Routledge
Taylor & Francis Group

Understanding Place Meanings on the Bitterroot National Forest, Montana

KARI GUNDERSON AND ALAN WATSON

Aldo Leopold Wilderness Research Institute, Missoula, Montana, USA

This study describes local personal and community relationships with the Bitterroot National Forest, Montana. Using a rapid appraisal research approach, a range of personal and community values was identified. Participants were asked to identify places they valued on the forest and why they valued them. Study results indicate that local relationships exist on several scales. First, people differentiate the set of values they ascribe to places they have visited from those places they have not. Two sets of values, at two very different scales, emerged in their descriptions of places they visit and those they do not. Community residents were also asked about things that influence their response to fuel management treatments. Managers and planners can benefit from understanding local relationships with public lands through narratives that describe why some locations are more important to residents than others and anticipate reactions to planned projects that may alter those relationships.

Keywords landscape-level fuel treatment, landscape meanings, place attachment, rapid appraisal research, social values

There is increasing evidence to suggest the value of incorporating knowledge about local community values in public land decision making (Brandenburg and Carroll 1995; Davenport and Anderson 2005; Eisenhauer et al. 2000; Endter-Wada et al. 1998; Mitchell et al. 1993; Schroeder 1996; Rogan et al. 2005; Vining and Tyler 1999; Williams et al. 1992; Williams and Stewart 1998). Local people may have relationships with places they do not visit, although there is little research that examines values attached to places considered important but seldom or never visited. In fact, Tuan (1977) suggested that an unexperienced physical setting is "blank space," without important characteristics of its own. Spaces become "places" only as they become endowed with meanings through lived experiences. Moore and Graefe (1994) also suggest that place attachment to a particular setting generally begins to develop only after one or more visits.

There are exceptions in the literature to the belief that attachment only comes through personal experiences, however. For instance, Basso (1996) describes cultural

meanings that are assigned to places and communicated through mention of place names in western Apache conversations to bring accrued lessons learned into analysis of current decisions. Among the Apache, Basso (1996) believes sense of place is what has accrued and never stops accruing, from lives spent sensing places. In a rapidly changing society, migration and urbanization make these relationships accrued across generations increasingly scarce.

Human Connectivity to Public Lands

The concept of *place attachment* has been an important topic of study in public lands management for over two decades (Davenport and Anderson 2005; Moore and Graefe 1994; Schreyer et al.1981; Williams et al. 1992). Much of this work dates from Tuan (1977), who introduced the concept of ''geopiety,'' referring to an individual's bonding with nature, in general, and to specific places in particular. Tuan described *place* as a center of meaning constructed by experience. Altman and Low (1992) noted that *sense of place* and *place attachment* have been studied in the fields of human geography, environmental psychology, community sociology, and urban planning. Gieryn (2000) concluded, however, that most place research has been on how urban places came to look the way that they do, with less study of the forces shaping rural areas.

Greider and Garkovick (1994), Hummon (1992), and Williams and Stewart (1998) have suggested that *sense of place* is not intrinsic to the physical setting itself, be it urban or rural, but resides in human interpretations of the setting, which are constructed through experience with it. ''Social construction'' of *place attachment* predominates many *place* writings, where *place* includes meanings people give to a specific landscape through human interpretations of the experienced setting (Stedman 2003). How the physical environment influences *sense of place* is implied, but not specified in the literature. Some authors imply a direct relationship between landscape features and *sense of place* (Shumaker and Taylor 1983; Ryden 1993; Shields 1991; Jackson 1994), though Stedman (2003) suggests that the physical environment only ''sets bounds and gives form to these social constructions'' (p. 671).

Emotional attachments to *place* represent a unique *sense of place* (Eisenhauer et al. 2000) involving unusually strong sentiments about places and heightened concerns about their management (Schroeder 2002; Mitchell et al, 1993). The connectivity between people and places is often described as powerfully emotional sentiments that influence how people perceive, experience, and value the environment (Cheng et al. 2003; Jorgensen and Stedman 2001; Manzo 2003; 2005; Stedman 2003).

