

# Shifting Forest Values as a Driver of Change

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**Abstract:** Forest values are significant drivers of change in the relationship between people and forests. Our forest values shape our attitudes, beliefs, and behaviors toward forests and guide forestry policy and management. Forest values have shifted and evolved significantly in the past and will continue to change in important and unexpected ways in the future. This paper presents a simple framework for understanding the forest values that people hold, briefly reviews historical and current trends in forest values, and sketches out three plausible alternative scenarios for how values could unfold and affect forestry and society.

KEY WORDS: forest values, scenarios, drivers of change, trends

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## Introduction

Forest values are significant drivers of change in the relationship between people and forests. More (1995: 22) observed: “We stand linked to the world by our values. The same values determine not only how we respond to change, but how we act upon it as well.”

Values occupy a central place in current and future forest management and policy because they shape and guide every decision, plan, and policy. Forest values have shifted and evolved in the past (Hays 1988, Xu and Bengston 1997) and will continue to change in unexpected ways in the future.

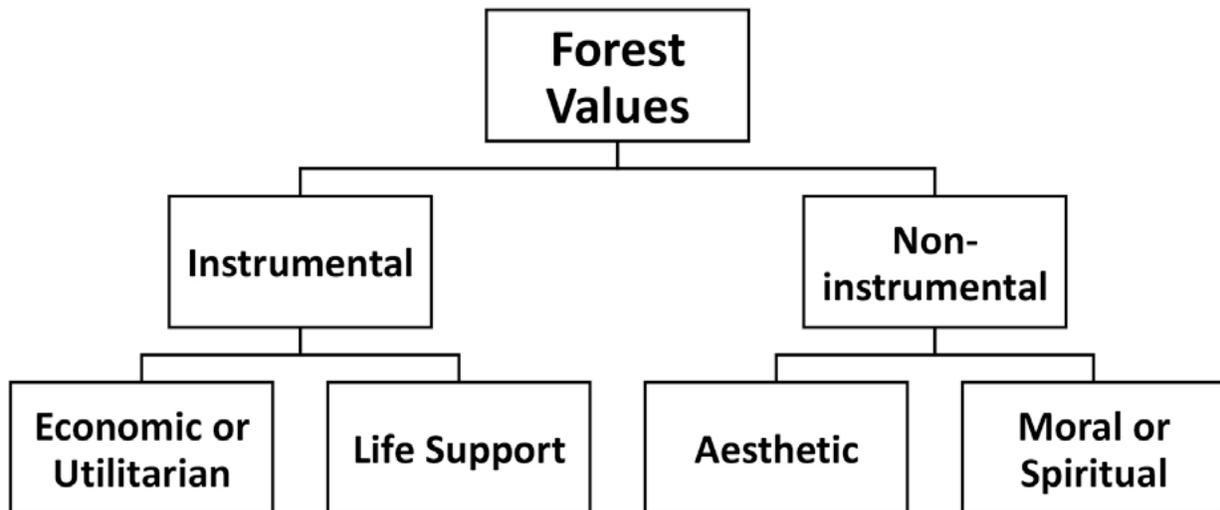
Values have been defined many different ways across academic disciplines. A thorough review of the many disciplinary conceptions of value is beyond the scope of this paper, but a fundamental and widespread distinction made in defining values is between held and assigned values (Brown 1984). “Held values” are ideals or conceptions of “the good,” such as desirable modes of conduct (e.g., courage, honesty), end-states of existence (e.g., equality, sustainability), or qualities (beauty, uniqueness). “Assigned value” is the relative importance or worth of an object, often measured in monetary terms. The focus

in this paper is on the changing “held values” of forests and their implications for the future of forests and forestry. Held forest values are defined as concepts of the good related to forests and forest ecosystems. Simply stated, forest values are “the various ways in which forests are important to people” (Duinker 2008: 1).

Many categories of held forest values have been distinguished (Fig. 1). Instrumental value is a concept of the good that focuses on what is useful as a means to some desirable human end. The instrumental value of the environment arises from the fact that “nature benefits us. Nature is useful: it serves a purpose, satisfies a preference, or meets a need” (Sagoff 1991: 32).

The instrumental value of a forest ecosystem stems from its utility as a means to a specific end or the realization of other values. For example, sawtimber is prized not for its own sake, but rather for its usefulness in building things that increase human well-being.

Economic or, more broadly, utilitarian value, is a type of instrumental value. Like instrumental value in general, the economic or utilitarian value of a forest ecosystem stems from its utility for achieving human ends,



**Figure 1.**—Broad conceptual categories of held forest values (adapted from Xu and Bengston 1997).

where the ultimate end or goal is maximizing preference satisfaction (Bengston 1994). The economic conception of the value of nature focuses on the usefulness of nature as expressed in individual preferences or an aggregation of individual preferences.

Life support or ecological value is another broad concept of what is instrumentally good about forest ecosystems (Bengston 1994). Life-supporting ecological functions and services are good because human well-being depends on them. Unlike economic value, life support value is not adequately measured by an aggregation of people's preferences for environmental functions and services. Many people are unaware of the life-supporting benefits that ecosystems provide, so aggregating preferences or willingness to pay for life-supporting environmental services does not produce a meaningful measure of their importance.

