a situation like that is they assess what the needs are, they utilize public involvement in that process, and they make wise resource decisions as to what the land calls for. They are going to make some determinations that natural regeneration is the appropriate approach and rely on natural generation, which may take longer than others. And if it takes too long to meet the

resource objectives, then we need to go in and do some more direct work to make sure that we're ensuring the reforestation.

Mr. WALDEN. We are down to about 3-1/2 minutes in the vote.

Ms. HERSETH. Well, then, one last question. Is there a prescribed amount of time that they have to do any of these things? Or is that going to be contingent on the Forest Plan?

Mr. HOLTROP. Again, in response to a catastrophic event, for the reforestation to occur there is not a prescribed amount of time. We do require a post-fire analysis of what those regeneration techniques are going to be, and generally we are going to get that—in less than a year's period of time we're going to have that, and I am not familiar with whether we have a national policy as to exactly what that time is.

Mr. WALDEN. Thank you. And we will be in recess until after the votes.

[Recess.]

Mr. WALDEN. I am going to call the Subcommittee back to order. When we had to recess for the vote on the House Floor, Ms. Herseth had about a minute remaining. And so I would yield back to her for any further comments or questions she may have.

Ms. HERSETH. Just one final comment. Part of the response that you gave, Mr. Holtrop, in terms of the direction and looking at the Forest Plan, the only comment I would make there is that in South Dakota, with the Black Hills National Forest, we have the same issue that a few other national forests have that I know you are aware of, and that is the length of time it is taking us to get a plan or amendments to that plan, and when you are looking back then for that guidance as it relates to purposes and resources, you are dealing with an outdated plan but may very well be nearing the end stages of getting another plan finalized. So I think that highlights the need for the clarification coming out of your office for everyone at the local-regional level to have more guidance here in how to address the reforestation challenge.

Thank you.

Mr. HOLTROP. Thank you. And I think what that does also is it highlights the complexity of the various issues that we are dealing with, both at the local level and more regionally and nationally as well. That's a good point.

Mr. WALDEN. I know I have heard some forests, it takes as long to do the plan as the plan's length. Do you run into that? It can take as much as 8, 10 years to do a 10-year plan?

Mr. HOLTROP. We have run into that situation in various places around the country, which is one of the reasons we are working in establishing a new rule for planning. That is one of the major driving factors in the need for that.

Mr. WALDEN. I have one final question before we go to our next panel. What changes in reforestation practices have been implemented to address concerns over high-density planting practices? Because I know in the GAO report they indicate that sort of the post-timber harvest, after-timber harvest, especially a decade or more ago, maybe 20 years, there was this intense reforestation with a plan to do thinning, and we have sort of evolved out of that and are not doing the thinning.

What are you doing now to change the forest replanting practices?

Mr. HOLTROP. In general, those forests are planting at a lower density. In fact, I would say that that's a pretty common statement to say that. In general, we don't plant at the same density as we were maybe 10, 15 years ago, with the expectation at that time of more intense thinning opportunities on down the line.

I would say that what's really driving that is the recognition of the multiple resource values in which we manage those lands for, that there are times in which a thinner planting spacing is going to result in objectives other than just some of the timber production, but it is going to provide some of the opportunities for us to accomplish wildlife habitat objectives and those types of things.

One of the things that we need to be careful about, of course, is that we want to make sure that if we are going to put the investment into regenerating a stand through reforestation techniques, that we meet the objective of actually reforesting the stand, and we want to make sure we don't plant at such a density that competing vegetation, non-tree vegetation, might outcompete the trees or whatever. So there needs to be a balance made in that decision as well.

Mr. WALDEN. How do you prioritize for reforestation compared to other things? Because these are issues I think everybody on the committee has. You know, how do you set what is your number one priority and how do you do reforestation?

Mr. HOLTROP. Well, one of the factors, of course, that weighs into prioritizing reforestation is under the National Forest Management Act we are required to regenerate a stand with 5 years of harvesting under the—so if it's a timber harvest treatment, in order to meet our legal requirements under that Act, that's one of the highest priorities.

Mr. WALDEN. But what about these areas where it is not a timber harvest? I think there is legislation in the Senate to require similar sort of standards for reforestation after a catastrophic event—a fire, blowdown, hurricane.

Mr. HOLTROP. You know, the types of things, again, that we would utilize to prioritize reforestation are things such as is the reforestation necessary in order to make sure that we're not going to have soil or water restoration problems because we haven't regenerated the stands to accomplish a basic stewardship responsibility on the land. Perhaps there's a reforestation need that's necessary to meet the needs of the habitat of a threatened and endangered species or some other high-valued wildlife species that the reforestation is going to allow us.

Those are going to be some of the first-tier, high-tier types of things that we're going to prioritize at the top of the list of the types of things.

Obviously the question is also complex from the standpoint of we're prioritizing within our reforestation needs, but then we also have to prioritize our reforestation needs with all the other needs, such as hazardous fuels treatment, some of those other types of things as well.

Mr. WALDEN. What happens, though, in a stand that has been managed or is supposed to have been managed for, let's say, all

those characteristics for spotted owl and that stand burns? I mean, it is what happened in the Biscuit Fire. Would it not be—I mean, doesn't it follow then that the goal should be to get back to an old-growth stand as quickly as possible if that was the—I mean, if you were managing for old growth for spotted owl habit, wouldn't it make sense to get back to that type of forest as soon as is environmentally appropriate?

Mr. HOLTROP. You would think that in many instances that would be the case. Certainly the changed condition that has occurred in terms of the amount of old growth habitat because of fires such as Biscuit causes a manager to have to make those types of determinations or find other places in which that old growth habitat can be provided elsewhere as well.

Mr. WALDEN. OK. Mr. Shepard, can you respond to that sort of general notion of how do you prioritize?

Mr. SHEPARD. Pretty much the same way. It depends on the land management objectives, of course, but then we look at the site conditions out there and the species that we are trying to manage for—if it was a species we were dealing with such as large pole pine, which usually gets adequate natural regeneration, we would put that as an area to watch to see if we were going to need to intervene or not, but let nature take its course and naturally reseed. An area where we are trying to get such as Douglas fir and mixed conifer type, then we would probably prioritize those to intervene and do the necessary reforestation and stand maintenance to keep those stands growing.

Mr. WALDEN. OK, very good. Mr. Gilchrest, do you have questions for our witnesses?

Mr. GILCHREST. Wasn't Ms. Herseth questioning?

Mr. WALDEN. She actually went, and now we are going to go to you.

Mr. GILCHREST. OK. Thank you.

Mr. WALDEN. You stepped out. We actually had a few more minutes, so as soon as you were gone, I called on her. So now we are to you.

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

I guess some of the questions were asked and some of the answers were forthcoming to have some understanding for what I am about to ask, I guess, and my question was: What are the goals—who determines the goals of reforestation in all the various regions around the country or in a particular national forest within a region? And I think you answered that. And to some extent, it will vary from region to region, forest to forest, landscape to landscape, and I would assume in the Forest Service or BLM on a designated wilderness, the reforestation goals would be different than they would be in an area where the goal was renewed production after the forest was regenerated.

So I guess some of the goals of reforestation are timber production, soil, water, wildlife habitat, endangered species, those kinds of things. Does the term "ecosystem" ever come into play with the goal or your priorities for the management plan for reforestation?

Mr. HOLTROP. Yes, it does, and the way I would describe that is all those multiple objectives that you were just describing define an

ecosystem, and that is indeed the holistic approach that we take as we determine——

Mr. GILCHREST. So are there forest ecologists on staff that have some perspective of that, some understanding of that?

Mr. HOLTROP. We have forest ecologists, we have grass line ecologists, we have——

Mr. GILCHREST. OK. You have got them all.

Mr. HOLTROP. And, of course, biologists and hydrologists and foresters.

Mr. GILCHREST. Soil scientists, you name it. As you pursue this, do you think about, do you actually try to accomplish, or is there some sense that in the future your management plans might be looking at the economic value of the ecosystem services that are provided since you are looking at the soil, you are looking at water quality, you are looking at habitat, and also looking at clean air or the potential for the Forest Service to make money with carbon sequestration? Is that in the mix anywhere in BLM or Forest Service, that kind of thing?

Mr. SHEPARD. Well, we talk about carbon sequestration, but we don't have any process right now to consider the economics of that. But as Joel said, we do consider all of those values in our interdisciplinary teams as we go through our projects.

Mr. GILCHREST. Do you know anyone that is working on that kind of a thing, the economic value of forest sequestration, either from a nearby public utility, public entity or a community or a coal-fired power plant or anything like that?

Mr. SHEPARD. I know that there is work going on on sequestration credits, but I am not familiar with it.

Mr. GILCHREST. I see. Yes, sir?

Mr. HOLTROP. I think I can add something to what Ed was saying as well. There is some work going on. The Forest Service researchers are doing some work on carbon sequestration and some credits. We are beginning to explore what our role should be and can be to further look into what are the opportunities that we have to encourage wise forest management, not only on the public lands but on private forested lands as well, to see if there is perhaps some opportunities to keep forest lands in forest by——

Mr. GILCHREST. The Delmarva Peninsula, think of that as places where you can come over and plant trees. You know, we designate certain areas for refuges. We did that in the last couple of years. Actually, the Federal Government purchased land to make it a wildlife refuge. Does the Forest Service ever go out there looking for more land? We would like you to come over to the Delmarva Peninsula. I had another question, though. We can talk about that later.

Mr. WALDEN. Do I feel a field hearing coming on?

Mr. GILCHREST. Field hearing on the Delmarva Peninsula in October, late October, fall foliage. We could go canoeing while we are there, and we will—oh, by the way, if I lose my election, I would, for room and board, be one of those guys collecting data, and I would walk through those forests.

[Laughter.]

Mr. GILCHREST. Just put me some place and let me go, and I will use my——

Mr. WALDEN. I don't think you are supposed to solicit for a job until you have lost your election.

Mr. GILCHREST. Well, just in case, keep me in mind.

I had a couple of quick questions, if the Chairman will indulge me for a couple extra seconds. How many acres of forest in the national forests and how many acres of forest in BLM?

Mr. HOLTROP. The National Forest System is 192 million acres, not all of which is forested. Is that the question you are asking?

Mr. GILCHREST. Yes. So 192 million acres. BLM?

Mr. SHEPARD. BLM manages 261 million acres, and of that approximately 55 million is forested.

Mr. GILCHREST. So if you looked at the economic value of carbon sequestration, there is potential for the Forest Service, I assume, to actually make a little money there from the private sector. Is that a possibility?

Mr. HOLTROP. I think that is one of the things that we need to explore. Again, recognizing that there is also 500 million acres of forested lands that are non-Federal lands, and perhaps there are some opportunities on those lands as well to explore that as an additional incentive to keep those forested lands in forest.

Mr. GILCHREST. Great. I was going to ask a question about Timbered Rock in southern Oregon where there was a forest fire where I guess there was about 800 acres that was burned—or 27,000 acres that was burned and 800 acres that was, I guess, reclaimed or salvaged and you went through an EIS. That was on BLM land?

Mr. SHEPARD. Yes.

Mr. GILCHREST. If there was 27,000 acres burned, what was the reason for the small amount of acreage salvaged? And do you have any idea how large or how many pages the EIS was to do that?

Mr. SHEPARD. Yes, I do. There was 27,000 acres total; approximately 12,000 acres of that was BLM. It was in a checkerboard pattern, so a lot of it was owned by a private timber company. It was proposed that we harvest 800 acres of that, and the EIS, I believe, was almost a page per acre. I think it was something like 700 pages.

Mr. WALDEN. Could I follow up? And how much was harvested?

Mr. SHEPARD. Right now we haven't harvested it. We're enjoined on that.