The bonding phenomenon between users and places has been conceptualized as composed of two major dimensions: *place identity* and *place dependence* (Williams et al. 1992; Moore and Graefe, 1994; Williams and Vaske 2003). *Place identity* has been defined as a substructure of the self-identity of the person consisting of broadly conceived cognitions about the physical world in which the individual lives (Proshansky et al. 1983, 59). *Place identity* represents the symbolic importance of a place as a repository for emotions and relationships that give meanings and purpose to life (Williams and Vaske 2003, 831). *Place dependence* is the functional reliance on a place, reflected in the importance of a place at providing features and conditions that support specific goals and desired activities (Stokols and Shumaker 1981;

Williams et al. 1992). *Place dependence* is based on an individual's or group's assessment of the quality of a *place* and the relative quality of alternative places.

Moore and Graefe (1994) found the best predictors of place attachment were years of use and frequency of use in a particular location. Williams et al. (1992) also found that the amount of past experience was highly correlated with degree of both place attachment dimensions of *identity* and *dependence*. Other researchers have proposed additional dimensions of attachment beyond *identity* and *dependence* (Hammitt and Stewart 1996; Hay 1998; Jorgensen and Stedman 2001), including community attachment (Hummon 1992), belongingness (Proshansky et al. 1983), and rootedness (Chawla 1992). Gieryn (2000) has suggested that even in a rapidly changing society the concept of place is still important, with the three defining features of places being location, material form, and meaningfulness. People have relationships with places, and scientists have contributed substantially to understanding these relationships through describing places and relationships with them.

This study attempts to create an understanding of the personal and community values attached to the Bitterroot National Forest by local residents, most of whom are not indigenous to the region. This information has value in any resource management decision making but was collected to guide a hazardous fuel reduction treatment on National Forest lands.

Fire on the Bitterroot National Forest Landscape

During the summer of 2000, wildfires burned more than 350,000 acres of Bitterroot National Forest, Montana State Trust, and private forest land in southwestern Montana. Since these fires, relationships among residents and the landscape, with each other, with the Forest Service, and with firefighters have changed (Daniels 2001). There is an "inseparability of fuels management and fire psychology" (Daniels 2001, 31).

In a recently completed analysis of the social impacts associated with the Bitterroot fires, there was a suggested lack of trust in the Forest Service to make decisions that affect *local values attached to the landscape*, and there was an expressed need to modify forest stewardship practices to *reduce wildland fire fuels* (Watson 2001). Additional studies, in the Bitterroot Forest and other places, have shown that significant portions of the public do not fully trust the fire and fuels decisions that managers make (Liljeblad and Borrie 2006; Shindler and Toman 2003; Winter et al. 2004).

Study Area

The Bitterroot National Forest is located in western Montana, south of Missoula. The Bitterroot Front, on the west side of the Bitterroot Valley, features an east to west continuum, beginning with developed private lands in the valley floor, transitioning to the wildland/urban interface, then to roaded National Forest lands, then upslope to roadless nonwilderness areas, and finally reaching the Selway-Bitterroot Wilderness to the west (Figure 1). About 77% of the property in the watershed is within the Bitterroot National Forest.

Historically, after the Salish people were displaced to the Flathead Indian Reservation in 1855, the local economy was predominately agriculture based until the early 1900s, then transitioned to wood products manufacturing as the dominant
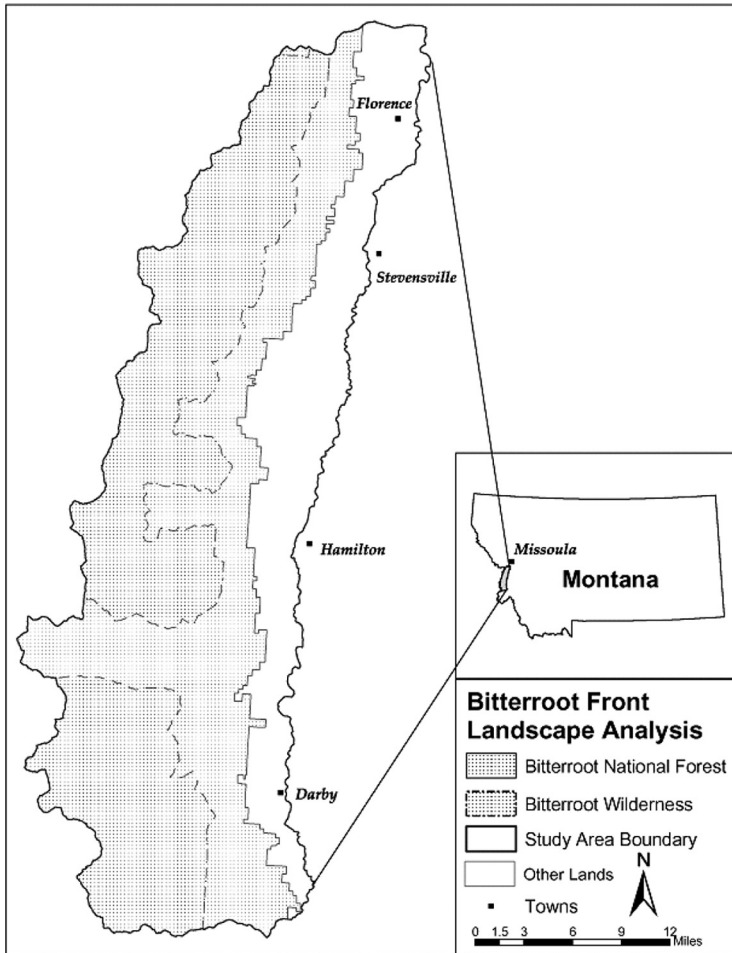
Figure 1. Bitterroot front.