Noninstrumental value focuses on the worth of something as an end in itself, rather than a means to some end (Bengston 1994). We value family members and other people in this way, in addition to valuing them instrumentally for the benefits we receive from them. They have "a good of their own"; they cannot be substituted for or replaced. Many people value forests noninstrumentally, in ways that go beyond their contribution to self-interested goals.

Aesthetic value is a type of noninstrumental value, in which the concept of the good is beauty. Aesthetic value has historically had profound impacts on public land policy and management: "One of the main reasons that we have set aside certain natural areas as national, state, and county parks is because they are considered beautiful" (Callicott 1992: 12).

Finally, moral or spiritual value is also a type of noninstrumental value. Humans value an object morally when they regard it with love, affection, reverence, and respect (Sagoff 1991). This is what Aldo Leopold (1966: 261) had in

mind when he wrote: "It is inconceivable to me that an ethical relation to land can exist without love, respect, and admiration for land, and a high regard for its value. By value, I of course mean something far broader than mere economic value . . ."

Spiritual value is a type of moral value. Environmental psychologists and philosophers have studied the spiritual value of forests and trees. One environmental psychologist has defined spiritual as "the experience of being related to or in touch with an 'other' that transcends one's individual sense of self and gives meaning to one's life at a deeper than intellectual level" (Schroeder 1992: 25).

In addition to broad conceptual categorizations of forest values such as that depicted in Figure 1, many detailed typologies have been developed based on empirical research with stakeholders that show the diversity of specific values associated with forests. Different stakeholder groups often hold unique forest values, and different types of forest ecosystems—such as old-growth or urban forests—have distinct sets of values associated with them. Examples of detailed value frameworks include typologies of old-growth values in Canada (Moyer et al. 2008), the diverse values of family forest owners in the United States (Bengston et al. 2011), national forest values of Alaska residents (Brown and Reed 2000), and national forest values in New England (Manning 2003).

## Historical and Current Trends

Environmental historians and other scholars have documented the sweeping changes in forest values and our relationship with forests and other wildlands over time (Clawson 1979, Nash 2001, Perlin 1989) and especially during the last half of the 20th century (Hays 1987, 1988). Many factors combined to make the period following World War II a time of rapid and significant change in environmental and forest values:

- a massive increase in outdoor recreation in the 1950s and 1960s (Cordell 2008). Unprecedented numbers of people visited national forests, national parks, and other public lands during this time.
- an increasingly urban population (U.S. Census Bureau 2012). Urbanization has changed the amount of direct interaction that most people have with wildlands.
- sprawling development patterns, growing multiple and seasonal home ownership, and amenity migration (Hammer et al. 2009). These shifts have expanded the wildland-urban interface and brought people with diverse environmental values into rural areas. Retirement by the baby boom generation over the next 20 years and continued sprawl are expected to intensify most of these trends.
- long-term structural changes in the economy such as the decline in the relative importance of the primary sector (making direct use of natural resources), decreased employment in the primary sector, and the rise of employment in the service sector. These changes in the production of goods and in employment have contributed to a shift away from economic or utilitarian forest values and toward the ecological and noninstrumental values of forests (Xu and Bengston 1997).

The net result of these and other changes has been a steady shift in the relative importance of various held forest values over time. For example, Bengston et al. (2004) found a decrease in anthropocentric forest value orientations (clusters of interrelated values and basic beliefs about forests) over the period 1980 through 2001, and an increase in the share of biocentric values. Hays (1988) found that the American public has increasingly valued forests for their amenity and ecological values such as open space and scenic beauty, clean air and water, wildlife habitat, and biodiversity. Finally, a nationwide survey of Americans' values related

to public lands was carried out in support of the USDA Forest Service's strategic planning efforts (Shields et al. 2002). The results showed that the public has a strong values orientation toward environmental protection and biocentric values, and a moderately strong conservation and preservation ethic. These shifts in forest value orientations have implications for identifying appropriate goals for public forest management and policy, developing socially acceptable means for accomplishing those goals, and dealing with inevitable conflict over forest management.

## A Look 20 Years Ahead

Predicting how forest values will evolve over the next 20 or 30 years is fraught with uncertainty because so many known and unknown factors could affect the nature and direction of changes in values (Lawrence 2004). Just as many factors shaped forest values in the past, a wide range of factors could affect them in the future, including:

- broader cultural currents, such as disillusionment with consumer culture and a decline in materialist values.
- major technological innovations, such as artificial reality technology. Technological innovations could increasingly substitute for first-hand experiences with nature, thereby fueling a decline in environmental values.
- economic change, such as significant economic decline. Pressure could be exerted to accelerate the exploitation of natural resources in an attempt to increase economic growth, fostering more utilitarian environmental values and attitudes.
- social trends that promote a decline in outdoor activities and engagement, such as growing "videophilia." These trends could result in apathy toward the environment and an increasing disconnect with nature (Balmford et al. 2002, Kareiva 2008, Zaradic 2008).

