Stewardship of Federal Forests

Description

With approximately 766 million acres of forest area – about one-third of land area – the United States is the fourth most forested country in the world. The Forest Service manages over 193 million acres across 44 States and other territories, as well as actively supports the sustainable stewardship of the approximate 445 million acres of private forest, 82.6 million acres of State and municipal forests.

Nineteen percent of all forestland in the United States are national forests. These Forest Service-managed lands provide multiple benefits including timber, wildlife habitat, water quality, and recreational opportunities. The national forests also currently serve as a major carbon sink. In 2013, they contained approximately 10,770 $MMTCO_2e$ in forests and harvested wood products (HWP), approximately 24 percent of the total carbon stocks in U.S. forests and HWP. Together, they annually sequester approximately 32 $MMTCO_2e$ per year; 13.5 percent of total forest stock change, a significant contribution to mitigating climate change.

Our ability to protect forest and grassland resources is now at risk due to drought, invasive species, severe wildfires, and uncharacteristically severe outbreaks of insects and disease, all exacerbated by a changing climate. The Forest Service manages carbon through managing the health and adaptive capacity of our forests in the face of multiple impacts of climate change. The actions within the Stewardship of Federal Forests Building Block are designed to recover, maintain, and enhance the resilience of the carbon sink associated with our national forests through restoration/reforestation.

The Stewardship of Federal Forests Building Block can be broken into two main actions: *Restoration of Resilience* and *Reforestation.*[16]

Restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed. Ecological restoration focuses on reestablishing the composition, structure, pattern, and ecological processes necessary to facilitate terrestrial and aquatic ecosystems sustainability, resilience,[17] and health under current and future conditions.

About 60 million acres in the National Forest System (NFS) have a high to very high risk of severe wildfire and are currently in need of restoration. However, some of these acres may be in wilderness areas or other areas that are not appropriate for treatments. Examples of restoration treatments include: commercial and pre-commercial thinning; hazardous fuels reduction through mechanical treatments and prescribed burning; detection and rapid response to control insects, pathogens, and invasive species; species conversion; watershed restoration; wildlife habitat improvement; and other land management objectives. Restoration projects could offer reduced carbon losses through better or more sustainable management techniques.

Reforestation specifically includes planting areas that are non-forested as a result of stand-replacing wildfire, insects and disease, or other disturbances but have been forested in the recent past. These areas are at risk of either remaining non-forested or of sequestering carbon at a much slower rate than if the areas were planted. This strategy is focused on areas where the Forest Service can take direct action to achieve additional carbon sequestration beyond what would occur through standard business practices. Therefore, this does not include reforestation actions created through commercial harvest, (replanting after harvest is considered standard procedure), nor does it include reforestation through natural regeneration.

A challenge to meeting the goals of this building block is the buildup of areas in need of replanting. At the start of 2015, the Forest Service identified almost 500,000 acres of post-disturbance planting needs. While projects that include regeneration harvests are able to collect and utilize a portion of the forest product value to fund the reforestation process, the harvest of trees killed by fire, or other disturbances, commonly offer insufficient value to meet this need. With over 97 percent of the current reforestation need caused by wildland fire, these 480,000 acres require an alternate funding source. The funding required to reestablish young forests on these lands far exceeds the Forest Service's annual appropriation for reforestation work. Further complicating the reforestation response is the challenge of having adequate staffing always located where the unpredictable disturbance occurs. In order to position skilled reforestation expertise, moving special teams and temporarily sharing staff between national forests or regions is becoming increasingly common, however, given funding limitations and the increased frequency and extent of large disturbances, the options remain limited.

[16] Note: Additional actions may be incorporated over time as part of this building block.

[17] Resilience is defined as: The ability of an ecosystem and its component parts to absorb, or recover from the effects of disturbances through preservation, restoration, or improvement of its essential structures and functions and redundancy of ecological patterns across the landscape.

CASE STUDY

Congress authorized the Collaborative Forest Landscape Restoration Program (CFLR) in the 2009 Omnibus Public Lands Management Act to accelerate restoration on high priority landscapes through collaborative, science-based approaches. In doing so, CFLR aims to promote forest health and resiliency, reduce the risk of catastrophic wildfires, and support economic stability in rural communities.

One project under CFLR, the Southwest Crown of the Continent (SWCC), brings together partners from the forestry industry, environmental advocacy groups, State and local agencies, and other groups to restore over 1.4 million acres of high peaks, aspen glades, conifer forests, rivers, and native grasslands. In order to reduce fire risk to nearby communities and increase forest health and resiliency to threats, the project has leveraged multiple funding sources, including CFLR funds, to treat in areas like the Meadow Smith project, located in the wildland-urban interface on the Flathead National Forest. The project has made use of stewardship contracting authorities, in this case with the Rocky Mountain Elk Foundation, which enable the Forest Service to work closely with communities to restore and maintain healthy forests.

