

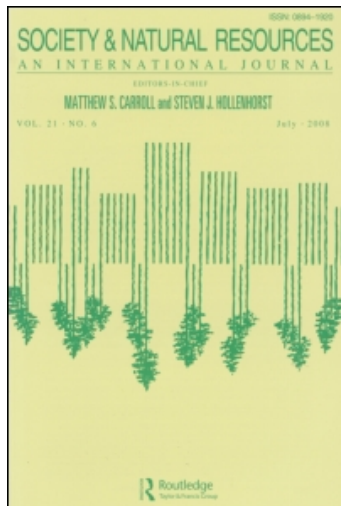
This article was downloaded by: [Everett, Yvonne]

On: 13 January 2011

Access details: Access Details: [subscription number 931650323]

Publisher Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Society & Natural Resources

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713667234>

Fire Safe Councils in the Interface

Yvonne Everett^a; Michelle Fuller^b

^a Department of Environmental Science and Management, Humboldt State University, Arcata, California, USA ^b Environment and Community Master of Arts Program, Humboldt State University, Arcata, California, USA

First published on: 28 December 2010

To cite this Article Everett, Yvonne and Fuller, Michelle(2010) 'Fire Safe Councils in the Interface', Society & Natural Resources,, First published on: 28 December 2010 (iFirst)

To link to this Article: DOI: 10.1080/08941920903313835

URL: <http://dx.doi.org/10.1080/08941920903313835>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Fire Safe Councils in the Interface

YVONNE EVERETT

Department of Environmental Science and Management, Humboldt
State University, Arcata, California, USA

MICHELLE FULLER

Environment and Community Master of Arts Program, Humboldt State
University, Arcata, California, USA

Legislators exhort government agencies to work with the public to reduce fire hazards in the wildland–urban interface. However, working with an unorganized “public” is a challenge for agencies. We present survey research on fire safe councils in California, community-based groups that work to reduce wildfire hazards with a range of innovative mitigation activities. We find that many fire safe councils exhibit high capacity for bonding and bridging forms of social capital that enable them to work within their communities and with government agencies to improve fire management. Two sources of strength in this potentially expandable organizational model are (1) the grass-roots character of most councils, which emerge from and reflect their communities’ specific needs and capacities, and (2) a statewide coalition of federal and state fire and land management agencies with other stakeholders, which legitimizes agency staff involvement at a local level and streamlines access to funding.

Keywords community capacity, community-based fire management, fire safe councils, social capital, wildland–urban interface

Wildfire is a natural phenomenon integral to ecosystem processes in much of the United States.

However, wildfire management is an increasing challenge. Annual Congressional allocations for fire protection have steadily increased from below \$500 million in 1991 to \$4.46 billion in FY 2008 (Gorte 2010).

The causes of the increasing scale and costs of fire include accumulation of biomass and hazardous fuels, worsening drought and climate change, and development in the wildland–urban interface (USDA and DOI 2005). This complex interface, called the WUI, refers to locations where housing developments extend into wildlands (Stewart et al. 2006) and often to borders between federal or state land management agency jurisdiction and that of local governments and private property owners. Fire suppression in the WUI is complicated, as structures simultaneously

Received 5 June 2008; accepted 20 April 2009.

Address correspondence to Yvonne Everett, Department of Environmental Science and Management, Humboldt State University, 1 Harpst St, Arcata, CA 95521, USA. E-mail: everett@humboldt.edu

increase the difficulty of fighting wildfire, the values at risk, and the social and political pressures to extinguish fires. Multiple jurisdictions and varied regulatory controls make preventive measures such as fuel reduction projects difficult, and constrain the use of prescribed fire (USDA and DOI 2005).

Public education is a key to reducing fire hazards in the WUI before, during, and after wildfire events. A growing body of research focuses on public perceptions of fire management activities, often with the complementary goals of helping fire managers understand public perceptions, and of identifying factors that can make fire management practices more acceptable to the public (e.g., Daniel et al. 2005; Vogt et al. 2005; McCaffrey 2006; Monroe et al. 2006). These studies indicate that managers can effectively engage the public in voluntary, collaborative fire management efforts. The processes of learning more about and participating in such activities can increase public acceptance of fire preparedness efforts, and build trust in public resource managers (Burns and Cheng 2007; Jakes 2003). Fire events, evacuations, and their aftermath are stressful times of fear and uncertainty for people in affected communities. Research on interactions within communities and between communities and fire-incident command teams and other “outsiders” during and after fire events indicates that conflicts often arise, particularly where community members believe authorities fail to value local knowledge, or constrain local autonomy and locally preferred results (Carroll et al. 2006; Terence 2008). Developing working relationships before fire events may reduce communication gaps and conflict during fires. In an environment of greater mutual trust, all parties could better use local knowledge and skills to reduce losses (Danks 2001).

