Using analyses of public value orientations, attitudes and preferences to inform national forest planning in Colorado and Wyoming

Jessica M. Clement*, Antony S. Cheng

Colorado Forest Restoration Institute, Department of Forest and Rangeland Stewardship, Colorado State University, Forestry Building, Colorado State University, Fort Collins, CO 80523, USA

ABSTRACT

Understanding public value orientations, attitudes and preferences towards national forests is a critical task for the USDA Forest Service (USFS) during the development of their forest plans. Social surveys are efficient and effective ways to generate this information from a representative sample of the larger public who may care about national forests but do not attend participatory events – the so-called silent majority. Survey results can be used to complement input generated from participatory and collaborative processes. This paper presents results and discusses implications from social surveys conducted on three national forests in Colorado and Wyoming. The results indicate that although respondents identified aesthetic, biodiversity, future and recreation value orientations as most important, there are also surprising linkages between value orientations, attitudes and preferences towards forest uses and policy options associated with specific geographic and socio-economic contexts and conditions. The results also suggest some "hotspots" where value orientations, attitudes and preferences display some apparent contradictions. Such hotspots indicate potential conflicts and suggest opportunities to focus participatory, collaborative methods. The relevance of these results to national forest planning in particular and public resource management is explored in the discussion and conclusion, especially as the USFS – and other public resource management agencies – face increased pressure to make room for place-based, collaborative planning while also taking into account broader public sentiments and preferences.

© 2010 Elsevier Ltd. All rights reserved.

Introduction

The National Forest and Grasslands System of the USA total 191 million acres (77.3 million ha) and are managed by the USDA Forest Service (USFS) to encompass multiple public values and uses, from commercial activities like ski areas, timber harvesting, and mining to more biocentric values, such as protecting threatened and endangered species and maintaining ecosystems in their wild, undeveloped state. As such, the national forests are geographic features integral to American history, livelihoods, and lifestyles (Hays, 2009). Understanding and taking into account public value orientations, attitudes and preferences towards national forest goals, uses, and management activities are a matter of critical importance for the USFS, especially during the development of a national forest's Land and Resource Management Plan – more commonly called a forest plan (Allen et al., 2009). Required by the

National Forest Management Act of 1976 (NFMA), a forest plan effectively sets policy about a national forest's goals, priorities, special area designations (i.e., recommendations for Wilderness and Wild & Scenic River designations) and management strategies for 10–15 years (Wilkinson & Anderson, 1987). The first national forest plans were completed in the 1980s and are required to be revised every 10–15 years.

The USFS has struggled with understanding and integrating social value orientations, attitudes, and preferences into its forest planning processes, which have traditionally emphasized technical analyses of a national forest's biophysical conditions and attributes (Committee of Scientists, 1999; Cortner & Moote, 1999; Larsen et al., 1990). The USFS employs public participation processes in attempts to elicit and incorporate public sentiments, such open public meetings, solicitation of written or oral comments, or small-group interactions (Gericke, Sullivan, & Wellman, 1992). Collaborative approaches and processes in particular have rapidly gained favor in national forest planning and management decision-making (Burns & Cheng, 2005; Selin, Schuett, & Carr, 1997; Wondolleck & Yaffee, 2000). However, even if the USFS thoughtfully develops highly inclusive, transparent and well-structured public involvement and

* Corresponding author.
  E-mail addresses: jessica.clement@colostate.edu (J.M. Clement), tony.cheng@colostate.edu (A.S. Cheng).

collaborative processes, participants may reflect only segments of the broader population. What of the so-called "silent majority" who may not participate in letter-writing campaigns, attend public meetings or commit to an intensive collaborative process, but nevertheless may care deeply about what happens to national forests?

A second elicitation approach available to the USFS is the administration of large-N, random sample social surveys containing questions about value orientations, attitudes, beliefs and preferences for national forest management. Social surveys are efficient ways to collect information from a representative sampling of the silent majority (Allen et al., 2009). Social surveys relating to national forests have been conducted at the national (Shields et al., 2002a, 2002b), regional (Tarrant & Cordell, 2002), and state levels (Manning, Valliere, & Minteer, 1999; Vaske & Donnelly, 1999), as well as comparing national and state populations (Shindler, List, & Steel, 1993). These and other studies examining public values and attitudes towards a variety of natural resource topics suggest that, in general, the U.S. public is generally more favorable towards biocentric values and prefer to protect ecosystems over using resources for material gain.

