



Eco-Link

Linking Social, Economic, and Ecological Issues

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All Americans have a responsibility to understand the history, current realities, and vision for our 192 million acre National Forest System. The US Forest Service is responsible for stewardship of the National Forest System (NFS) with its 155 National Forests and 20 National Grasslands in 44 states, Puerto Rico, and the Virgin Islands. Nature is dynamic, so the best they can do is manage for the reoccurrence of desirable conditions. However, it's up to the people who own these lands to determine what the "desired future conditions" should be. It's also up to the public to determine the desired outputs of commodities (timber, water) and amenities (aesthetics, recreation, wilderness). This requires an understanding of how forest ecosystems work in space (large landscapes) and time (long horizons). Only then can we begin to make informed choices. Hopefully, public forest policy will be based on solid science, public values and the need to integrate ecological, social, and economic needs for the benefit of current and future generations.



The Big Four

Collectively these agencies manage 628 million acres of Federal Lands, including 104 million acres which are set aside as the National Wilderness Preservation System. These agencies are striving to work together in a collaborative management program.

Stewardship & Sustainability



Outputs & Outcomes

A clear vision is needed for our National Forest System. A clear mission is needed for the US Forest Service. Forests meet social, economic, and ecologic needs which present themselves at many levels and scales, and must be considered as an integrated whole.

"National Forests are made for all the people and owned by all the people. They should also be managed by all the people. This means if National Forests are going to accomplish anything worthwhile, the people must know all about them, must take an active part in their management."

Gifford Pinchot, 1907

The Progressive Era

The **Creative Act of 1891** authorized the President to establish Forest Reserves, primarily to ensure irrigation districts in the west reliable water flows. In 1897 Congress passed the first forest management act, opening the forests to timber cutting, grazing, and mining. The **Organic Act of 1897** intended to improve and protect the forest, secure favorable conditions of water flows, and to produce a continuous supply of timber to meet the needs of U.S. citizens. Under the **Transfer Act of 1905** the Forest Reserves were transferred from the Department of Interior to the Department of Agriculture, thereby creating the U.S. Forest Service.

Pioneers in Conservation



Theodore Roosevelt 1858–1919

President Roosevelt's executive orders set aside nearly $\frac{3}{4}$ of today's National Forest System. Gifford Pinchot became the first Chief of the Forest Service and initiated a multiple-use management policy. National Forest Management was guided by Pinchot's principle, "the greatest good for the greatest number in the long run." Pinchot and Roosevelt together made conservation a public issue and a national policy.

Pinchot was considered the first professional forester in the United States. He helped found the Society of American Foresters in 1900. The Columbia National Forest was renamed The Gifford Pinchot National Forest in his honor.



Gifford Pinchot 1865–1946

"...among the many, many public officials who under my administration rendered literally invaluable service to the people of the United States, Gifford Pinchot on the whole, stood first."

Theodore Roosevelt

1898	32 National Forests	18 Million Acres	74 million citizens
1910	149 National Forests	168 Million Acres	92 million citizens
1999	155 National Forests	192 Million Acres	273 million citizens

The Custodial Period

The primary commercial use of the National Forest System (NFS) lands during the period before WWII was livestock grazing. Other than grazing, management of these lands was generally of a custodial nature or was focused on meeting local demands for resources (timber, fence posts and rails, firewood, etc.). The main focus of the Forest Service was to bring livestock down to the carrying capacity of the land and to reduce the large area of uncontrolled wildfire that was common prior to the 1930's.

Many of today's eastern National Forests were acquired under the Weeks Law of 1911, which was enacted to restore forests on formerly private lands that had been heavily logged or cleared for agriculture.

Journey Toward the 21st Century as Marked by Federal Statutes

The **Multiple Use-Sustained Yield Act (MUSY) of 1960** was passed in response to the dramatic increase in demand for wood and other resources of the forest following WWII. This federal statute directed the Forest Service to manage National Forests for outdoor recreation, range, timber, watershed, and fish/wildlife purposes. The act directed that these resources be used in a combination that best meets the needs of the American people (multiple-use) and with the achievement in perpetuity of a high-level of annual or periodic output of these resources without impairment of the productivity of the land (sustained-yield). This concept meant that forests, in general, should not be used for one purpose, but certain areas within a forest could be.

The **Wilderness Preservation Act of 1964** protected 9.1 million acres by withdrawing them from multiple-use management and established a process for creating more wildernesses.



John Muir 1838–1914

Pioneers in Wilderness Preservation

John Muir and Aldo Leopold were leaders in articulating a 'preservationist' land ethic, which has been juxtaposed with the 'conservationist' ethic of Roosevelt and Pinchot.