industry in the Bitterroot economy (Swanson 2001). A combination economy dependent upon agriculture and wood products continued until the latter part of the century, when forest management practices became a focal point of controversy. Since 1969, which represented a peak timber harvest on the Bitterroot National Forest, timber harvest has declined 87%. By 1992, only 13% of Ravalli County's basic labor income was related to the wood products and agriculture industries, and the service sector now represents the core of the economy.

Ravalli County, which comprises most of the Bitterroot watershed including the communities of Florence, Stevensville, Hamilton, and Darby, experienced a 43% increase in population during the 1990s and was the fastest growing county in Montana (Swanson 2001). Today the Bitterroot Valley is characterized by an influx of new people with different values and economic means. The once very rural communities here are evolving into communities of commuters to the Missoula area and retirees, and service and high-technology business centers. These communities are also trying to maintain a strong relationship to agriculture and natural resources,

with the latter largely managed by the Bitterroot National Forest. Most of the Bitterroot Range above the Bitterroot Valley is protected as wilderness and is a source of much of the water that flows down and through the otherwise fairly arid valley environment. The quality of life in the Bitterroot Valley is high, and it is deeply connected to natural resources, outdoor recreational opportunities, and the naturalness of the mountain landscape.

Methods

Several methods have been developed to describe values related to landscapes. Commonly, researchers have offered a list of potential values to the study participants and asked for indications of how important each value is. This method dates back to the early 1970 s, when Rokeach (1973) suggested a ranking method to understand the importance people attach to various aspects of quality of life. Researchers often employ Rokeach's method by using a finite, quantitative rating system for environmental values in which respondents are encouraged to make explicit a hierarchy of importance (Brown and Reed 2000; Cordell and Stokes 2000; Haas et al. 1986). Respondents are usually asked to rate hypothesized values in relation to their importance to wilderness, national parks, or some specific study area. Since the 1990s, tension has been building among some authors about the lack of conceptual clarity in research on values of place that limits our ability to accrue a coherent body of knowledge (Patterson and Williams 2005).

There are limitations to using this quantitative approach to understand relationships. It is not typically possible to discern why people value what they do using this method. Also, by predetermining a list of values to be ranked by respondents, researchers may be leaving out some existing critical subset of meanings. Davenport and Anderson (2005) describe an expanding body of research that uses qualitative research methodologies to examine the human-environment relationship and specifically the meanings of place.

A landscape-level, place-based approach suggests that the values of these places can be better understood through qualitative methods to address context-embedded issues, such as fire, where losses are very personal and emotional bonds to places are deep. The person's whole relationship to a location cannot be dissected in a quantitative, reductionist manner and then put back together in order to understand in a holistic way the level of emotional disruption due to a disturbance event.

To achieve an understanding of landscape level values, this study used qualitative research methods focusing on local community knowledge to capture as much context as possible about the relationship people have with the Bitterroot National Forest.

