Statement of

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Reforestation Problems on National Forests: A GAO Report on the Increasing Backlog
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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 20^{th} 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 de-emphasized 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 non-commodity

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 out-planting, 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 said earlier, 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.