"When we contemplate the whole globe as one great dewdrop, striped and dotted with continents and islands, flying through space with the other stars, all singing and shining together as one, the whole universe appears as an infinite storm of beauty."

John Muir

"We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."

Aldo Leopold, *Sand County Almanac*



Aldo Leopold 1887–1948

The **National Environmental Policy Act (NEPA) of 1970** significantly strengthened federal responsibilities toward conservation of species and ecosystems, and protection of environmental quality. This act established the Council of Environmental Quality in the White House to ensure that all federal agencies, including the Forest Service, incorporated the NEPA process (Environmental Assessment/Environmental Impact Statements/Public Participation) into their planning and decision-making.

The **Endangered Species Act (ESA) of 1973** directed federal agencies to identify threatened or endangered species and to take measures to prevent them from going extinct. The Fish and Wildlife Service in the Department of Interior and the National Marine Fisheries Service in the Department of Commerce do the listings. Due to the large number of species using National Forests as habitat, this law had a dramatic effect on Forest Service planning and decision making. Once a species is listed, critical habitat must be identified and a recovery plan put in place. More than any other, this act fueled a move towards biodiversity and ecosystem management as key goals in National Forests.



The **Forest and Range Renewable Resources Planning Act (RPA) of 1974** directed the Forest Service to carry out periodic assessments of the national long-term demand and supply for all renewable resources, and to lay out a policy and framework for how agency programs could be structured to address these projected demands. The mid 1970's were tumultuous times for America's forests and rangelands as environmental and commodity interests were at odds over how National Forest System lands should be managed. It was within that context that Congress crafted the **National Forest Management Act (NFMA) of 1976** to reduce the controversy over the management of our public lands. The NFMA was predicated on the notion that the key to resolving conflicts lay with the development of integrated land and resource management plans for each national forest after careful reasoning and analysis as mandated by NEPA. The hope was the development of a national shared vision through public participation in the planning process, and that the plans would be viewed by Congress as a guideline for budgeting. A Committee of Scientists was appointed to help the Secretary of Agriculture develop planning regulations, which were adopted in 1979 and last revised in 1982. National Forests struggled for 10-15 years to complete the first set of plans under NFMA. Many of those plans are now due for renewal. In March of 1999, a second Committee of Scientists provided input to the Forest Service for new planning regulations.

Forest Service planning is largely an administrative process and budgeting is largely a congressional process. There is a significant disconnect between the two, which has demoralized the people who do the planning.

Current Realities

The Forest Service has made a mission shift away from Multiple Use-Sustained Yield Management toward Ecosystem Management. The emphasis on a sustained yield of outputs and commodities has been replaced by an emphasis on outcomes and amenities. Ecological sustainability has been placed ahead of social and economic sustainability. Commodity production, particularly timber, may become a by-product of managing for various outcomes like watershed restoration, forest health or biodiversity.

"It has become increasingly obvious that the overriding de-facto policy for the management of our National Forests is the protection of biodiversity. That de-facto policy has evolved through the interaction of laws, regulations, court cases and expedient administrative direction. This de-facto policy is, I believe, the very crux of the raging debate over the level of commodity production that can be expected from Federal lands and the community stability debate. If the protection of biodiversity is the national policy it should be stated and the consequences accepted"

Jack Ward Thomas
Former Chief USFS

The NFMA certainly democratized the National Forest planning process, but it also slowed the decision making process. If the Forest Service was a bus and all US citizens were the passengers, every passenger has been given a break pedal. The burden has fallen on the Forest Service to prove no harm before taking any actions on the ground. However, at some point somebody has to have the authority to say "yes" and step on the accelerator. Collaborative stewardship is a good idea, but the Forest Service still has to make decisions.

National Forests are suffering from a huge backlog of forest health issues. An estimated 40 million acres are at risk of catastrophic fire and 26 million acres are at risk from insects, disease, and exotic pests. Where fire has been excluded, thick overstocked stands of trees compete for sunlight, water and nutrients, and fuel loads increase. Since 1952, forest biomass on National Forests of the interior west has increased by 44%. The National Forests do not operate in isolation. Adjacent landowners and villages are also at risk.

