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Place Mapping and the Role of Spatial Scale in Understanding Landowner Views of Fire and Fuels Management

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Place mapping is emerging as a way to understand the spatial components of people's relationships with particular locations and how these relate to support for management proposals. But despite the spatial focus of place mapping, scale is rarely explicitly examined in such exercises. This is particularly problematic since scalar definitions and configurations have implications for research results. In this study, we examine the relationship between place meanings and views on fire and fuels management through in-depth interviews and computer-based mapping with forest landowners. While landowners readily described and mapped special places, these places did not influence views on fire and fuels management, views that were situated almost entirely at larger scales and explained by broader worldviews and political ideologies. Because research results may be an artifact of measurement, place-mapping efforts need to carefully consider scale to ensure that public views are appropriately characterized for decision makers.

Keywords fire, place mapping, scale, special places, wildland–urban interface

Both managers and researchers often assume that people's relationships with particular places on public lands influence support for management proposals. Mapping place meanings and other social values is increasingly popular as a way to better understand public support for specific projects and to improve integration of social data with biophysical data. Although it is an important part of forest planning and public participation, we demonstrate here that social mapping may only capture a subset of relevant views and values. Furthermore, in some cases, the scale of meanings and values expressed in social mapping exercises may be, at least in part, an artifact of the mapping tool.

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Place Mapping and Spatial Scale

Research on place attachment, place meanings, and special places shares a common assumption that some social views and values have a spatial component. According to Williams and Patterson (1996), an initial impetus behind place research was to embed psychosocial values back into their ''meaning-filled spatial . . . context'' (508). Thus, place research seeks to understand those meanings, memories, values, interests, and ideas that are situated in particular locations in a landscape. A better understanding of people's relationship with place has been postulated to improve resource management (Kruger and Jakes 2003), community–agency relations (Moore and Scott 2003), collaboration (Kemmis 1990), and trust and citizen involvement in public lands management (Payton et al. 2005).

Despite its spatial focus, place research is rarely explicit about scale, which can leave decision makers with little specificity regarding the extent of the area of a particular meaning or attachment. Research on special places is perhaps the most site-specific work, suggesting that ''when people have highly valued aesthetic or emotional experiences'' particular geographic areas become important (Schroeder 2002, 8). Special places are believed to be nonsubstitutable (Eisenhauer et al. 2000). Thus, managers have been asked to ''protect the qualities that make these places special'' (Schroeder 2005, 55). Furthermore, researchers have argued that understanding people's relationships with special places ''can help identify . . . issues and concerns that are important in managing and planning for these places'' (Schroeder 2002, 13). We use the term ''special places'' throughout this article to refer to site-specific, geographically discrete locations that have meaning to people.

Social mapping tools have been used to understand the spatial components of public views, to study public opinion about the placement of nuclear waste (Evans et al. 2004), resident views on neighborhood planning (Kingston et al. 2000), tribal perspectives on fuels management (Watson et al. 2008), preferences for conservation and tourism development (Raymond and Brown 2007), manager views of ecosystem services (Raymond et al. 2009), and support for legislation on national scenic byways (Brown 2003). Such mapping exercises assume that relevant social views and values are both spatially situated and spatially discrete. Maps can visually represent public views, enhancing dialogue by demonstrating how agreement varies across a landscape (Carver 2003). Participatory mapping enables different stakeholders to spatially situate the views and values they deem important, and thus empowers members of the public to create tangible resources for decision makers. Brown (2006) argues that social mapping therefore democratizes decision making. Social mapping also provides a mechanism to integrate social data with biophysical data through geographic information system (GIS) tools.

In the natural resources field, many researchers have asserted that mapping place meanings can contribute to understanding public views of proposed management actions. Such mapping assumes a connection between spatially situated values and meanings, and views on management actions, suggesting that relationships with special places may influence or even drive management preferences. Place-mapping methods include interviews that involve identifying special places by drawing on a paper map (see Gunderson and Watson 2007), sticker dot surveys that enable respondents to locate landscape values and development preferences (see Brown 2006), and computer-based programs that allow participants to paint locations with a spray-can tool and describe their importance (see Carver et al. 2009).