This general finding is useful to USFS planners, as it indicates a general public sentiment. But as sense of-place research suggest, people's connection to and values for national forest "places" are complex and multi-layered, encompassing highly personal, intimate connections as well as instrumental and symbolic connections (Williams & Stewart, 1998). Additionally, many national forest planning decisions are not so easily dichotomous choices between ecosystem protection and resource use. For example, tens of millions acres of national forest lands in the Western US are in need of active management in the form of mechanical tree removal (i.e., logging), prescribed burning, or both, in order to reduce the risk of ecologically uncharacteristic and/or socially undesirable wildfires (Sampson & Adams, 1994). By emphasizing forest wildfire risk reduction in a national forest plan, value-added forest products and other wood biomass companies — and the people they employ and do business with — may benefit economically, people living and recreating in the forests face reduced wildfire risks, and the resilience of the ecosystem in the face of wildfire events may likely be improved. While it may be obvious that national forest planning choices affect different people in different ways, USFS planners and decision-makers often do not have empirical data from which to draw in order to assess how different forest management goals and strategies are regarded by the public. As a result, the social impacts of plan decisions — positive and negative — may be a matter of guesswork, thereby heightening public dissatisfaction with the planning process and the final plan decision, and fostering conflict.

As Allen et al. (2009) note, there is a need and opportunity to refine and apply social research methodologies to specific national forest geographic and socio-economic contexts in order to more fully inform forest planning and decision-making. Even as the USFS employs more participatory, collaborative public involvement strategies, forest planners will benefit from cross-checking the values, attitudes and preferences of active attendees of participatory processes with those of the silent majority. Having social research findings in hand also allows planners and the public to more precisely identify and closely examine potential conflicts and take appropriate steps to address them. Lastly, federal administrative and environmental laws mandate agency decision-makers to make informed choices supported by evidence (Haas, 2003); possessing results from valid social research methodologies can give decision-makers the confidence that their public land management decisions are grounded in empirical data and avoid accusations of making arbitrary and capricious decisions.

In this light, we present results and implications from a social survey methodology that was replicated across three national forests undergoing revision of their forest plans from 2004-2008: the Bridger-Teton (BTNF) in Wyoming, Pike-San Isabel (PSI) in Colorado), and Shoshone (SNF) in Wyoming. The methodology was derived from the work Greg Brown and Pat Reed conducted pursuant to the Chugach National Forest plan revision process (Brown, Reed, & Harris, 2002) and has since been applied across various resource management settings globally (Brown & Reed, 2009). The methodology was applied to these three forests at the request of USFS planners and decision-makers, as well as state policy-makers who desired to ensure that social data and analyses were being considered in national forest plans alongside biophysical analyses. A highly participatory process involving USFS planners, decision-makers, and public stakeholders was employed to tailor the survey to specific geographic and socio-economic contexts. Additionally, each national forest was utilizing collaborative stakeholder processes and there was interest in assessing how stakeholder values and preferences compared with those of a large, representative sample of the public.

The results of statistical analyses of survey data are presented in the context of key national forest plan decisions for each forest and across all three forests. We present the results related to values for all three forests, and then focus on one critical subject for each forest, explore the role of values in relation to each subject, and describe the implications regarding these results for each forest's planning efforts. Our intent is two-fold: 1) to demonstrate how this methodology, based on a specific set of constructs of social values and behavior, can generate information useful to national forest planning, and 2) contribute to the evolving scholarship of social values-related research in landscape planning contexts.

Study contexts and concepts

Bridger-Teton National Forest (BTNF) is in northwest Wyoming, encapsulating five counties (Teton, Fremont, Sublette, Park and Lincoln) with a total population of 107,287 as of 2007. The largest sources of income to this area were recreation, tourism, natural gas development and agriculture (Taylor, Coupal, Foulke, Rashford, & Olsen, 2008). The Shoshone National Forest (SNF) includes Park, Teton, Fremont and Hot Springs counties which collectively have a population of 87,159 in 2007 relying on recreation and tourism, livestock grazing, and timber as primary economic activities (Taylor, Coupal, et al., 2008; Taylor, Foulke, et al., 2008). Both national forests contain populations of elk, sage grouse, grizzly bear and wolves. Vegetation on both national forests start with sagebrush and grasslands at lower elevations and proceed to lodgepole pine, mixed-conifer forest types, spruce-fir forests, and alpine tundra as elevation rises. Insect infestations and wildfires are recent significant ecological disturbances on these national forests. The lands and communities surrounding the BTNF and SNF have experienced considerable in-migration (12.5% population growth between 2000 and 2008), resulting in an increase in land development and second-home-ownership (Taylor, Coupal, et al., 2008; Taylor, Foulke, et al., 2008).

The Pike and San Isabel National Forests (PSI) in central Colorado are adjacent to large population centers totaling approximately 3.2 million people, including Denver, Colorado Springs, Pueblo, and communities of Summit County, one of the fastest growing counties in the U.S. (USDA Forest Service 2006). The PSI contain the tallest mountains peaks in Colorado, include nine wilderness areas, and support the third highest visitation rate of any forest in the National Forest System (USDA Forest Service 2006). The communities adjacent to the PSI have experienced high population growth rates in both rural and urban areas and