

Learning from escaped prescribed fire reviews

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Abstract: The U.S. wildland fire community has developed a number of innovative methods for conducting a review following escape of a prescribed fire (expanding on the typical regional or local reviews, to include more of a learning focus – expanded After Action Reviews, reviews that incorporate High Reliability Organizing, Facilitated Learning Analyses, etc). The stated purpose of these reviews has been to identify methods that not only meet policy requirements, but also reduce future escapes. Implicit in this is the assumption that a review leads to learning. Yet, as organizational learning expert David Garvin (2000) notes, learning may be said to have occurred only when individual behaviors change on the ground.

We seek to understand whether and how the escaped prescribed fire review processes as currently designed and implemented by U.S. federal fire agencies promote organizational learning. We are particularly interested in what facilitates individual and organizational learning and how learning may be effectively transferred. We are using structured dialogue sessions as our primary method of inquiry. The two day workshops are guided by three questions: What aspects of the escaped prescribed fire review processes as currently designed and implemented promote organizational learning? How effectively do current reviews transfer the knowledge gained from reviews to other field units? What is needed to strengthen the learning and the knowledge transfer aspects of reviews?

Additional Keywords: prescribed fire, organizational learning, reviews

Introduction

The U.S. wildland fire community has developed a number of innovative methods for conducting a review following escape of a prescribed fire. The stated purpose of these has been to identify methods that not only meet policy requirements, but also reduce future escapes. Implicit in this is the assumption that a review leads to learning.

The sociological and organizational psychology literature is replete with scientific studies concerning the worthiness of organizational learning for error prevention (Senge 1990; Garvin 2000; Kegan and Lahey 2000; Weick and Sutcliffe 2007). Similarly, there are a number of theories about how organizations learn and change, and the conditions and activities necessary to facilitate change (Isaacs *et al.* 2006; Scharmer 2007). However, few scientific studies of fire management operations have attempted to understand the *effectiveness* of accident reviews,

particularly how effective reviews collect and analyze information and disseminate lessons learned to those not directly involved in the original event.

We seek to understand whether and how the escaped prescribed fire review processes (such as regional or local reviews, Facilitated Learning Analyses, etc) as currently designed and implemented by U.S. federal fire agencies promote organizational learning. We are particularly interested in what facilitates individual and organizational learning and how learning may be effectively transferred.

We draw our definition of learning from the multiple dimensions of organizational learning previously identified – from who is doing the learning (individual to institutional) to what is being learned (instrumental to fundamental knowledge) (e.g. Shirvastava 1983; Argyris and Schon 1996; Garvin 2000; Argote *et al.* 2000; Fazey *et al.* 2007). To capture the full circuit of learning, we define three phases. Learning involves both a cognitive and a behavioral aspect – the moment of insight and the subsequent change in action or behavior. Framing learning in this way allows us to recognize that changes in behavior often lag behind changes in thinking, and provides the space to explore individual and organizational activities that can facilitate or impair completion of the circuit. Learning may also be phased chronologically. For instance, lessons may occur during the event itself, during or through the process of the review itself, as well as from resulting products or reports and deliberate mechanisms to transfer lessons beyond the local unit. Finally, the entity that learns includes a spectrum from the individual, to burn unit or crew and/or review team, to broader organizational levels such as the Forest/Park/Resource Area/Refuge or the entire organization, such as Forest Service, National Park Service or the inter-agency fire community.

Workshop Design

Our primary data collection method uses the concept of *dialogue* (Isaacs 1999). Dialogue has been described as “a discipline of collective thinking and inquiry; a process for transforming the quality of conversation, and in particular the thinking that lies beneath it” (Isaacs *et al.* 2006). Ordinary conversation is often focused on informing another about (or convincing another to adopt) one’s own perspective. Dialogue differs by emphasizing as its goal the generation of new understanding and insight. This occurs through sharing of individual experience, acknowledgement of multiple – even conflicting - perspectives, and inquiry into the underlying structures (mental models, assumptions) for these perspectives. Dialogue has been shown to be an effective technique to solve and understand knotty, sometimes intractable organizational problems especially if those problems are rooted in the culture of the organization; dialogue has been used successfully by such companies as Monsanto, U. S. Steel and Shell Oil.

We expect to hold five dialogue sessions around the United States –four are complete. Each session has or will include 6 -25 participants drawn from the five federal land management agencies with fire responsibilities (Department of Agriculture - Forest Service, Department of Interior - National Park Service, Fish and Wildlife Service, Bureau of Land Management, Bureau of Indian Affairs). We seek a mix of experiences and responsibilities with respect to prescribed fire escapes, from line officers (Refuge Managers, Park Superintendents, Regional Foresters, etc.) and review team leaders to planning and operational staff (burn plan developers, firing, holding bosses, etc.) and ancillary support (fire weather meteorologists, dispatch, etc). Workshop notifications are electronically circulated through both formal and informal organizational channels.

Sessions are guided by a series of open-ended inquiry questions: What aspects of the escaped prescribed fire review processes as currently designed and implemented promote organizational learning? How effectively do current reviews transfer the knowledge gained from reviews to other field units? What is needed to strengthen the learning and the knowledge transfer aspects of reviews? Sessions are recorded and transcripts prepared to mask identities. Analysis will occur using multiple, concurrent perspectives, including: comparison of processes and procedures with academic definitions of learning organizations such as Garvin (2000) and Dekker (2006); “cognitive task analysis” developed to study complex mental tasks involved with decision-making (Czarniawska 2006; Crandall *et al.* 2006), and communication theory (e.g. Thackaberry 2004).

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