Recognizing the challenges of fire management in the WUI, and the potential benefits of collaboration (Sturtevant et al. 2005), the National Fire Plan (USDA and DOI 2000) exhorted federal agencies to work with state agencies and the public to address wildfire management. The Healthy Forest Restoration Act of 2003 (HFRA) specifically targeted fuels management in the WUI. However, working with a broadly defined but amorphous “public” is a huge challenge. Federal and state agencies are professional organizations hierarchically structured to carry out particular missions through top down command. The public in the WUI’s complex social landscape is not uniformly organized and ready to “be educated.” Systematic approaches to developing linkages across this interface are needed.

Research has shown that the type of communication used in public education and efforts to develop collaboration is important, whether unidirectional (e.g., mass outreach brochures) or interactive. Interactive communication is more likely to encourage collaboration and changes in behavior (Toman and Shindler 2006). Interactive communication requires personal contact between agency representatives and the public.

One successful approach fire management agencies have taken to build interactive communication is to contact existing social networks such as neighborhood associations, which would likely be interested in wildfire hazard mitigation (Agrawal and Monroe 2006; Jakes and Nelson 2007; Shiralipour et al. 2006). Such networks are a source of community capacity, or “the collective ability of residents to respond to social, economic, and environmental stresses, create and take advantage of opportunities, and meet the needs of the community” (Rural Voices for Conservation Coalition 2007, 1). Social capital is one type of local human resource upon which community capacity is based. Social capital refers to the relationships, including trust, and networks developed between people over time that help them cooperate

for mutual benefit (Flora and Flora 2004). One aspect of social capital is *bonding*, which refers to the strength of the relationships between people with similar backgrounds and shared interests (Putnam and Feldstein 2003). Working with neighborhood associations effectively allows agencies to tap into the potentially strong bonds of families, friends, and neighbors who can rely on each other to participate and carry out activities to benefit one another and the group.

Another form of social capital is *bridging capital*, or the extent to which a group can reach out to and collaborate with other groups of people, usually because of the personal or professional relationships of some of its members (Flora and Flora 2004). Bridging is a two-way interaction that benefits both parties. In this case, bridging capital might be developed through community organizations whose members include locally resident agency employees. Agency employees who convey an understanding of their agency mission and capacity to their community organization can identify opportunities for furthering mutually desired goals, such as wildfire preparedness. As Putnam and Feldstein (2003) point out, bridging capital is the most difficult form of social capital to create, yet is critical to communication in a pluralistic society. Explicitly recognizing opportunities to develop bridging capital may be a further key to communication across the interface between hierarchically structured agencies and the public.

Managing fire is one of California's greatest natural-resource challenges (Husari et al. 2006). In June 2008, lightning storms set off hundreds of fires that burned for months on hundreds of thousands of acres in northern California. Fire storms struck southern California in 2003, 2007, and again in 2008, destroying thousands of homes. California has more homes in the WUI than any other state (Stewart et al. 2006). In the late 1980s, grass-roots community groups began to form to address local fire hazards. The number of California groups multiplied rapidly and there are now over 200.

The California State Fire Safe Council umbrella organization was initiated in 1993 by the California Department of Forestry and Fire Protection. Soon county and community groups focused on wildfire mitigation began calling themselves fire safe councils. In 2002 the Fire Safe Council was incorporated as an independent not-for-profit organization that includes representation from state and federal resource management and fire agencies, as well as the insurance industry, business and real estate interests, and environmental organizations (CFSC 2008). Its mission is mobilizing Californians to protect their homes, communities, and environments from wildfire. The Fire Safe Council provides educational materials and a clearinghouse for grants to county and community-level councils. The clearinghouse allows councils to apply for federal and state funding for fire management activities from several agency sources with one grant proposal (Ganz et al. 2007). While the Fire Safe Council supports local councils, the Fire Safe Council is not a membership organization, and many local councils have little or no contact with it. The Fire Safe Council advises communities wishing to start a council, but no set criteria define local councils. This allows emerging councils to become whatever their members have time and energy to make them. Whether or not all of these councils grow into high-capacity organizations, any effort by a group of people to work together to learn about wildfire and take steps to protect their community is potentially beneficial, and could provide an opening for interaction with professional fire managers.

Activities of individual fire safe councils have been documented with favorable comparisons between the fire safe councils and other community-based fire

organizations (Sturtevant and McCaffrey 2006; Ganz et al. 2007). However, to date no study has focused on fire safe councils from a perspective informed by social capital theory or analyzing councils' potential to act as collaborative partners with fire management agencies.

This study surveyed fire safe councils to find out what motivates citizens to initiate councils, how councils are organized, who belongs to them, and to what degree councils collaborate with other organizations. We also sought to understand what kinds of capacity councils have by finding out what types of activities councils carry out, and what councils see as their greatest challenges.

Methods

We contacted the 157 fire safe councils listed on the Fire Safe Council's website beginning in June 2006, using an approach modified from Dillman (2000). Of the initial 157 councils contacted by e-mail or phone to confirm their addresses and active status, 70 responded to repeated efforts to reach them. Depending on how contact was made, we sent these 70 councils a survey form by e-mail or surface mail.