Rapid Appraisal Research

Two basic methodological principles of a rapid appraisal research approach (Beebe 1995) were used: triangulation of techniques and iteration. Triangulation, or the use of multiple methods, attempts to maximize the validity and reliability of data (Manderson 1997). Interviews with a range of community members, key informant interviews, and community focus groups are the characteristic elements of a triangulated methodology (Taplin et al. 2002) and were used in this study. Iteration refers to the constant reevaluation of findings as new data come in, with the implication that

new research questions may be generated in light of such reevaluations (Harris et al. 1997; Manderson 1997). The iterative process used in this study included: (1) structured time for research team interaction and negotiation during the development of the interview guidelines and data analysis; (2) iterative reading of transcribed interviews as they were generated; and (3) negotiation among research team members to identify dimensions of relationships Bitterroot Valley residents have with the Bitterroot Front. It is not suggested that rapid appraisal can substitute for more long-term, in-depth studies (Beebe 1995), nor are these techniques intended to generate statistically sound survey data.

The population of interest for this study was residents of the Bitterroot Valley. Interviews were stratified across four principal communities in Ravalli County: Florence, Stevensville, Hamilton, and Darby (Figure 1). The sample of Bitterroot Valley residents was purposeful rather than random, and the size of the sample was relatively small, with emphasis placed on holistic and in-depth understanding of beliefs, values, and meanings that characterize an individual's perceptions, rather than statistical generalizability to a larger population. According to Patterson and Williams (2001), "Representativeness can also be conceived as a question of how well (richly, deeply, thorough) the findings represent the actual subject or individual being studied" and "the primary fundamental tension in sampling involves tradeoffs between depth of insight and specificity at an individual scale versus generalizability at a population scale" (40–41).

To conduct an inventory of places, landscape meanings, use, and values people attach to specific places, information was gathered on demographics, use history, meanings of special places, and how hazardous fuel treatments proposed on the Bitterroot Front by the Forest Service would influence the relationships people have with specific places. Participants were asked three questions of interest to the research reported here: (1) At what specific places on this map do you spend the most time on the Bitterroot Front? (2) Are there areas that you consider important, but that you have seldom or never spent time at? (3) How would hazardous fuel treatments affect these important places? For each place they identified, participants were asked to describe why they valued it. Maps of the Bitterroot Front were available for respondents to locate specific places that had meaning to them.

All interviewees and focus-group participants were told there was interest in understanding their relationship with the Bitterroot Front for input to proposed fuel treatments. Two examples of fixed-point photographs showing "before" and "after" treatments were presented to all interviewees after they had identified important places on a map of the Bitterroot Front. Hazardous fuel reduction treatments could include using prescribed fire alone, using mechanical fuel treatments alone, and using a combination of prescribed fire and mechanical treatments. Possible treatments could include: (1) machine crush and burn; (2) cut only; (3) cut and burn; (4) cut, stack, and burn; and (5) burn only. Interviewees were informed that mechanical treatments would not be applied in the wilderness portion of the forest.

Introducing photographs into a research interview brings images into the center of the research agenda (Harper 2002). It reduces the asymmetry in power between the researcher and participant because the interview focuses on the photographs rather than the research participant (Carlsson 2001; Collier and Collier 1986; Harper 2002). According to Loeffler (2004), "Photo elicitation is a collaborative process whereby the researcher becomes a listener as the participant interprets the photograph for the researcher. This process invites research participants to take the

leading role in the interview and to make full use of their expertise'' (539). Although photographs reflect the photographer's point of view, biases, and experiences, the photographer and the viewer of a photograph can construct meaning because they bring different social positions, personality, and personal histories to the interpretive act (Harper 2002). Also, the meaning of a photograph can change when it is viewed in different contexts (Becker 1998; Carlsson 2001; Schwartz 1989).

Twelve semistructured interviews using interview guides and maps of the Bitterroot Front were conducted with residents from the four principal communities of the Bitterroot Valley. Among those interviewed were a rancher, librarian, real estate salesperson, insurance agent, retiree, educator, forester, logger, writer, museum curator, engineer, and nonprofit executive director. Eight key informant interviews were also conducted using snowball sampling from informant to informant based on their networks of knowledge. Key informant interviews, using interview guides and photographs displaying hazardous fuel reduction treatment alternatives, were conducted with people recognized as community members with specific detailed knowledge and broad experience in their communities about hazardous fuel reduction treatments on the Bitterroot Front. Among the key informants was a member of the Confederated Salish and Kootenai Tribes. Two focus groups from Bitterroot Valley community organizations provided additional information on how important places should be considered in hazardous fuel management efforts. The community organizations included the Ravalli County Wildland/Residential Fire Task Force, established to improve wildland fire prevention and protection in the county's wildland/residential interface area and to support the efforts of the rural fire districts, and the Forest Consensus Council, which works to create partnerships among forest management participants in sustainability of forest land using consensus approaches. Members of these community organizations represent both governmental bodies (federal, state, and county) and Bitterroot Valley citizens.

