

EXAMINING CHANGES IN WILDFIRE POLICY AND GOVERNANCE IN THE UNITED STATES THROUGH THREE ANALYTICAL LENSES

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Abstract.—U.S. wildfire policy and governance increasingly emphasize collaboration among levels of government and between government and non-governmental entities, expanding the roles and duties of nonfederal and nongovernmental organizations, and instituting performance-based measures to improve accountability and control costs. While many changes have been enacted, others have yet to be realized. This paper’s purpose is to examine changes in U.S. wildfire governance through three analytical lenses: collaborative public management (CPM), adaptive governance (AG), and historic institutionalism (HI). CPM focuses attention on: structures of interdependence; strategies for pooling resources, monitoring, and accountability; and capacity to attain desired outcomes. AG draws attention to structures that facilitate social learning, successive modifications, and continued improvement across different scales. HI suggests that the institutions of governance resist change so that even new ideas—such as collaborative public management and adaptive governance—may fail to become institutionalized, even when widely supported. If they do become institutionalized, it may be in a context in which older institutions continue to coexist, creating a complex and sometimes contradictory management context. Each lens offers a framework of understanding and explains certain aspects of wildfire policy and governance; collectively, the lenses provide analytical power beyond what any single lens could provide.

1.0 INTRODUCTION

In this paper, we examine the pathways and factors associated with changing wildland fire policy and governance in the United States that have spurred the growth of collaborative, network-based governance approaches from the local to national levels (Steelman and Burke 2007). These multi-scalar governance approaches lend themselves to analysis using Kiser and Ostrom’s (1982) “three worlds of action” framework for analyzing governance institutions, which specifies three levels of governance rules: operational, collective-choice, and constitutional-choice. *Operational* rules articulate decisions about how to appropriate and manage resources, provide information, monitor actions, and enforce rules. *Collective-choice* rules define what and how decisions are made, thereby enabling or constraining operational-level governance. *Constitutional-choice* governance refers to who gets to participate in decisionmaking, the powers and authorities with which participants are vested, and how participants are structured and organized. This framework provides a means by which to examine where governance changes are occurring, what factors enable or constrain changes at each level, why these factors arise and persist, and the prospects for durable change given conditions across the three governance levels. Our research follows the work of Imperial (2005), who examines the performance of collaborative watershed management across the three governance levels.

To further the critical nature of the examination and add depth to answering the “why” question, we apply three interpretive lenses to our wildfire management governance cases: CPM, AG, and HI. When brought together, the lenses shed light on how and why pathways and mechanisms of governance change manifest the way they do, and how changes—or lack of changes—at the operational, collective-choice, and constitutional-choice levels interact. Further, applying

the three lenses collectively can target barriers to specific pathways and mechanisms to more durable governance change and inform more systematic, intentional transformations in wildfire governance.

2.0 STATUS OF WILDFIRE GOVERNANCE

Since 2000, federal and state policy-makers have enacted a series of policy initiatives to transform wildfire governance: the National Fire Plan (NFP), the Western Governors Association’s Ten-Year Implementation Strategy (TYIS), the Wildland Fire Leadership Council (WFLC), and the Healthy Forest Restoration Act (HFRA) (Table 1). NFP is a set of collective-choice governance rules directing federal agencies to invest technical, financial, and organizational resources to support wildfire management across jurisdictions and land ownerships.

Similarly, the TYIS is a collective-choice mechanism specifying a framework for intergovernmental, interagency, and government/nongovernmental organizational collaboration, and a system of performance-based measures. The WFLC was created by the Secretaries of Agriculture and Interior as a constitutional-level arrangement to oversee wildfire policy. WFLC is an intergovernmental committee of federal, state, tribal, county, and municipal government officials that provides oversight and coordination of the National Fire Plan and Federal Wildland Fire Management Policy. As a constitutive policy, HFRA authorized communities to collaborate with government agencies to create Community Wildfire Protection Plans (CWPPs). CWPPs specify priority areas for hazardous-fuels reduction, recommended treatment prescriptions for those priorities, and measures to reduce “structural ignitability.”

Table 1.—Recent U.S. wildfire management policies.