Scale is often briefly acknowledged, but is rarely interrogated in such studies. Gunderson and Watson (2007) suggest that meanings occur at, and differ across, multiple scales. Hall et al. (2009) acknowledge that many human values do not necessarily have a spatial dimension because they are intangible or nonmaterial, and caution that place-mapping activities produce "one type of information about values and that values may have many different spatial scales" (14). Brown (2005) also acknowledges that the shape and size of an area mapped by a survey respondent is indeterminate. He suggests that "One respondent could be referencing a spatial area as small as a picnic site, while another might be referencing a spatial area as large as the entire study region" (15). The fuzzy mapping employed by Carver et al. (2009) addresses this issue through a tool that allows participants to vary the size and thus scale of the place they are mapping. However, while some scalar questions have been identified and, in some cases, addressed, the implications of asking participants to spatially locate their views and values and what is captured and conveyed by the scales selected by either researchers or research participants have not been addressed in depth.

In contrast, geographers have been examining and problematizing scale for several decades, especially in the context of globalization. Scale is often conceptualized in terms of nested locations of descending or ascending size—for example, global, national, regional, landscape, and site—and certain scales are sometimes thought to exhibit specific characteristics. For example, in the United States, efforts to devolve state power and move toward local-level collaboration both legitimize and privilege local scales of decision making, implying that decisions made at a local scale are necessarily more democratic and more sustainable, as compared with decisions at the national level. But Brown and Purcell (2005) suggest that assumptions that certain scales are inherently more socially just or environmentally sound are problematic, as they blind both political actors and researchers to alternative possibilities. A rich body of literature in geography suggests that scale is socially constructed and produced, not ontologically given or predefined (Brenner 2001; Brown and Purcell 2005; Delaney and Leitner 1997; Martson 2000; Nielson and Simonsen 2003). Scale then is not fixed, but is fluid and dynamic. Scales are not distinct and isolated; they interact.

Scale can be understood as a way of framing or representing reality (Nielson and Simonsen 2003). Moore (2008) argues that "actors utilize scale categories to spatially 'frame' problems and solutions, include or exclude certain actors, legitimate political projects, rework relations of power and coalesce political processes around particular scalar orders" (218). Because different scales privilege different social values and political interests, scalar definitions and configurations are contested. Political actors pursue issue framing and decision making at particular scales because such scales are believed to favor and empower certain interests (Brown and Purcell 2005; Swyngedouw 2002). Thus, emphasizing a particular scale is seen as a way to effect change (Delaney and Leitner 1997).

Scale as practice (scales experienced and developed by political actors) and scale as category of analysis (scales used by social scientists) are often conflated (Moore 2008). Assumptions about scalar categories shape discourse and practice in academia (Paasi 2004). Decisions about scale in research design can influence results, since some patterns and processes can only be discerned at particular scales (Sayre 2005). To the extent researchers take scale as unproblematic and given, they may uncritically reify and reproduce an aspect of the phenomenon being studied, without

including it in a careful way in the analysis. Researchers influence the outcomes of mapping exercises because they provide the mapping structure onto which certain values and views "fit" or do not fit. Such maps, then, reflect both the assumptions of the researcher regarding what is important and the participatory mapper's views to the extent that they fit on the map. Investigation of special places (i.e., site-specific place meanings) may have dramatically different results as compared with investigation of meanings and management preferences situated at larger scales. Place mapping can only be an effective tool for decision makers to the extent that we better understand the implications of scalar definitions and configurations for research results.