Analysis

All interviews and focus-group discussions were tape-recorded in their entirety, transcribed verbatim, and analyzed. A permanent text record of the interviews allowed for the use of qualitative data analysis software for organizing data generated from this study, and facilitated a rigorous, iterative reading and analysis process. Each interview transcript was edited by simultaneously listening to the associated tape-recording and reading the transcribed text. The final edited transcripts served as data analyzed.

A software program, QSR Nvivo 2.0, was used to facilitate interpretive analysis of the interviews. Segments of the text were assigned textual ''codes'' that represented the researchers' interpretation of their meaning or significance. Multiple, iterative stages of reading and coding all interviews by three researchers led to a final coding scheme that was used as a framework to summarize and present dimensions of relationships that residents attach to specific places on the Bitterroot Front.

Results

Analysis of interviews and focus groups provided insight into relationships with places on the Bitterroot Front at two levels: specific places where people spend time and that are important, and specific places they do not go at all or go to very

infrequently but still consider important. The following quotes are representative of the emergent themes across all interviews. These quotes were chosen to encapsulate most, if not all, of the larger sentiments of the interviewees across each particular theme.

On What Specific Places Do You Spend the Most Time on the Bitterroot Front? Why Are They Important?

Seven primary types of meanings were found to be attached to important frequented places: ease of access to wild places; natural-roadless; unique contrast to everything else; familiar, historically important, or tradition; scenically attractive; physical features of significance; and work oriented.

Ease of Access to Wild Places. Living close to the Selway-Bitterroot Wilderness is important to many Bitterroot Valley residents. A significant consideration in their selection of important places is the access provided by roads leading to trailheads and trails. Many of the roads provide significant elevation gain thus improving access to alpine areas. Ease of access offers opportunities to engage in day use recreational activities in very wild places. For example:

> It's accessibility, easy. It's a place where you can get into the Wilderness pretty easily. If you want to, like when people from out of town are visiting, or, you can like leave home at 2:00 in the afternoon and be up in this high alpine Wilderness lake within, you know, like an hour and a half to two hours. It's like real easy to get in.

Natural-Roadless. Places in the Bitterroot National Forest offer many natural features commonly associated with wild places, such as old-growth trees, free-flowing streams, and a landscape void of human influences like roads and other developments. For example:

> It's one of the remaining places where we have that interplay of a free flowing stream and virgin ponderosa pine forest with the massive 300-year old trees. And there aren't many places left where you can access that. And there isn't a road to go cut them down and this sort of thing.

Unique Contrast to Everything Else. Study participants discussed how important places they frequent on the Bitterroot National Forest are different from other places in their lives. Words like "miraculous," "inconceivable perfection," and "solitude" were used to describe these places. For example:

> It's like, I call it the Lost World. It's one of those places that is so perfect that it's just inconceivable, the perfection is so inconceivable. It's just like clearly kind of this, I don't know, kind of miraculous.

Also:

> I use the Bitterroot quite often. Mainly for aboriginal hunting and spiritual use. There are still places that we can go to and receive the solitude

and pretty much solitude and not running into people when you have to go up there.

Familiar, Historically Important, or Tradition. Significant experiences, reminiscence, family traditions, and cultural ties contributed to the selection of important places identified on maps of the Bitterroot National Forest, both for pioneering families and for indigenous people. For example:

It's a canyon I knew through my youth, my first trip through it was on horseback with my dad headed over into the Selway, into Indian Lake and Moose Creek and up the river coming out at Boulder Creek on the West Fork. So I knew it as a Wilderness canyon...I will drive a few times up Lost Horse right to the headwaters, to the headwaters and the Bear Creek Divide and the Wahoo Divide, over into Fish Lake. All that country is my stomping grounds from the time I was a kid. I went to the Twin Lakes, or the Lost Horse cabin as a kid with my family. Deep nostalgia.

Also:

We still use any part of it that we choose to. In any fashion whether we need to collect medicinal plants or bark or whatever we need to get. We'll go down there and do it...traditional use.