Policy	Governance Level	Description
National Fire Plan	Collective-Action	Directs the Departments of Agriculture and Interior to take steps to achieve goals of increased firefighting capacity, post-fire rehabilitation, hazardous fuel reduction, and assistance to communities to reduce catastrophic wildfire risk.
Ten-Year Implementation Strategy	Collective-Action	Establishes a collaborative, performance-based framework across federal, Tribal, state, and local governments to achieve goals of improving fire prevention and suppression, reducing hazardous fuel reduction, restoring fire-adapted ecosystems, and promoting assistance to communities to reduce catastrophic wildfire risk. The collaborative framework spans three organizational levels: local, state/regional and Tribal, and national.
Wildland Fire Leadership Council	Constitutional	Establishes duties and responsibilities for an intergovernmental committee of federal, state, Tribal, county, and municipal governments to work in concert to address large-scale policy, programmatic resource allocation, prioritization, and budget issues.
Healthy Forest Restoration Act of 2003	Constitutional, collective-action, and operational	Directs the Secretaries of Agriculture and the Interior to conduct hazardous fuels reduction projects on National Forest System lands and Bureau of Land Management lands aimed at protecting communities, watersheds, and certain other at-risk lands from catastrophic wildfire, and to enhance efforts to protect watersheds and address threats to forest and rangeland health, including catastrophic wildfire, across the landscape. Authorizes the role of communities to work collaboratively with federal, state, and local governments to develop Community Wildfire Protection Plans to complement plans and priorities of federal agencies to reduce wildfire risk to communities.

For more details on each policy, see further: <http://www.forestsandrangelands.gov/index.shtml>

What has been the progress of these governance changes? At the constitutive level, the WFLC has carried out its duties to meet on a regular basis to discuss policy, resource allocation, prioritization, and budgeting.¹ However, WFLC recommendations have not translated into changes at the collective-choice or operational levels. The General Accounting Office (GAO) has consistently discovered that agencies have failed to develop and implement a comprehensive, cohesive wildland management strategy as specified by the NFP, TYIS, and HFRA (GAO 2006, 2007b, 2008, 2009a). With regard to the TYIS' recommendation to develop a coordinated system of accounting and performance measures, GAO and others have found that federal agencies have fallen short in developing information systems to prioritize and measure effectiveness of treatments, and in developing budgeting tools to allocate funds to achieve national wildfire management goals (GAO 2007a, 2009b; U.S. Department of Agriculture-Office of the Inspector General 2006).

Information and research on local CWPP development and implementation suggest that the expansion of communities' roles and duties has made halting progress. CWPPs alter collective-choice rules for how communities, non-governmental stakeholders, and federal, state, Tribal, and local governments interact to address wildfire management goals and priorities. A recent update reported that more than 4,600 CWPPs have been developed (U.S. Department of Interior and U.S. Department of Agriculture 2009). A comparative case study of 13 CWPP processes across eight states indicates varying types and levels of collaboration in CWPPs (Jakes et al. 2007). One key finding is that the collaborative process to develop CWPPs does result in social benefits beyond hazardous-fuels reduction, such as: enhanced social networks within the community and between community members and government entities; the development of learning communities; and the development of community capacity to self-organize to address wildfire risks and hazards beyond the CWPP process (Jakes et al. 2007).

¹Information on WFLC meetings can be accessed at URL: <http://www.forestsandrangelands.gov/leadership/meetings/index.shtml>

On the other hand, an assessment of CWPP processes in Colorado sponsored by a consortium of conservation organizations (the Southern Rockies Conservation Alliance) found that many CWPPs lacked specific fuels reduction recommendations, had inconsistent involvement from government agencies, and lacked clear planning objectives to continue updating and revising CWPPs in the face of new information (Chapman 2009).

In looking forward, the Quadrennial Fire Review 2009 final report (WFLC Fire Executive Council and National Association of State Foresters 2009) defines a "strategy calling for reaffirming fire governance, essentially building a new national intergovernmental wildfire policy framework" (p. v) to clarify and realign roles, responsibilities, and authorities for the various wildfire management agencies. The report further outlines needed capacities to achieve these strategic elements, including workforce capacity and capital assets.

3.0 ANALYSIS AND INTERPRETATION

Despite significant reforms at the constitutional-choice, collective-choice, and operational levels of wildfire policy and governance, such change has generally fallen short of expectations. In this section, we apply three interpretive lenses to analyze where and why change has progressed or stalled out: collaborative public management, adaptive governance and management, and historical institutionalism.

