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CITIZEN JOURNALISM IN A TIME OF CRISIS: LESSONS FROM CALIFORNIA WILDFIRES

Shana Gillette
Colorado State University

Jonathan Taylor
U.S. Geological Survey, Emeritus

Deborah Chavez
U.S.D.A. Forest Service

Ron Hodgson
Natural Resource Management Research Consultant

Judith Downing
U.S. D.A. Forest Service, Fire and Aviation Management, Pacific SW Region

Abstract: The accessibility of news production tools through consumer communication technology has made it possible for media consumers to become media producers. The evolution of media consumer to media producer has important implications for the shape of public discourse during a time of crisis. Citizen journalists cover crisis events using camera cell phones and digital cameras and then either publish their accounts on the Web, or exchange images and accounts through informal networks. The result can be news in real-time that is more local and informative. In this study, we discuss the emergence of citizen journalism during and immediately following two wildfire events along the wildland-urban interface in southern California. The information-seeking behavior of community residents and the fire communication practices of relevant government agency staff were studied using qualitative techniques such as informal focus group sessions and participant observation.

Introduction

The accessibility of news production tools through consumer communication technology has made it possible for the media consumers of the 20th century to become media producers of the 21st century. Although this transformation had been predicted for quite some time (Licklider & Taylor 1968, Winner 1986, Rheingold 1994), advances in technology combined with an increase in use have given it much wider impact. Advances in technology have increased the speed and ease with which consumers can broadcast information through text, images, and audio. In 2007, 71% of US adults use the internet at least occasionally and 47% of adults have high-speed internet connections at home that allow them to

quickly download and upload large video, audio, and text files (Horrigan and Smith 2007).

The evolution of media consumer to media producer has important implications for the shape of public discourse during a time of crisis. As Gillmor writes in *We the Media* (2004), the events of September 11 provided a glimpse of the future of news: "Another kind of reporting emerged during those appalling hours and days. Via email, mailing lists, chat groups, personal web journals—all nonstandard news sources—we received valuable context that the major American media couldn't or wouldn't provide." This new type of journalism has been termed "citizen journalism" (Outing 2005). Crisis events such as the September 11 attacks and the 2004 Indian Ocean tsunami illustrate how citizen journalism has provided real-time coverage of crisis events, transforming the media landscape (Lule 2006, Silverstone 2004).

As a disaster or crisis unfolds, communication breakdowns occur and information can be erroneous and incomplete (Scanlon 1998). In this communication environment, media consumers often have difficulty getting the complete picture of what is happening from one media source. Co-production of news on the Internet can provide immediate, first-person exchanges about the event that go beyond the traditional forms of media that are often unidirectional and draw from a small pool of sources for information (Siegl & Foot 2004). During subsequent stages of the event, citizen news producers can provide information and updates from a base of local knowledge and experience that may not be readily available through media or official sources (Chavez 2004 and Taylor et al. 2005).

Twenty-first century technology makes it possible for citizen journalists to cover stories using camera cell phones and digital cameras and then either publish their accounts on the web or in blogs (a personal account in journal form on the web that is frequently updated and intended for a general public audience), or exchange images and accounts through informal networks (such as friends, family, and co-workers). Citizen coverage of the breaking events is often ephemeral, with media consumers transforming into news producers during the event and then transforming back into the media consumers after the event has happened (Outing 2005). The result can be news that is more local and informative, but it can also be inaccurate and misleading.

In a media environment in which technology is converging, and the format and methods of reporting have become more diverse, citizen journalism is one more addition to the ever-evolving media landscape that is available to media consumers. Traditional news organizations are responding by restructuring for media convergence and reassessing relationships between themselves and their audiences. The journalist of the 21st century, argues Pavlik in his book, *Journalism and the New Media* (2001), will need to be more skillful in providing a context for new events that is engaging, detailed and accurate while at the same time helping communities reconnect by supporting constructive civic action.

Although researchers have looked at the effects of new media on journalism practices in media organizations (Boczkowski 2002, Cavanaugh 2002, Deuze 2003), a limited number of studies have discussed how the introduction of citizen journalism into the changing media landscape may affect public information practices during a disaster or crisis event (Schneider & Foot 2003). To bridge the knowledge gap related to crisis events, this study examined the wildfire events in southern California in 2003. We assessed information-seeking behavior of residents in a new media environment, the use and production of citizen journalism, and the potential implications of the new media environment and citizen journalism on public information practice.