The level of National Forest Timber Sales has fallen dramatically. Sales averaged 10-12 billion bd.ft. (BBF) in the 60's, 70's, and 80's, and then dropped by 60-70% to 3-4 BBF today. The Pacific Northwest Forest Plan (1994) makes only 3.7 million acres of the 19 million acres of National Forest in the Northern Spotted Owl's range available for harvest. In 1999 virtually all timber sales in the PNW Plan area were stopped by court injunction citing a Forest Service failure to survey for some 77 rare species as required by the plan. Ironically, the original reason for the Northwest Forest Plan was to overcome gridlock in the court system. As larger trees from National Forest timber sales dried up, and engineered-wood products gained market share, mills retooled to handle smaller wood. This provided an incentive for private landowners to grow smaller trees on shorter rotations. Another incentive for shorter rotations is to avoid the economic risk of creating habitat for threatened and endangered species. The loss of private property rights is a major issue.

In 1998 and 1999, Roads and Roadless Areas became the hottest issues on National Forests. The Forest Service declared a moratorium on road construction in 33 million acres of roadless areas. It also started the process of deciding what to do with the 383,000 miles of roads in the National Forest System and which ones to retire, keep or upgrade. Apparently 60% of the roads are below the standard for which they were built. Deteriorating roads are seen as a major source of environmental degradation. Most of these roads were built for timber harvesting and many are now essential for forest management and recreation. The Pres-

The Chief of the Forest Service announced his new Natural Resource Agenda when he came to office in 1998. The Chief indicated that performance would be evaluated in large part by focusing on the following priorities and by working these priorities into the strategic plan and the land and resource management plans.

<p>Watershed Restoration & Protection Complete the Assessment of Watershed Conditions Reconstruct, Relocate and Decommission Roads Rebuild Populations of Threatened, Endangered and Sensitive Species Prevent Exotic Organisms from Entering & Spreading Restore Degraded Riparian Areas</p>	<p>Sustainable Forest Management Reduce Hazardous Fuel Buildups Prevent Biodiversity loss Reduce Forest Fragmentation Address Urban-Interface Issues Build Diverse and Stable Communities Do Collaborative Management with other Agencies</p>
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ident of the United States announced a **Roadless Area Initiative**, which seeks to set aside 40 million acres of roadless areas making them de-facto wilderness.

Relevant Statistics

Major Forest Service Activities



The U.S. Forest Service manages approximately 8.5% of the landmass of the United States.



Harvest by Region		1969	1999
1	Northern	1,565.6	256.4
2	Rocky Mountain	366.5	141.3
3	Southwestern	442.2	83.6
4	Intermountain	457.4	141.8
5	Pacific Southwest	2,107.9	451.2
6	Pacific Northwest	4,752.3	569.3
8	Southern	543.1	594.7
9	Eastern	159.6	553.7
10	Alaska	523.0	146.1
TOTAL		10,917.6	2,938.5

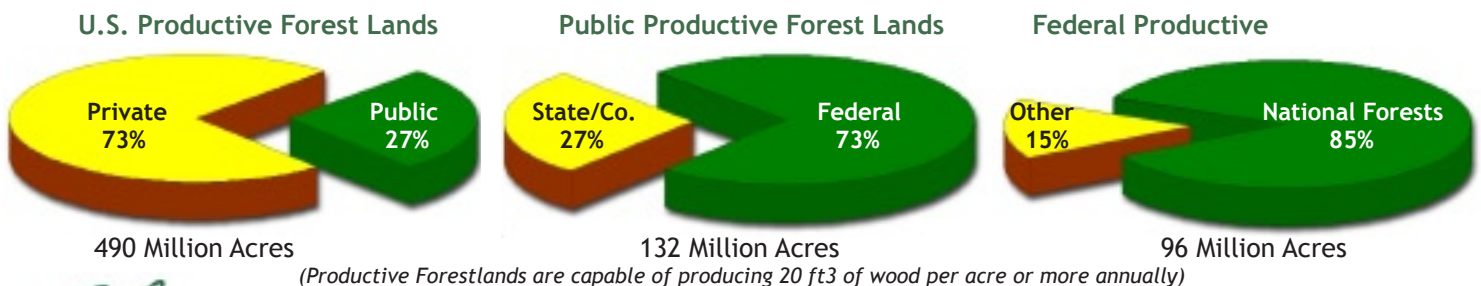
IN MILLIONS OF BOARD FEET

From 1985 to 1998 the National Forest land available for planned timber harvest has dropped from 72 million acres to 49 million acres. Current National Forest management plans provide for timber harvest as one of the objectives on about 26% of the total NFS lands, 35% of the NFS forestlands and 48% of the NFS productive forestland. Timber harvesting now occurs annually on less than 1% of the area identified as suitable for timber harvest.