3.1 Collaborative Public Management

The primary analytical foci of CPM are the structures, processes, conditions, and capacities that advance interdependent goals among diverse organizations. When the CPM lens is applied to the three levels of wildfire governance, the analytical challenge is to examine the pathways and mechanisms through which new collaborative arrangements are interacting, transforming existing wildfire management institutions, and creating enduring governance changes.

At the operational level, research by Jakes et al. (2007) suggests that collaboration among government, non-government, and community organizations is inconsistent. In some cases there was intensive collaborative engagement throughout CWPP development, while other communities relied solely on government agencies or private contractors to develop CWPPs. Due to uncertainty (or, in some cases, unwillingness) on the part of public agency wildfire managers regarding their role in collaborative CWPP processes, public wildfire managers still address the new challenge of community-based wildfire management largely through existing hierarchical processes (Jakes et al. 2007).

An overriding consideration for agency managers is that HFRA stipulates that 50 percent of hazardous-fuels reduction treatments must be completed in the wildland-urban interface, providing an incentive to identify geographic areas to which to apply those funds. In the competition for scarce funds, agency managers may be motivated to develop as many CWPPs as quickly as possible. Since collaboration takes time, agency managers are confronted with the choice of either positioning themselves to garner funding or embarking on what might be an onerous collaborative process, thereby possibly jeopardizing funding.

In the case of the WFLC, there is evidence of more cooperation among agencies, among levels of government, and between government and non-governmental organizations. However, WFLC has no authority to alter the collective-choice or operational rules of any organization or collection of organizations. Fire suppression still commands a large proportion of federal government agency budgets, while state and local government, non-governmental entities, and community organizations have insufficient funds to carry out non-suppression wildfire management activities.

At the collective-choice level, while HFRA expanded the roles and duties of entities in wildfire management, specifically communities, HFRA was vague or silent

on who is supposed to be in charge and who has authority and responsibility for carrying out CWPPs. Empirical research and anecdotal evidence suggest that collaborative governance in CWPPs has been highly variable, possibly due in part to the lack of specified authority and responsibility. Additionally, there are no standards for what constitutes “collaboration” under HFRA.

At the constitutional-choice level, TYIS and HFRA clearly set out new expectations for roles and responsibilities over wildfire management, but federal and state fire managers are held politically and legally liable and accountable for wildfires and suppression. As such, government managers—especially federal wildfire managers—are highly exposed to negative consequences while their partners may not be. Collaborative governance inherently requires shared risks, but the existing set of liability rules does not yet redistribute those risks beyond government managers.

3.2 Adaptive Governance

According to Brunner and Steelman (2005), AG re-imagines how multiple participants with diverse interests learn together to establish and modify policies and actions that serve the common interest. However, evidence suggests that the process of developing CWPPs has been more like scientific management—achieving the target of a completed plan without necessarily creating a sustainable governance structure that can follow through on implementation, evaluation, and adaptive change (Chapman 2009). Collaboration has taken place in some locales while in others contractors took on the task of organizing the plans.

The AG literature suggests that harmonizing actions across scales is important for policy effectiveness (Cash et al. 2006). Cross-scale *support* has not been a constraint for CWPPs, but cross-scale *interaction* has been. In the case of CWPPs, HFRA defines constitutive-level rules to support operational-level action. However, feedback mechanisms to the collective and the constitutional levels are missing. It is not clear whether there is horizontal interplay or vertical interplay in terms of learning. When CWPPs

fail to live up to their potential, feedback to the collective level or back to the constitutive level is not offered.

At the operational level, the question we would like to be able to answer is: Have CWPPs made a difference in the way we manage fire? From an adaptive management perspective, we would want some empirically-based evidence to demonstrate how direction in CWPPs (prioritizing fuel reduction projects, identifying important values at risk, and specifying forest and fire management strategies) made a difference in how fires were managed. However, we do not know the answer to this question because we do not have a system in place to collect information that addresses such questions.

At the collective and constitutive levels, the WFLC oversees the implementation of NFP through the TYIS, but it is not clear that the feedback mechanisms work. The disjuncture between the collective and constitutive levels is troubling because great effort has been expended to effect change at these levels. Individuals find it increasingly hard to effect change as they move up in the hierarchy and it is frustrating not to realize the benefits (Goodin 1996).