Using a mix of closed and open-ended questions, we asked council respondents to describe their communities. In order to understand the nature of councils' social capital, we asked how they were formed and organized, including size and composition of their membership, frequency of meetings, types of decision-making processes, incorporation status, and whether they worked with other organizations. To assess what councils were actually accomplishing, we asked what types of activities councils carried out and hoped to carry out in future. We also asked what councils saw as their greatest challenges.

We called or e-mailed each council once or twice in the following six months to remind them to submit the survey. We received completed survey forms from 28 councils, a response rate representing 40% of all contacted councils. We compiled descriptive statistics and applied content analysis to reviewing open-ended responses to survey questions.

Results

The 28 fire safe councils responding to the survey were located in 19 California counties, from San Diego and San Bernardino in the south to Humboldt and Siskiyou counties in the north. The majority (78%) of these councils characterized their communities as rural, and the rest as a rural to urban mix or suburban. Most (86%) of the councils served populations of 50,000 or less, and 30% served communities of fewer than 1,000 people.

A third of the councils indicated that their populations change significantly on a seasonal basis. Most of these councils reported summer population increases between 25% and 50%; a few indicated populations more than doubling during summer.

Most counties reported a county-level fire safe council and several to numerous community-level councils. San Diego County, with nearly 3 million people, had a county-wide fire safe council that served over 60 community councils. By contrast, the 14,000 people in Trinity County had one county-level fire safe council for all

communities in the county. Levels of communication and collaboration among the community-, county-, and state-level fire safe councils varied. Some county-level councils helped to initiate community councils. In other cases, several community councils organized to form a county umbrella council. Among reporting councils, 71% were initiated by community members alone. Government agencies assisted in starting four councils (14%) and established four councils.

Council Organization

The fire safe councils organized themselves in a range of ways. In our survey, councils defined membership as either a count of participants who regularly attended meetings, or the estimated population a council served. The majority of councils indicated having 8–20 regular active members. Almost all reporting councils indicated that most or all of their members were private landowners. In many cases members wore multiple hats—for example, landowners were also members of volunteer fire departments (VFDs). Over 60% of councils reported VFD members and or professional fire service staff among their regulars. Over half of the councils reported having federal, state, and local government representatives as council members. Half of the councils included members from community-based nongovernmental organizations (NGOs). A smaller proportion of councils (20%) identified members from businesses or environmental organizations.

Council decision-making processes varied widely. A formal structure including a board of directors was the most commonly reported (63%). In about half of the board-directed councils, decisions were taken by the board alone. In the others, input from the members strongly guided the board, and in a few councils, all attending members voted on decisions. In the remaining councils (37%), residents and landowner members reportedly made decisions.

More than half of the reporting councils were incorporated as tax-exempt not-for-profit organizations. Among other councils that were not incorporated themselves, 25% reported being supported by an incorporated umbrella organization, such as a county Resource Conservation District.

A majority of the councils met monthly, while 30% reported meeting every 2–3 months.

Well over half of the councils (64%) reported that they commonly collaborated with other organizations. Only 10% of councils indicated that they worked alone. The rest reported working with other groups occasionally. Council respondents identified a wide range of governmental and nongovernmental organizations as partners. The U.S. Forest Service, the largest land management agency in California, was the leading federal partner, working with 12 councils. CalFire (formerly the California Department of Forestry and Fire Protection), the state agency responsible for providing fire protection to private forest landowners, was the most common state agency partner, reported by 12 councils (Figure 1).

Collaboration had a range of meanings for reporting councils. Some had formal Memoranda of Understanding (MOUs) between the council and collaborating organizations. In some cases, collaborating organizations helped administer funding, or provided meeting space. In others the partners shared equipment for activities such as fuel reduction and wood chipping.

Fire safe councils reported activities in three general categories: public education and outreach; planning for wildfire; and implementing risk reduction activities.

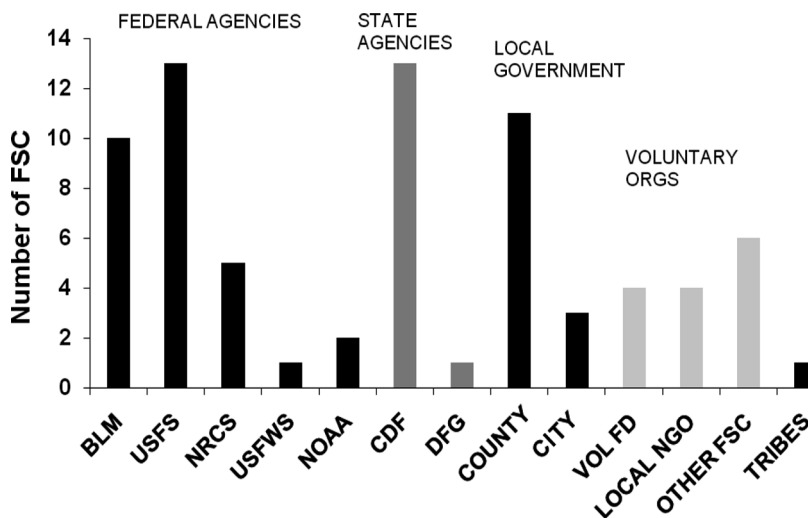


Figure 1. Fire safe council partner organizations.