Approximately 73% of the 192 million acre National Forest System is considered forested. Of that forested land, 35% is available for regularly scheduled timber harvest and about 1/2 of 1 percent of those trees are harvested in any one year. The remaining 65% of the forested land is designated for other uses exclusive of timber, such as wilderness and recreation, or cannot be harvested due to environmental conditions, such as steep slopes and fragile soils. The National Forests once supplied about 20% of the nation's domestic wood consumption. Today, national Forests supply about 5% of the nation's wood consumption (104 bbf); however, national forests contain roughly 50% of the nation's commercial standing softwood inventory.

The **Twenty-Five Percent Act of 1908** allocates 25% of Forest Service revenues to the states for use on roads and schools in the counties where national forests are located. This payment substitutes for property taxes because the national forests are exempt from local taxation. The sharp reduction of timber sales has also sent these revenues into a freefall. Efforts are underway to stabilize these payments at historic levels and to decouple them from timber sales.



Vision - The next 100 years

The population of the United States will exceed 500 million people by the end of the 21st century. We are creating more mobile and affluent consumers, but we can't make more land. One of the greatest legacies we can pass on to future generations is our National Forests. However, we have options to consider. Should these 192 million acres become part of the National Park System? Should they be privatized? Shall we continue to manage them on a multiple use-sustained yield basis? Shall we continue to produce commodities and amenities or just sustain ecological processes and biodiversity? Shall natural disturbances be allowed to run their course without human intervention? These are big questions that demand big answers. The issue is too important to accept the status quo. Nature is dynamic, so we must work with nature to manage change. We need to decide what we want from our forests and then manage for those outputs and outcomes. Let the national debate begin, this time with all the citizens, not just the special interest groups.



We can be safe in two basic assumptions: we own these forests and sustainability should be our overarching goal. For something to be sustainable it has to be socially acceptable, economically feasible, and ecologically sound. This is the definition of sustainability as articulated in *Our Common Future*, the 1987 report of the World Commission on Environment and Development (Brundtland Report), and in the 1992 UN Conference on Environment and Development (Earth Summit). These forests are part of a web of communities, economies, and ecosystems that operate at many different levels and scales from local to global.

How To Run An Agency

Articulate an inspiring-shared vision
Assess the current realities
Develop a strategy to close the gap
Make operations support the strategy
Implement - Take action
Measure and Monitor results
Learn & Adapt

We can hold our policy makers accountable. They should have the political will to make policy, which honors both the best available science and our values. Science is not a fixed set of beliefs but a process. There is not a single truth, but always a set of options from which to choose. The role of scientists is to present options on which policy can be based, not to make the policy. It's up to us to insist on good science, free of value judgments. Most importantly, we need to educate ourselves because everything depends on a well-informed public capable of making informed choices. Our descendants will hold us accountable.

Glossary

Adaptive Management: Driving forest management with scientific research. This requires excellent monitoring and feedback loops to quickly put new knowledge into practice on the ground.

Biomass: The weight of living organisms. Forests are biomass factories, producing plant, animal, and microbial biomass.

Conservation: The sustainable use of forest resources in a manner that doesn't degrade the collective resource values of a region over the long term.

Eco: This prefix comes from the Greek "Oikos" which means house. In the original context, ecology refers to the house we live in and economy refers to how we manage that house.

Ecological Sustainability: Maintaining the composition, structure and processes of an ecosystem.

Ecology: The study of ecosystems. As a science ecology makes no value judgements.

Ecosystem: A natural system which functions as a unit. It can be anything from a rotting log to the entire planet. It is an assemblage of living organisms together with their non-living environment in a particular area.

Forest: An ecosystem dominated by trees, with a unique combination of plants, animals, microbes, soil, and climate.

Foresters: Foresters manage forests for the maintenance and reoccurrence of desirable conditions. What is desirable is determined by social, biological, and economic considerations.

Forestry: The art, science, and practice of managing forest landscapes to provide a sustained production of a variety of goods and services for society.

Silviculture: The art and science of managing stands of trees to achieve desired outcomes relative to species composition and stand structure.



- Ensure sustainable ecosystems
- Provide multiple benefits for people within capability of ecosystems
- Ensure organizational effectiveness

Web

National Wilderness Preservation System www.wilderness.net/nwps/default.cfm

President's Council on Environmental Quality www.whitehouse.gov/CEQ

Resources For The Future www.rff.org

Society of American Foresters www.safnet.org

U.S. Department of Agriculture, Forest Service www.fs.fed.us

U.S. Department of Commerce, National Marine Fisheries Service www.nmfs.gov

U.S. Department of Interior, Fish & Wildlife Service www.fws.gov

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