We do not see evidence of adaptive management at the operational level, nor do we see evidence of structures in place at the collective or constitutive levels that could promote the integration of knowledge and social learning that typify adaptive governance. We do have governance structures in place that are mutually supportive (e.g., HFRA supports CWPPs), but there is no feedback at any level within the system to promote learning. To create a more adaptive management/governance regime would require linking the information derived from the operational processes to decision-makers at the operational, collective, and constitutive levels and then taking action based on what was learned.

3.3 Historic Institutionalism

Historic Institutionalism (HI) is a school of political science focused on understanding how institutions—rules, habits, cultures, and history—structure political action (Steinmo et al. 1992, Thelen 1999). Ideas institutionalized in earlier periods of political development continue to influence current politics even after ideas have changed about how we should govern—a concept known as “path-dependence” (Skocpol 2002).

At the operational level, Jakes et al.’s (2007) research demonstrates how past cooperative efforts to address wildfire or other natural resource-related issues, and the history of conflict over natural resource issues, affect collaboration in CWPP development. Similarly, the historic pattern of federal land management agencies’ failing to invest in response monitoring has limited the development of adaptive collaborative arrangements at the operational level of CWPPs. Until recently, federal and state wildfire agencies did not maintain any sort of monitoring database for wildfire management activities. While the NFP and TYIS emphasized performance-based measures to gauge progress towards broad policy goals, the main mechanism, National Fire Plan Operating and Reporting System (NFPORS) has been criticized for not gauging whether fuel reduction treatments are achieving desired objectives (Cochrane et al. 2006, Stephens and Ruth 2005).

The limitations to collaboration and adaptive learning at the operational level have their source in part at the collective-choice level. Federal land management agencies were originally set up to be populated by scientifically trained technical experts and insulated from public and political pressure (Kaufmann 1960). The insular nature of these agencies eroded with laws requiring public participation in decision-making, such as the Administrative Procedures Act and the National Environmental Policy Act. However, resistance within the U.S. Forest Service to these changes, coupled with growing public distrust and displeasure over federal land management, resulted in a divisive, “us vs. them”

posture (Wondolleck 1988). Since the 1910s, wildfire management in particular has been characterized by a militaristic organizational structure given near autonomy and authority to garner resources and implement action with little need to collaborate outside the wildfire institutional structure (Busenberg 2004, Pyne 1997). New governance structures, monitoring of performance measures, accountability, and collaboration run headlong into these long-standing wildfire management institutional structures.

HI suggests that once something is deeply institutionalized, it is not easily changed. How can change occur? Historical institutionalists have long pointed to crises as critical junctures (Kingdon 1984, Skowronek 1982). This has certainly been the case with wildfire management. Over the past century, years with massive fires have led to major policy change and, ironically, an increase in the suppression capacity of the federal land management agencies. Despite the National Fire Plan's intent to reduce costs, reduce wildfire risk, restore fire-adapted ecosystems, and reintroduce wildfire as a natural process, much of what has actually happened both at the collective-choice and operational levels has re-enforced and further strengthened the suppression institutions. Rather than reducing costs and engagement in fire suppression, the institutional momentum of fire management combined with the political crisis of the large wildfires in the late 1990s and early 2000s served to reinforce and strengthen old institutions instead of dramatically changing them.

The HI perspective also sheds light on the reality that new policies may come into conflict with long-standing, institutionalized policies at any level. Beyond the reinforcement of wildfire suppression institutions, another major institutional dynamic has been in play in the area of hazardous-fuels reduction. The combination of pressure from Office of Management and Budget to lower costs plus the culture of measuring success have led the U.S. Forest Service to focus hazardous-fuels reduction efforts on maximizing the number of acres treated.

4.0 DISCUSSION

We acknowledge that selecting these three lenses for this analysis necessarily excludes other lenses that explain change, such as individual behavior, institutional incentives, and political risk-taking. Additionally, we rely primarily on secondary sources of information to draw conclusions about change in wildfire governance. Our analysis may also be limited by the time-span since policy reforms were enacted.

