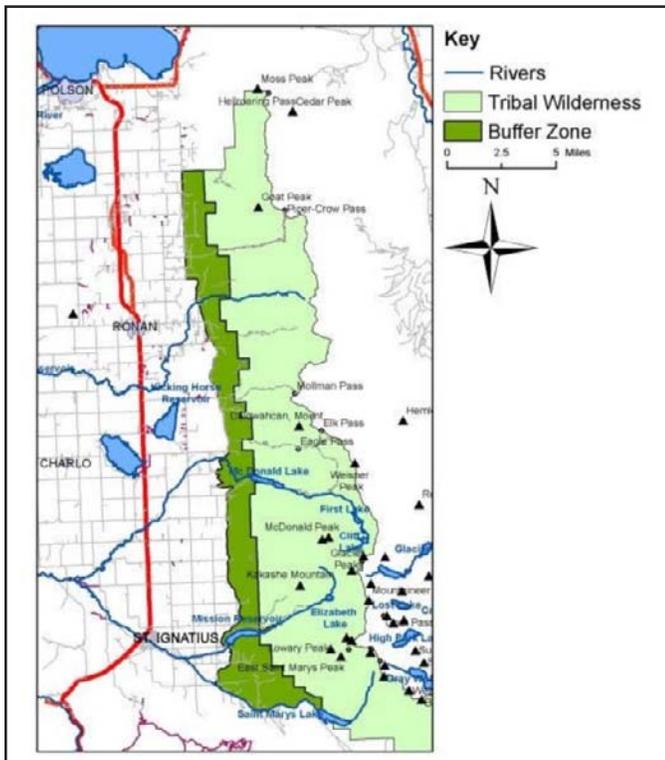


Mapping Social and Cultural Values in the Mission Mountains



The Mission Mountains Tribal Wilderness and Tribal Buffer Zone extend north to south along the eastern border of the Flathead Indian Reservation. (Map prepared by Brett Davis)

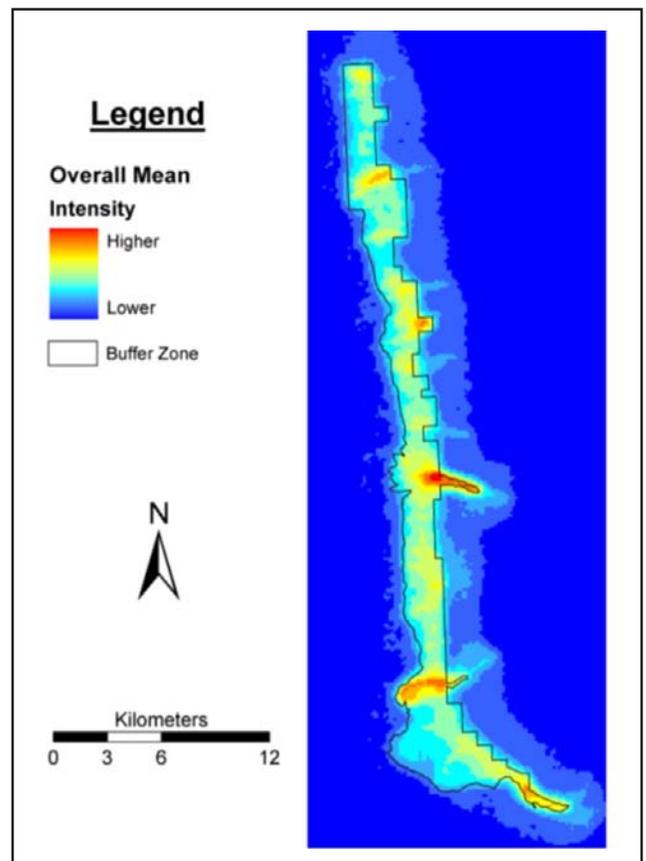
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Picture a favorite area where you hike, hunt, ride your 4-wheeler, seek solitude and renewal, or maybe just appreciate for its wildlife habitat. How would you feel if that area was burned over, the understory trees were thinned out, or a road built through it? Would you feel that your favorite area has been harmed or protected?

We've been conducting research on the Flathead Indian Reservation in Montana to understand the values that Tribal and non-Tribal members attach to the Mission Mountains Tribal Wilderness and its bordering 22,000-acre Buffer Zone (see map above). To successfully improve forest health within that Buffer Zone and restore fire in the Wilderness, the managing agency and public must work together to find solutions to increasingly threatening fuel buildups. We used qualitative, culturally sensitive research and a computer-based mapping exercise to understand tradeoffs Reservation residents describe in relation to potential Buffer Zone fuel treatment actions.

