

# Using and Improving Social Capital to Increase Community Preparedness for Wildfire

Shruti Agrawal and Martha C. Monroe  
School of Forest Resources and Conservation,  
University of Florida, Gainesville, FL (mcmonroe@ufl.edu)

## Introduction

Community education programs are an important aspect of wildfire preparedness. Research suggests that social capital is also an important element of community preparedness. A community with greater social capital will likely have residents more willing to participate in community activities and solve problems they face together. For example, residents in a subdivision vulnerable to wildfires and with high social capital would be more likely to work together to manage vegetation, install dry hydrants, rent a chipper, or widen an access road, thus reducing their vulnerability to wildfires.

However, education programs can vary in the degree to which they improve community networks and relationships. A brochure left on the door likely would not have the same impact on the community norm as the same brochure distributed in a community meeting. But programs that include activities that increase participation, interaction, and communication can build and improve social capital. The formal and informal networks formed are a resource available to individuals in the community and can be used to achieve a variety of objectives.

## Key Findings

This paper discusses findings that show the likely advantages for managers in developing wildfire education programs that also emphasize building social capital. Three key results are discussed:

- **People who perceive greater social capital in their community are more likely to take action around their homes to create defensible space and reduce wildfire risk.**
- **People who perceive greater social capital in their community are more likely to participate in activities to increase their knowledge and skills on wildfire mitigation.**
- **People who stated that talking to neighborhood friends or to a community leader influenced them to take steps to reduce wildfire risk perceived greater social capital than those who did not credit friends and leaders.**

**Social capital** is both an economic and non-economic benefit that individuals, groups, and communities get through the structure of their relationships. It is referred to as “social” because it grows out of relationships between people. It is a form of “capital” in that it helps individuals achieve things that they might not have been able to achieve otherwise (e.g., obtain job information, safer communities because of social norms, and reduced risk of wildfires). It can be assessed by the degree to which people participate in community activities and the strength of community ties and networks.

In this study, social capital is defined as an individual’s perception of the quality of relationships he/she holds with his/her neighbors and other people in the community, and community characteristics like community participation.

These findings suggest that educational programs that strengthen social capital by fostering interaction between people will be more likely to motivate community members to take steps to reduce their wildfire risk.

## **Detailed Findings**

This study surveyed residents in seven neighborhoods in fire-prone areas in Florida that had been exposed to some type of wildfire education program. This section describes the three key results and their implications for resource managers. Specific statistical analyses for the study will not be reported in detail here. All the results and comparisons discussed below proved significant at the .05 significance level.

### **People who perceive greater social capital in their community are more likely to take action around their homes to create defensible space and reduce risk of wildfires.**

The study found that people who took steps to reduce their risk of wildfire were significantly more likely to perceive greater social capital than those who did not. This is not unexpected because the theories about social capital suggest that communities high in social capital are more likely to work together to solve problems. It is important to note that the correlation between these variables does not tell us if one caused the other: the process of learning how to create defensible space may have enhanced a respondent's perception of social capital, or those who already interact and care about the community might have been more eager to take steps to reduce wildfire risk. In either case, the apparent reciprocal link between defensible space actions and social capital gives managers an important reason to develop wildfire outreach programs that also enhance social capital.

### **People who perceive greater social capital in their community are more likely to participate in activities to increase their knowledge and skills on wildfire mitigation.**

At a general level, we found that people who participated in the wildfire education program were significantly more likely to perceive greater social capital than people who did not participate. A key question is whether all activities in a program are associated with social capital. To determine this, the survey presented specific types of activities that can be combined into three activity groups: viewing electronic media, receiving printed information, and attending wildfire-related events. Participation was defined as receiving and using any of these informational media. We found a significant positive relationship between perception of social capital and each activity group. People who viewed electronic media, received printed information, and attended a wildfire-related event perceived greater social capital in their community than those who did not receive information in these formats.

We further broke down each activity group into specific sources (see table 1). Among people who received information from various electronic and print media, only listening to television and radio news and receiving a handout or newspaper were significantly related to greater perceptions of social capital. For events, only attending a meeting to discuss wildfires, a prescribed burn demonstration, or a picnic were significantly associated with greater perceived social capital. The last three activities likely involve interaction with other people—neighbors, community members, and agencies delivering the information—which is generally associated with greater social capital. Wilson (1997) suggests that social capital can be built or rebuilt through an incremental process that helps individuals break out of their isolation, brings them into interaction with other individuals, improves connectedness among one another, and makes them responsible for their actions. It is also possible that the results reflect a dynamic whereby people who perceive higher social capital are more likely to attend meetings and interact in their community.