Public Education and Outreach

Councils applied both time-tested and innovative ways of sharing information about fire safety and hazard reduction with their communities, reaching many thousands of people through these general outreach activities every year. Most councils (75%) reported doing mass distribution of print materials drawn from partner organizations and the Fire Safe Council. Councils also developed their own brochures and newspaper inserts, or wrote articles or news releases about their work. Kiosks and booths at fairs and community events were favored venues for 25% of reporting councils to distribute materials and highlight fire safety and council activities. Two groups had programs for local schools. Six reporting councils had developed websites, one in conjunction with the local volunteer fire department. In all, reporting councils spent 12% of their time and energy on distributing publications for public education.

A majority of councils (68%) also carried out more interactive communications, such as holding neighborhood and community meetings on a regular basis. Some councils used neighborhood surveys and door-to-door canvassing to learn about local fire safety concerns and inform residents about fire management activities. Workshops and training days were common (43% reporting) and often organized by a council with invited speakers from agency partners such as CalFire. A few councils reported functioning like social clubs with regularly hosted dinners and other gatherings for local community members. Reporting councils estimated that they spent 10% of their time on neighborhood outreach activities.

Councils (75%) indicated that they spent an average of 14% of their time coordinating with other groups. Some respondents mentioned particular efforts to reach out to other councils or to support new councils and to network with local volunteer fire departments. The northern California councils, for example, had held three well-attended regional gatherings of fire safe councils for networking and peer training since 2004.

Planning and Funding for Community Wildfire Protection

All of the councils were involved in planning and finding support for their activities. The 23 councils reporting on their funding sources indicated that they had raised \$12,919,066 for their work over the last decade. The majority of funds (63%) came from federal sources and from state government (20%). Federal funds came through the Fire Safe Council's Clearinghouse or from county-level resource advisory committees with funding from Congress under Title II from the Secure Rural Schools and Community Self-Determination Act of 2000. Councils provided matching funds (9%), while local governments (6%) and individuals (1%) also provided support. Of these funds, \$9,956,050 (77%) reportedly were applied to fuels management and \$2,324,700 (18%) to community wildfire protection plan (CWPP) preparation and other planning. Councils indicated that \$666,100 (5%) were used for public outreach.

Among councils reporting on this survey, 64% had completed a CWPP or its equivalent. A CWPP is a federally promoted protocol for community-based fire preparedness planning under the Healthy Forest Restoration Act (2003). CWPP emphasize fuel reduction, protection of structures, and other issues, for example, evacuation plans and wildfire response. Communities prepared their CWPP in collaboration with agency and local officials (Communities Committee et al. 2004; Ganz et al. 2007). Communities with completed CWPP endorsed by local government were more competitive for federal funds administered through the Fire Safe Council's Clearinghouse.

Among the county-level councils (10 reporting), all had either completed CWPPs or were working to complete one. Of the 18 community-level councils in our survey, nine had completed a CWPP. One council without a CWPP explained that it worked within the fire plans of larger government entities in the area such as the national forest. The other eight councils included several that had previously received funding through their resource advisory councils and were working on a CWPP in part to tap into the Fire Safe Council's Clearinghouse. Others had just recently formed and were beginning CWPP efforts.

Implementing Hazard Reduction Activities

Fire safe councils reported tackling a wide range of fire preparedness and response projects, including emergency communications and evacuation, facilitation of emergency response, home improvement, and fuel reduction. Examples of the types of activities councils reported are presented in Table 1. The specific activities carried out by a particular council depended on local needs and capacity, with some councils involved in many projects, while others focused only on one or two activities. Two councils did not report any implementation activities and three county-level councils provided planning support but did not get involved in on-the-ground implementation work.

The most emphasized activity was fuels treatment, reported by 82% of councils. Eliminating fuels and access points for fire on and around structures is widely accepted as a critical factor in reducing losses to wildfire (USDA 2007). Councils carried out a range of fuel reduction activities, including maintaining defensible space around private homes and community buildings, clearing fuels along access roads and highways and between public and private lands, and in some cases

Table 1. Fire safe council wildland fire hazard reduction activities*Emergency communications and evacuation*

- Emergency 911 systems installed or improved
- Volunteer radio equipped “canyon watch” fire patrols initiated
- Fire danger flag warning systems set up
- Evacuation routes and/or safety zones identified
- Emergency telephone trees, Citizen’s Band, and ham radio links set up
- Evacuation drills
- Voluntary registration of vulnerable individuals (such as elderly citizens) initiated and provisions for their evacuation
- Coordination of micro-chip identity implants in pets and livestock