Mr. WALDEN. And how many years has it been?

Mr. SHEPARD. That was in 2002, so we're in our third year.

Mr. WALDEN. And in that 3-year period, what's happened to the value of the trees?

Mr. SHEPARD. The smaller trees have lost all their value. The larger trees have probably lost 40 to 50 percent of their value.

Mr. GILCHREST. Thanks.

Mr. WALDEN. Thank you. We may have to take you up on that Delmarva canoe trip, too.

Thank you very much, gentlemen, both again for your service, the BLM and the Forest Service and to our Nation's forest and grasslands. We appreciate it, and your testimony and comments today are most helpful as we work through these issues, and your staffs who help you out.

Mr. WALDEN. Now I would like to invite up our third panel of witnesses. On panel three we have Dr. Scott Schlarbaum—I hope

I said that right—Department of Forestry, Wildlife, and Fisheries, University of Tennessee; Dr. Jerry Franklin from the College of Forest Resources at the University of Washington, and Mr. Ken Kane from the Society of American Foresters. And since I have sworn in all the other witnesses, it is only fair that I swear you in today. So before you get seated, please stand and raise your right hand.

[Witnesses sworn.]

Mr. WALDEN. Now pleased be seated. Again, we thank you for your comments today. We are looking forward to your testimony on this important issue. So now I would like to recognize Dr. Schlarbaum. Am I close? OK. And if you could hit your microphone, I am not sure it is on.

Dr. SCHLARBAUM. How is that?

Mr. WALDEN. That is better. Thank you, sir, and welcome.

STATEMENT OF SCOTT E. SCHLARBAUM, JAMES R. COX PROFESSOR OF FOREST GENETICS, DEPARTMENT OF FORESTRY, WILDLIFE, AND FISHERIES, INSTITUTE OF AGRICULTURE, THE UNIVERSITY OF TENNESSEE

Dr. SCHLARBAUM. Mr. Chairman, committee members, national forests are valued for timber, wildlife, recreation, and many other uses. Although managed by the Forest Service, citizens have input into the Forest Plan for each national forest. The Forest Plan is the centerpiece for management actions and ensures multiple use and sustained yield of goods and services. Fire, insects, adverse weather, and other catastrophic events that affect large areas of national forests are unpredictable and, therefore, are not addressed in the Forest Plan. Reforestation is necessary in order to attain previous structure and function as specified by the Forest Plan. Successful reforestation is a three-pronged process that depends upon funding, a source of living materials, and actual management activities.

Funding for reforestation activities comes from three sources: Knutson-Vandenberg or K–V funds; national forest vegetation and watershed management budget, NFVW; and the reforestation trust fund, RTRT. The K–V dollars are tied to planned harvest sales and sales of salvage timber, the NFVW funds are appropriated based upon a submitted fiscal year budget, and the RTRT funds originate from certain tariffs, both of which do not normally consider catastrophic events in regional allocations.

On the surface, it appears that K–V funds generated by salvage sales would provide for reforestation. In reality, K–V funds do not provide enough dollars to reforest large acreages for several reasons. When a catastrophic event occurs and wood is plentiful, there can be a market saturation. Another problem stems from the National Environmental Policy Act. Under NEPA, large salvage logging operations require an Environmental Assessment. This process can eventually lead to legal challenges which can last until the trees that could have been salvaged are worthless due to degradation, and this is particularly true for Southern national forests.

Given the above limitations of the three funding sources, it is evident that reforestation backlogs from catastrophic events will continue to occur and certain objectives in Forest Plans will not be met unless additional funds become available.

Reforestation efforts often depend upon planting seedlings of appropriate seed origin. The foundation for producing seed for the production of seedlings in the Forest Service lies with the Regional Genetic Resources Programs. In addition to producing seed, these regional programs also develop genetically resistant trees for various native and exotic pests that can cause widespread damage.

With respect to reforestation backlogs, the regional programs should be regarded as an integral part of the solution. Any funding increases to address reforestation backlogs should be in concert with funding increases for these Regional Genetic Resources Programs.

In Eastern forests dominated by hardwoods, seedlings and sprouts of fast-growing species will often quickly dominate a site at the expense of slower-growing species such as oaks. Forest managers need to have the flexibility in controlling these competitors that lack a categorical exclusion for herbicides, despite the fact that some herbicides are benign to human health and do not move through the soil. I have selected three examples of problems that have caused a reforestation backlog of approximately 180,000 acres in Fiscal Year 2003 and Fiscal Year 2004 in Southern national forests.

Currently, there are 350 acres of severe oak mortality with another 300,000 acres of moderate mortality in the Ozark National Forest in Arkansas. The red oak borer has been identified as the primary causal agent. Damage occurs from the larval stage of this insect, which chews large holes in the tree's stem. This damage also predisposes the tree to Armillaria root rot and hypoxylon canker diseases and attacks by other insects.

The overall result of the oak mortality will be low-density forests with less diversity. Regeneration of the oak component will be limited due to the lack of seed trees and intense competition, and, unfortunately, there are no seed orchards for reduction of red or white oak acorns adapted for the Ozark National Forest.

Southern pine beetle populations began to multiply and reached epidemic proportions in 2001 in the Daniel Boone National Forest in Kentucky. By 2002, there were dead or damaged pines on approximately 70,000 to 90,000 acres. Currently the forest is reforesting approximately 600 acres per year, which is short of the amount of acreage required under the Forest Plan. Correspondingly, a reforestation backlog exists. In addition, the Regional Genetic Program does not have enough shortleaf pine seed adapted for the Daniel Boone National Forest to sustain the reforestation effort.

And the last example is the Osceola National Forest in Florida recently exchanged land with a timber company to better consolidate the national forest. Prior to this exchange, a prescribed fire on the national forest escaped and burned approximately 14,000 acres of land that was intended for the exchange. The exchange proceeded, but the Forest Service inherited a block of burnt-over land and must fund any restoration with existing funds. Reforestation efforts will be limited as there are no funds to collect longleaf pine seed adapted for the local environment.

That concludes my statement.

[The prepared statement of Dr. Schlarbaum follows:]

Statement of Scott E. Schlarbaum, James R. Cox Professor of Forest Genetics, Department of Forestry, Wildlife and Fisheries, Institute of Agriculture, The University of Tennessee

Mr. Chairman and Committee Members:

National Forests provide a multitude of opportunities for use by American citizens. They are valued for timber, wildlife, recreation, and other uses connected with natural settings. Although managed by the USDA Forest Service, citizens can have input into the Forest Plan for each National Forest. The Forest Plan is the centerpiece for management actions on a National Forest that include decisions on reforestation, goals and objectives, timber land suitability, wilderness designation, monitoring, and other management activities. Moreover, the Forest Plan ensures multiple use and sustained yield of goods and services from the National Forest System. Fire, insects, adverse weather, and other catastrophic events that destroy or damage large areas in National Forests are unpredictable and therefore, are not addressed in the Forest Plan. Reforestation of these areas is necessary in order to attain previous structure and function as specified by the Forest Plan. Successful reforestation is a three-pronged process that depends on funding, a source of living materials, i.e., seeds, seedlings, sprouts, and actual management activities.

Reforestation Funding—Funding for reforestation activities come from three sources: Knutson-Vanderburg (K–V) funds, National Forest Vegetation and Watershed Management budget (NFVW), and the Reforestation Trust Fund (RTRT). The K–V dollars are tied to planned harvest sales and sales of salvage timber from unpredictable events. The NFVW funds are appropriated based on a submitted fiscal year budget, which normally does not take catastrophic events into consideration. The RTRT funds originate from certain tariffs and may not exceed $30 million dollars in total. The RTRT funds to each Region are based on annual request of current year silvicultural program and budget planning information. As with NFVW funds, the RTRT funds do not normally consider catastrophic events in Regional allocations.

On the surface, it appears that K–V funds, generated by salvage sales would provide for reforestation, even in a large catastrophic event. In reality, K–V funds do not provide enough dollars to reforest large acreages for several reasons. When a catastrophic event occurs and wood is plentiful, there can be a market saturation, and paper mills and sawmills will not buy more logs. This is particularly critical to southern National Forests in that the stems of a dead tree will degrade in a relatively short period of time. Another problem stems from the National Environmental Policy Act (NEPA). Under NEPA, generally a large (over 250 acres) salvage logging operation requires an Environmental Assessment (EA). When the EA is complete and a decision has been made that there will be no significant impacts, a Decision Notice is posted as a Paper of Record with an appeal process. This process can lead to legal challenges, which can last until the trees that could have been salvaged are worthless due to degradation.

Given the above limitations for K–V, NFVW, and RTRT funding of restoration, it is evident that reforestation backlogs from catastrophic events will continue to occur and certain objectives in Forest Plans will not be met. Additional funding through RTRT or some other channel will be needed to properly reforest and manage devastated lands according to their respective Forest Plan.

Source of Living Materials—Reforestation efforts depend upon a source of living materials that can be managed or planted to achieve a desired outcome. Disturbed forest land regenerates by natural or artificial ('tree planting) regeneration. Natural regeneration can be occur from seeds and/or sprouts. Natural regeneration by seed requires the presence of reproductively mature trees, which are called seed trees. Spouting is generally limited to hardwood species, although a few coniferous species, e.g., coast redwood, can sprout. The conifer-dominated western forests of pines, spruces, true firs, and Douglas-fir do not regenerate from sprouting and thereby, require seed trees or a source of nursery-grown seedlings to regenerate the forest. Eastern forests can be either conifer or hardwood dominated. Many hardwood species will sprout unless over mature or killed entirely, i.e., stem, crown and root system are dead. Therefore, the need for a supply of seed for artificial regeneration can be critical for reforestation.

Seed Origin—Although forest tree species can have natural ranges that span many states and physiographic regions, there are genetic differences in trees of the same species from different seed sources. For example, seedlings of northern red oak from the deep South may not be adapted to upstate New York environmental conditions where northern red oak also occurs naturally. Reforestation efforts should use seedlings from local sources or seedlings from seed orchards that have been evaluated in the environment that will be planted.

Regional Genetic Resources Program—The foundation for artificial regeneration within the Forest Service lies in the Regional Genetic Resources Programs (Table 1). Regional Genetic Resources Programs (RGRP) were formerly called Regional Tree Improvement Programs and existed in all Regions with the exception of Region 10 (Alaska). These programs were originally developed to improve species for timber production through breeding, testing and creation of seed production orchards. In recent years, however, the Programs have become more holistic in purpose. In addition to producing seed for general reforestation or reforestation due to catastrophic events, the RGRPs can: 1) initiate gene conservation of threatened and endangered species and populations, 2) respond to forest decline from air pollution and global warming, 3) respond to changes in emphasis for National Forest use, and 4) develop genetically resistant trees for various native and exotic pests.

The continued existence of RGRPs is essential to reforestation efforts where artificial regeneration is necessary. The planting of seedlings that are adapted to the reforestation site is critical for long term survival and productivity. Unfortunately, these Programs have been struggling with declining budgets and have been further impacted by the Forest Service's Budget Formulation and Execution System, which was implemented in FY03. In 1991, the combined RGRP budget was over $16 million dollars, but had slipped to approximately $10 million dollars by 1998. In addition, the Region 2, Region 3, and Region 4 Programs were consolidated and placed under the Regional Geneticist for Region 1 in 1998. The new budget system has removed control of most funds from the Regional Geneticists and allocated them to National Forest budgets. Forest Supervisors are now faced with the difficult decisions of funding immediate needs or long-term needs such as seed orchards, which produce seed for reforestation. Seed orchards have been closed or mothballed due to lack of funding.