Scenically Attractive. Scenery and beauty were dimensions used to describe relationships people have with frequented places on the Bitterroot National Forest.

For one thing, the scenery is awful nice. You look up the lake there and you see the Como peaks and whatnot. It's just nice. And for the most part it's pretty pleasant there. You know, another thing, you relate that to experiences you've had there and it's pretty hard to beat a little campfire there and looking up at the ridge and seeing those pines standing up on the ridge against the evening sky.

Physical Features of Significance. Montana is often referred to in popular literature as "The Last Best Place." Some respondents expressed this sentiment or they described the physical features that contribute to these feelings about important places on the Bitterroot National Forest including flora, fauna, free-flowing streams, and physical features associated with alpine habitat. For example:

I'm drawn to places more remote where I won't run into people—mushrooms, huckleberries, great places to hike and bike, places I can find solace. I like the sunny, open places and I love being in high rocky places.

Also:

This whole area back in here is where the goats hang out come another month or so. Well right now actually they're up there.

Also:

> This is the last of the places where we find whatever that cotton picking
> pine is. That real good old knotty pine. What is that? What kind of pine is
> that now? White bark pine.

Work Oriented. Some participants who were interviewed attached practical,
work-related reasons to explain why places on the Bitterroot National Forest are
important to them. For example, "I was hired by the Ditch Association to assess
their dam one time. I had to go up and calibrate a weir on the upper dam," and "Well
since that provides irrigation to our place I guess I'd have to go with Como Lake."

Are There Areas That You Consider Important, but That You Have Seldom Or Never Spent Time at? Why Are They Important?

Eight primary types of meanings for less frequented places were identified at a more
general physical scale: watershed protection; work oriented; social identity; wilderness;
intrinsic values; new places to explore; cultural significance; and beauty or scenery.

Watershed Protection. The quality of life in the Bitterroot Valley is high, and it
is deeply connected to the water resources of the Bitterroot Front. Prosperity of
some economic sectors, aesthetic beauty, and place attachment are all believed to
be somewhat dependent upon the water resources on the Bitterroot National Forest.
For example:

> And that reservoir augments what used to be a natural lake and it helps
> extend the storage. If we didn't have that kind of storage I think there'd
> be a lot of domestic water wells and a lot that would be dry and I think a
> lot of fields would be dry. The choice is either maintaining and support-
> ing things like reservoirs like that, or subdivisions. Because that land is
> owned by somebody, and you can't just own it for nothing. And that
> reservoirs help keep the valley green and they support life and all that
> kind of thing. I just think they're terribly important. And if I had all
> my druthers we'd be looking for additional places for upstream storage.

Work Oriented. Field work on the Bitterroot Front including hazardous fuel
reduction treatments, cultural resources inventory work, and dam maintenance were
listed as important reasons for valuing some places only occasionally visited on the
Bitterroot National Forest. For example:

> Lost Horse has a lot of residents and it's an area that is high risk. And I
> want to get in there and do more work with the private landowners. Con-
> nor South is an area that's been impacted by fire and, again, there's a lot
> of residents in along this area. And I just need to get in there and talk to
> them more.

Social Identity. Important places selected by some study participants imparted
cultural meanings and provided favorable comparisons to other regional wildlands.
For example: "That's the Rocky Mountain Front. That's our Rocky Mountain
Front."

Wilderness. Local residents recognize the importance of federally protected Wilderness in very general ways, and they attach meanings with descriptive words like "remoteness," "pristine," "the frontier," "solace," and "not very many people." For example:

> I think that not very many people get up into any of these . . . going up Rock Creek as long as you stay on the trail, horses do get up to the Grizzly Lakes, but the divide between Fish and Coquina Lake and Grizzly Lakes is extremely remote, extremely remote. And same with that upper Bear Creek area. It's a long ways from trails up there. Not very many people are willing to crawl on their hands and knees with a full backpack. . . . It's very pristine. The remoteness. In fact, with all of these areas the reason is that it feels like rarely do people get up there.

Another example is, "You know . . . it seems like it's the frontier. It's very alive."

Intrinsic Values. Even though Bitterroot Valley residents value the Bitterroot National Forest for human-centered benefits, many also recognize the benefits provided for wildlife, unaltered habitat, and other nonmonetary values. To some respondents personal use of places on the Bitterroot Front is less important than knowing that these places are there and are in good condition for the fish and wildlife.

