



Recreation Research Update



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Wildfire Management and Decision Making

Research findings are now available from a study conducted by Dr. Robyn Wilson, Dr. Eric Toman, and Timothy Ascher at The Ohio State University, Dr. Lynn Maguire at Duke University, and Dr. Pat Winter (PSW). This study involved 206 Forest Service fire managers with line officer and incident management experience. Respondents were contacted by email and completed an online survey. We aimed to improve our understanding of how fire management decisions are made, viewed from a risk management perspective. We presented scenarios and asked respondents to make a hypothetical management decision. Each scenario tested elements of a fire situation that researchers have proposed will influence risk-related decisions. We compared risky and certain choices, stated as values potentially lost or preserved.

The first scenario showed that management decisions were influenced by both the way that choice was framed and the individual's attitude toward risk. The majority preferred the risky choice when the outcome of the choice was framed as a loss (worded as homes lost). However, the majority went with the certain choice when the outcome was framed as a gain (worded as homes saved). Individuals who were more likely to take management risks in general were also more likely to choose the risky option regardless of how the choices were framed.

In the second scenario, we asked respondents to choose from one of nine management options. Each option involved some tradeoff between minimizing short- and long-term risk. The majority preferred minimizing short-term risk when property, public safety, or threatened and endangered species were at risk. When ecosystem health was the primary objective there was a greater focus on minimizing long-term risk. Long-term risk was more of a focus for those with more experience in fire management.

The third scenario asked about preferences for fire use and fire suppression in the context of risky or certain options. We found that fire use was preferred regardless of how the options were presented. However, the reported status quo (how they typically manage fires) mattered, so that those with a pattern of suppression were more likely to choose it again in the decision scenario. Managers can benefit from these

findings by understanding that individual differences and the way that risk information is presented can both weigh heavily into decisions. *For more information about this study contact Pat Winter at 951-680-1557 or pwinter@fs.fed.us.*

WUI Homeowners' Wildland Fire Values, Attitudes and Behaviors

A compilation report that summarizes and integrates recent research studies is now available. Dr. Jim Absher (PSW) with co-authors Dr. Jerry Vaske (Colorado State University) and Dr. Lori Shelby (George Mason University) produced it from four studies which developed a theoretical and practical understanding of homeowners' attitudes and behaviors in the wildland-urban interface (WUI) in relation to the threat from wildland fires. Individual studies focused on models and methods that measured (1) value orientations (patterns of basic beliefs) toward natural processes, (2) attitudes toward wildland fire policies, and (3) behavioral intentions to adopt defensible space activities or support agency policies and actions. This report presents key findings from these studies, highlights the practical consequences of adopting a theory-based approach to understanding wildland fire management in urbanized areas, and suggests strategies for successful wildfire-prevention education programs.

The studies are based in social-psychological theories about how attitudes and beliefs mediate the relationships between values and behavior, and the link to more specific cognitions (e.g., attitudes) about threats from wildland fire. This "cognitive hierarchy" was used to predict public acceptance of support for wildfire management policies and homeowners' willingness to adopt defensible space activities. Results suggest that homeowner compliance and successful communication in firewise programs are influenced by program goals, the effectiveness of message delivery, and audience characteristics, especially homeowners' orientations and attitudes toward fire risk and the agency involved in prevention and suppression.

The results further suggest that agency attempts to change residents' responses to wildland fire threat can be enhanced in four ways. (1) Know an individual community's beliefs and attitudes regarding firewise behaviors in order to facilitate the design of effective

communication strategies. (2) Not assuming that the public trusts or even understands agency decisions regarding wildfire management. Instead, build trust to facilitate policy support and firewise compliance. (3) Be flexible in dealing with individual communities. Programs often look to others for “success” and emulate their actions when it may be better to pay attention to the differences between communities. (4) Develop a strategy to get homeowners to do something, as this seems to get the “biggest bang for the buck.” Once they have started to do firewise actions, the likelihood is that other actions and attitude changes are likely to follow. *For more information about this study contact Jim Absher at 951-680-1559 or jabsher@fs.fed.us.*

Perceptions about Law Enforcement

This synthesizes a series of studies to evaluate perceptions of U.S. Department of Agriculture Forest Service (USFS) law enforcement and investigations (LEI) conducted by Dr. Debbie Chavez and Dr. Joanne Tynon (Oregon State University). In all, five groups were evaluated. The first four groups consisted of employees from different positions within LEI. The fifth group was a customer of LEI, the line officers of the National Forest System (NFS). The groups responded to questions within 10 topic areas: demographics, area of responsibility, enforcement level and cooperation, roles, existing issues, priorities, customers, natural resources, success stories, and successful LEI program. There were more similarities among the groups than dissimilarities. In fact, among all groups there were similar responses to questions within each of the ten major topic areas. For example, in the enforcement level and cooperation topic there was agreement that there were too few law enforcement officers and too few forest protection officers. Within the existing issues topic there was uniform agreement that several types of crime and violence were increasing over the years. Similarly all respondent groups agreed that fiscal issues were a top priority. There was also agreement that a successful national law enforcement program would have the resources necessary to do the job, and there would be good understanding of the program and interaction between LEI and the NFS. There was little dissimilarity found among response groups. Findings from this analysis suggest LEI and NFS have the opportunity to strengthen the law enforcement program in the USFS. They can do this by highlighting areas of similarity between the groups and building further consensus based on that beginning. They can also examine the

differences that exist and work toward understanding the position each group has on those areas. *For more information please contact Debbie Chavez at 951-680-1558 or dchavez@fs.fed.us.*

Unit Publications

- Absher, James D.; Vaske, Jerry J.; Shelby, Lori B. 2009. **Residents' responses to wildland fire programs: a review of cognitive and behavioral studies.** Gen. Tech. Rep. PSW-GTR-223. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 31 p.
- Burn, S.M.; Winter, P.L. 2008. **A behavioral intervention tool for recreation managers.** *Park Science* 31(1): 5-15.
- Chavez, D.J. 2008. **Invite, include, and involve! Racial groups, ethnic groups, and leisure.** In: Allison, M.T. and Schneider, I.E. (eds.), *Diversity and the Recreation Profession: Organizational Perspectives.* State College, PA: Venture Publishing, Inc., p. 223-232.
- Chavez, Deborah J.; Tynon, Joanne, F. 2009. **A synthesis of five nationwide studies: perceptions of law enforcement and investigations in the USDA Forest Service.** Res. Pap. PSW-RP-260. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 19 p.
- Chick, G.; Li, C.; Zinn, H.C.; Absher, J.D.; Graefe, A.R. 2007. **Ethnicity as a construct in leisure research: a rejoinder to Gobster.** *Journal of Leisure Research* 39(3): 554-566.
- Roberts, N.S.; Chavez, D.J.; Lara, B.M.; Sheffield, E.A. 2009. **Serving culturally diverse visitors to forests in California: a resource guide.** PSW-GTR-222. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 76 p.
- Wilhelm-Stanis, S.A.; Schneider, I.E.; Chavez, D.J.; Shinew, K.J. 2009. **Visitor constraints to physical activity in park and recreation areas: differences by race and ethnicity.** *Journal of Park and Recreation Administration* 27(3): 78-95.
- Winter, P.L. 2008. **Park signs and visitor behavior: a research summary.** *Park Science* 31(1). www.nature.nps.gov/ParkScience.