Table 1. USDA Forest Service Regions and Regional Genetic Resources Programs (RGRP)

Region	States and Affiliates	RGRP Primary Location
Northern (R1)	MT. northeastern WA. northern ID. National Grasslands in ND and northwestern SD	Moscow, ID
Rocky Mountain (R2)	CO. NE. ND. WY	Administered by R1
Southwestern (R3)	AZ. NM. National Grasslands in NM. OK. and TX panhandle	Administered by R1
Intermountain (R4)	NV. UT. western WY, southern ID. and small amount of CA	Administered by R1
Pacific Southwest (R5)	CA. HI. affiliated Pacific islands	Chico, CA
Pacific Northwest (R6)	OR. WA	Portland, OR
Southern (R8)	AL. AR. FL. GA. LA. MS. NC. OK Puerto Rico. SC. TN. TX. VA	Atlanta, GA
Eastern (R9)	CT. DE. IL. IN. IO. ME. MD. MA. MI. MN. MO. NH. NJ. NY. OH. PA. RI. VT. WV. WI	Milwaukee, WI
Alaska (R10)	AK	none

With respect to reforestation backlogs, the RGRPs should be regarded as an integral part of the solution. Funding increases to address reforestation backlogs should be in concert with funding increases for the RGRPs, in order to sustain a supply of seedlings that are of the appropriate seed source for reforestation sites.

Reforestation Management—There are a wide range of management activities in conjunction with reforestation. In eastern forests dominated by hardwoods, seedlings and sprouts of fast growing hardwood species, such as yellow-poplar, black gum, red maple, sycamore, and sweetgum, will often quickly dominate a site at the expense of slower growing species, e.g., oaks, which are important contributors to habitat and diversity. Southern forests have an array of aggressive vines, weeds, and grasses that will overtop seedlings unless controlled. Forest managers need to have the flexibility in controlling these competitors, but lack a Categorical Exclusion for herbicides despite the fact that some herbicides are benign to human health and do not move through soil, e.g., glyphosate. Herbicide use now requires an Environmental Impact Statement (EIS) or an EA, which cost money to conduct and can be

appealed. Delay by litigation can be critical in some regions, as degradation will quickly ruin the market value for a log.

Reforestation Backlogs in Southern Region (R8) National Forests—Recently, southern National Forests have been subjected to catastrophic damage from insects. In addition, a large portion of land was acquired that had considerable fire damage. Overall, there is a large reforestation backlog in the Southern Region (Table 2).

Table 2. Reforestation program accomplishments and backlog, FY2003-FY2005 for the Southern Region (NFVW = National Forest Vegetation and Watershed Management funds, RTRT = Reforestation Trust Fund; K–V = Knutson-Vanderburg funds). Source: USDA Forest Service R8 2003-2004 TRACS (Timber Activity Control System) report.

Reforestation Acres	Fiscal Year 2003	Fiscal Year 2004	Fiscal Year 2005
Reforestation using NFVW/RTRT funds	8,694	9,262	7,753*
Reforestation using K-V funds	16,630	14,182	12,505*
Total accomplishment	25,324	23,444	20,258*
Reforestation Backlog	179,803	181,809	

* assigned targets

Below are three examples of problems that have caused a reforestation backlog in southern National Forests. In each situation, there is a lack of funding that has caused a reforestation backlog and there is a lack of seed from an appropriate source for artificial regeneration.

Ozark-St. Francis National Forests—Currently, there are 350,000 acres of severe oak mortality with another 300,000 acres of moderate mortality on the Ozark National Forest (Arkansas). In the areas with severe mortality, over 50 percent of the red and white oaks are dead, and many of the remaining oaks have thinning crowns (loss of leaves) indicating that they may die as well. The red oak borer has been identified at the primary causal agent. Damage occurs from the larval stage of this insect, which chews large holes in the tree's stem and branches in the crown. The borer will attack even small oaks, i.e., 3" diameter, and cause mortality. In heavily infested trees, one oak borer per linear inch of the stem has been found. This damage predisposes a tree to Armillaria root rot and hypoxylon canker diseases and attacks from other insects such as white oak borers, carpenterworms, walking sticks, and grasshoppers. Although the mortality has been primarily ascribed to the red oak borer, the oak-dominated forests on the Ozark National Forest were heading for decline because of drought, relatively oak age (70-90 years-old), overstocking, and poor site quality.

The overall result of the oak mortality will be low density forests consisting of species inferior for timber and mast production. Regeneration of the oak component will be limited, due to the lack of seed trees and intense competition from faster growing hardwoods. If allowed to occur, this will be a significant change in forest habitat and diversity. Restoration of the oak component will require the use of artificial regeneration and post-planting management to reduce competition. Unfortunately, there are no seed orchards for production of red or white oak acorns adapted for the Ozark National Forest. The Region 8 RGRP has recently created some oak plantations for eventual conversion to seed orchards, but it will be a number of years before the trees reach reproductive maturity.

Daniel Boone National Forest—At the advent of the 21st century, southern pine beetle populations began to multiply and reached epidemic proportions in 2001 on the Daniel Boone National Forest (Kentucky). By 2002, there were dead or damaged pines on approximately 70,000 to 90,000 acres within the Forest boundaries. Within the predominately pine stands of the Daniel Boone National Forest, were red-cockaded woodpecker colonies, a federally listed endangered species. Until the southern pine beetle outbreak, these colonies had been increasing in size. The outbreak destroyed their habitat, which necessitated trapping the surviving birds and relocating them to more southern locations in Arkansas, Georgia, and South Carolina.

The Forest Plan was revised in 2004 to include an objective to reforest 8200 acres in shortleaf pine over the next 10 years and approximately 42,000 acres over a longer period of time. With current resources, the Forest is reforesting approximately 600 acres per year, which is short of the amount of acreage required under the Forest Plan. Correspondingly, a reforestation backlog exists. Over time, reforest-

ation will become more expensive as hardwood species are in the process of dominating the sites and will have to be killed or removed prior to planting shortleaf pine. In addition, there is not enough shortleaf pine seed adapted for the Daniel Boone National Forest to sustain the reforestation effort.

Osceola National Forest—The Osceola National Forest in Florida recently exchanged land with a timber company to better consolidate the National Forest and thereby, reduce management costs, improve water quality, and reduce forest fragmentation, which is important to wildlife. Prior to the exchange, a prescribed fire on the National Forest escaped and burned approximately 14,000 acres of the land that was intended for exchange. The exchange proceeded, but the Forest inherited a block of burnt-over land, instead of a longleaf pine forest, and must fund any restoration with existing funds, i.e., from RTRT and NFVW. Reforestation efforts will be limited as there are no funds to collect longleaf pine seed adapted for the local environment.

Closing Statement

Reforestation backlogs on National Forests will continue to occur as catastrophic events are difficult to predict. Provisions for additional funding to meet immediate reforestation needs from catastrophic events should be made. Otherwise, there will continue to be alterations in the habitat and diversity on National Forests where a catastrophic event has occurred, resulting in failure to meet certain Forest Plan objectives. Reforestation should be regarded as a combination of actions leading to a single outcome. The Regional Genetic Resources Programs are the foundation for reforestation where artificial regeneration is required and thereby, are integral in the reforestation process. Increases in funding to meet reforestation backlogs should correspond to increases in the Regional Genetic Resources Programs' budget in order to generate enough seed of appropriate origin to meet reforestation needs. Management activities in conjunction with reforestation should be efficient and environmentally safe. A Categorical Exclusion for the use of benign herbicides to control competition in reforestation plantings would significantly improve survival and growth without damaging the environment.

Mr. WALDEN. Thank you very much.

Mr. Kane?

STATEMENT OF KENNETH KANE, SOCIETY OF AMERICAN FORESTERS, KANE, PENNSYLVANIA

Mr. KANE. Thank you, Mr. Chairman.

I am here today representing the Society of American Foresters——

Mr. WALDEN. I am not convinced your microphone is on or it is close enough to you. Those have to be fairly close.

Mr. KANE. How is that? Is that better?

Mr. WALDEN. I think so.

Mr. KANE. OK. I am here today representing the Society of American Foresters. SAF is an organization of over 15,000 professional foresters in all segments of the profession, from consultant foresters like myself, to academics, scientific researchers, and Federal and State and local agency personnel. SAF members believe it is our responsibility as professionals to ensure the continued health and long-term sustainability of both public and privately owned forest resources for the current and future generations. Over the last several decades, SAF has become increasingly concerned with the lack of action in Federal forests that is needed to maintain and improve these forests and their associated resources. Foresters need to be able to apply the proven practices of silviculture, which at times can include timely human-induced reforestation, to ensure over the long run that our forests are healthy and the objectives set forth for these forests can be met. As the General Accountability Office report outlines, reforestation has become a major problem on National Forest System lands. The backlog of reforest-

ation can inhibit proper stewardship of our forests and can reduce the health and long-term viability of these forests.

As you said so well in your opening remarks, our area was pretty much harvested early on from large sawmills. This is a typical sawmill that occurred in our area around 1900. The devastation from the intense harvest with firewood and forest product materials left a landscape that the next slide will show. This landscape was not uncommon across Pennsylvania. In fact, around 1900, Pennsylvania, most of Pennsylvania looked like this, coupled with the deer herd that was reduced by 400 animals at that time, as the settlers used the natural resources of the area to survive.

This is what the forest looked like prior to settlement. You'll see a lot of vertical structure, a lot of old growth down and dead and woody material. However, after the harvesting, the next slide depicts what the forest looked like after harvesting. The large materials were taken to the sawmills, and in remote areas small, low-value pole timber was left behind. This land was purchased primarily by the Allegheny National Forest that comprises now half a million acres of public land in our area.

The next slide depicts the very first timber sale on the Allegheny National Forest in 1927 in the little Arnot watershed. You will notice the next series of slides is taken from the exact spot for a period of approximately 70 years. This is in the spring of 1927, 1937, 1947, 1957, 1967, 1977, 1987, all the way to 1998, which depicts a mature Allegheny hardwood forest.

Mr. WALDEN. Can you tell us what the tree types are?

Mr. KANE. Interesting. That's a great question. I hate to take up the time, but to answer your question in the interim of my time——

[Laughter.]

Mr. WALDEN. Suspend the clock.

Mr. KANE. OK. Thank you for that opportunity. But I am trying to depict 150 years of history in 5 minutes, so thank you for bearing with me. But the species you see in this picture, the larger trees you see are black cherry, prunus serotina, which is the primary species of the Allegheny forest type. Many accuse us foresters of managing primarily for that tree. However, if you couple what I have explained to you in the low deer herd in 1900, today the estimated deer herd in Pennsylvania is 1.6 million animals. The problem we are having and that I will depict later on in this presentation is with that low deer herd, we were able to regenerate a very diverse forest. The smaller tree on the right-hand side of that is a sugar maple, acer saccharum. What we tried to do in managing our resource is we carry the acer saccharum—when we manage for the forest resource, we try to carry that sugar maple into the next rotation, and oftentimes we will let that tree go for 200 years. However, the black cherry matures in about 100 years, which is the crisis that we have before us today. We not only are susceptible to the blowdown that I am going to show you, but we are also susceptible of overmaturity.

The slides that I've depicted show the forest in a dormant state, our hardwood forest in a dormant state. The next slide will show you what the forest floor looks like with 1.6 million deer on our landscape. That slide, you will see hayscented fern in the

foreground, and if you look very closely, in the background you will see at about 5 foot a line, horizontal. That is a deer browse line. That is the impact of the white-tailed deer to our forest.

Just yesterday, I attended a conference at Penn State, the Pennsylvania Forest Issues Conference, and at that conference it was stated by research data that two-thirds of Pennsylvania currently is unable to regenerate itself without foresters actively managing that resource. Two-thirds of Pennsylvania's 17 million acres of forestland can't regenerate itself because of that condition, because the white-tailed deer changes the forest structure on the forest floor, inhibiting natural species to advance.