Interviewing Forest Landowners in the Cabinet Mountains of Northwest Montana

The purpose of this study was to understand landowner place meanings and how those meanings related to views on fire and fuels management, a central concern for forest landowners and public land management agencies throughout the West. Research was conducted in Libby, MT, with wildland–urban interface (WUI) landowners on the eastern slope of the Cabinet Mountains on the Kootenai National Forest. The Cabinet Mountains landscape includes designated wilderness and roadless areas as well as multiple-use units historically used for timber production. Typical of WUI zones, national forest lands phase into rural residential developments, and private parcels adjoin and intersperse public lands. Like many rural, Western communities, Libby's economy was historically based on resource extraction, but is increasingly diversified. Residents have widely diverging views on the appropriate role of industries such as logging and mining and the emerging service-based amenity economy, and what economic shifts might mean for forest management. Conflict over national forest management figures prominently in local politics. Because of community fire risk, residential development in the WUI, the dramatic impact of the 1910 fire on this area, and interest in timber supply, multiple agencies and organizations are working to reduce the historic fuels buildup in the Kootenai National Forest, agencies including the Forest Service, Lincoln County, and the Kootenai Forest Stakeholders Group.

To understand place meanings and views on fire and fuels, the first author conducted in-depth, semistructured interviews and participatory mapping with forest landowners during the summer of 2007. Semistructured interviews were employed to gain insight into the connections between complex place meanings and views on fire and fuels management and to allow participants to provide detailed explanations during the mapping exercise. Twenty-nine interviews were conducted with 37 landowners. Landowners were purposively selected to include different political views, employment history, length of residence, knowledge of fire and fuels, ages, and genders. All participants owned parcels adjacent to the Kootenai National Forest. Of the 37 participants, 12 were women, 12 were newcomers, 20 were retired, 17 had a background in logging or mining, 29 were over 40 years old, and 1 was an absentee owner.

An interview guide ensured that interviews were systematic and that data were comparable across interviews, while allowing for unanticipated topics to emerge (Patterson and Williams 2002). Interviews included questions about (1) landowner relationships with special places and the landscape as a whole and (2) fire and fuel

management. Probes were used to clarify ambiguous responses and gain greater detail. A computer-based mapping exercise was introduced about 30–40 minutes into the interview, to better understand the spatial dimensions of both place meanings and views on fire and fuels management (with the goal of understanding how these ideas align in space). The mapping exercise allowed participants to use a ''spray-can'' tool to mark specific locations on a map that included geophysical features, landownership, and human developments, or to utilize a small inset map to mark the entire landscape. Mapping software was adapted from Carver et al. (2002). Participants were first asked to mark locations that were ''important'' to them (special places) and describe why those locations were important. Landowners were then asked to mark locations where wildland fire use, prescribed fire, and mechanical thinning (which were explained in lay terms) were unacceptable and explain why these management options were not acceptable in these locations.

Interviews were digitally recorded, professionally transcribed, and proofed and read multiple times. Major themes were identified within and across interviews in an iterative process and formed the basis of an organizing system as described by Patterson and Williams (2002). QSR NVivo 7.0 was used to organize data according to codes. Several colleagues read interview transcripts and provided feedback on coding and analysis early in the process. The data excerpts that follow were chosen for their ability to clearly express and represent the views and ideas that multiple participants articulated.

Looking at Scale: Special Places, Landscape Meanings, and Fire

Landowners in this study described place meanings at multiple scales, focusing both on special places and on landscape-level meanings. When asked to do so, landowners provided maps and detailed descriptions of their special places along the Cabinet Mountains, often enthusiastically and meticulously creating multiple maps with numerous ''paint'' marks. In discussing their special places, landowners related personal stories, experiences, and memories. The response here is typical, as landowners had many special places that they valued for multiple reasons.

> I: Do you have any special places up there?
> L32: Lots of them. The Ramsey Creek drainage. It's just jaw dropping. If you get a chance to go up there, there's a basin up there that's surrounded by waterfalls. There's ribbons [referring to ''blue ribbon'' scenery] all over the place. It's a kid-making location. You can go up there now in the middle of the summer and meet just a few people. Howard Lake, [my family and I] go up there a lot for a quick paddle-the-boat-around-the-lake.