> My personal use of these places is less important to me than just that they're there and in good condition for the fish and wildlife . . . . if I really had to choose some areas, there's some areas of really prime grizzly bear habitat that are kind of up in this neck of the woods that . . . as far as grizzly bear habitat, that's some of the best.

New Places to Explore. Some respondents attach value to the many places they would like to visit on the Bitterroot National Forest. Each new place brings something different and a sense of exploration into unknown places. For example:

> The weather has something to do with it. If it's spring, you know, the wildflowers are out. If it's in the fall the critters are kind of moving around. And the water isn't as high so it isn't as noisy. So I would probably think season has the most to do with it. But it was pretty. I mean, you know, it's still, it was still, and, you know, if it's a rainy day, you know, it's different. And if it's a sun shiny day. Oh, for me it's almost a spiritual experience. It's like living in a National Geographic magazine . . . you're just so in a rush to get to the next page to see, you know, what. And every turn in the road is different. Every time you go, you see something that you've never seen before.

Cultural Significance. In an interview with an enrolled member of the Confederated Salish and Kootenai Tribes, whose ancestors inhabited the Bitterroot Valley prior to White settlement, the selection of important sites encompassed the entire

Bitterroot National Forest with special significance attended to travel routes over the divide to Idaho. For example:

> All of these peaks and lakes are very important up here . . . pretty much the whole top of the ridge in the Wilderness is very important. The ridge line and all this, pretty much the land, everything above pretty much the footlands is very important to them . . . it is all important . . . there were certain trails and passes over the divide, through the Wilderness over into Idaho that were used by families for thousands of years and they're continually used. Not only is it our aboriginal territories for the tribes and me individually, I'd say that it's more than just a special place. It's our homeland, you know?

Beauty or Scenery. Aesthetic value was a common theme throughout the interviews with local residents. Some of the common adjectives used to describe these important places they visit frequently included "spectacular," "immense," "beautiful scenery," and "magnificent." For example:

> The big patch of bitterroot in the valley. You're right here on the edge of an immense bluff. You know, looking down into the Trapper Creek Canyon and there's a bitterroot patch right there just off the end of the road. It's just probably the biggest patch of bitterroots that are left that I'm aware of. You know, it's a little early. You get up there in June and it's just solid covered with bitterroots. It's always covered with bitterroot.

Potential Hazardous Fuel Reduction Treatments on the Bitterroot Front

Many respondents indicated a strong attachment to the wilderness portion of the landscape, whether or not they had visited specific places in the Selway-Bitterroot Wilderness. Several respondents offered comments on the use of wildland fire there and how it interacts with the meanings they attach to it. For example:

> Fire will reintroduce itself. And I don't think we need to go in there with fire. Let nature take over. And I would say that with much of this, where these prescriptions may be proposed. Let's back off with our intensive practices of scarifying the land and let nature come in.

Also:

> Fine, let it burn. It burned, it burned for eons of time before we ever saw it, and we're just a speck on the flow of time there so.

Also:

> Getting back to Wilderness . . . the Selway-Bitterroot Wilderness, we do have authorization or authority to allow wildland fire to meet resource management objectives in those areas. But certainly the issue with that is that we're limited in our ability to do that, just based on typical weather patterns, topography, geography of the area, and historically how fires

once being established up canyon have a tendency to move out onto the face. But, I mean, that is a fuels reduction tool we have in the wilderness.

Outside the wilderness, some respondents voiced skepticism over a perceived discrepancy between the Forest Service's stated needs to reduce fuel danger and a "hidden agenda" for using hazardous fuel reduction treatments as another way to harvest more trees. Some meanings were threatened by fuel treatments that would alter wildlife habitat through reduction of critical forest cover. There appears to be support for allowing "naturally occurring fire" to play a stronger role in reducing fire hazards both inside and adjacent to the Selway-Bitterroot Wilderness. For example:

And I think ultimately we're going to come to the realization, as we have with wilderness, that natural fire will play a role, as it always had. And that that will apply also to roadless lands and other lands of the National Forest. We will let fire have its head in many instances in the National Forest, but this extreme denudation of the landscape with fire I think in the worst of these examples is unconscionable. And we really need to stand by research that gives us some balance with this and avoid the pitfall of justifying treatment, fire treatment where the bottom line is getting the logs out.