Fire management focuses on reinstating natural fire regimes through fuel treatment—thinning and burning—and allowing fire to return to function, as nearly as possible, in its natural ecological role. Forest managers use thinning and burning to reduce fuel loads so that natural fire regimes can be allowed to operate. Instilling trust and accomplishing resource management objectives require a high degree of collaboration and participatory planning with the public. From previous BEMRP research on the Bitterroot National Forest, we know that a key contributor to trust in fire and fuel management decisions is procedural justice, or the perceived fairness, equity, and legitimacy of decisions managers make. People want to be assured that managers understand the values they attach to forest lands and that these values are at least considered in decision making.

(continued on page 12)



This composite map (across five layers of meanings described by community residents) for overall averaged results (Jenks method, 10 categories) demonstrates how the scale and intensity of social and cultural values can be mapped for a landscape. (Map prepared by Brett Davis)

Mapping Cultural Values . . . (from page 4)

On the Reservation, we found that the primary meanings Tribal members associate with the Buffer Zone are wilderness protection, wildlife and water quality, access and functional attachments (such as a source of medicinal plants), recreation and scenic values, and personal and cultural meanings symbolic of long-term associations with nature in the Northern Rockies. We used a computer-based mapping exercise to develop 154 community resident maps of important places in the Buffer Zone across these five types of meanings. The map on the bottom of page 4 represents an overall average of those maps.

We also asked study subjects to identify major threats they perceive to these meanings. Initial analysis reveals that residents perceived four primary categories of threats to the meanings they attached to the Buffer Zone: wildfire, intense logging, roads and development, and off-highway vehicle use. The threat of wildfire was broadly recognized by many subjects and blamed on years of fire restriction, resulting in the feeling that now uncontrolled fires would be disastrous due to overstocked or dense vegetation.

Logging also was commonly listed among threats, giving rise to the dilemma that Tribal resource managers face. Specifically, people expressed fears about intense logging, extreme logging, commercial logging, and large scale logging, suggesting that people are more threatened by the scale and intensity it might entail than the logging itself.

Residents are also concerned about other threats to the Buffer Zone such as perceived increases in road access, subdivision of property, and ATV and motorcycle use on and off roads. Some miscellaneous threats attached to specific areas in the Buffer Zone were cattle grazing, recreation over use, horses, litter, weeds, impacts to water quality, and insect outbreaks. While many of these threats exist at a large scale, many were attached to specific places in the Buffer Zone, providing opportunity to base discussions with the public about priorities for future management actions. BEMRP scientists will continue to facilitate interaction between forest managers and the public as proposals are developed in 2008 to reduce fire hazard, increase forest health, and restore the natural role of fire on Tribal lands.



Mice . . . (from page 8)

following natural wildfire, evaluated deer mouse seed predation on Douglas-fir and ponderosa pine seeds, and determined whether seed predation affected tree regeneration.

At two different sets of study sites on the Lolo National Forest, we confirmed that deer mouse populations increase dramatically in the first years after forest fires. At one set of study sites, we put out ponderosa pine and Douglas-fir seeds in trays to evaluate deer mouse seed selection. We also placed seeds on the ground in cages that either allowed or precluded mouse access to evaluate the effect of seed predation on seedling recruitment. Our preliminary data indicate that 1) mice did not exhibit size-dependent seed selection, i.e., mice consumed Douglas-fir seeds as readily as ponderosa pine seeds, 2) mice consumed large numbers of both seed species, and 3) seed predation by mice greatly reduced recruitment of seedlings for both species. Thus, mice may influence the *rate* of post-fire regeneration, but not the *trajectory*, meaning the direction the system is going such as toward a forest dominated by one tree species over another. When finished, our study will improve our understanding of animal-plant interactions in western forest succession and determine whether deer mice warrant special management in regenerating forests.

What Kind of Cutting . . . (from page 7)

possible to improbable. The crowning index (wind speed at which fire will spread in the tree crowns) almost tripled in the OT plots from 12 to 34 mph with thinning but changed minimally (17 to 19 mph) in the UC treatment. This contrast reflects the large and small canopy fuels changes for the OT and UC plots, respectively.

Therefore, models show that surface wind speeds increase as a result of thinning, which in turn leads to an increase in surface fire intensity. However, this expected fire intensity increase should not result in increased crown fire potential. Instead, reductions in canopy fuel quantities and increases in canopy base heights in the OT treatment results in a low probability of crown fire spreading or even initiating. Increases in canopy base heights with removal of ladder fuels in the UC treatment greatly reduce the chance of crown fire initiation. But with the overstory fuels virtually unaltered, the likelihood of crown fire spread remains unchanged. So, the trade-off for increased fire intensity is a substantial decrease in crown fire potential.