In conveying the significance of Ramsey Creek, this landowner touches on aesthetics, solitude, convenient recreation, romantic memories, and quality time with family. Other landowners described their special places in ways as varied as ''my little piece of heaven,'' ''my backyard,'' ''my thinking spot,'' ''our place,'' ''where I go to be alone,'' ''a stunning view,'' ''where I want my ashes to be scattered,'' and ''my playground.'' Special places fell into four broad categories: (1) personal home and land, (2) recreational areas, (3) scenic views, and (4) hunting and gathering areas.

While landowners were asked to map special places, the small inset map enabled them to "paint" or map the entire area and describe place meanings situated at that scale. Even though they could identify specific special places if prompted to do so (landowners made 1–8 maps of special places, with an average of 3.25 maps), most landowners asserted that an expanded focus on the whole landscape was also required to describe their relationship with place. Nearly all landowners also focused on landscape-level meanings. For example, the following landowner emphasized life-long, on-the-ground experience when asked to explain why they had "painted" the entire landscape as important.

> I: Why would you say the whole thing's important?
> L31: Well, it's home. This is my forest, and this is really my home. This is what I call my backyard. And it isn't just right here. This little piece right here that I pay taxes on, this is just a very small part of it. It extends all the way up into the Cabinets. I've lived and worked all over the Kootenai National Forest. I was talking one time with [friend's name]. I said, "We're probably two of the only people left that pretty much walked every acre of this forest." I have special things that I do all over this forest, traditional things. I know it very, very well.

The landowner just quoted drew on personal experience and extensive knowledge of the land to produce seven separate, highly detailed maps of special places, each associated with a different place meaning (including places valued for hunting, mushroom and huckleberry foraging, landscape photography, hiking, solitude, Native American cultural activities, and sacredness). However, this landowner went on to state that mapping these special places alone did not adequately describe their relationship with the Cabinet landscape. Many landowners echoed these sentiments, such as the landowner quoted next.

> Well, it is [all important], because everything is part of the whole. You can't look at it. . . . I mean, you can. Of course you can analyze different areas. But everything is related to everything else. And it all has to be important. We can't just have this microbe focus on one little area without taking everything into consideration. (L9)

A few landowners even actively resisted identifying some locations as more special than others, as illustrated by the following quote:

> If I was going to pick my special places . . . it's so hard for me to do. You're talking to a guy who loves it all. And I can describe each and every one of these peaks for you . . . you're talking to a guy who's stayed many nights along all of this [the Cabinet range] . . . And I would have a heck of a time trying to pick priority [places] over any of it. And why don't I do that? Now for those reasons that we just talked about: for the ecological diversity, for all the different components of these special areas that actually make them work. I would have to blot out all of those things, say that all of this is important. (L24)

Thus, while special places were important to landowners, they tended to explicitly privilege a broader landscape scale in describing their relationship with place.

This emphasis on the landscape scale was even more pronounced when landowners mapped preferences for fire and fuels management. Landowners expressed their views on all three potential management actions (wildland fire use, thinning, and prescribed burning) with spatially expansive statements such as "prescribed burning is inappropriate everywhere" or "everywhere except near residences." Nearly all landowners used the small inset map to "paint" the entire landscape with their views on fire and fuels management, as opposed to marking specific locations where these treatments would be unacceptable. Further, many landowners, when asked about fire and fuels management in relation to special places, explicitly stated that they lacked spatially discrete preferences. Instead, they insisted that management must consider the whole landscape, not just individuals' special places.

> You can't single out a specific area in my mind that's better than another. It's all part of the package. . . . It's all really important. I don't want to give it a lesser degree and say, well my place is more important. . . . No, it's all important. It's all home . . . I can't say that I only want to take care of my spot, I don't care what happens to the rest. That's just so irresponsible to me. (L28)

This landowner clearly did not believe that his or her special places should be prioritized or treated differently in management decisions. Other landowners made similar statements with regard to their own private property, suggesting that national forest lands adjacent to their property should not be managed differently than other National Forest lands. For example:

> I don't think that I could say this mile wide band on my [property] perimeter is more important than what's up adjacent to the dam. It's not any more important than the whole thing. When I talk about that they need to be managing "it," "it" is all of it. They need to start managing the whole thing. And this piece [indicating his private property] isn't any more important to me than [the area] beyond that. (L34)

Landowners made it clear, both through their maps and descriptions, as well as through explicit statements, that their management preferences for fire and fuels treatments were not connected to their relationships with special places, and were actually situated at a larger spatial scale.