The next slide will show you how we're susceptible to blowdown. We experienced a blowdown in 1985 that damaged the 13,000 acres in the Allegheny National Forest, and in 2003, we had a blowdown that blew down 10,000 acres.

The next slide will show you the impact. That is an aerial infrared photo of the Allegheny National Forest, the impact of the tornadoes that crossed it in 1985. That area, 13,000 acres was blown down quite severely, as you can tell by the color infrared. That area was let for timber sale within 2 years of blowdown. The 2003 storm, now in 2005, less than 20 percent of the area has been let for timber sale salvage.

Mr. WALDEN. Excuse my ignorance. Is it the blue or the red that was blown down? The blue?

Mr. KANE. The red is the growing infrared. The gray in the middle is the impact of the tornado.

Mr. WALDEN. Thank you.

Mr. KANE. Which was quite severe. It was a swath approximately a quarter to a mile wide and 60 miles across our half-million-acre national forest.

The next slide shows you what the regeneration looks like in that tornado swath today. Twenty years later we have a sapling stand, very similar to that stand that you saw in my earlier slide of 1937.

The next slide shows you why we can't let our forest go to late succession. That is a beech tree. The species on—the same tree, species on the left is early stages of the beech scale nectria-complex; the middle is when the tree is on the killing front; and on the right is the late stages of the beech scale nectria-complex. Beech scale nectria-complex is a disease that was brought into North America at the point of Nova Scotia in 1890 from Europe, and it has been moving south and west ever since. The Allegheny Plateau is now in the killing front of that disease. Beeches are late successional species in our forests, so we can't support a late successional forest. In Europe, the beech tree is known as—the disease is known as the beech snap disease because the trees tend to snap off between 15 and 30 feet high. So they're not even good areas for recreation once you're in late succession because you're in there, the wind blows, and the trees start snapping off all around you.

It's interesting. I know our area may not quite be as beautiful as the peninsula you were invited to earlier, but we very much would enjoy having you up for a tour, if you were inclined.

Mr. WALDEN. Yes, snapping tree tour. That will work.

[Laughter.]

Mr. KANE. Also, we're susceptible to a disease that's exotic that is in another late successional species, which is the hemlock wooly adelgid, which is attacking our State tree, the Eastern hemlock.

The next slide shows you what we are up against today. The upper left is straight maple, and the low-story vegetation that takes over our lower canopy that won't allow natural forest to replace itself, primarily because of our friend the white-tailed deer. Bambi is beautiful, but she can cause a lot of problems.

The lower left shows what we have to do. That's a herbicide apparatus that we use to use herbicides, as Dr. Schlarbaum referred to, herbicides that are inert to man, but they are herbicides that we use daily, such as glyphosate, which is Round-up that we use around our homes. That is the primary herbicide we use to control these species on the ground.

And then, of course, the beech brush, the young root suckers that occur from the dying beech from the scale nectria. They reproduce through their roots, so we get that thick brush you see in the lower right.

The next slide is my final slide that I will try to conclude my comments with. That is a woven wire deer exclosure. Those are what we have to erect on our plateau to regenerate our forest. The area to the right is inside the exclosure. The area to the left is outside. The difference is quite stark. That fence to erect today is—2 years ago, prior to the cost of energy and steel increasing, that cost us approximately $1.50 a linear foot to construct. I'm currently under contract with a contractor to put some of that fence up at $2.20 a linear foot.

So, in conclusion, action needs to be taken now to ensure the establishment and growth of regeneration in disturbance areas of northwest Pennsylvania and in many areas throughout the country. Forest policy, funding, and other factors that preclude timely reforestation are evident in comparing the response, of course, to the 1985 and the 2003 wind events.

Thank you for the extra time.

Mr. WALDEN. Well, it is very helpful, especially those of us from the West who aren't dealing with some of the issues you are, but as a committee we have that responsibility. So it has been most informative.

[The prepared statement of Mr. Kane follows:]

Statement of Kenneth Kane, Consulting Forester, Keith Horn Forestry, Inc., representing the Society of American Foresters

My name is Kenneth C. Kane. I am president of Keith Horn Forestry, Inc., Consulting Foresters, in Kane, Pennsylvania. I have been practicing forestry full time on the Allegheny Plateau since 1983. I am also a native of Kane, Pennsylvania, a small community located at the eastern edge of the Allegheny National Forest. It was growing up in the Allegheny Plateau Region that motivated me to attend Penn State University and obtain my Bachelor of Science degree from Penn State's School of Forest Resources.

I am here today representing the Society of American Foresters (SAF), an organization of over 15,000 professional foresters in all segments of the profession, from consultant foresters like myself, to academics, scientific researchers, and federal, state, and local agency personnel. SAF members believe it is our responsibility as professionals to ensure the continued health and long-term sustainability of both public and privately owned forest resources for current and future generations. Over the last several decades, SAF has become increasingly concerned with the lack of action in federal forests that is needed to maintain and improve these forests and their associated resources. Foresters need to be able to apply the proven practices

of silviculture, which at times can include timely human-induced reforestation, to ensure, over the long-run, that our forests are healthy and the objectives set for these forests can be met. I will include, for the record, SAF's position statement in this issue, titled Use of Silviculture to Achieve and Maintain Forest Health on Public Lands. It is difficult to meet the public's demands for these lands when foresters are prevented or restricted from practicing our profession. As the General Accountability Office Report outlines, reforestation has become a major problem on National Forest System lands. The backlog of reforestation can inhibit proper stewardship of our forests and can reduce the health and long-term viability of these forests.

Many well-intentioned people ask if we should simply allow forests to regenerate on their own. In fact, most forests can regenerate successfully without human influence, However, when society expects (and legally requires) responsible stewardship of our forests and diverse values from these forests—clean water and air, wildlife habitat, recreational opportunities, forest products, and scenic beauty, it is sometimes necessary to intervene. Human-induced or artificial reforestation is often needed to accelerate the growing process and move more quickly towards meeting the demands society places on forests. Human induced reforestation is also beneficial where there is an abundance of invasive species, wildlife such as deer, a real problem in northwest Pennsylvania, or other conditions, that would prohibit natural regeneration of the desired forest. Additionally if there is a lack of seed trees in the area, it may take years for natural regeneration to take hold, putting the soil at risk of erosion and putting the area at risk of invasive species.

Delayed or inadequate reforestation after catastrophic events, such as wildfires, hurricanes, blow downs, and ice storms, is of particular concern. In some cases it is extremely difficult to naturally reforest these areas to the desired species and composition in a timely manner and intervention is needed through forest management and reforestation practices. At times foresters need to remove a proportion of dead and dying trees in a disturbance area to provide access, remove safety hazards, or reduce the risk of insect infestations or fire danger the dead and dying trees can create. This kind of activity encourages forest regeneration.

I'd like to share a case example of the reforestation problem from the eastern U.S., in the Allegheny Plateau. The example demonstrates the need for timely reforestation in the Allegheny region, particularly after catastrophic events, to achieve the objectives set out for these areas and restore the desired species composition and forest structure. These problems are certainly not exclusive to the eastern U.S.—similar issues are prevalent after wildfires in the west and south, blow-downs in the boundary waters, hurricanes on the east coast and after many other disturbances.

Extensive timber harvesting in the Allegheny region in the early 1900's coupled with a greatly reduced deer herd provided ideal conditions for the establishment of a new forest of shade intolerant hardwoods such as Black Cherry, White Ash, and Tulip Poplar, along with Red Oak and Maple. At the turn of the last century, these lands were of little value to timber companies and were sold to the federal government, forming the Allegheny National Forest. The first timber sale was conducted on the little Arnot watershed in 1927. I have attached to this testimony a pictorial sequence of the development of the forest as it moved from an early successional seedling to sapling stand, to a poletimber stand, to a light sawtimber stand to eventually in seventy years, a mature Allegheny hardwood sawtimber stand.

Unfortunately, these beautiful forests do not stop changing once they are mature. Mature Allegheny Hardwood forests are very susceptible to wind throw as we experienced in 1985 with the series of tornadoes that crossed the region and again in 2003 with a combination of tornadoes and intense thunderstorms. The 2003 storm resulted in approximately 10,000 acres of downed trees.

These natural disturbances should create a scenario to regenerate the forest without human intervention—Natural seedlings and a seedbank from the blow down trees, abundant light created from the disturbance, the same moist rich soil, and natural protection from the blow down. However, other influences on the landscape have greatly inhibited the capacity of the forest to naturally regenerate on its own.

First and foremost, the whitetail deer population has exploded. The herd that was estimated at only 400 animals in Pennsylvania in the early 20th century is now estimated at 1.6 million. The deer through over-browsing, have changed the species composition of the forest floor from diverse wild flowers, shrubs, and seedling trees to hayscented fern, beech brush, and striped maple, preventing the natural regeneration of desired species. The beech brush, fern, and striped maple eliminate other species desired for diversity and favorable stand structure.

Insects and diseases are also a factor precluding natural regeneration of this forest type. Although American Beech is a late successional forest species, an exotic disease known as the beech scale nectria-complex prevents the tree from occupying the upper canopy of the forest and providing valuable mast (food) for animals. The

Hemlock wooly adelgid insect threatens the native Hemlock in a similar manner. These and other invasive species often preclude regeneration of desirable native species.

In order to overcome these hurdles and restore the forest to desirable species composition and structure, foresters must be able to employ modern science and professionally accepted techniques. In some areas, foresters need to be able to salvage a portion of the down timber to gain access to the forest or create conditions where shade intolerant species can grow. In some cases, herbicides may need to be used to control undesirable vegetation, invasive species, and promote species diversity. Deer exclosure fences can also be constructed to protect diverse early successional forests from deer and additional steps can be taken to work with wildlife agencies to bring deer populations into balance with the habitat. Fertilizers can also be used to enable regeneration to grow past the level of deer browse.

Action needs to be taken now to ensure the establishment and growth of regeneration in disturbance areas in northwest Pennsylvania and in many areas throughout the country. Forest policy, funding, and other factors that preclude timely reforestation are evident in comparing the response to the 1985 tornado and the 2003 blow down. After the 1985 event—covering a much larger area than the 2003 event—the Allegheny National Forest completed over 80% of the salvage by 1987 and the area is now fully regenerated. Here in 2005, nearly two years after the 2003 storm, less than 20% of the affected area has been salvaged and even less has been reforested. In contrast on private land and state land, the salvage is nearly complete at over 80% salvaged. Once this material is removed, the area can be quickly reforested to ensure the presence of desirable species. On the federal lands, where this material is being removed at a much slower rate or not at all, reforestation is slow and will most likely not produce desired results.

The Allegheny Hardwood Forest type is a unique forest ecosystem. We need to utilize the science available to us to regenerate the forest in a timely manner and ensure the continuation of this unique ecosystem, before the opportunity passes.

NOTE: Pictures attached to Mr. Kane's statement have been retained in the Committee's official files.

Mr. WALDEN. Dr. Franklin, we are delighted to have you here, although I was a little concerned, you being a Husky and me being a Duck, but, you know, we will put that aside.

Dr. FRANKLIN. I am worse than a Husky. I am a Beaver.

[Laughter.]

Mr. WALDEN. That is—I won't ask you about the football players and the sheep, you know, the guy that got pulled over. But, anyway, we are delighted to have you here and look forward to your testimony today.

STATEMENT OF JERRY F. FRANKLIN, COLLEGE OF FOREST RESOURCES, UNIVERSITY OF WASHINGTON, SEATTLE, WASHINGTON

Dr. FRANKLIN. I will briefly go over the points in my testimony. I had understood that we were really focusing on the GAO report, and I just want to say I agree with the general conclusions of the GAO report. I think there are serious deficiencies in providing accurate and nationally consistent data regarding reforestation and stand improvement needs, as well as on a number of other topics. And the absence of such data bases, combined with the massive retirements of career professional foresters, is resulting in a significant and irretrievable loss of institutional memory on the part of the Forest Service.