The study of the wildfire events in the San Bernardino mountain communities was particularly suited to this inquiry because community residents were in a geographical news gap—too far away and too small to receive coverage in the regional media, and too close to regional media to have a strong local media market. The immensity of the Old Fire / Grand Prix Fire near these communities made it newsworthy not only to the local residents, but also to nonresidents across the country. California is one of the leading states in Internet and cell phone use (Spooner 2003), making the media accessible and familiar to many of the evacuated residents.

Methods

Communication needs emerge rapidly and change quickly during a wildfire; therefore, it is crucial that research take place as the crisis unfolds. Quick response research is conducted during and immediately following a disaster event. The following components are essential to quick response research (Michaels 2003): 1) Coordinate with local and regional

officials who are responding to the wildfire threat; 2) Identify communities at risk for wildfire and assess their capacity to respond; 3) Arrive during or immediately after the fire event; 4) Conduct research in a manner that does not impede assistance efforts; and 5) Provide timely results.

Rapid assessment guidelines provided us with the structure for the study. Rapid assessment is a research approach that is increasingly being used in the health field to assess rapidly changing conditions such as the health threat of an emerging infectious disease. Given the rapid nature of both the reconnaissance and emergency assessments, the community did not fully participate as members of the research process. Instead, they served as research consultants in their community roles. We gathered data from three sources: written documents (flyers, brochures, paper notices posted on bulletin boards in public places, and web site updates); informal conversation and discussion (group discussions, in-person interviews, and telephone conversations); and observations (at public meetings and agency information operation meetings). In this manner, we conducted a rough triangulation of the data, validating or rejecting data from one source through comparison with at least two other data collection sources. The cross-checking made it possible to identify discrepancies between reports and helped us develop a more comprehensive view of wildfire communication across contexts. Despite these efforts at validating the data, the rapid pace of the assessment did introduce the possibility of inadequate representation of the full range of views from community members. Also, the rapid nature of the research lacks the methodological sophistication and analytical precision of conventional approaches such as large-scale surveys and carefully constructed in-depth case studies. However, rapid assessment can be carried out within time and resource constraints that limit the application of conventional approaches. Therefore, it can provide an overview of a rapidly changing situation to decision-makers and community members that otherwise would not be possible.

Study Area Selection

The San Bernardino National Forest had experienced a prolonged drought that made the trees more susceptible to mortality from a complex of insects and disease (Dietrich, 2003). In response to the tree die-off, several fuels reduction projects were initiated. Coordination of these projects and other fire mitigation efforts enlisted a diverse range of agencies and community groups and served as a catalyst for collaboration across agencies and organizations. The geographic location of the San Bernardino Mountain communities made these projects a challenge for emergency planning. Although these communities are less than an hour drive from large urban centers, they have a substantial combined population (close to 60,000) with very few evacuation routes (only three paved roads that lead off the mountain). This study area made it possible to conduct repeat, multi-site assessments.

Fire Communications Data Collection

The research team traveled to the San Bernardino Mountains in southern California in September 2003, to study the pre-fire communication process. Coincidentally, the 1,400-acre Bridge Fire near the mountain community of Running Springs occurred the same weekend. This gave the research team an opportunity to study both pre-fire communication preparations as well as the effectiveness of the during-fire communication process related to the Bridge Fire. This data collection was an important referent pre-fire study for the extreme fire events that affected these and other San Bernardino Mountain communities in October and November 2003.

Bridge Fire September 5-6, 2003.

- Location: San Bernardino Mountains, south of Running Springs
- Acres burned: 1,352
- 1,500 residences threatened and occupants evacuated from 2 communities
- No home or businesses destroyed.
- 1 injury, no deaths

Immediately following the Bridge Fire, the research team spoke with residents and agency personnel in an informal discussion following a regularly scheduled public meeting that discussed forest health and fire mitigation. A "snowballing" method was used to identify key personnel and residents to speak with concerning fire communication prior, during, and following the fire. Fire mitigation pamphlets, official fire reports, and other informational material were collected from community organizations and agency officials.