Landscape Narratives Emerge as Explanations for Views on Fire and Fuels

A complex set of meanings, values, beliefs, and interests coalesced into two landscape-scale narratives that helped explain landowner views on fire and fuels. Landowners drew either on working landscape or on natural landscape narratives to explain, justify, and support their fire and fuel treatment preferences. These landscape narratives reflected two different worldviews about the nature of fire, aesthetics, proper use of the forest, and stewardship ethics. The working landscape focused on sustainable production, the value of resource use, and active management, whereas the natural landscape emphasized ecology, conservation, and hands-off

management. Both of these landscape narratives are described in the following, to provide a detailed understanding of the meanings that were situated at the landscape scale and their relationship with views on fire and fuels management.

The Working Landscape

Consistent with previous literature, long-term landowners frequently described a "landscape of production" (Nelson 2001), emphasizing human livelihood and use of forest resources for human consumption (newcomers were more variable in their views with some describing a working landscape and some describing a natural landscape). Landowners who situated themselves in the working landscape narrative described wildland fire use and prescribed fire as wasting valuable timber resources. According to these two landowners:

> [Not thinning and allowing trees to burn] is wasting resources. And in wasting the resources, you also allow the ground fuels to accumulate and so when you do have the fires, they're just that much worse. It needs to be harvested rather than wasted. (L4)

> I don't see why they would use a prescribed burn if they could do the same thing by utilizing some kind of economic resource by farming it. I'm not as much of a proponent of fire, because I've always seen fire as one of the biggest destroyers of the merchantable timber. (L36)

Landowners expressing this narrative also described a stewardship obligation, a moral responsibility to manage forest resources properly:

> I think [lighting fires or letting them burn] is poor management. We're stewards of the land. If we weren't going to be stewards of the land, then we shouldn't be here, and we should just let nature take its course. But we are. We live here, and we have a responsibility. (L5)

Note that the meaning of stewardship here is active management, as opposed to letting nature take its course.

Some landowners connected their views on working landscapes with ideas about special places, suggesting that special places should be valued even when they include evidence of active management. For example, one landowner said: "Special places don't have to have an absence of our footprint . . . I think it would be nice if people could see their special places embracing being touched by humans, whether it be by logging, mining, something" (L34). Thus, for these landowners, active management is not seen as denigrating or devaluing special places. Human use of resources and manipulation of nature are viewed as part of an appropriate relationship between humans and the landscape in which they live, even in those places that are considered particularly important or special.

Landowners expressing the working landscape narrative argued that proper stewardship involves actively managing the forest. Aesthetically, these landowners preferred a "managed" or "park-like" forest with wide spacing between trees; they were also accepting of the visual cues of human use, such as clearcuts and old tree-stumps. As a result of the worldview embedded in this narrative, a worldview

where economic and noneconomic values are not in conflict, these landowners typically supported mechanical thinning everywhere on the landscape, even in their special places. Further, these types of management actions were deemed appropriate for a working landscape as a way to reinvigorate the local economy, make gainful use of timber resources, and provide fire protection. In contrast, landowners expressing the working landscape narrative generally disapproved of prescribed burning and wildland fire use. Fire was typically seen as "bad," destructive, and "unnatural," a wasteful force that must be suppressed by humans.

However, the Cabinet Mountains Wilderness was viewed differently by respondents expressing this narrative. Most, but not all, were willing to exempt the wilderness from mechanical thinning due to rugged topography and policy restrictions on timber harvest. While these landowners generally did not support the use of fire as a management tool, some saw prescribed fire and wildland fire use as acceptable in the wilderness because timber resources were already unavailable there. In other words, designated wilderness was not a working landscape (in no small part because of the topography). The wilderness was not regarded differently because of its status as a special place, but because of its political designation and physical character.