This is a really serious issue. We have no record of what has gone on on a lot of that landscape. We cannot identify who did what when and why.

However, perhaps the most fundamental of the GAO findings in importance is the need to, as they put it, "clarify the direction and policies for the reforestation and timber stand improvement

program to be consistent with the agency's current emphasis on ecosystem management." And I would have to say, I think, the Forest Service has not systematically assessed its objectives and methods, silvicultural prescriptions, for example, in reforestation and stand improvement in light of the dramatic shift from timber production to ecosystem management that has occurred in the last 15 years.

Objectives and practices in reforestation and stand improvement need to reflect these new management objectives and not the historic timber emphasis, except where that's appropriate to the land allocation. What was appropriate for timber production is not necessarily good for many ecological objectives.

For example, the traditional practice following natural disturbances calls for rapid re-establishment of dense ("fully stocked") stands of commercially important tree species. Such an approach may be antithetical to both short- and long-term ecological objectives. As an example, early successional forest habitat—meaning relatively open areas free of dominance by closed forest canopies—characteristically have very high levels of species diversity and are the site of many important ecological processes. That is when a lot of the nitrogen-fixing organisms are found, for example.

Further, traditional reforestation practices can result in perverse outcomes, and a great example of this is on sites that suffer uncharacteristically severe—meaning stand replacement—wildfire, where we get intense fire where it is not characteristic. On such sites it is currently the common practice to salvage and immediately re-establish dense, uniform plantations. What have we done? We have effectively recreated the conditions for the next, uncharacteristic stand replacement fire. And a lot of the problems that we have with uncharacteristically dense stands in the West, particularly on the coast, has to do with the fact that we created those stands. Sierra Nevada is a great example of where we have done it.

An additional perverse example of an outcome from traditional reforestation practices applies particularly on the west side in the Pacific Northwest, the west side of the Cascades, and that's where we are proposing to go out and create new dense stands—they are plantations—on sites where we ultimately want to create owl habitat. Now, we have a big program specifically to correct that condition on a lot of designated owl habitat. So, you know, what are we doing? We are creating more work for ourselves in the future.

I would also add that stand improvement needs and practices need serious reconsideration along with the reforestation practices. The treatment of young stands to restore ecological values is often a very different process than that that we use to achieve timber management objectives.

I did want to end with just a comment that I think many Forest Service professionals are really doing their best to understand the differences and adjust their assessments and prescriptions accordingly, and I really give them high marks for their efforts. However, agency traditions and local policies may not always allow them to do what they think is best.

I would encourage you to think about encouraging the Forest Service to do a serious agency-wide reevaluation and rationaliza-

tion of reforestation and stand improvement policies. I think they need to systematically examine and revise the philosophies, principles, and practices on which its silvicultural activities are based, including reforestation and stand improvement. I think that would be an important and worthy exercise.

Thanks.

[The prepared statement of Dr. Franklin follows:]

Statement of Jerry F. Franklin, Professor, College of Forest Resources, University of Washington

Jerry F. Franklin is Professor at the College of Forest Resources at the University of Washington, Seattle, Washington, His degrees are in Forest Management from Oregon State University (BS "59, MS "61) and plant ecology from Washington State University (PhD, "66). He has over 50 years of experience in forest management, silviculture, and forest ecology, primarily with the USDA Forest Service Pacific NW Research Station (35 years) and as a university professor.

I agree with the general conclusions of the GAO report. The Forest Service does have serious deficiencies in providing accurate and nationally consistent data regarding reforestation and timber stand improvement needs. I would note that there are many similar topics where the agency lacks consistent and retrievable documentation of stand conditions, past silvicultural activities, and management needs on national forest lands. The absence of such data bases, combined with the massive retirements of career professional foresters, is resulting in a significant and irretrievable "loss of institutional memory" on the part of the Forest Service.

However, perhaps the most fundamental of the GAO findings in importance is the need to "clarify the direction and policies for the reforestation and timber stand improvement program to be consistent with the agency's current emphasis on ecosystem management" (p. 36). The Forest Service clearly has not systematically assessed its objectives and methods (silvicultural prescriptions) in reforestation and stand improvement in light of the dramatic shift from timber production to ecosystem management that has occurred in the last 15 years. This failure is resulting in projects, prescriptions, assessments, and inventories that are neither consistent with ecosystem-based objectives nor consistent among regions or even national forests within a region.

The emphasis in managing much of the national forest land base has shifted from maximizing timber production to other resource objectives, such as providing habitat for biodiversity and restoring forests to historic and less fire-prone conditions. Objectives and practices in reforestation and stand improvement programs need to reflect these new management objectives and not the historic timber emphasis. What was appropriate for timber production is not necessarily "good" for many ecological objectives!

For example, traditional practice following natural disturbances called for rapid re-establishment of dense ("fully stocked") stands of commercially important tree species. Such an approach may be antithetical to both short- and long-term ecological objectives. Early successional forest habitat—relatively open areas free of dominance by closed forest canopies—characteristically has high levels of species diversity and is the site of many important ecological processes, such as nitrogen fixation. Allowing for the slower and less uniform process of natural regeneration may have greater ecological benefits, particularly when such naturally disturbed areas are allowed to retain the structural legacies of the previous stands—i.e., are left unsalvaged.

Traditional reforestation practices often result in perverse outcomes, such as on sites that suffer uncharacteristically severe (stand replacement) wildfire as a result of uncharacteristic fuel accumulation. On such sites it is currently common practice to salvage and immediately re-establish dense, uniform plantations—effectively recreating the conditions for the next, uncharacteristic stand-replacement fire! In some national forests successful past efforts to replace under-stocked natural stands with dense plantations have been as important as fire suppression programs in creating fire prone stands and landscapes. This may have been appropriate when the objective was to intensively tend these stands for timber production but such practices are not consistent with current objectives. Many professionals in the agency recognize such inconsistencies and have made efforts to change practices but past regulations (e.g., reforest in five years) and tradition often make this difficult or impossible.

Additional examples of perverse outcomes from traditional reforestation practices can be found in the Pacific Northwest. Here the agency is engaged in a major pro-

gram—appropriately I would argue—to treat plantations established during the last forty years so as to accelerate development of structurally complex forests, which provide habitat for species such as the Northern Spotted Owl. Why would we continue to establish new dense plantations of this type on sites where our goal is structurally and compositionally complex forests?! It would not achieve our ecological goals and, if successful, result in the need for additional stand improvement treatments.

I would emphasize again the importance of structurally complex, gradually reforesting early successional habitat for ecological diversity. Mount St. Helens has provided us with a clear example of the unique contributions that large, slowly reforesting areas of this type can make to regional biological diversity. For example diversity and density of avifauna (birds), amphibians, and meso-predators are at extraordinarily high levels in the Mount St. Helens landscape.

Stand improvement needs and practices need serious reconsideration along with reforestation practices. Treatment of young stands for ecological purposes often contrasts with what is done to achieve timber management objectives. For example, creation of uniform stands is a goal in timber management; stimulating spatial heterogeneity through variable density thinning is often a goal in ecologically-oriented stand treatments. Related to this, ecological treatments often involve removal of some of the dominant trees while traditional timber thinning is "from below"—removal of only the smaller trees. Traditional wood production thinning focuses on elimination of commercially unimportant species and defective trees while ecological thinning may focus on retention of minor stand components and trees that have special value as habitat.

Many Forest Service professionals understand these differences and are adjusting their assessments and prescriptions accordingly. I give high marks to the insight and creativity of the majority of the agencies professionals as they deal with a bewildering array of new knowledge and new goals. However, agency traditions and local policies may not always support their efforts.

A serious, agency-wide re-evaluation and rationalization of reforestation and stand improvement policies is urgently needed. Even the language that is utilized—"timber" stand improvement—is inappropriate where development and enhancement of ecological values are really the primary objective. The language helps perpetuate the confusion of field personnel, stakeholders, and decision makers about what is really intended with reforestation and stand improvement activities. There have been profound expansions in the scientific underpinnings for silviculture along with the dramatic changes in management direction that warrant agency-wide attention.

A major national initiative by the Forest Service to systematically examine and revise the philosophies, principles, and practices on which its silvicultural activities are based—including reforestation and stand improvement—would be an important and useful exercise.

Mr. WALDEN. Thank you again, Dr. Franklin. We appreciate your comments on this important topic. Thanks for being here.

I am going to yield to my colleague from Oregon, who is in the middle of a markup in another committee, but I know has an intense interest in these issues. We appreciate Mr. DeFazio being here today, and I will turn it to you first for question.

Mr. DEFAZIO. Thank you, Mr. Chairman. I appreciate the courtesy. Yes, we are in the middle of a lengthy homeland security markup, and I have got to run back.

I am particularly interested in these issues, representing a district more than half owned by the Federal Government, predominantly in forests. And, you know, I would direct a couple of questions to Dr. Franklin, although to Mr. Kane I would observe, if the white deer are that much of a problem, I don't know what has happened to your hunter population there in Pennsylvania.

[Laughter.]

Mr. KANE. Interestingly enough, Congressman, Pennsylvania has a million hunters. We have one of the largest hunting populations in the United States.

Mr. DEFAZIO. Well, then, maybe they need to be reoriented onto what they are hunting.

[Laughter.]

Mr. DEFAZIO. Or beyond that, we have got a few extra cougars and we could lend those to you, and then maybe some wolf reintroduction would be good.

Mr. KANE. Interesting comment. The hunters have become lazy with an overabundance of deer. It is an issue in itself within Pennsylvania. Thank you for your comment.

Mr. DEFAZIO. Dr. Franklin, so salvage logging, can it occur and meet ecological objectives? I mean, are there cases where—or certain sizes of trees or stands where that would be allowable in your opinion, or desirable, shall we say?

Dr. FRANKLIN. Yes, I think those are relatively uncommon. I don't think, you know, that that circumstance generally exists. But there are circumstances of that sort, and it would be, for example, on a case where you get an uncharacteristic stand replacement fire and you have large fuel accumulations left after that fire, and you're concerned about having another repeat, excessively intense fire. So there are circumstances. But for the most part, salvage logging effectively does little or generally no ecological good. We do it. We do it for economic reasons. But in terms of a direct benefit for recovery processes, generally it is not.

Mr. DEFAZIO. So in the Northwest, in particular, matrix lands would be handled differently than LSR lands in sort of salvage and reforestation.

Dr. FRANKLIN. Absolutely. You know, the land allocation is critical. What are your objectives for that acre? Are they ecological, or are they timber production? And if they are ecological, then particularly on the west side, salvage is not appropriate. It doesn't make a positive contribution. It doesn't make a direct contribution.

Mr. DEFAZIO. I thought, though, from looking at your testimony that if we had an area that had burned where you had a mix of fairly dense smaller trees that were not thoroughly burned mixed into larger trees, some of which were dead or dying and others which weren't, that you might go in there, remove the fuel load and the smaller trees, which perhaps ideally we might have done before we had the fire. Is that correct?

Dr. FRANKLIN. That's correct.

Mr. DEFAZIO. And to get any value out of those, that would have to be done——

Dr. FRANKLIN. Quickly.

Mr. DEFAZIO. Very quickly. OK.

Dr. FRANKLIN. Absolutely.

Mr. DEFAZIO. That is an interesting twist, sort of the inverse of what we look at now. We look at the highest timber value bigger, older stuff, and the smaller trees are ignored. And then we generally engage in a longer fight over the larger trees as opposed to expediting—perhaps we could get some consensus on expediting removal of the smaller trees.