Also:

The biggest issue with regards to fuel management on the Bitterroot Front is probably trust I guess. The public understanding of the need to do the work to accomplish the objectives.

Conclusions

Bitterroot Valley residents indicated that they have relationships with places on the Bitterroot National Forest on at least two very different levels: places they go, and places they do not go at all or go to very infrequently but still consider important. With some overlap, residents described the meanings they attach to these places very differently. Regarding the places they go and are attached to, there are both functional and emotional bases for attachment. For instance, there are work-oriented reasons certain places are important to people. They have worked there and place value on the work they have done or the value of that work to the benefit received by people from that area. On the other hand, people also acknowledged the contribution of historical ties, unique features or experiences found there, and the ease with which they can access these wild places.

Place meanings, however, seems to extend beyond those places they frequent, but are described differently. Some people have work-oriented reasons for valuing a place they seldom visit, but they seem to be attaching more sweeping, intangible values to these places. For instance, they realize the contribution of these vast public lands to their own domestic water supplies. They also place significance on the intrinsic, cultural, and wilderness values of the landscape, as well as their role in cultural and social identity. *Place identity* has often been referred to as the foundation for personal relationships with the physical environment (e.g., Proshansky et al.

1983; Williams and Vaske 2003). The findings in this study suggest that even though people may never visit a place, the *place* is considered important to them, particularly at a landscape level, serving as a warehouse for emotions and relationships that provide significance and meaning to life.

This research also provided some insight into how hazardous fuel treatments and other landscape modifications may interact with these relationships people have with a landscape. With many of the relationships oriented toward the wilderness portion of the landscape, for both places they frequent and those they don't, it was difficult to learn about how these values would be influenced by treatments, because the only likely treatment there was naturally occurring fire. Much of the discussion gravitated toward fuel buildup in the wilderness and things that might be accomplished at the interface between wilderness and nonwilderness in order to protect both. Concern about homes at risk from wildfire and the risk of undesirable landscape modification due to stand replacement fires certainly drove some support of hazardous fuel treatment objectives. Skepticism over fear of hidden agendas connected to hazardous fuel management, however, suggests that some members of the public remain suspicious of how well the Forest Service understands or represents the values local people attach to this landscape.

Implications

The knowledge generated in this project may be helpful to managers in understanding the roots of public comment received during public involvement activities. Some members of the public are suspicious about whether the agency understands the values they place on the landscape and are uncertain how knowledge about these values is used by the agency in making decisions about fire and hazardous fuel management. Efforts to understand these values are aimed at increasing trust in the agency by facilitating public engagement at a deeper level through collaborative planning to jointly generate solutions to hazardous fuels accumulation and protection of human values at risk.

We have confidence that the rapid appraisal research approach used in this study identified the predominant values attached to the Bitterroot Front. Future research conducted at a higher resolution, with specificity for site level and population, may provide Forest Service managers with additional insight on the full range of meanings attached to a specific area. Information from these interviews is now being incorporated into modeling efforts to project optimum fuel treatments that will accomplish ecological restoration and hazardous fuel reduction targets. When projecting the long-term effects of fire on the landscape under alternative fuel treatment scenarios, anticipating the influence of social response is vital.

Future research also needs to provide more complete understanding of the influences of alternative fuel treatments on human relationships with the landscape. One potential measurement that would be useful in such an analysis would be accurate indications of the intensity of the meanings held for specific sites. A person might have ancestral/traditional meanings attached to several areas, and meanings can vary in terms of scale. Special places can be specific spots or they might be whole drainages or they might be the entire crest of a mountain range. But we anticipate that the attachments might also vary in the intensity of feelings about how that site, drainage, or landscape feature contributes to identity, provides some functional value, or is unique.

Although Bell (1997) concluded that the realness of ghosts of place is often questioned because no laboratory instrument has ever measured their presence, the meanings people attach to the Bitterroot landscape, which are also invisible, are no doubt very real. Future efforts to proactively include this type of social science data as the first layer in modeling efforts to locate and select priority fuel treatment activities are crucial. Currently, national public lands fire and fuel management programs are placing significant emphasis on building trust (Liljeblad and Borrie 2006), understanding and protecting economic and noneconomic values at risk associated with public lands, and gaining more collaborative engagement with the public. This kind of research will contribute to all of these objectives.

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