When the Condon Mountain Fire erupted from a lighting strike in July 2012—just four air-miles northeast of the community of Condon—the units that had previously been treated in the Meadow Smith project area successfully served as a fuel break. This fuel break allowed firefighters to reduce their exposure and safely manage the fire and helped preserve large diameter ponderosa pine and larch trees. Without the treatments, it's very likely that the mortality for these trees would have been high.

In FY 2015, the Forest Service and its partners planted 125 acres of Whitebark Pine in wildfire burned areas within the SWCC area, a species that reduces runoff, provides food for over 100 wildlife species, including the threatened grizzly bear, and acts as a "nurse" to allow other vegetation to establish in the harsh conditions at high elevations. Since its inception in 2010, the SWCC project has treated over 21,000 acres for hazardous fuels reduction. Forest Service and its partners have also revegetated and reforested over 10,000 acres, achieving more than double their 10-year goal in half the time.

Fall in a Rocky Mountain national forest. Photo courtesy of USDA.

Greenhouse Gas Reduction Goal

Goal	GHG Reduction Goal ($MMTCO_2e$ per year by 2025)[18]
Reforest 320,000 acres on NFS lands.	2.5
Treat 27 million acres of NFS lands to sustain or restore watershed function and resilience (2015-2024).	N/A[19]
Treat 17 million acres of high priority fuels in the Wildland Urban Interface on NFS lands (2015-2024).	N/A[19]

[18] For information on how to interpret this goal, see p. 6.

[19] The carbon sequestration of these actions is not estimated in this framework due to insufficient data. Forest restoration activities may not result in a net increase in carbon sequestration by 2025. However, by 2050, some activities may see a small net increase over no action alternatives. The activities that could show a net gain in carbon storage by 2050 would be those with a small initial carbon impact such as prescribed burning, understory thinning, or thinning treatments to reduce losses from insects and disease. These treatments remove small trees and brush that contain only a small percentage of the total carbon on site. The remaining forest stand is healthier and more resilient to wildfire, insects, and disease. On productive sites, the remaining trees could capture enough carbon to create a small net gain in 30 years or so. The far greater impact from these treatments would be the increased health and resiliency and the stands' ability to provide multiple environmental benefits including, but not limited to, wildlife habitat, recreation, and watershed protection.

Due to long-term growth of biomass on forestlands, carbon sequestration will continue to grow beyond 2025. USDA estimates that the additional reforestation of NFS lands will sequester 21.9 $MMTCO_2e$ per year in 2050 and 77.6 $MMTCO_2e$ in 2100.

Partnership Opportunities

There are numerous opportunities to form partnerships with stakeholders to maintain and enhance carbon sequestration on NFS lands. For example:

- The Arbor Day Foundation, American Forests, and National Forest Foundation are key reforestation partners; there is potential to expand to new partners through organizations like the Forest Climate Working Group;
- The Nature Conservancy (TNC) is working collaboratively with Federal, Tribal, State and local partners to effectively use prescribed fire for restoration around and within communities;
- State governments now have the ability to conduct restoration work on NFS lands through the extension of the Good Neighbor Authority in the 2014 Farm Bill;
- The USDA Regional Climate Hubs can help provide region-specific climate change adaptation and mitigation training to Forest Service region and forest-level personnel; and
- The Collaborative Forest Landscape Restoration Program (CFLR) encourages the cooperative, science-based ecosystem restoration of priority forest landscapes. Partners in CFLR include a diverse array of Federal, Tribal, State, local, private, nonprofit, industry, and environmental groups.

Proposed Actions

FY 2016

Action	Lead USDA Agency(s)
Reforest 32,000 acres of post-disturbance NFS lands.	Forest Service
Develop regional reforestation strategies.	Forest Service
Treat 2.7 million acres to sustain or restore watershed function and resilience.	Forest Service
Treat 1.7 million acres of high-priority fuels in the Wildland Urban Interface on NFS lands.	Forest Service

FY 2017

Action	Lead USDA Agency(s)
Reforest 32,000 acres of post-disturbance NFS lands.	Forest Service
Treat 2.7 million acres to sustain or restore watershed function and resilience.	Forest Service
Treat 1.7 million acres of high-priority fuels in the Wildland Urban Interface on NFS lands.	Forest Service

FY 2018

Action	Lead USDA Agency(s)
Reforest 32,000 acres of post-disturbance NFS lands.	Forest Service
Treat 2.7 million acres to sustain or restore watershed function and resilience.	Forest Service
Treat 1.7 million acres of high-priority fuels in the Wildland Urban Interface on NFS lands.	Forest Service