The Natural Landscape

A contrasting landscape narrative was described by a smaller but sizable number of landowners (22%). These landowners saw the Cabinets landscape as "natural" and "undeveloped" and connected ideas about stewardship to their presuppositions about ecological principles rather than a human mandate to manage. For example, the landowner quoted next describes a stewardship idea that differs dramatically from the notions of stewardship expressed earlier.

> Until now Libby has been nothing but, in my opinion, a place of exploitation of the wilderness. And I think that that needs to be completely changed, and there needs to be a healing going on. It's been exploited. People haven't come here and lifted her up. They've come here to take. And yet she still is magnificent. She doesn't look depleted when you look at her. I'd rather us be here as stewards. (L12)

As exhibited by comments like this one, landowners who situated themselves in the natural landscape narrative described stewardship in terms of restoration and hands-off management, rather than active management and resource use. They focused on existence and intrinsic values. Active management was considered acceptable if the goal was to restore an ecosystem "degraded" by historical resource extraction.

These landowners frequently cited seemingly ecological values, such as "presence of wildlife," "protecting the watershed," and sensitive riparian habitat. Additionally, some landowners marked the designated wilderness as very important during the mapping exercise, saying, "We need places like that." The Cabinet landscape's "raw," "primitive," and "wild" character was an important component of their sense of place. They often discussed the need to experience solitude or nature.

A key component of the natural landscape narrative was a belief that wildland fire is a natural phenomenon, an essential and inevitable part of the

Cabinets landscape. Landowners explicitly stated that ''fires are natural'' and some described wildland fire as ''good'' in all contexts, as illustrated by the following excerpt:

> I think fire is a natural part of the ecological cycle and should be allowed to go its course. So I have no problem with controlled burning or letting fires go their own way . . . I have no problem with burning as a practice. That's necessary. It's natural, and it needs to be utilized . . . I guess I get a little bit put off by people who go out into the forest and they want the forest managed like their township. To me, if you are fortunate enough to go out and have a place in the forest, then recognize that you are in a forest. And you adapt to the forest, don't make the forest adapt to you. That's kind of been my philosophy. I think that's appropriate because fire is a natural part of the ecological cycle so I have no problem with it at all. (L18)

For this landowner, good stewardship means that fire should be allowed to ''run its course.'' The same landowner also suggested that landowners need to adapt to the forest, and not require the safety and services they would expect in town. Other landowners expressing this narrative explicitly contrasted their views with the working landscape narrative:

> And I do agree that we could reduce the fuels. [Some people say], ''they're going to go to waste.'' I don't agree with that. It's not wasted just because nobody used it. Nature doesn't think it's wasted. The birds don't think it's wasted. However, it is dead, and it is a fire hazard. (L9)

This landowner simultaneously recognizes the benefits of fuels for wildlife and the fire risk they produce.

In short, landowners in the natural landscape narrative focused on the ecological values, perceived naturalness, and undeveloped quality of the landscape. Aesthetically, they preferred a ''natural'' appearance to the forest; signs of human management were seen as ''out of place'' and undesirable. Stewardship meant a concern for all components of the forest ecosystem, biotic and abiotic, including wildlife, humans, water, soil, and air. Active management was only deemed necessary when ''restoring'' an ''exploited landscape'' harmed by resource extraction or when directly protecting residential areas from fire.

Nearly all of these landowners supported wildland fire use in the wilderness and prescribed burning for the entire national forest, often arguing that prescribed fire was appropriate right up to the forest boundary as long as private homes were considered and protected. In particular, belief in the regenerative power of fire was associated with support for wildland fire use and prescribed burning. These landowners supported mechanical thinning only for protection of valuable human structures in the wildland–urban interface (WUI). They frequently described thinning as unacceptable outside of high-risk WUI areas. For many, human concerns for property protection were taken into consideration, but not necessarily given highest priority.