Facilitation of emergency response

- Geographic information systems (GIS) mapping of WUI areas (e.g., roads, topography, vegetation, structures, water-tanker fill-up locations, safety zones, safe sites for helicopter landing to be shared with local and out-of-area fire management authorities)
- Road and home address signs installed
- Local water sources and access points developed and fire department hose connectors installed

Home improvement

- Free evaluations for homeowners regarding fire safety
- Demonstration gardens to show landowners and school children which native plants provide little fuel for fire and can thrive after fire
- Demonstrations of clearing defensible space around homes and public buildings (fuels treatment below)
- Annual contests for most improved and best maintained defensible space

Fuels treatment

- Mechanical treatment (e.g., mowing grasslands, cutting brush, removing small-diameter trees, chipping and masticating brush and slash, piling and burning slash, grazing goats)
- Curbside pickup of treatment waste
- Trash removal
- Fuel breaks along roadsides (public and private)
- Prescribed fire use

reducing fuels on public lands. Many groups worked closely with state and federal fire managers in these efforts. One group reported working with a national forest to complete a defensible fuel profile zone across private and public lands that would protect three communities.

At the time of the survey, 23 councils (82%) reported having completed fuel reduction work on 25,647 acres. About one-third of these councils indicated they had each treated more than 1,000 acres. Another one-third said they had treated between 100 and 1,000 acres. The remaining councils had treated less than 100 acres each. Fuel reduction was largely on private lands immediately adjacent to structures or along access roads. Many councils were monitoring treated areas to develop schedules for future maintenance, and reported that they hoped to treat areas again before they became overgrown.

The councils reported at least 3,655 landowners as participants in these fuel reduction treatments. While the majority of councils worked with 10 to 50 landowners, nearly one-third reported working with over 100 different landowners. Councils that did not report carrying out fuels reduction work were either county-level councils focused on coordination among member groups, or councils that focused exclusively on public education.

Challenges for Fire Safe Councils

We asked responding councils to identify their greatest challenges. The most widely reported challenge (79%) was increasing and maintaining community awareness and participation in council activities. Respondents expressed frustration about how few volunteers join in council efforts, and about how to generate and maintain public interest in fire issues and healthy ecosystems, and the need to reduce fuels around homes. Few councils had full-time staff. Finding time to train volunteers was difficult. In areas with many absentee owners, it was difficult to reach owners to gain permission to treat contiguous land to achieve a fuel break effect for a neighborhood or along an access road.

Funding was the second perennial challenge for fire safe councils. A majority (61%) of the councils specifically mentioned funding problems, especially for fuel reduction projects and operational expenses. Related issues raised included money to cover liability insurance and protection for board members.

Fuels reduction was a third key issue mentioned by councils, especially convincing landowners to reduce fuels on their property. Councils highlighted the need for more local contractors able to do fuels reduction work, and the need to enlist the continuing support of agencies and environmental groups to get projects approved on public land in the WUI. Councils also noted regulatory barriers to fuels reduction work on federal lands, such as complying with the National Environmental Policy Act (NEPA), and the permitting process for prescribed fire.

Discussion

California's fire safe councils are diverse in their organization, size, membership, and activities. Most councils responding to this survey serve mid-size to small rural communities, often with significant seasonal residency. A two-tiered structure is the norm with county- and community-level councils. County-level councils tend to be more professionalized and to address issues of local governance, such as codes for allowable building materials and delineation of emergency fire response districts. Community-level councils emphasize local public outreach and site-specific fire preparedness activities. These are critically important efforts. However, none of the councils reported involvement in general land use planning processes to modify the pattern of new development in the WUI.

Councils exhibit strong bonding capacity through their members' ties to place and to their common cause in protecting homes and communities. The diverse professional experience and networked personal relationships, particularly in rural communities, further strengthen bonding forms of social capital. Many council members have fire and land management expertise, including being volunteer or professional fire fighters and government agency staff members. In some cases these members are retired or participate "on their own time." In other cases, professionals participate

on duty as federal or state agency representatives in their own communities. These members act as bridging agents across the agency–public divide and can be called upon to explain their agencies' priorities and policies to their council. They can also relay the council's efforts to their employer, acting as points of contact to initiate collaborative activities. Sometimes one agency representative, for example, from CalFire, works with several councils in a region, thus also providing bridging between councils. Bridging capacity has led to regional workshops bringing councils together, and in one case, 18 community-level councils collaborated to initiate a county-level council.

Several other factors facilitate strong cooperation between councils and government agencies. First is the high proportion (75%) of councils reporting that are either incorporated as 501(c)(3) not-for-profit organizations or supported by an incorporated umbrella organization. An incorporated council can take on financial and legal responsibility, which encourages government agencies to commit resources to collaboration. A second factor is the formal agreements or memoranda of understanding (MOU) between many councils and state and federal agency partners. An MOU provides a legal framework for collaboration that explicitly identifies the types of interaction that councils and agency partners agree to engage in (e.g., equipment sharing, in kind services). Developing MOUs can be a long and difficult process, as one council discovered after working for more than 2 years to get several agencies to agree on collaborative language. However, once this precedent-setting MOU was approved by state and federal agencies, it became easy to share the language with other councils, who were able to complete their MOUs more quickly, another example of bridging capital.