We encouraged participant-determined content in the discussions by using silent (remaining silent with a look of expectation) and echo (repeating the last word or phrase that was spoken) probes, techniques that are commonly used in psychiatry. The communication-related experiences of community members before, during, and after the fire were the open-ended topics of discussion. A research team member tape-recorded and transcribed the discussions, keeping back-up notes that identified direct quotes, paraphrases, and important contextual details. Each night, team members reviewed their field notes and other material such as official fire reports and fire mitigation pamphlets and noted any inconsistencies between reports from the different data sources. After returning from the rapid assessment fieldwork, Taylor and Gillette repeatedly reviewed the transcripts and generated themes following the protocol as described in Ryan and Bernard (2003). Gillette drew on her background in communication research and Taylor from his previous research in fire social science (Taylor 2000) to provide context for their qualitative interpretation which they later reviewed and verified with the other research team members.

Old Fire/Grand Prix Fire Complex October 22 – November 4, 2003.

- Location: Began at the base of the San Bernardino mountains and moved upslope
- Acres burned: 91,281
- More than 45,000 residents evacuated; 12 communities mandatory evacuation
- 993 homes and 10 commercial properties destroyed
- 12 persons injured, 6 fire-related deaths

For the Old Fire/Grand Prix Fire Complex, the research team acted as participant observers during the information coordination process toward the end of the evacuation period and the beginning of re-entry to the mountain communities. Research team members attended internal briefings at the Joint Information Center (JIC) that served as the central point for the dissemination of agency information about the Old Fire/Grand Prix Fire Complex. Research team members also observed public briefings held at evacuation centers, attended a public meeting held one day after re-entry for Big Bear community residents, attended organizational meetings among information officers, and attended two inter-agency coordination meetings. Research team members also spoke with staff and volunteers at the JIC.

In March 2004, the research team returned to the San Bernardino Mountains to participate in discussions with groups from several different communities who had experienced the Old Fire/ Grand Prix Fire Complex (see Table 1). Eight focus groups were set up by local community groups and leaders to discuss people's communication-related experiences before, during, and after the fire. As with the Bridge Fire, research team members conducted a qualitative analysis of informal discussions and conversations.

Table 1
Community-organized Discussion Groups

Name of Group	Number of Participants
Running Springs Business Community	15
Lytle Creek Fire Safe Council *	3
Rim Family Services *	25
Big Bear Fire Safe Council *	12
Crestline Fire Safe Council *	10
Rebuilding Mountain Hearts and Lives	20
Running Springs Fire Safe Council *	6
Rancho Cucamonga Fire Safe Council *	10

*The Fire Safe Council was formed from public and private organizations to discuss fire safety. FSC local chapters are charged with providing leadership and support for residents to protect their homes and communities from fires.

Research team members conducted participant observation at public meetings and JIC meetings to better understand: 1)

the relationships between individuals and different entities, 2) the organization and priorities for communication planning, and 3) the cultural context of leadership, social interaction, and politics for different organizations and groups.

Findings

Research findings indicate that the public is accessing several different unconventional news sources during evacuation and reentry, two stages during a wildfire event in which residents are the most disoriented and disconnected. During the evacuation, we found that residents relied on scanners and cell phones as an immediate relay of news. As the fire progressed, the people who served as information brokers during the evacuation, interpreting scanner information for others via cell phone networks, became news producers, relaying information via cell phone networks, email distribution lists, and Internet websites. Other citizens emerged as news producers as a result of their frustration with the lack of relevant news for residents that was available through regional media. Citizen production of news was deemed useful by residents when it was immediate, personal, direct, and credible.

In discussions with both residents and local agency officials, scanners were cited as a common source of real-time news about emergencies in mountain communities. Residents mentioned that they turned on their scanners to hear more information at the beginning of a wildfire event. Scanner information was useful, residents reported, because it was unfiltered, immediate, and coming from the people who were involved in fighting the fire. Residents often knew the firefighters, officers and other emergency personnel involved in the fire and could recognize the voices of familiar personnel on a scanner.

The amount of information that residents received from the scanner varied depending on their knowledge of fire management operations and personnel. Local agency personnel were aware of their news producer role in the relay of information over the scanner and mentioned the need to be cryptic at certain stages of a wildfire event in order not to instill panic or misunderstandings by the listening audience. More knowledgeable residents who had professional experience working with emergency personnel during a fire were able to "read between the lines" of the scanner lingo and act as information brokers for less knowledgeable community members.