I also would like—I appreciate the issue you raised where you talked about the uncharacteristically dense stands, and it is my understanding from talking to the Forest Service that, looking at west side Oregon and Washington, uncharacteristically dense stands

west side, and going into thin for ecological value but achieving commercial grade production in doing that is somewhere around 6 billion board feet, if you want to measure it that way. Obviously, perhaps, you wouldn't want to measure it that way. But to me it seems like a missed opportunity here, and anything you want to expand on on the pre-fire condition of some of the west side forest and the uncharacteristically dense stands and the wisdom or lack thereof in terms of not moving that back more toward a natural system before a fire. Could you just briefly comment on that? I am about out of time.

Dr. FRANKLIN. I think there are two places where we really aggressively need to treat stands, and on the west side it's particularly in the younger stands that are overly dense. We thought we were going to primarily focus on maximizing timber production. We aren't anymore, and there's a very large acreage of those and a very large need for treating those. And certainly that would yield a potentially significant amount of timber.

The other place where we have a very significant need is more in the eastern slopes of the Cascades, where we have stands that are clearly—and these include older trees—that are clearly in a condition that it is not characteristic and will lead to an intense fire, which is not characteristic of that site. And, clearly, there's a real need to get into a lot of those stands and largely remove small and medium-size material so that, in fact, those forests are sustainable.

In southwestern Oregon, you know, there is a very complex mix of conditions. It is really complicated. So, you know, it is sort of a mix of both places where it's appropriate and places where it's inappropriate.

Mr. DEFAZIO. Yes, if I would—and, again, it is somewhat difficult to determine sometimes, but some people want to restrict that to a particular diameter. But, for instance, I have witnessed on the Malheur where there has not been a significant fire, mostly because of human intervention in some places for 90 years, where you have Doug firs of significant diameter growing up into the crowns of ponderosas that would survive a fire, but the Doug fir is like 20-some-odd inches in diameter. And so the measures cannot be just sort of, well, we will go in and take out all the trees less than a certain diameter. It has got to be we want to protect the remaining old growth ponderosa, which might mean removing some significant but exotic trees.

Dr. FRANKLIN. I agree with you absolutely, and it needs to be objectively driven, and arbitrary diameter limits are not a particularly good approach to that. And I have seen exactly the same thing where 18-, 20-, 22-inch diameter white firs are tucked into the crowns of some of those old growth ponderosa pine, and I would like to see us keep those pine. And to do that you have to remove that white fir.

Mr. DEFAZIO. Thank you.

Thank you, Mr. Chairman, for your indulgence.

Mr. WALDEN. Thank you, Mr. DeFazio. And, Dr. Franklin, thank you, because a lot of those are forests that are in my district. When I was first running for this office, I went on a forest tour out in the Deschutes, and they were showing us how they were—that the

forest we were in was being managed in theory for, I think, last succession—old growth characteristics of ponderosa pine. And so that on the one hand, they were describing what the forest should look like and showed us a photo from, I think, the 1920s of a car sort of driving through, a savannah type scene with just grass underneath, and then these big old growth ponderosa. And then what we were seeing when we got out of the bus and got out walking around was all this white fir and other fir coming up in it. And I said, now, I am confused, because you just told us it should look like this, and yet it looks like that. And they sort of threw up their hands and admitted that was a problem.

I was just up on a proposed thinning project up on Mount Emily outside of LeGrand, the same deal. And the people who were appealing that fuels reduction project are doing it based on diameter size, which you have just testified isn't necessarily the way to manage these old growth forests. We appreciate that.

Dr. FRANKLIN. I don't think that that is the best way to approach restoration.

Mr. WALDEN. It seems arbitrary. We ought to be managing for the stand that is supposed to be there, historically was there. Isn't that more accurate?

Let me turn to Mr. Kane. Why has the agency's response to 2003 blowdown on the Allegheny National Forest taken longer than the response to the 1985 event?

Mr. KANE. That is an interesting question, and I would tend to say that there's—with more pressure on the National Forest System for multiple uses other than primarily timber, in 1985 there was still a very active timber program on the Allegheny National Forest, an at that time the timber program produced somewhere in the vicinity of about 70 million board feet a year, was their ASQ. In 2000, that was down to about 10. They just didn't have the staff, and they didn't have the resources, because if you couple—what we have been told on the Allegheny is, as you mentioned, borrowing from funds to take care of the fire issue, a lot of those management monies went to fires, as I understand it, and they didn't have the resources to address it. Also, there has been more challenges nationwide on our National Forest System and their practices by other individuals and groups that slows that process where they tend to get caught up in, you know, preparation of policy and analysis of what they do rather than knowing—we generally know what to do in short term, but to document it and to do the traditional long-term—as you mentioned earlier with the BLM, a page of environmental assessment for every acre of treatment. It tends to slow the process immeasurably.

Mr. WALDEN. And with the funding problem we face, then, if we lose the economic benefit of salvaging some of this timber, then that money is not available to engage in some of the restoration work that needs to be done, clearly.

Mr. KANE. In fact, you will notice today I've danced around economics. The Allegheny National Forest is the most valuable forest in Region 9, and truly one of the most valuable national forests in America. The timber values on that forest, individual trees can be worth up to—the trees like I showed in my slide—not every tree. I have to qualify, not every tree, but individual trees in that forest

can be worth in excess of $10,000 per tree, and values in excess of $10,000 an acre are not uncommon if you check the Forest Service——

Mr. WALDEN. Ten thousand dollars an acre?

Mr. KANE. An acre for salvage—for the timber that's on an acre. An individual tree can be, but it's not uncommon for an acre of timber to be worth in excess of $10,000. So the economic factor is significant. I'm hesitant to bring that up. I'd rather stick to the science because the economics are pretty straightforward.

Mr. WALDEN. All right. And, Dr. Schlarbaum, I just want to point out for the committee—and we may send this around separately. Your explanation of reforestation funding is probably the most thorough and yet succinct that we have seen, so we appreciate the work that you have put into this.

In the South, what happens after a catastrophic event like a blowdown if human intervention is not undertaken?

Dr. SCHLARBAUM. Well, the timber will degrade quite rapidly. In fact, with the southern pine beetle hitting these pine stands, if you do not get in there and salvage within a year, usually it's too late. In fact, they won't even burn.

Mr. WALDEN. Do you have examples of—much more of your lands are privately held, I assume, than those of us in the West.

Dr. SCHLARBAUM. Yes.

Mr. WALDEN. But what does it look like between the private and the Federal lands when there is a blowdown? What do you see as differences in the way they are then managed?

Dr. SCHLARBAUM. Well, again, assuming there is not a market saturation, the private landowner would immediately move to salvage that timber and then regenerate the stand.

Mr. WALDEN. OK. And the public landowner?

Dr. SCHLARBAUM. Well, the public landowner, you know, you would have to do an EA if you wanted to do a large salvage sale, over 250 acres generally on national forest, and those are subject to litigation.

Mr. WALDEN. OK. My time has elapsed. I recognize my colleague from South Dakota.

Ms. HERSETH. Thank you, Mr. Chairman. And thank you to each of you for your statements and for your presence here today and answering some important questions in a very important area, regardless of what region of the country we are from and districts that we represent.

You may have heard me speak with the earlier panel that in South Dakota we have the Black Hills National Forest. We have experienced not only wildfires that are exacerbated by drought conditions in the western side of the State but pine beetle epidemics as well. And we have had a series of litigation that has been somewhat minimized here in the last couple of years based on the advisory group that was formulated about a handful of years ago. And I just want to open up a couple of questions to any of you that want to respond, but, Dr. Franklin, I couldn't agree more with your assessment based on what we have heard today from the GAO's report as well as the testimony from those in the earlier panels that we need some sort of more comprehensive reevaluation within the Forest Service, an ability to collect this data that will help guide

us in the policies as well as these funding priorities that are necessary for the health of our forests across the country as it relates to regeneration, the reforestation and stand improvement issues.

So I agree with you there, and I think it is important that we do that in a way that can then collect regional and forest-specific data. Let's see. Whose report here—I think it is, Mr. Kane, your statement indicates that the Allegheny Hardwood Forest type is a unique forest ecosystem. That is commonly how we talk about the Black Hills National Forest, as being a unique ecosystem. Did you want to respond? You have heard that before, I suppose.

Mr. KANE. Yes, I think we—that brings up a very interesting point. The Black Hills is a unique ecosystem, as is the Allegheny, which shows the importance of giving the local managers responsible for that forest the opportunity to practice the silvicultural techniques necessary to manage that forest.

Ms. HERSETH. Thank you. Again, it is the local and unique characteristics of each of our forests that highlights the importance of collecting data in a systematic way with standardized criteria that takes into account what those measures and methods are and the local importance of those that can then help inform the Forest Plans. And if we had a way to collect this data more efficiently, it might help make the whole Forest Plan development process more efficient as well.

But let me just throw these questions out to any of you. We have the benefit in the Black Hills of still having some infrastructure for our timber industry and the economic importance for jobs there. And I have worked closely with the association that works also quite closely with the Forest Service in addressing the predictability and stability of the harvest and of the ASQ that is necessary to sustain those mills and other businesses.

But something that is of importance to all of us and that the association has been involved with in our neighboring State of Wyoming as well is what informs the Forest Plan in a variety of other areas. And so if you could just share some of your thoughts on the ecological importance of maintaining species diversity, structural diversity, and age class diversity when reforesting an area as well, and then any thoughts that you have on the role of disturbance, whether it is wildfires, blowdown, or pine beetle epidemics and natural regeneration. If any of you or if all three of you want to respond, if one of you wants to take the lead in either of those areas.

Dr. SCHLARBAUM. I will just say something about the importance of making sure that you get the appropriate seed source if you are going to artificially regenerate or plant those areas. You want to make sure that your seed source is local or if you have an orchard, they are from the Forest Service's Regional Genetics Resources Program that is constructed from materials that have been tested. Otherwise, if you buy just any seedlings off the market, they may not be adapted to 2-year force in the short term or the long term, and sometimes you can get trees that will live that aren't particularly productive, but they will go ahead and pollinate your more native local genotypes and lower the overall fitness of your forest. So pay close attention to your seed source when you reforest.

Mr. KANE. Uniquely, on the Allegheny Plateau, nearly all of our regeneration is natural regeneration through silvicultural practices.

So we don't have the concern for the genetic purity because it is already there. We are using native trees for our regeneration.

The important thing for us, as you saw from my presentation, is that we need more—we may need more structural diversity that our lower canopy has been really inhibited by man's influence over a hundred years of policy on white-tailed deer management in Pennsylvania that causes a problem, and also that it affects our species diversity. We are often accused by people in our management schemes that we are managing, again, as I mentioned earlier, for the black cherry monoculture. That could not be further from the truth. It is the strength of the tree's survival and the influence of man, again, going back to the white-tailed deer problem, that deer are preferential browsers, just like we are, that they prefer other species above the cherry, and it just so happens that areas that were harvested in the 1930s and 1940s when the deer herd was quite high actually are almost all cherry monocultures.

So all those outside factors affect it, which shows the importance of why we need, you know, good professionalism and, I would say, a history of individuals on a forest. It is very difficult to understand—you know, you can understand general silviculture, but I will be honest with you, as a forester, I guess I'm considered an expert on the Allegheny Plateau. But I wouldn't attempt to come out to the Black Hills and try to manage your forest.

Ms. HERSETH. Is that a general—excuse me just a second. I want to follow up. Is that a general assessment that you are offering perhaps on policy and procedure within the Forest Service and the moving around of various supervisors and other officials?

Mr. KANE. That is, yes, ma'am.

Ms. HERSETH. OK. Thank you.