The Fire Safe Council facilitates widespread collaboration between agencies and local councils. By bringing together agency leaders in a united effort to address wild-fire management in the WUI, the Fire Safe Council validates community-based fire management activities among participating federal, state, and local government agencies. The support of top agency officials exercised through a MOU with a local council allows agency line officers all over California to encourage staff participation in and support of local fire safe council activities.

With these institutional linkages in place, councils' activities extend far beyond a level that government agencies could achieve alone in WUI communities, and demonstrate the importance of both bonding and bridging forms of social capital to involving the public in wildfire mitigation. As local residents with a range of skills and representing a variety of networks of relationships in their communities, council members are uniquely situated to provide locally appropriate educational outreach. At the most basic level of unidirectional outreach, government agencies typically produce and distribute educational materials, but councils use the strength of their local relationships to extend the reach of the agencies producing the literature by distributing and discussing materials at a wider range of local venues.

Meetings and workshops are important interface opportunities for agencies, and councils regularly provide forums for bridging interactions. The mutually beneficial bridging linkages between agencies and councils can become symbiotic. One very active council hosted leading researchers, agency experts, and its council partners at a conference to explore regional fire ecology and the beneficial use of fire in their area. The three-day event was attended by more than 100 fire scientists, agency managers, and community members. Such forums go far beyond one-way communication by agency experts to the public. Information exchange fosters mutual

respect and trust among participants, which lays the foundation for future collaboration through joint fact finding, skills building, and fuels reduction activities.

Collaborative efforts like developing a community wildfire protection plan (CWPP) can provide valuable information about the community to the council and to agency fire managers, giving the community a stronger voice in negotiations with government agencies about fire management planning. One council survey respondent noted:

The biggest impact we have had is to influence the production of evacuation plans. Our CWPP will also add sections on the need to get fire back into our landscape where practical and suggest techniques for insuring fuel reduction projects, wildland fire use, and appropriate response (suppression plans). It emphasizes incorporating fuel reduction opportunities into other projects (e.g., completing fuel reduction along roads that will be maintained, upgraded, or decommissioned).

Councils use their social capital, including thousands of hours of volunteer time, to take on a wide range of hazard mitigation activities that would be difficult for agencies to initiate, for lack of local relationships or funding or staff time. Councils identify fuel reduction needs, organize neighborhood workdays, hire (or borrow) chippers, and do the work themselves. Participants contribute to reducing fuels on their own property and might work with others to help out an elderly neighbor. Councils may raise funds to hire local contractors to do work, especially when more skilled or bonded labor is needed, for example, to thin trees on a common access route. Where adjacent public lands are involved, councils might indicate the importance of getting the fuels reduction done, for example, in a CWPP. In addition, councils work with local public land managers to define the type of work to be done, and help with community outreach to explain the project and its significance for community hazard reduction. A few councils even have the capacity among their membership to contract with the agencies to write necessary environmental assessment documents or to implement entire projects. These councils can provide considerable assistance to local level agencies operating with reduced staff. The agencies retain oversight, while councils or their contractors do most of the work.

In view of the many acres that need to be treated, the fuels reduced by councils may seem insignificant. However, these acres are strategically targeted. They include areas where willing homeowners reduce flammable vegetation around structures on land where government fire managers alone would not have had access. There are demonstration projects where a few acres of trees along an access road to a development were thinned and meetings were held to explain the treatment's significance, and broader neighborhood fuel reduction efforts followed. Reaching short-term residents and getting them involved in fuel reduction activities takes persistence and creativity on the part of local fire safe councils. One council saw improved absentee owner relations and participation when they began sending members to speak at summertime homeowners' association meetings and barbecues. This type of interactive outreach can reduce opposition to prefire treatments such as brush removal, which benefits both private landowners and public land management in the WUI.

The wide range of activities that the councils carry out indicates the power and capability of grass-roots voluntary organizations to get things done in ways

appropriate for their own communities. As a number of councils have demonstrated, they share their experience in local and regional venues with other groups, including other councils. Fire safe councils, through bonding relationships among their members, are able to encourage fire management activities on private property where government agencies acting alone have no jurisdiction. At the same time, the expertise, in-kind support, and funding provided to councils by government agencies are critical to council success. The social capital developed by council and agency collaboration bridges the divide between government and “the public” with mutually beneficial results.