As evacuation progressed during the Old Fire/Grand Prix wildfire event, people who had served as information brokers during the Bridge fire became news producers, relaying information gleaned from essential personnel on the fire to a cell-phone network of community residents. Many of the residents we spoke with reported using these cell phone trees as a way to keep in touch with community members after the evacuation off the mountain. Since the entire mountain was evacuated, residents dispersed across a very wide area. A small percentage of the total residents who were evacuated went to the evacuation shelters. A much larger percentage went to stay with friends or family in other southern California communities or stayed in hotels near the foot of the mountain. As a result, residents sought to re-establish their local, informal community information networks via cell phone trees. One resident explained how an impromptu cell phone tree was formed from a chance meeting of evacuated residents:

Well, that Thursday night Palm Springs had their little gathering in the center of town, they have like a swap meet. I went down, said, "I have to get away from everything. Just have to." And I ran into five or six of my neighbors from up here. I ran into several members of our Chamber of Commerce. But it was like we just stood in the middle of the street hugging and anyway, "You have communication yet? "Here's Jane Smith's number, She'll keep you informed."

The cell phone networks did not always work. Some residents did not have cell phone coverage in the area to which they evacuated. Even on the mountain, residents reported that cell phone coverage was often not very reliable. As a result, some of the news producers who were informing community members through cell phone trees also recast the information in an electronic format, informing email lists and passing the information along to others to post on websites or passing along information from the Internet to people on their cell-phone tree.

Residents reported heavy use of official and local media information sources when they were getting ready to evacuate off the mountain. For Big Bear residents, the local radio station was especially useful as an information source because the station manager had direct access to local, real-time information from officials involved in the evacuation. For residents who had recently moved to the area, the radio broadcast was especially helpful because it provided them with

information that they were not getting through established informal networks.

In both the small Bridge Fire and the Old Fire/Grand Prix Fire Complex, residents relied on information from the scanner and on information from friends, family, and neighbors to gauge the severity of the fire and the need to start preparing for an evacuation. Once residents were evacuated off the mountain and took in the immensity of the Old Fire/Grand Prix Fire complex which would cause a lengthy, week-long evacuation from their communities, they found that their need for real-time and personal information was not being filled by the traditional agency and media outlets (Taylor et al. 2005).

People who were staffing emergency call-in lines reported frustration with not having the most accurate and up-to-date information because of problems in information flow between and within agencies. Local people involved in the evacuation and re-entry reported the difficulty in conveying a consistent message when information was coming in from several different sources.

And there were some problems, I think, in coordinating the public information out of, you know, whoever was doing central PIO (Public Information Officer). You know, there was a County PIO. There was the sheriff PIO. Everybody had their own PIO officer. And I know that they were trying to coordinate that...

Once evacuated, residents found that their media access was often limited to regional media accounts of the event which were designed for a larger metropolitan audience. Evacuees reported frustration with sensationalized coverage of the fire in the regional media and the often inaccurate reporting of where the fire was and what communities were being affected.

But to describe one person's disaster is another person's entertainment. And I think it is really true in the Los Angeles market because you got approximately 12 million people and maybe 200,000 people were affected here so it's not a very big percentage that they're worried about getting information right. They're interested in getting entertainment right for the rest of the 11½ million people.

Residents acknowledged the difficulty that the regional media faced in reporting a rapidly changing event, but couldn't understand how basic reporting skills appeared to be absent such as providing the correct name and location of areas in the news clip. Residents reported that they often saw broadcast news reporters from Los Angeles saying that they were reporting from one mountain community, when in fact the buildings in the background behind them were obviously from another mountain community 30 miles away.

...when you're getting these false reports because initially we had to rely strictly on the news media. And, I mean, we made a joke about it afterwards at our Appreciation Day. We gave them maps. I mean they didn't even know where they were here 'cause it's mountains....

As the fire started to diminish and agency officials began to discuss re-entry, news coverage from the regional media started to be less frequent. The lack of news coverage made it more difficult for evacuated residents to find out how their communities had been affected and when they might be able to go back in.

...the news dwindled, like he said, dwindled down --and there wasn't -- suddenly it's like it's Saturday and I -- I don't even know what's going on.

Frustrated with agency and media information sources, residents turned to their cell phones and then to the Internet to fill the news gap. As discussed earlier, cell phone networks served as a source of information for residents while they were evacuated off the mountain. Some of the news producers on cell phone networks made the transition to the Internet as a way to supplement the information that they were already providing in a different format that was accessible to more people.