While the substance of their preferences differs from that of those expressing the working landscape narrative, from a special places place-mapping perspective there

was one striking similarity between the two narratives. Like the landowners in the working landscape narrative, the natural landscape narrative landowners expressed preferences for fire and fuels management at a landscape scale, declining to identify specific places where particular treatments were unacceptable.

Integrating Questions about Scale into Place Research and Social Mapping

We set out to understand the conceptual and spatial relationship between special or important places and views on fire and fuels management. We found that while landowners in this study readily described and mapped special places, they tended to emphasize the landscape as a whole when describing their relationship to place. Further, they explicitly stated that their special places should not influence decisions about fire and fuels. Landowners situated their views on fire and fuels management at the landscape scale, declining to indicate particular locations where certain treatments would be unacceptable, even though they were readily able to identify and describe an extensive list of special places. This contradicts our starting assumption that fire and fuels management preferences would be spatially situated at a scale similar to special places.

As described throughout this article, landowners located their preferences for fire and fuels management at the landscape scale. But perhaps more important is the fact that landowners did not consider fire and fuels at scales smaller than the entire landscape, such as special places or specific sites. The fact that views on fire and fuels management were not situated at smaller scales is important because it contradicts assumptions built into public involvement (e.g., agencies taking members of the public on tours of sites where treatments are proposed), management (e.g., which assumes that the location of a treatment is particularly important to the public), and categories of analysis often utilized in place theory (e.g., which assumes that people's relationships with special places influence their views on management actions proposed for those locations).

Landowners in this study suggested that focusing discussion about fire and fuels management on special places was somewhat selfish and unenlightened: an abdication of responsibility for caring for "the rest" or the "whole thing." While this perspective was widespread across the sample, views on just what constituted responsible management did differ. Specifically, landowners drew on one of two differing narratives, a working landscape and a natural landscape (expressed through stories that landowners told about the Cabinets landscape, about themselves, and about their roles in the landscape), to explain their views on fire and fuels. As Dizard (1993) found in a study of deer management, these narratives are more than just attitudes or beliefs; they are broad worldviews or political ideologies about the human relationship with nature.

As this study suggests, these types of worldviews or political ideologies are not situated at the scale of special places. But they are embedded in particular ecological, historical, and cultural contexts. Landowners in this study were knowledgeable about the role of fire, historic and contemporary, in the Cabinets landscape. Long-term tension between residents and the Forest Service and the broader politics of natural resource management were evident in the two landscape narratives. Thus, ideas about the management of fire and fuels are spatially situated in the sense that they are embedded in a biophysical and sociopolitical context that is associated, at least in part, with a geographic location.

The scalar preferences of research participants may also be related to the population being studied. Much of the place research has been conducted with nonresident visitors (tourists or recreationists), whose experiences at particular places are the salient features of a landscape in which they do not reside. For these visitors, substitutability is a key concern because management actions might alter special places that are not easily or readily replaceable (Williams and Stewart 1998). However, resident landowners, who experience the landscape in more varied ways over longer periods of time, may not relate to specific locations in the same way as visitors. In this study, it was the management actions themselves that were acceptable or unacceptable, not their spatial locations. There was no need for landowners to find "new" special places because of particular management actions, as such actions did not devalue or compromise their relationships with these locations.

Consistent with our findings, Beckley (1998) suggests that the nature of people's attachment to the landscape (psychological and economic) may take "different forms depending on the unit of analysis chosen" (101). A particular scale, then, may only contain a subset of the views relevant to a particular management issue, and needs to be conceptualized as somewhat limited and partial. Scales are practical categories, both for research and for management, but we need to be explicit about the scale we privilege in theory building, data collection, and management decisions, and acknowledge what we gain or lose by focusing exclusively on particular scales. Because research that examines people's spatially specific meanings and special places may emphasize personal relationships with particular places, depoliticizing their perspective and the discussion of forest management, people may jump up a scale to reinsert their political views and natural resource ideologies. Selection of spatial scales is not neutral then, because particular scales privilege certain ideas, ideologies, and interests, in both research and in management decisions.