Nonetheless, we believe that our analysis raises critical issues relating to changing wildfire policy and governance. The CPM lens helps explain how existing vertical organizational practices and budget structures prevent fully implementing collaborative, adaptive wildfire management. At the operational level, collaboration is only inconsistently occurring among stakeholders; government agencies often push through CWPPs in order to get as many completed as possible to garner financial resources. Additionally, collaborative groups—either at the CWPP or the national WFLC level—lack any enforcement authority to assure that agreements and recommendations are, in fact, carried out. As a result, the U.S. Forest Service and other government agencies can act independently of any collaborative effort and seek to achieve their own goals and objectives. At the same time, federal agencies are held accountable to achieve acres-treated targets associated with their budget allocations. When facing a choice between achieving acres-treated targets and entering into numerous small-scale CWPP processes, Forest Service managers may be forced to forego the collective-choice rules spelled out in HFRA and other collaboration mandates.

The AG lens focuses primarily on how institutions foster social learning in order to integrate diverse forms of knowledge and information when designing, monitoring, and evaluating action. Harmonizing actions across scales is important for overall policy effectiveness. Adaptive management is not occurring at the operational level, nor do we see evidence of structures in place that could promote the integration of knowledge and social learning that typifies adaptive governance. Multi-level governance structures are in place that are mutually supportive (e.g., HFRA

supports CWPPs), but there is no formal feedback at any level within the system to promote learning. Moving to a more adaptive governance regime would require linking the information derived from the operational processes to decision-makers at the operational, collective, and constitutive levels and then taking action based on what was learned.

The HI lens sheds light on the role of historical context and motivations in creating stable institutional structures that are designed to endure through changing ideas about governance. HI suggests that change occurs incrementally, as new governance arrangements must be dovetailed with existing governance institutions and practices. The supremacy of fire suppression as de facto policy and practice for the U.S. Forest Service and other responsible agencies represents a daunting institutional issue for new wildfire governance strategies. The recent changes at the constitutional- and collective-choice policy levels to increase interagency coordination and community collaboration have actually strengthened fire suppression institutional structures. Policies intended to increase hazardous-fuels treatments to restore fire-adapted ecosystems, increase community safety, and reduce suppression costs have not been realized as a result. Instead, due to internal agency incentives to maximize the geographic area treated while minimizing cost per unit of treatment, hazardous-fuels treatments are being conducted in places with low per-unit costs rather than places where they would do the most to reduce community risks or lower suppression costs.

When these lenses are combined, three primary barriers to collaborative, adaptive wildfire governance come into focus. First, there are organizational, operational, and budget structures, and long-standing values, attitudes, and behaviors rooted in history. Looking specifically at the U.S. Forest Service, we note that wildfire management has long been associated with fire suppression. The newer goals of restoring fire-adapted ecosystems and community protection do not yet have organizational infrastructure around them. Budgets for wildfire management have been and continue to be directed primarily

to suppression; frequently, funds for restoration are drawn from non-wildfire programs, which historically have much lower budgets. Furthermore, the historic organizational norms associated with wildfire management stem from a highly militaristic, hierarchical structure unaccustomed to collaboration.

Second, there is a lack of institutional structures and performance measures that foster feedback and learning across governance and jurisdictional levels. While NFP and the TYIS in particular mandate performance-based measures to facilitate adaptive management, the measures themselves lack adequate feedback relative to the inter-linked goals of fire suppression, post-fire rehabilitation, restoration of fire-adapted ecosystems, and community protection. The last two goals lack performance measures that, when monitored, would indicate movement towards goal accomplishment. Where such measures are being monitored, there is a paucity of mechanisms by which to aggregate and integrate these measures across governance and jurisdictional levels. Without the ability to aggregate treatment effectiveness measures at higher levels, it is not possible to know where to continue to invest scarce resources or to adapt management practices.

Last, the emphasis on “acres treated” targets and the institutional pressure to minimize per-unit treatment costs suggest that the current institutional incentives do not align with new wildfire policy goals. Performance targets are an historical artifact for public natural resource agencies, whether they relate to timber outputs, livestock grazing production, water yields, or wildlife target populations. Such single-objective targets are ill-suited to the integrated goals of new wildfire policies. By focusing on the number of acres treated at the lowest possible cost, government agencies are often motivated to achieve those targets at the expense of the recommended priorities of collaborative arrangements. Without incentives and rewards associated with performance measures that show progress towards multiple wildfire management goals, agency managers are motivated to achieve single-objective targets only—and are held accountable only for those single objectives.

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