A local resident with fire experience remained on the mountain with essential emergency personnel when most residents had evacuated during the Old/Grand Prix Fire. Initially, he fielded calls from concerned evacuees who wanted localized, real-time information about the fire's progress and its path through the communities. When the calls became too frequent, he turned to the Internet to relay his information and took the moniker of "Ranger AI".

And then a couple of people that were in the evacuation centers kept calling. They had cell phones and I'd call them. The first two days I was so busy answering phone calls and I said, "No, it's okay," 'cause I know the area quite well. And my son called and he said, "I've been trying to get you for 12 hours. Are you okay?" He said, "Crestline is supposed to be burning." I said, "No, it isn't." And I said, "I can't get the message out (fast) enough." I contacted a couple people and he says, "Well I'll put a website up." "Okay." Well, the website lasted two hours because it got to the evacuation center and so many people called the server crashed immediately. Well, he realized right then, "Hey, this is going to be big," and he set it up and got a server that could handle everything and within 36 hours we had one million hits.

Residents attributed the popularity of the website to its information which they characterized as immediate, personal, direct, and credible (from the perception of the residents, the news producer was credible because he had knowledge of fire behavior and knew the local neighborhoods). People were able to remember the website readily because of its web address, fireupdate.com, whereas the web address of the official fire website referred to an agency term for a firefighting unit that was not familiar to most people in the general public (incidentcommand.com).

And then when we came back, we were just all coming back to see what was left, you know, and had a better idea of the things to do (because of information from the website).

Oh, he (Ranger Al) monitored the West side on a daily 24-(hour) basis and had pictures and addresses and streets...

Incident command or something dot-com -- that's where I was looking. I hadn't heard of Ranger Al's yet. And then one day I went on and they said, "Sorry, we're not doing the Old Fire anymore. No one is cooperating with us—I mean I don't know if it was financial or they were just withholding information or, you know, what the deal was, but you could tell that they were really frustrated with the powers that were, that they -- they just weren't getting any help. And that had been my main source of information outside of television. And then somebody, I don't even remember who it was, turned me onto Fire Update and that was fantastic.

The popularity of Ranger Al's website extended beyond the evacuated residents. Friends and family members of evacuated residents visited the site for information and its popularity spread as it was cited by regional and national media as a site for information. The L.A. Times wrote an article about Ranger Al's efforts and his site was linked to other websites on the fire. When his access to areas on the mountains was attempted to be curtailed, he did use his new-found notoriety to negotiate his status as a legitimate news producer and his right to remain on the mountain and visit affected communities.

And so I went around and checked all the area. I -- I know the areas and I went to every view point, every place and started copying addresses so people would know. And it just kept getting bigger and bigger and I thought "Well, let me give this information to somebody," and nobody wanted it because I was a civilian. I had no -- no power. After about Thursday then the (LA) Times (coverage about Ranger Al's efforts to collect the information and put it up on the website) -- "Oh, we got to stop." The CHP says, "... if you drive around we're going to take you out of the hill and move you around."

And so my son put down the fact on the website that CHP says Ranger Al cannot drive around anymore and they're going to take him off the hill. And they got so many calls -- we got a call from Sacramento saying, "You go where you want." I don't know who called but there were a lot of people that called and got -- it got to the right people 'cause they said, "Just be careful."

Not all evacuated residents found the website during the evacuation. As one resident noted, people who don't have the informal information networks may not know where to look for other sources of news outside the traditional media and official news outlets.

I think that there needs to be a program to let people know when, how, and where, (to evacuate) because people involved that have children, they usually have more outlets. People who don't have children, they don't know who to rely on. I would never know to go to Ranger Al. And I was online looking for information

about fires, but I never saw (Ranger Al's site)...

After the fire, the moniker of Ranger Al continued to have a presence on the web through the web address: firerecovery.com which provides locally relevant information on the recovery efforts after the fire. A professional background in fire and a longtime attachment to the community served as a motivation for the news producer, Ranger Al, to become involved in reporting on the fire.

Another resident, with no experience in fire and only a few years in the mountain community, became a news producer after becoming frustrated with the visual map information that was available. It wasn't specific to the local area and it didn't appear to be updated very often. The resident transformed from a frustrated media consumer to a news producer when a distant friend contacted him to find out how he was (the friend had seen national coverage of the fire on television). When the friend was told about the frustration with maps of the fire, he provided a special link to a satellite map. The resident's local tourism/business website of the local community became a site for news about the fire from a satellite map.

