

Draft Approach to Address Resilience for the Proposed Forest Service Planning Rule
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The capacity of a system to absorb disturbance and still retain its basic function and structure is called “resilience.” For national forest system units (NFS units), which include national forests, grasslands and prairies, resilience means that even in the face of disturbances—such as wildfire, drought, pests and diseases, invasive species, and climate change—plant and animal communities across the landscape can continue to flourish, and intact waters and watersheds can retain ecological functions and processes. It also means that the systems can provide benefits, products and services (including ecosystem services) over time, enabling our neighbor communities to absorb or reduce losses from disturbance and to adapt economies to shifting conditions and needs. Ecological restoration is the process of helping ecosystems that have been degraded, damaged, or destroyed to recover to the point that they are resilient and able to adapt to changing environmental conditions and human needs.

Across the country people have talked with us about the need for maintaining or regaining healthy, resilient ecosystems and about the benefits that resilient systems provide, like reduced risk of catastrophic fire, connected habitats for wide ranging species, and the economic benefits associated with restoration activities. We also spoke with the public at each roundtable and at the national science forum about the concepts of restoration and resilience, and heard from those who sent in comments to the NOI.

We recommend the 2011 planning rule emphasize: 1) maintaining healthy, resilient ecosystems, and 2) using ecological restoration as a resource management tool to achieve desired conditions where ecosystems have been damaged or degraded. We also recommend that managers, through the planning framework, evaluate information on historic, existing, and foreseeable future conditions and trends to understand changing demands, stressors that are affecting ecosystem resiliency and the system’s capacity to adapt, in order to inform management for resilience.

So, how exactly would the 2011 planning rule guide management for resilience?

We would first work with other Federal agencies, States, tribes, and other public and private stakeholders to **assess** ecosystem resiliency, conditions, and trends and identify restoration or maintenance management needs on the NFS unit, in the context of the broader landscape. We would also assess current and predicted stressors that affect the land—such as uncharacteristic insect and disease outbreaks, high-risk fire conditions, invasive species, or pressures from use or development —and seek to understand how well the current ecosystem is able to resist or recover from these stressors.

Assessments would be conducted at appropriate geographic scales using shared data sets. We would build on existing information and resources to the extent possible, such as the Forest Service’s Renewable Resources Planning Act (RPA) assessment, the Forest Inventory and Analysis (FIA) program, statewide forest resource assessments, and other eco-regional assessments. Where appropriate, we would work with researchers and partners to capitalize on new and improving modeling and mapping tools to understand current conditions and predict a

range of potential future disturbances and conditions. The scope of the assessments would vary based on the anticipated planning action or question to be answered, and may depend on the availability of collaborative assistance to develop additional assessment material.

It is important to note that the goal of these assessments would **not** be to conduct an exhaustive review or take on a huge new research and assessment agenda. The goal is to design a workable, practical, and achievable approach to assessing relevant information on current and foreseeable conditions of the land, current and predicted stressors and uses, and the resiliency of the ecosystems within or affected by the planning unit. The information would be used to determine whether there was a need to revise or amend the plan, and would seek to identify uncertainties so that plan revisions or amendments anticipate, and do not preclude, options in the face of changing conditions.

The responsible official may determine, based on the assessments, monitoring data, new uses, or other triggers, that there is a need to **revise or amend** plans. Plan amendments or revisions may identify desired conditions and objectives for ecosystem health, and would emphasize maintaining healthy ecosystems and restoring resiliency to ecosystems that have been degraded, damaged, or destroyed. Plans could identify characteristics and objectives for areas in critical need of restoration, such as values at risk, or vulnerable resources or ecosystem services. Examples could include objectives for restoring functional, structural and compositional complexity to systems that have been simplified due to past management, protecting or restoring critical watersheds, reconnecting wildlife corridors, or reducing fire risk.

We would **monitor** toward achieving the desired conditions and objectives for ecosystem resiliency, considering the **broader landscape**. Monitoring may test the assumptions made during the assess and revise phases and evaluate the effectiveness of management activities; for example, monitoring fuels reduction or stewardship projects to determine if they are meeting objectives and moving NFS lands toward increased resiliency. It may track the spread of invasive species or identify other changes to the ecologic-social-economic system and the effects of those changes on the landscape. As modeling and other forecasting tools improve, we would also seek to apply those to the unit to anticipate the range of possible future conditions that may affect or test ecosystem resiliency and the corresponding need for future management actions.

How would this help people and communities?

Resilient ecosystems can absorb or resist disturbances and stressors, while retaining ecological functions and processes and continuing to provide benefits, products and services over time. There are many resulting benefits to people and communities, including:

- Functioning watersheds which yield better water quality and result in lower treatment costs for public water supplies, while protecting ecosystem function, buffering the system in times of flood or drought, and providing aquatic habitat.
- Productive systems that yield goods and services, including ecosystem services, far into the future.
- Restoration-based work opportunities that have positive environmental impacts, enhance ecosystem services and values, yield sustainable byproducts, support sustainable infrastructure, and enhance rural prosperity.

- Beautiful, healthy lands and waters that support a diversity of plant and animal wildlife, and draw visitors and residents to view scenery, fish, camp and hike, or engage in other forms of sustainable outdoor recreation.
- Lands and waters that can support multiple uses and resist fire, insect and other threats, reducing risks to communities, local economies, the safety of visitors, and the health of the system.

Maintaining healthy ecosystems is easier and more cost effective than restoring degraded or damaged systems, so in addition to restoring impaired ecosystems, it is important to protect the resiliency of well-functioning ecosystems.

Please comment on this draft approach on the Planning Rule Blog at <http://planningrule.blogs.usda.gov>.