The councils face considerable challenges. Of the 157 councils listed on the Fire Safe Council website in June 2006, only 70 had kept their links to the state level updated and could be contacted. It seems likely that many of the original councils listed are defunct. It is also likely that the councils responding to our lengthy survey were comparatively high-capacity groups. The councils noted the challenges they face to maintain their internal community participation. Bridging links to agencies for in-kind support and funding for projects are equally critical. As the competition between councils for funds grows and criteria for fundable councils are tightened, councils with limited capacity will likely disappear. Even among the probably high-capacity councils responding to our survey, 36% had not completed a CWPP. Preparing a CWPP takes a level of capacity that may be an insurmountable barrier to small councils made up of volunteers contributing a range of skills after hours and on weekends. One respondent for a recently formed council specifically addressed the capacity issue:

I wish there was a county fire plan that we could just be a part of. There seems to be no organized effort, and as coordinator I feel very alone in this task. I just make up most of this work as I go along, and do not feel that even the California Fire Safe Council is in a position to advise us.

Over time, more county-level councils may emerge to take on the challenging aspects of CWPP preparation in collaboration with local-level councils. Since 2004 a completed CWPP, or a request for funds to prepare a CWPP, has become a “gatekeeper” to the competition for federal and state funding through the Fire Safe Council’s Clearinghouse. It remains to be seen how such limits on which councils can qualify for funding will affect the number of grassroots councils able to work together to reduce fuels around their neighborhoods. For many, preparing a CWPP may be out of reach.

It will be important for the Fire Safe Council to balance the benefits of support for councils serving suburban population centers with the benefits of statewide distribution of funds to more rural communities. Every council, no matter how small, provides a point of access. Every time a council fails, fire managers lose that access point to the public in that portion of the WUI landscape.

Conclusions

Fire safe councils are diverse organizations with a wide range of capacities. The councils are creative, active, and dedicated civic organizations that apply social capital to bridge the interfaces between government agency fire managers, private landowners, and communities. The councils are involved in a range of fire preparedness

and response activities, and they commonly collaborate with agency partners on projects that would be beyond either organization's capacity to implement alone.

We suggest that the success of the councils is contingent upon the combination of several institutional factors. These include legitimating agency staff cooperation with councils through the Fire Safe Council and MOU between councils and agency partners; centrally managed funding support provided by the Fire Safe Council Clearinghouse; and flexibility for councils as grass-roots organizations to develop according to local needs and capacity.

Councils are a powerful model for collaborative fire management in the WUI. With continued support, this model could expand in California and could be extended to other states. Yet councils constantly struggle as they do the "heavy lifting" to engage and sustain their communities' interest in reducing wildfire hazards. Their future will depend upon the ability of councils' agency partners and the Fire Safe Council to recognize their achievements, and to nurture the local councils with thoughtful policies that provide broadly distributed and consistent support.

References

- Agrawal, S., and M. C. Monroe. 2006. Using and improving social capital to increase community preparedness for wildfire. In *The public and wildland fire management: Social science findings for managers*, ed. S. M. McCaffrey, 163–167. GTR-NRS-1. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.
- Burns, M., and A. S. Cheng. 2007. Framing the need for active management for wildfire mitigation and forest restoration. *Society Nat. Resources* 20:245–259.
- California Fire Safe Council. 2008. *About the Fire Safe Council*. <http://www.firesafecouncil.org/about/index.cfm> (accessed 27 February 2009).
- Carroll, M., L. Higgins, P. Cohn, and J. Burchfield. 2006. Community wildfire events as a source of social conflict. *Rural Sociol.* 71(2):261–280.
- Communities Committee, National Association of Counties, National Association of State Foresters, Society of American Foresters, and the Western Governors' Association. 2004. *Preparing a community wildfire protection plan: A handbook for communities in the wildland urban interface*. <http://www.safnet.org/policyandpress/cwpphandbook.pdf> (accessed 27 February 2009).
- Daniel, T. C., M. Valdiserri, C. R. Daniel, P. Jakes, and S. Barro. 2005. *Social science to improve fuels management: A synthesis of research on assessing social acceptability of fuels treatments*. GTR-NC-259. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station.
- Danks, C. 2001. Community-based wildfire management: An opportunity to integrate social and ecological objectives on federal lands. In *Enabling policy frameworks for successful community-based resource management*, ed. K. Suriyanata, G. Dolcemascolo, R. Fisher and J. Fox, 45–55. Honolulu, HI: East West Center.
- Dillman, D. A. 2000. *Mail and Internet surveys: The tailored design method*. New York: Wiley.
- Flora, C., and J. Flora. 2004. *Rural communities*, 2nd ed. Boulder, CO: Westview Press.
- Ganz, D., A. Troy, and D. Saah. 2007. Community involvement in wildfire hazard mitigation and management: Community based fire management, fire safe councils and community wildfire protection plans. In *Living on the edge: Economic, institutional and management perspectives on wildfire hazard in the urban interface*, ed. A. Troy and R. Kennedy, 143–164. New York: Elsevier.
- Gorte, R. (2010). Federal funding for wildlife control and management. Congressional Research Service Reports. RL 33990. April 22, 2010. <http://ncseonline.org/NLE/CRSreports/10May/RL33990.pdf>