Dr. FRANKLIN. Well, it is always difficult to give general guidance for somebody else's backyard, but in general, the biological diversity is important, and a lot of it you won't even be aware of, you won't even see, because it's things like the fungi in the ground that form the mycorrhizal relationships with the trees. So diversity is important. Probably structural complexity is the best way to have an index to that, a reference to that. So structural complexity is probably your simplest measure of how well you're doing on diversity. I would just suggest that probably over half, perhaps as much as two-thirds of the animal diversity in your forest system—and that means both vertebrates and invertebrates—is probably associated with deadwood. So deadwood is a very, very component of those systems.

The last thing I would suggest to you is don't—you mentioned the issue of different age classes or different successional stages of forest. Do not deceive yourself that a clear cut is anything like a natural young stand. Natural young stands have high levels of structural complexity. One of the things they have in them typically is a lot of residual deadwood. That is one of the reasons why they work much differently than a clean cut does in terms of providing for things like biodiversity.

Mr. WALDEN. Go ahead, Dr. Schlarbaum.

Dr. SCHLARBAUM. In terms of some historical references, South Dakota State put out a publication—and you may or may not have

seen it—of photos from the Custer expedition. Have you seen this publication?

Ms. HERSETH. I have, and I would encourage—I will get you a copy, Chairman, because it is fascinating to see during the—all of these photos document during Custer's expedition and the growth of the forest. As you know, the ponderosa pine regenerates itself tremendous quickly, and given the population of the hills since Custer's expedition—and we were talking about the urban-wildland interface, and the patchwork of private-public property there. So I am pleased that you mentioned that because I think it is very informative and instructive.

Mr. WALDEN. Can you outline it for me?

Dr. SCHLARBAUM. Well, it is a publication that—they noticed the Custer expedition, he was—what was he? He was up there looking for gold or—he was doing—I can't remember exactly what he was looking for.

Ms. HERSETH. Unfortunately, it may have been something involving poor policy on our part with Native Americans. But there was an expedition that actually found the gold, that discovered—that was not—the primary purpose was actually to map out the area, combined with some of the other missions within the Army, and then they discovered gold at that time.

Dr. SCHLARBAUM. But they took a number of photos and then some people came back 100 years later from South Dakota State University, rephotographed the exact spots—I mean, you can see the same rocks, rock formation, even some dead trees that are there. And I use it—and I teach a history of forestry class, and I use that as an example. And it is striking that if you look at the difference between 100 years, there are more trees now than there were.

Mr. WALDEN. All right. Well, I appreciate the testimony from all of our witnesses today, and especially you all who have hung out with us until the end here. Thank you for your comments, your counsel. It is appreciated. Obviously people come at this issue with different views, and that helps us in some respects, makes our job harder in others. But hopefully we will get it right and, again, we thank you for your testimony, your time, and your service.

The record will stay open for 10 days. If members of the committee who were unable to be with us today have questions, we would appreciate your getting back to us. Otherwise, all the testimony today and the statements of our members will be put in the record.

[Additional information submitted for the record follows:]

[A letter submitted for the record by Dale E. Anderson, President, Pennsylvania Forest Industry Association, follows:]

Mr. Doug Crandall, Director
House Resource Committee
Subcommittee on Forests and Forest Health

The four attachments included here are the recent pleadings from the lawsuit before the District Court for the Western District of Pennsylvania, civil case #04-1466.

This case was brought by the Allegheny Defense Project against the U.S. Forest Service, Allegheny National Forest.

These types of cases consume a huge amount of resources from both the government and private sector.

They result in the destruction of the forest.

They wreck the local custom, culture, and economy.

These types of lawsuits are unfair to the local residents.

These types of lawsuits benefit only the non-profits who bring them against the government due to the effect of the Equal Access to Justice Act.

A way needs to be found to curb this type of favoritism.

Please include these comments, and these attachments, in the record of the House Resources Subcommittee on Forest and Forest Health hearing as held on Wednesday, 27 April 2005.

Dale E. Anderson
President
Pennsylvania Forest Industry Association
415 Washington Street
Ridgway, Pennsylvania 15853
(814) 776-1883

NOTE: Attachments have been retained in the Committee's official files.

[A statement submitted for the record by Michelle Dennehy, The Forest Foundation, follows:]

Statement submitted for the record by Michelle Dennehy, The Forest Foundation

GREATER REFORESTATION EFFORTS NEEDED SAY FOREST FOUNDATION, FOREST SERVICE RETIREES

Call Comes as Nation Prepares to Mark Arbor Day on Friday, April 29

AUBURN, Calif., April 27, 2005—Forests on federally owned lands in California wiped out by wildfires are not being replanted quickly—or at all, in some cases—putting ecosystems at risk from severe erosion and mudslides and depriving future generations of forests, two groups said today.

Nearly four years after fires burned more than 117,000 acres in California forests in 2001, a survey by The Forest Foundation found that only about 28 percent of severely burned forest land designated by the Forest Service for replanting has actually been replanted.

The National Association of Forest Service Retirees (NAFSR) and The Forest Foundation, an organization dedicated to educating the public about our forests, today urged the Forest Service to speed replanting efforts to ensure forests for future generations.

''As we celebrate National Arbor Day April 29, the Forest Service cannot do what is necessary to ensure forests for future generations because their hands are tied by burdensome regulations and a lack of funding,'' said Dr. Tom Bonnicksen, a visiting scholar with The Forest Foundation and a professor emeritus of forest science at Texas A&M University. ''Rather than replanting trees, these once majestic forests stand burnt and dead, and some are turning into brushfields.''

''Replanting is key to ensuring our state's forests stand tall for generations to enjoy,'' said Doug Leisz, Chairman of the National Association of Forest Service Retirees (NAFSR) who served as U.S. Forest Service Associate Chief from 1979-1982 and California's Regional Forester from 1970-1978. ''During my tenure with the Forest Service, we actively replanted soon after fires, before competing brush took over. The delays experienced by the Forest Service spell disaster for our future forests.''

The Forest Foundation's survey found that of the 117,907 acres in California's forests burned in 2001, the Forest Service determined 30,372 acres of their land experienced a high-severity fire and needed replanting. The Forest Foundation surveyed results on 10,647 of these acres where information was available and found that only 3,011 acres—or about 28 percent—had been replanted to date. Only 1,541 more acres are planned for replanting, meaning only about 43 percent of the area identified as needing reforestation will ever be replanted.

While the Forest Service's reforestation efforts focus only on high-severity burns only, experts believe some moderately-burned areas also need active attention and replanting, as many trees in these areas will also die.

Historically, natural, low-intensity wildfires helped create forest clearings and ecological conditions conducive to forest regeneration. But after a century of public policy mandating fire suppression, and a lack of forest management practices that reduce fuels, forests have grown overcrowded. The resulting buildup has led to catastrophic wildfires in recent years—fires that often degrade soil quality and destroy forests so completely that regeneration likely will take hundreds of years.

> "These monster fires of extreme heat kill seed trees over vast areas, making it difficult or impossible for living trees to spread seeds widely enough to generate a new forest," Dr. Bonnicksen said. "Meanwhile, other competitive plants that thrive in post-fire environments, like manzanita, can quickly overtake an area and delay regeneration of conifer trees for centuries."

These areas that cannot regenerate naturally need a helping hand, the Forest Foundation found. But the Forest Service faces delays or obstruction of its efforts to restore burned areas.

For example, the McNally Fire in 2002 burned more than 150,000 acres in the Giant Sequoia National Monument and the Sequoia and Inyo National Forests. While the Forest Service found 8,400 acres of conifer forest needed replanting, only 4-5,000 acres are likely to ever be replanted. Almost three years after the fire, no replanting has been accomplished to date due to delays caused by environmental documentation requirements. The delay has allowed brush to overtake some areas.

In the Megram Fire of 1999, which burned 59,200 acres in the Six Rivers National Forest, only 1,508 of the 3,000 acres the Forest Service planned to replant have, in fact, been replanted. Portions of what was once a magnificent conifer forest of Douglas-firs and other trees are becoming brush.

While severely burned public lands haven't been replanted, private forestland owners quickly removed dead trees and fuels, using the value of the wood to fund the replanting of a new forest. These private landowners replant in ways that enhance environmental values and accelerate forest regeneration.

After the 2000 Storrie fire in Plumas and Lassen Counties, local private land manager W.M. Beaty and Associates removed dead trees and fuels on the 3,200 acres it managed that burned in the fire. Its reforestation efforts, including the planting of nearly one million trees, were completed by 2004. Some trees in this young, mixed conifer forest are now 4-5 feet tall.

In contrast, on public land at the Lassen National Forest, of the estimated 27,000 acres burned on the in the Storrie fire, only about 1,206 acres will be treated with fuels removal efforts and only 230 acres will be replanted. More than four years after the Storrie fire, only 171 acres have been replanted

> "Although some natural regeneration is occurring, Lassen and other national forests are in need of active replanting," said Doug Leisz. "Without this replanting, generations of Californians stand to miss out on the forest grandeur we now take for granted."

Note: Photos of forests turning to brush are available by contacting Michelle Dennehy at The Forest Foundation, tel. 530 823 2363, email: md@calforests.org.

About The Forest Foundation

The Forest Foundation is a non-profit organization that strives to conserve our forests and keep them healthy by sharing the knowledge of forestry experts with the public. Based in Auburn, Calif., its programs include scientific research, community outreach, education programs, and forestry exhibits. For more information, visit www.calforestfoundation.org.

About the National Association of Forest Service Retirees (NAFSR)

The National Association of Forest Service Retirees is a national, nonprofit organization of former Forest Service employees and associates who possess a unique body of knowledge, expertise and experience in the management of the National Forests and other forestland. NAFSR members strive to contribute to the understanding and resolving of natural resource issues through periodic review and critiques of agency policies and programs. For more information, visit http://www.fsx.org/nafsrpg.html.

Contact:

Michelle Dennehy, The Forest Foundation
www.calforestfoundation.org or Email: md@calforests.org
tel. 530 823 2363, cell 530 320 6732

REPLANTING ON OUR NATIONAL FORESTS AFTER 2001 FIRES IN CALIFORNIA

Craater Fire

- Inyo National Forest
- 5,600 acres burned; 800 identified as needing reforestation
- Approx. 400 acres were replanted
- Obstacles: Remaining 400 aces located in Mono Basin Scenic Area and manager decided not to replant by hand.

Darby Fire

- Stanislaus National Forest
- 14,288 acres burned; 2,096 acres identified as needing reforestation
- No replanting to date and none planned. Some natural regeneration occurred.
- Obstacles: No funding available.

Gap Fire

- Tahoe National Forest
- 2,462 acres burned; 1,100 acres identified as needing reforestation
- 1,020 acres planted to date; 80 more acres planned

Hyampom Fire

- Shasta-Trinity National Forest
- 1,065 acres burned; 172 acres identified as needing reforestation
- No acres planted to date; 121 acres planned
- Obstacles: Environmental planning process caused delay; sale of dead material offered one year after fire was unsuccessful.

Highway Fire

- Sequoia National Forest
- 4,150 acres burned; 150 acres identified as needing reforestation
- 150 acres replanted

McLaughin Fire

- Inyo National Forest
- 2,407 acres burned; 150 identified as needing reforestation
- None replanted
- Obstacles: No seed stock available to plant. The area was also located on a steep slope that would make replanting difficult.

Modoc Complex

- Several fires in Modoc National Forest
- 2,900 acres burned in Bell Fire, 332 acres identified as needing reforestation
- 186 acres replanted
- Obstacles: Survival of trees planted is questionable because site was not prepped by removing dead trees and other fuels. Dead trees are likely to fall on top of new seedlings over next decades, creating a hazardous fire situation. Several removal sales attempted but wood had deteriorated and no longer held value.

