

Ecosystem Services

The 2012 Planning Rule defines ecosystem services as “the benefits people obtain from ecosystems”. Healthy forest ecosystems are life-supporting systems that provide a full suite of goods and services (**ecosystem services**) that are vital to human health and livelihood.

Table 1 below displays the framework for the identification and classification of ecosystem services that is used in the 2012 Planning Rule. This framework is based upon the Millennium Ecosystem Assessment (2003 and 2005), a study commissioned by the United Nations that developed a classification of goods and services produced by nature (**ecosystem services**) and then used that framework to catalogue and evaluate the extent to which human activities have altered ecosystems around the globe. This framework includes the most basic services from nature—provisioning services like the delivery of food, fresh water, wood and fiber, and medicine—and services that are less tangible and harder to measure but equally as critical, such as regulating, supporting, and cultural services (Table 1).

Table 1. Ecosystem services examples

Supporting Services such as Pollination, seed dispersal, soil formation, nutrient cycling, biodiversity, ecosystem resilience	Provisioning Services , such as Clean air and fresh water Energy and minerals Fiber and forage Food (game animals, fish, plants) Biochemicals, natural medicines, pharmaceuticals
	Regulating Services , such as Long-term storage of carbon Climate regulation Water filtration, purification, and storage Soil stabilization Flood control Disease regulation
	Cultural Services , such as Aesthetic values Educational values Spiritual and cultural heritage values Recreational experiences and tourism opportunities

In a 2007 Pacific Northwest Research Station publication (Collins and Larry 2007), former USFS Associate Chief, and former Director of the USDA Office of Environmental Markets (retired in 2010), Sally Collins, along with Elizabeth Larry, describe ecosystem services as follows:

An ecosystem services perspective encourages natural resource managers **to extend the classification of “multiple uses”** [emphasis added] to include a broader array of services or values; managing for water, wildlife, timber, and recreation addresses the need to sustain “provisioning” services, but land managers are also stewards of regulating, cultural, and supporting services,) all of which are critical to human health and well-being. (See Table 1 for examples of these other ecosystem services)

Natural resource managers now have a new language to describe the benefits of forest management—a language that helps them connect a changing population to the land and the services it provides. Too often resource specialists rely on the technical language of their profession to describe their work. Technical language

enhances professional credibility and enables research and application, but it can also be highly exclusive. An ecosystem services perspective moves land managers to frame a purpose that reflects a broader set of values, with greater potential to resonate with the public. It helps build bridges of understanding between different interest groups.

In a land management context, the ecosystem services concept can be extremely helpful for (Smith et al, 2011):

- describing to the public and to Congress the value of forest and grassland resources;
- characterizing Forest Service management activities in terms of ecosystem service outcomes to complement output-related targets required by law. This approach helps managers highlight the connection between public benefits and ecological conditions, establish management priorities, evaluate tradeoffs among different landscape attributes, functions, or goods and services, and clarify relationships between the quantity or quality of services provided by forests and the condition of ecosystems supplying them.
- assessing if particular ecosystem service flows are in decline over time, and, if they are, develop a range of management alternatives and policies to stem those losses; and
- strengthening relationships with communities, tribes, private stakeholders, and nongovernmental organizations by helping to define common natural resource stewardship objectives.

The requirements for plan components for ecosystem services in the rule are found both in the section on social and economic sustainability and the section on multiple use:

36 CFR 219.8(b) : The plan must include plan components, including the plan area’s contribution to social and economic sustainability , taking into account:...(4) Ecosystem services

§ 219.10 Multiple use. While meeting the requirements of §§ 219.8 and 219.9, the plan must provide for ecosystem services and multiple uses, including outdoor recreation, range, timber, watershed, wildlife, and fish, within Forest Service authority and the inherent capability of the plan area as follows: (a) Integrated resource management for multiple use. The plan must include plan components, including standards or guidelines, for integrated resource management to provide for ecosystem services and multiple uses in the plan area

REFERENCES:

Collins, Sally; Larry, Elizabeth 2007. Caring for our natural assets: an ecosystem services perspective.Excerpt from PNW-GTR-733. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 11 p.

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Smith, Nikola; Deal, Robert; Kline, Jeff; Blahna, Dale; Patterson, Trista;Spies, Thomas A.; Bennett, Karen. 2011. Ecosystem services as a framework for forest stewardship: Deschutes National Forest overview. Gen. Tech. Rep.PNW-GTR-852. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 46 p.