In the introduction to this article, we argue that decisions about scale have political and managerial implications, and that research results may be, in part, an artifact of the instrument utilized. So, how might our measurement approach have influenced our findings, especially those related to scale? We first ask how the spatial frameworks that our study participants brought to the mapping exercise might have impacted their ability to perform the task and thus the scale at which they mapped. Given the fact that locating special places on the map was relatively easy for study participants, we can conclude that special places have a spatial component. That is, people have a spatial framework to draw on when they map such places. But, as described earlier, people declined to map their preferences for fire and fuels management, instead applying their views on these issues to the entire landscape. One possible explanation for this difference is that participating landowners had never conceptualized their views on fire and fuels as spatial. In the absence of a spatial framework from which to draw, respondents may have simply selected the entire landscape. Further, landowners may have situated their views on fire and fuels at the Cabinet landscape scale specifically because that was the largest scale available to them in the mapping exercise. Research participants may be relatively compliant and willing to "locate" their meanings and views on a map if requested to do so. Thus, in the absence of a spatial framework for fire and fuels, landowners may have completed the exercise in exactly the way that did not require difficult spatial decisions. Furthermore, when landowners were asked to think about fire and fuels, they

had to confront management strategies that affect everyone, through impacts to people's health, livelihoods, private property, and aesthetic and recreational experiences. A much broader set of concerns and interests related to community and ecology was invoked by the question about fire and fuels, which might explain why these views were mapped at the landscape scale.

In addition, the focus on locations where certain fire and fuels treatments were *unacceptable* (as opposed to *acceptable*) might have influenced participants' responses to the mapping exercise. In survey research, wording questions in the positive or negative (as in "forbid" versus "allow") has been found to influence results rather dramatically (see Shuman and Presser 1981). Thus, had we asked participants to map locations where particular fire and fuels management strategies were *acceptable*, responses and thus study results might have been different. According to research in cultural cognition, differences in cultural worldviews or core values strongly influence perceptions of risk (Kahan et al. 2007; Douglas and Wildavsky 1982). This is consistent with our findings that people drew on broader worldviews to explain their preferences for fire and fuels management. While landowners rarely explained their views in terms of risk, it is possible that perceptions of risk were influencing their views on what was unacceptable.

To further discern the influence of the instrument on study results and because it is difficult to anticipate the scale of particular social phenomena, future research can (1) provide additional scalar choices within mapping exercises, ranging from site to region, (2) allow participants to indicate if their views are not mappable or are inherently aspatial, (3) ask participants what key terms (such as acceptable or important) mean to them, (4) "prime" participants for the mapping exercise by providing information about what they will be asked to map prior to the interview, and (5) ask participants to prioritize locations for particular forest management activities. More specifically, mapping in combination with semistructured interviews allows participants to explain scalar choices, define terms, and show the researcher how and where their views do or do not "fit" into the mapping format. Mapping in combination with quantitative surveys allows researchers to examine spatial data in the context of views that are not spatially situated. Use of multiple approaches to measurement can lead to a much richer understanding of people's views, values, and interests.

Getting scale "right" is critically important for public lands managers engaged in project planning at multiple scales, from site-specific treatments to landscape-level restoration. In the Cabinet Mountains area, a hazardous fuels management decision based on accommodating special places may have overlooked the values and interests that were actually linked to landowner preferences for fuel treatments. This sort of scalar mismatch could result in inaccurate conclusions about public views of different fire and fuel management options. Getting the scale wrong might have increased local conflict or public opposition to national forest management efforts, instead of effectively integrating local views into decision making. Research that attempts to map people's relationships with particular places needs to pay close attention to scale, in order to improve the ability of mapping exercises to appropriately characterize social views and values for decision making. And, as we explore the potential of social mapping to illuminate people's relationships with particular places as well as their views on management actions, we must not lose sight of political ideologies and broader worldviews that are not necessarily spatially situated, and the insights they provide.

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