...he gave my son a special linkage.... And so every two hours on bigbearlake.net he (the son) was laying on the couch with the laptop downloading an overlay map which is -- you could still see some of it on -- in there. We got about 90,000 hits a day, even just -- just stoked, not on the fire, on the hits

The website also started to post information from the local radio station that had proven useful for residents who were evacuating the area. When people evacuated the mountain community of Big Bear, they no longer had access to their local radio station, which many had relied on for information during the evacuation. In order to remain connected with the radio audience, the KBHR producer started to use the website to publish information. Unlike radio broadcasts, the information was more frequent and it was archived. In a focus group session, the radio station's manager said that although the transition was difficult at first (he had to learn how to update the website and alter the format and frequency of the news), it was the most effective way to stay in touch with his audience during the wildfire event.

Again, residents cited the immediate, personal, direct, and credible nature of the information as the reason why they visited the website during the evacuation. Although the radio news producer had more direct access to information because of his local connections with emergency personnel on the mountain, that access was conditional. Both residents and the news producer recognized that the website became less useful when its direct access to information was shut down during the re-entry, due to confusion and debate over who had authority to issue the announcement for re-entry.

Discussion

Study findings indicate that during a small-fire event, when a limited area is threatened, residents in the San Bernardino mountain communities relied on the local information networks that were connected to local emergency personnel (e.g. sheriff's department, fire department, fire safe councils, local gathering places such as the grocery store, and/or local news sources—from scanners to local radio stations). When a larger evacuation displaced mountain residents from their familiar information networks, they rebuilt those networks through the use of cell phones and websites. Both information seekers and citizen news producers cited frustration with inaccurate news reports by the regional media and the lack of locally relevant, real-time information from official sources as the reason for using citizen-produced information as an additional source for news.

Although it is not possible to generalize from these findings, they do provide a comparative look at how the use of emerging communication technology by media consumers has led the emergence of new communication networks during a large wildfire event and presages the need for traditional information sources (e.g. the mass media and public information officers) to retool and prepare for a communication environment during such events that demands interactivity, transparency, and mobility. In an "open system" approach to information delivery, a news producer's input is unique, but it is also intertwined and acts in parallel with information provided by other news producers. Interactivity requires that traditional information sources who have previously operated in a relatively closed system change their behavior to interact with other news producers as well as news consumers in the exchange of information. Transparency requires an increased openness in information delivery which reveals behavior and intent. Mobility requires that information provision be mobile and available in places where the news will be sought by news consumers and producers.

Effective participants in an "open system" are aware of the web of information that is available to people and how it is interconnected. They also have the skills to identify the new actors in media production and to understand how the new actors are interconnected. In the future, it will be important to map community, social, and communication networks before a wildfire event and to monitor fire communication between agencies, the public, and the media during a wildfire event to better understand how people seek information in an "open system" during a hazard event.

As journalists start to think about being part of a larger "conversation" and conducting "seminars" that provide context for the day's events (Gillmor 2004), public information officers can benefit from learning how to help journalists enrich the discussion as well as how to be direct participants in the discussion. During a wildfire event, public information officers could strive not only to understand what type of real-time information is desired at different stages of a wildfire event, but also to gather the additional background information that will help enrich that real-time understanding and meet the emotional needs that are attached to information-seeking behavior.

In the past, public information officers have been instructed on how to control the flow of information in a manner that benefits the organization responsible for wildfire suppression. In an open system, it is not possible to control the information, only contribute to its content. The more an actor contributes, the more likely the information will be used by other actors in the system, and the more likely information seekers will find that information. Public information officers can be successful contributors by providing more frequent updates. In our research, at least hourly updates were wanted by mountain residents even if the situation had not changed. Information that comes too late is useless, and unless a source provides useful information, it will be abandoned for other information sources.

If public information officers start acting more like reporters, gathering information about the current state of the fire from the fire line and getting information quickly to the communities, they are more likely to be able to provide the desired information within a short timeframe. Information officers who are equipped with picture cell phones, digital cameras, scanners, and other technology will be able to quickly convey information graphically and rapidly. Also, community-based information officers could provide information at road-stops or other informal gathering places through the use of a text-messaging relay of information from operations on the fireline.