**Table 1.—Specific media sources and effect on perceived social capital**

| Electronic media sources | Print media  | Wildfire-related events          |
|--------------------------|--------------|----------------------------------|
| Web sites                | Handouts**   | Presentations                    |
| TV advertisements        | Brochures    | Meetings to discuss wildfires**  |
| TV news**                | Door hangers | Prescribed burn demonstrations** |
| TV shows                 | Newletters   | Equipment demonstrations         |
| Radio advertisements     | Magazines    | Landscape demonstrations         |
| Radio news**             | Newspapers** | Information booths               |
| CD/video                 |              | Community picnics**              |

\*\*Significant (0.05) positive association with higher perceived social capital.

Given the positive relationship found between perception of social capital and risk reduction activities, managers may want to focus their education programs on using the information sources associated with greater social capital: using television and radio news; developing handouts and newspaper articles; and organizing meetings, prescribed burn demonstrations, or community picnics. Public affairs officers and mitigation specialists could work to place fire-related stories useful to mitigation and preparedness in all three types of news media, create handouts that play off of current wildfire news, and provide keys to creating defensible space around homes. Managers also could use demonstrations, meetings, and get-togethers as ways to disseminate wildfire information to residents. Handouts with information on ways to reduce wildfire risk could be distributed at the events.

**People who stated that talking to neighborhood friends or to a community leader influenced them to take steps to reduce wildfire risk perceived greater social capital than those who did not credit friends and leaders.**

Respondents who indicated they had taken steps around their homes to reduce their wildfire risk were asked whether any of the electronic, print, or event information sources influenced them to take action. They were also asked whether talking to neighbors, experts, leaders, or friends, or participating in workdays or a Firewise program influenced them.

Of all the types of educational activities assessed, the two most strongly correlated to perception of social capital were talking to friends in the neighborhood and talking with a community leader. Three other activities—attending a wildfire preparedness event, participating in a Firewise program, and seeing neighbors engage in risk reduction activities—also were positively correlated with perception of social capital, although the effect was smaller. All these activities involve interaction among people, whether with a neighbor, community leader, or forest or fire protection agency personnel. Thus, engagement in activities and interaction with people has a significant effect on perception of social capital.

These findings indicate that programs that emphasize interpersonal interaction will be more effective in influencing people to take steps to mitigate their fire risk. Resource managers therefore may want to focus attention on designing outreach programs that foster interaction between community members, such as a community workday or a neighbor appreciation day that would bring together friends and other members of the community. At these functions, people who have taken actions around their homes to reduce wildfire risk can talk to peers about what they have done around their homes, what motivated them to take the actions, and why others in the community should also get involved.

## **Study Communities**

This study focused on seven neighborhoods in three communities in Florida:

- Wedgefield (in Orange County).
- Two neighborhoods of Palm Coast (in Flagler County)—Seminole Woods and Cypress Knoll.
- Four neighborhoods on the Lake Wales Ridge (in Polk and Highlands Counties)—Tiger Creek Forest, Indian Lakes Estates, Placid Lake Estates, and Leisure Lakes.

Of these, Wedgefield and the two neighborhoods of Palm Coast participated in the national study “Community partnerships: landscape level strategies to reduce the risk of wildfires” (Jakes *et al.* 2003). Communities were selected based on their risk of wildfire and their wildfire education programs. All seven neighborhoods are at risk of wildfires, have been exposed to some educational program to educate residents, and are taking steps to increase wildfire preparedness.

## Methods

For this study, social capital is defined as an individual's perception of the quality of relationship he/she holds with his/her neighbors and other people in the community, and community characteristics like community participation. A wildfire education program is defined as an educational initiative that informs homeowners about the history and risk of wildfires, educates them about steps they can take at individual and community levels to reduce their vulnerability to wildfires, informs them about new policies and ordinances, and increases support for expenditures and policies.

Mail surveys were sent to a sample of 3,744 homeowners. The survey contained questions on the individual's perception of wildfire risk, participation in wildfire education programs, steps taken to reduce risk of wildfires, and involvement and perception of their community. The Dillman method (2000) for administering mail surveys was used to improve response rate. This included first survey mailing (with cover letter, survey, and magnet) followed by a reminder postcard after 2 weeks; second mailing (with cover letter and survey) 2 weeks after the reminder postcard; followed by a final reminder postcard after 2 weeks. Usable data were obtained from 1,350 participants for an overall response rate of 36 percent (ranging from 43 percent in Tiger Creek Forest to 26 percent in Seminole Woods).

## References

Dillman, D., A. 2000. Mail and internet surveys: the tailored design method. New York, NY: John Wiley and Sons, Inc. 480 p.

Jakes, P.J.; Nelson, K.; Lang, E.; *et al.* 2003. A model for improving community preparedness for wildfire. In: Jakes, P.J., comp. Homeowners, communities, and wildfire: science findings from the National Fire Plan, Proceedings of the 9<sup>th</sup> International symposium on society and resource management; 2002 June 2-5; Bloomington, IN. Gen. Tech. Rep. NC-231. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station: 4-9.

Wilson, P.A. 1997. Building social capital: a learning agenda for the twenty-first century. *Urban Studies*. 34(5-6): 745-760.