- the growing use of social media. The increasing influence of social media is changing where and how people engage in outdoor recreation (Zimmerman 2018) and could significantly affect environmental values.

Therefore, rather than attempting to predict the future of forest values, this section briefly explores several plausible directions in which forest values could unfold in the coming decades. Three mini-scenarios are briefly sketched out here, representing a wide range—but by no means an exhaustive list—of plausible forest value futures. These scenarios were developed by identifying broad forest value trends (growing ecological, utilitarian, and apathetic values) and drawing from a variety of information sources to support and elaborate these trends. The mini-scenarios are labeled Eco-Utopia, Back to the Utilitarian Future, and Growing Apathy and Disengagement.

**Eco-Utopia** is a forest future in which the ecological and spiritual values of forests grow significantly and eventually become dominant. The sharp rise of life support and spiritual forest values was prompted in part by an acceleration in climate disruption and recognition that a disastrous climate tipping point from which we might not recover was rapidly approaching. Indicators of this tipping point included the collapse of the West Antarctic Ice Sheet, the complete summer melting of Arctic sea ice, and the abrupt increase in all the impacts of climate change, from heat waves, droughts, and wildfires to more intense storms, flooding, and the spread of tropical diseases into temperate zones. These indisputable signs of a rapidly changing climate came at the same time as growing Indigenous empowerment, especially with respect to natural resources and the environment, in many regions of the world. Solutions that embraced both ecological science and Indigenous values of the sacredness of the Earth were seen as crucial to

dealing with mounting environmental crises. The integration of science and Indigenous spirituality and epistemologies changed how most people viewed the natural world and humanity's relationship to it, resulting in a massive mobilization to stabilize the global climate. The rise of ecological and Indigenous values had profound effects on forestry and natural resource management, as managers aspired to “go with the flow” of natural processes in every way. Foresters quickly came to view fire as a natural part of the landscape with important ecological functions. They learned to live with fire and help build fire-resilient communities rather than wage war against it (Olson et al. 2015).

**Back to the Utilitarian Future** is a scenario in which forests are highly valued and of growing importance, but for very different reasons than in an Eco-Utopian future. In this scenario, the economic/utilitarian values of forests have come to the forefront. A new “age of wood” dawned due to multiple and significant technological innovations in wood products that cumulatively created a thriving bioeconomy and dramatically increased the demand for wood and wood fiber (Bowyer et al. 2017). Examples of these innovations include wood-based nanomaterials with thousands of uses ranging from computer chips to automotive panels; tall wood buildings or “plyscrapers” made of cross-laminated timber and other “mass timber” technologies; 3D printing using cellulose from wood pulp; fabric made from wood fibers that uses 99 percent less water and 80 percent less energy than producing cotton; transparent wood substitute for glass in windows and solar cells made by chemically removing lignin from natural wood fibers; and countless other game-changing technologies (Bengston 2019). These innovations combined to create a revolution in wood products, the rise of a bioeconomy based on renewable and biodegradable wood-based materials, and a dramatic increase in the economic and utilitarian values of forests. The

increased utilization of wood also increased tree planting on a massive scale, resulting in increased absorption of atmospheric carbon dioxide. Rapid development of markets for small diameter wood that formerly lacked economic value led to widespread thinning of overgrown forests to supply the markets and decreased the risk of catastrophic wildfire.

In contrast to the first two scenarios, **Growing Apathy and Disengagement** is a future in which all types of forest values decline significantly. The roots of this decline can be traced to a steady drop in outdoor activities—from gardening to hiking—as more and more people became “glued to their screens” instead of experiencing nature. Environmental and conservation issues were utterly ignored during political campaigns because they had dropped so far down on the priorities of all but a very small minority of the population. Growing apathy toward the environment produced a cascade of negative results for nature and society (Bengston et al. 2019): a significant decline in political and budgetary support for the Forest Service and other natural resource management agencies; slashed natural resource research funding; the sale of many local, state, and Federal public lands to private individuals and developers; unsustainable logging and mining on former public lands; and increased stress and anxiety among children and young adults suffering from “nature deficit disorder.” As forest values waned, forest ecosystems began to slowly unravel due to abuse and neglect.

## Concluding Comments

Shifting values are a strong driver of change. Some have argued that, throughout human history, the predominant values of the time have always shaped the future (Lent 2017). Our forest values shape our attitudes, beliefs, and behaviors toward forests and guide forestry policy and management. The nature and speed of shifts in forest values will have a substantial impact on the future of forests and forestry.

But fundamental uncertainties about forest values in the future suggest that there are many plausible scenarios for changing forest values and how they could affect forestry and forest management agencies in the long run. The three mini-scenarios sketched out in this paper—Eco-Utopia, Back to the Utilitarian Future, and Growing Apathy and Disengagement—point to very different but equally plausible directions in which forest values could unfold, with sharply different implications for forestry and society. Exploring a wide range of alternative futures can provide a useful basis for ongoing strategic conversations about the future of forestry and help decision makers prepare for whatever scenarios unfold.

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