North Fork

- Sierra National Forest
- 4,132 acres burned; 430 acres identified as high-severity burned areas that could be reasonably replanted. Many other acres received high-severity fire effects.
- Approx. 250 acres replanted where managers were able to remove dead trees and fuel; another 70 acres planned over the next year. Of remaining acres, 130 likely to remain unplanted, as dead tree removal was delayed until material worthless. Planting without fuels removal would create fire hazard.

Oregon Fire

- Shasta-Trinity National Forest
- 1,720 acres burned; 197 acres identified as needing reforestation
- 20 acres have been replanted; no other treatment planned.
- Obstacles: Planning process took 13 months to complete, during which value of wood to fund removal and replanting was lost.

Sand Prescribed Burn

- Inyo National Forest
- 100 acres burned; 100 identified as needing reforestation
- 100 acres planted

Star Fire

- Tahoe and Eldorado National Forests
- On the Tahoe, where 9,500 acres burned, 5,000 acres identified as needing reforestation.
- 835 acres replanted to date; another 1,200 acres planned. Some natural regeneration occurring, though with white fir only in what was formerly a mixed conifer forest.

- Obstacles: Removal of some trees was stalled by litigation, so the trees lost any value to fund replanting efforts. Acres not replanted have too much fuel already on the ground; competing brush, vegetation in area also problematic.

White Fire

- Stanislaus National Forest
- 120 acres need replanting
- 50 acres replanted to date; remaining 70 acres to be planted in 2006.

NOTE: Pictures attached to The Forest Foundation's statement have been retained in the Committee's official files.

[A letter submitted for the record by George Sexton, Conservation Director, Klamath Siskiyou Wildlands Center, follows:]

May 5, 2005

House Committee on Resources
Subcommittee on Forests and Forest Health

Re: Oversight Hearing on Reforestation on National Forests: A GAO Report on the Increasing Backlog

Please accept these comments from the Klamath-Siskiyou Wildlands Center regarding reforestation efforts conducted by the Bureau of Land Management (BLM) pursuant to the Timbered Rock fire of 2002. We feel compelled to offer the following comments to the Subcommittee in order to clarify, and refute, some of the contentions made by Mr. Ed Shepard, Assistant Director of Renewable Resources and Planning for the BLM to this Committee on April 27, 2005. As the small non-profit forest defense group that took the lead on the administrative protest and litigation that ultimately halted the illegal Timbered Rock salvage logging, we have significantly different observations and thoughts regarding the actual relationship between salvage logging and reforestation than was presented to this committee by the BLM.

We believe that it is important for this committee to know that while a federal court halted the aggressive and illegal salvage logging at Timbered Rock, that BLM restoration efforts in the burn area have proceeded has planned. It is inappropriate, and inaccurate, for the BLM to imply to this committee that the court order preventing large-diameter (old-growth) logging in the Elk Creek Late-Successional Reserve somehow prevented the accomplishment of re-forestation efforts. Indeed the BLM wrote an Environmental Assessment (EA Number OR "110-03-08) specifically authorizing 6,600 acres of tree planting in the Timbered Rock burn area that was separate and distinct from the proposal to log trees in the Reserve. The EA covering reforestation was written, signed, and implemented months before the illegal Timbered Rock EIS was completed or litigated. The re-forestation EA was not subject to administrative protest or litigation, and the BLM is free to implement all proposed tree-planting activities.

Were Restoration Activities Halted or Slowed at Timbered Rock?

No. Not in the slightest.

In November 2002, long before the Timbered Rock Logging EIS was complete, the BLM issued the Timbered Rock Rehabilitation/Stabilization Environmental Assessment, authorizing thousands of acres of tree-planting in the project area. That Environmental Assessment was never protested, or appealed, and many of the rehabilitation efforts authorized in that EA were implemented with widespread community support.

Further, upon release of the Timbered Rock Logging EIS, the BLM split the project into several Records of Decision (RODs), which authorized various actions across the forests. One of these RODs authorized road maintenance, road closures and further tree planting. This ROD was not protested or litigated and the BLM is free to implement it whenever the agency so desires.

Unfortunately, the activities authorized under the "restoration ROD" were mere sideboards to the large-diameter (average 26 inches DBH) old-growth logging of the Elk Creek Late-Successional "Reserve". By authorizing the proposed restoration activities in a separate decision from the ROD containing the destructive large-diameter logging, the BLM wisely allowed the less controversial portions of the project to proceed without administrative or legal challenges. Yet Mr. Shepard inexplicably told this Committee that litigation (preventing the logging of the reserve) "delayed

implementation of the salvage and other restoration activities." The BLM is simply wrong about this. Hopefully the BLM was not trying to mislead this committee.

The plaintiffs' administrative protest and legal complaint, as well as Judge Aiken's ruling, all clearly state that the only activity being protested, or enjoined, was the illegal Late-Successional Reserve logging of large diameter snags from the "reserve" proposed in the Flaming Rock and Smoked Gobbler timber sales. No restoration, or reforestation efforts for this project were ever administratively or legally challenged. Most, if not all, of the restoration and reforestation activities outlined in both the EA and the restoration ROD have already been implemented.

Why Was the Timbered Rock Salvage Logging EIS Litigated?

> "This EIS does not claim that there is an ecological benefit to salvage logging."
>
> Medford BLM, Timbered Rock FEIS at page 5-16.

Mr. Shepard's testimony left out many salient facts regarding the proposed Timbered Rock salvage logging. In particular, no mention was made of the fact that all of the proposed salvage logging would have occurred within forests set aside for protection as the Elk Creek Late Successional Reserve (LSR). These reserve lands were protected by the Northwest Forest Plan, while other lands, known as the timber matrix, were identified as those forests in which logging, replanting and fiber production would play a dominant role. None of the lands proposed for logging in the Timbered Rock EIS were matrix logging lands. All of the lands proposed for logging in the planning area were classified as Late-Successional Reserves. Nowhere in Mr. Shepard's testimony will you find reference to the term "Late Successional Reserve." Indeed, the BLM is conspicuously silent as to the protective status that governs management of this delicate watershed.

Other words that do not appear in Mr. Shepard's testimony include the terms "deferred watersheds", "key watersheds" and "critical habitat." While the BLM may not wish to highlight these words, they are relevant in that the illegal Timbered Rock salvage logging would have occurred within forests designated by the U.S. Fish and Wildlife Service as critical to the recovery of the Northern Spotted owl, found in watersheds that were designated as key to the maintenance of healthy salmon runs, which were deferred from logging by the BLM due to the immense cumulative impacts from prior BLM logging and road construction activities in the watersheds. Simply put, the Timbered Rock planning area is one of the most environmentally sensitive, and protected, watersheds in Oregon. But for the Timbered Rock fire, the BLM could not have proposed large-scale logging in this watershed. Please see the photo attachment for an image of the cumulative effects of road building on the Elk Creek watershed.

Plantations in the Planning Area Act as Fire Bombs

While there is no court order, law or regulation that prevents the BLM from creating more plantations in the Timbered Rock planning area, it might be wise for the agency to avoid creating further tree plantations by its own volition.

Following the Timbered Rock fire, the Oregon Department of Forestry conducted a damage appraisal report for Timbered Rock which found that 100% of the young plantations burned with stand replacing intensity, while less than 10% of the big old growth trees burned intensely. Stand mortality on the Medford BLM land that was located in the nearby Biscuit fire showed very similar results to Timbered Rock in that 81% of plantations and 33% of forested stands experienced moderate to high burn severity according to the BLM (November 8, 2002 Press Release from BLM).

Unfortunately the BLM timber sales at both Biscuit and Timbered Rock targeted the biggest trees while neglecting to thin the dense young fiber plantations. The average tree marked for logging in the Elk Creek Late-Successional Reserve was about 26-inches in diameter, over two feet wide. A 26-inch average DBH indicates that the timber sale focuses exclusively on taking old-growth trees. Here in Southern Oregon, the BLM contended in Medford Mail Tribune newspaper (Timber plan draws cheers, jeers 2/11/04) that the focus of its logging at Timbered Rock "would be on smaller trees, not the largest ones." Unfortunately that statement was not reflected in the actual logging prescription developed by the BLM. In fact, all of the 24 million board feet of salvage at Timbered Rock would have come from snags over 16 inches in diameter. In other words, only the largest, most valuable wildlife snags were proposed for logging. The smaller burned material will simply be left on site as a continuing fire hazard.

We at the Klamath-Siskiyou Wildlands Center (KS Wild) estimate that well over 500,000 acres of native old-growth forests in Southwest Oregon and Northern California have already been converted into small-diameter fiber plantations on our public lands. Similarly, the Medford BLM recently stated that over 770,000 acres of our

public forestlands contain trees less than 12 inches wide that could be thinned. It is high time for the BLM to turn its focus toward managing those fiber plantations that it has already planted, rather than continuing to convert large-diameter forests into small-diameter fiber plantations.

BLM Math Tricks

For the committee to understand the complex and controversial issues surrounding post-fire management activities on federal lands, it is essential that you be provided with accurate information from the federal land management agencies. Unfortunately Mr. Shepard's testimony relies on many figures that are simply not accurate reflections of the BLM's aggressive plans to log the Elk Creek LSR following the Timbered Rock fire.

Mr. Shepard submitted to the committee that the BLM intended to log "approximately 17 mmbf of burned, but still merchantable, timber on approximately 800 acres (8 percent of the burned area." In fact the timber sale prospectus for the Smoked Gobbler and Flaming Rock timber sales called for logging over 24 mmbf, in order to assure that at least 17 mmbf made it to the mill. While the BLM may choose to only "count" those trees that make it to the mill, it understates the impacts of the logging by refusing to disclose the actual amount of forest to be felled.

Mr. Shepard's 800-acre figure is equally dubious. He neglects to mention to the committee that the roadside-logging portion of the proposal would open up an additional 1,000 acres of the Elk Creek Late-Successional Reserve for salvage logging on top of the 800 acres of "area salvage logging". Similarly, the 800-acre figure ignores the more than 2,500 acres of proposed green tree logging authorized by the Timbered Rock EIS which is not defined as "salvage." To contend that the Timbered Rock timber sales would only impact 800 acres of small diameter trees is misleading at best and dishonest at worst. In fact, the BLM is attempting to log the very largest burned trees and a significant number of unburned green trees within the old-growth reserve.

Compromise and Collaboration

Mr. Shepard neglected to inform the committee that approximately 6,000 acres of privately owned industrial timber industry lands within the burn have been salvage logged and are being managed exclusively for fiber production. Additionally, before the burn the BLM had converted 5,400 acres of native forest within the Elk Creek watershed into fiber plantations. Approximately 80% of forest stands in the area have already been subjected to logging. The Elk Creek watershed has already done more than its part to supply our nation's wood fiber needs. Yet the BLM seems intent on proposed to log the remaining forests supposedly protected as a Late-Successional Reserve in a watershed that has experienced extreme cumulative impacts from past logging activities.

Further large-diameter logging in this watershed would not provide "balance" nor would it aid in BLM restoration activities. By attempting to blur the lines between the controversial practice of salvage logging in a Late-Successional Reserve, with the agency's efforts to conduct re-planting and other restoration activities, the BLM does the public, the forest, and this committee a disservice.

The BLM can help resolve the controversy surrounding post-fire management by truly focusing its activities on restoration of burned stands and small-diameter thinning of green stands, while abandoning its obsession with logging large trees and snags within old-growth "reserves" located in sensitive watersheds. It is irresponsible of the BLM to use the forum provided for it by this committee to push its old-growth logging agenda.

Sincerely,

George Sexton
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Ashland, OR 97520
(541) 488-5789

Mr. WALDEN. And, with that, we are adjourned.

[Whereupon, at 4:55 p.m., the Subcommittee was adjourned.]

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