- Healthy Forests Restoration Act of 2003 (PL 108-148). 2003. Washington, DC: U.S. Congress. http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=108_cong_bills&docid=f:h1904enr.txt.pdf (accessed 27 February 2009).
- Husari, S., H. T. Nichols, N. G. Sugihara, and S. Stephens. 2006. Fire and fuel management. In *Fire in California's ecosystems*, ed. N. G. Sugihara, J. W. Van Wagtendonk, K. E. Shaffer, J. Fites-Kauffman and A. E. Thode, 444–465. Berkeley: University of California Press.
- Jakes, P., and K. Nelson. 2007. Community interaction with large wildland fire events: Critical initiatives prior to the fire. In *People, fire and forests: A synthesis of wildfire social science*, ed. T. C. Daniel, M. Carroll, C. Moseley and C. Raish, 91–104. Corvallis: Oregon State University Press.
- Jakes, P., ed. 2003. *Homeowners, communities and wildfire: Science findings from the National Fire Plan*. GTR NC-231. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.
- McCaffrey, S. M. 2006. *The public and wildland fire management: Social science findings for managers*. GTR-NRS-1. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.
- Monroe, M. C., L. Pennisi, S. M. McCaffrey, and D. Mileti. 2006. *Social science to improve fuels management: A synthesis of research relevant to communicating with homeowners about fuels management*. GTR-NC-267. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station.
- Putnam, R. D., and L. M. Feldstein. 2003. *Better together*. New York: Simon and Shuster.
- Rural Voices for Conservation Coalition. 2007. *Building community capacity issue paper*. <http://www.sustainablenorthwest.org/quick-links/resources/rvcc-issue-papers> (accessed 27 February 2009).
- Secure Rural Schools, and Community Self Determination Act of 2000. 2000. PL 106–393. [https://wwwnotes.fs.fed.us/r4/payments_to_states.nsf/b21825ca706c908d88256ccb007255e6/215d26ea7223a85c88256ccc0079a649/\\$FILE/106-393_text.pdf](https://wwwnotes.fs.fed.us/r4/payments_to_states.nsf/b21825ca706c908d88256ccb007255e6/215d26ea7223a85c88256ccc0079a649/$FILE/106-393_text.pdf) (accessed 27 February 2009).
- Shiralipour, H. J., M. C. Monroe, K. C. Nelson, and M. Payton. 2006. Working with neighborhood organizations to promote wildfire preparedness. In *The public and wildland fire management: Social science findings for managers*, ed. S. M. McCaffrey, 151–162. GTR-NRS-1. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.
- Stewart, S. I., V. C. Radloff, and R. B. Hammer. 2006. The wildland–urban interface in the United States. In *The public and wildland fire management: Social science findings for managers*, ed. S. M. McCaffrey, 197–202. GTR-NRS-1. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.
- Sturtevant, V., and S. McCaffrey. 2006. Encouraging wildland fire preparedness: Lessons learned from three wildfire education programs. In *The public and wildland fire management: Social science findings for managers*, ed. S. M. McCaffrey, 87–96. GTR-NRS-1. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.
- Sturtevant, V., M. A. Moote, P. Jakes, and A. S. Cheng. 2005. *Social science to improve fuels management: A synthesis of research on collaboration*. Gen. Tech. Rep. NC-257. St. Paul, MN: US Department of Agriculture, Forest Service, North Central Research Station.
- Terence, E. 2008. Heroic crews fending off fires . . . But locals ask: Why back burn so much? *EcoNews* 38(8):4–5.
- Toman, E., and B. Shindler. 2006. Wildland fire and fuel management: Principles for effective communication. In *The public and wildland fire management: Social science findings for managers*, ed. S. M. McCaffrey, 111–123. GTR-NRS-1. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.

- U.S. Department of Agriculture, and Department of the Interior. 2000. *Managing the impacts of wildfire on communities and the environment: A report to the President in response to the wildfires of 2000*. (National Fire Plan) Healthy Forests and Rangelands. <http://www.forestsandrangelands.gov/reports/documents/2001/8-20-en.pdf> (accessed 3 June 2008).
- U.S. Department of Agriculture and Department of the Interior. 2005. *Quadrennial fire and fuels review report*. http://www.wildfirelessons.net/documents/QFFR_Final_Report_071905.pdf (accessed 6 April 2008).
- U.S. Department of Agriculture (USDA) Forest Service Independent Large Wildfire Cost Panel. 2007. *Towards a collaborative cost management strategy: U. S. Forest Service large wildfire cost review recommendations*. A report on 2006 Wildland Fires chartered by the U. S. Secretary of Agriculture. <http://www.fs.fed.us/fire/BR6988~1.pdf> (accessed 2 June 2008).
- Vogt, C., G. Winter, and J. Fried. 2005. Predicting homeowners' approval of fuel management at the wildland urban interface using the theory of reasoned action. *Society Nat. Resources* 18:337–354.