Communication within an open system operates best as "distributed" communication in which information processing occurs in many different places in the open system, wherever it makes the most sense for the media consumer / producer. By understanding how informal community information networks emerge during a wildfire event, public information officers can be more effective as contributors within an open system. This means more than using the "grapevine" to disseminate fire information. It means participating with community residents in information gathering, processing, and sharing. It is important to be able to engage with the community in their information-seeking efforts. While maintaining an official status, information officers can monitor information in the networks, validate correct information, correct errors, provide more details, and embrace the notion of making "citizen journalism" better in terms of accuracy and credibility.

References

- Boczkowski, P.J. (2002). The development and use of online newspapers: What research tells us and what we might want to know. In L.A. Lievrouw and S. Livingstone (Eds.), **Handbook of New Media: Social Shaping and Consequences of ICTs**, (pp. 270-86). London: Sage.
- Cavanaugh, T. (2002). Let slip the blogs of war. In **We've Got Blog: How Weblogs Are changing our Culture** (pp. 188-97). Cambridge, MA: Perseus Publishing.
- Chavez, D.J. (2004). Community impacts from the 2003 fires in southern California. In P.T. Tierney and D.J. Chavez (Technical Coordinators). **Proceedings of the Fourth Social Aspects and Recreation Research Symposium**; 2004 February 4-6; San Francisco, CA (pp. 126-131). San Francisco, CA: San Francisco State University.
- Deuze, M. (2003). The web and its journalism: Considering the consequences of different types of newsmedia online. **New Media & Society**, 5(2), 203-20.

- Dietrich, M. (2003). Personal communication. Fire Management Officer, San Bernardino National Forest.
- Gillmor, Dan. (2004). **We the media: Grassroots journalism by the people, for the people**. Sebastopol, CA: O'Reilly Media.
- Horrigan, J.B., and Smith, A. 2007. **Pew Internet and American life data memo: Home broadband adoption**. June 2007. Retrieved July 18, 2007 from http://www.pewinternet.org/pdfs/PIP_Broadband_2007.pdf
- Licklider, J.C.R. and Taylor, R.W. (1968). The computer as a communication device. **Science and Technology** (April), 20-41.
- Lule, J. (2006). (New) Media Studies. **Critical Studies in Media Communication**. 23(4), 339-339.
- Michaels, S. (2003). Perishable information, enduring insights? Understanding quick response research. In **Beyond September 11th: An account of post-disaster research** (pp. 15-48). Natural Hazards Research and Applications Information Center, Program on the Environment and Behavior. Boulder, CO: University of Colorado.
- Outing, S. (2005). Managing the army of temporary journalists: Eyewitness online reporting about the tsunami complements coverage by mainstream news organizations. **Neiman Reports**, March, 79-80.
- Pavlik, J.V. (2001). **Journalism and the New Media**. New York: Columbia University Press.
- Rheingold, H. (1994). **The Virtual Community. Homesteading on the Electronic Frontier**. New York: Harper Perennial.
- Ryan, G. and Bernard, R. (2003). Techniques to identify themes. **Field Methods**, 15(1): 85-109
- Scanlon, J. (1998). The search for non-existent facts in the reporting of disasters. **Journalism and Mass Communication Educator**, 53(2), 45-53.
- Schneider, S.M. and Foot, K.A. (2003). Crisis communication and new media: The web after September 11. In P.N. Howard and S. Jones (Eds.), **Society online: The Internet in context** (pp. 137-154). Thousand Oaks, CA: Sage.
- Siegl, E. and Foot, K.A. (2004). Expression in the post-September 11th web sphere. **Electronic Journal of Communication**, 14(1-2).
- Silverstone, R. (2004). 9/11 and new media. **New Media and Society**. 6(5), 587-590.
- Spooner, T. (2003). **Internet use by region in the United States**. Pew Internet and American Life. P. Meredith and L. Rainie, Eds. Retrieved July 18, 2007 from http://www.pewinternet.org/pdfs/PIP_Regional_Report_Aug_2003.pdf
- Taylor, J.G. (2000). The wildland-urban human fire interface: The WUFI revisited [abs.]. In: **Second Wildland Fire Workshop, Los Alamos, NM, October 31 through November 3, 2000** (p. 1). Denver, CO: US Geological Survey, Central Region.
- Taylor, J.G., Gillette, S.C., Hodgson, R.W., Downing, J.L. (2005). **Communicating with wildland interface communities during wildfire**. USGS Open-File Report 2005-1061.
- Winner, L. (1986). **The whale and the reactor. A search for limits in an age of high technology**. Chicago, IL: University of Chicago Press.

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