

Understanding micro-processes of institutionalization: stewardship contracting and national forest management

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Abstract This paper examines micro-processes of institutionalization, using the case of stewardship contracting within the US Forest Service. Our basic premise is that, until a new policy becomes an everyday practice among local actors, it will not become institutionalized at the macro-scale. We find that micro-processes of institutionalization are driven by a mixture of large-scale institutional dynamics and how frontline decision-makers understand and interpret these dynamics, given the local social and ecological context in which they operate. For example, this paper suggests that a new policy may become institutionalized when it is understood to solve problems that old institutions at once create and demand to be solved. Agency actors cannot be conceptualized as untethered from the institutions in which they operate. Yet, within larger institutional dynamics, field personnel make key choices about whether to adopt a new policy, making them important players in the micro-processes of policy institutionalization. The interplay of actors and institutions turns agencies, such as the Forest Service, into complex systems that cannot be understood as artifacts of their own history or as a sum of the decisions of individual actors. This dynamic also implies that macro-level institutional change will be uneven, incomplete, and gradual, mirroring uneven, contingent micro-level processes.

Keywords Policy implementation · Political change · Institutions · Institutionalism · Stewardship contracting · Forest Service · Actors

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Introduction

Federal bureaucrats are awash in rules, regulations, policies, politics, budgeting, and accountability procedures. This cacophony creates a significant challenge for those who would change the practices of an agency. Faced with a new political climate or new management direction, an agency cannot simply change overnight. Yet, as circumstances, values, and understandings change, so must policies and practices. But creation of new macro-level policies does not necessarily lead to their institutionalization, nor are they adopted in a homogeneous fashion. There have been a few critical junctures in American history where big institutional change happened (Sunquist 1983; Baumgartner and Jones 1993; Skowronek 1982), yet even big events do not change everything (Skocpol 1979; Cashore and Howlett 2007). As often, institutional change is subtle and incremental (Lindblom 1968, 1979), occurring largely within existing arrangements (Deeg 2001), or through slow shifts (Mahoney and Thelen 2010). And, many efforts of political actors to change policies fail (Skowronek and Glassman 2007).

Even when new laws are passed and policy handed down, implementation can be thwarted by unanticipated conflict with old policies, or because the changes never become embedded at the field level (Kingdon 1984; Mayhew 2002). Until a policy change becomes a “commonly accepted way of doing things” at the ground level, it has not really become institutionalized (Abers and Keck 2013, 3). Consequently, the micro-processes of institutionalization via policy implementation on the ground are key to shaping political change. Understanding these processes is especially vexing, however, because even when policies become “institutionalized,” they may be implemented differently by different actors, or differently than advocates had anticipated (Abers and Keck 2013). They may even backfire, leading to the institutionalization of practices that are the opposite from what the policy advocates had originally intended (Valelly 2007).

This highly variable process raises questions about how new policies become institutionalized at the local level. This is particularly true in natural resource management in the USA, where policies are implemented under highly diverse ecological and socioeconomic conditions (Abers and Keck 2013; Moseley 1999; Steelman 2010; Cashore and Howlett 2007). To gain purchase on the micro-processes of institutionalization in complex systems, this paper focuses on how policy change becomes institutionalized within a federal land management agency after legislation has been passed and associated direction to act has been handed down to the field. It seeks to shed light on the micro-processes of institutionalizing a law into the practice of an agency, processes that we believe are critical for shaping the nature of macro-level institutional change within a given agency. Specifically, we use the example of stewardship contracting within the US Forest Service to explore why national forests have chosen (or not chosen) to make stewardship contracting a regular part of their work.

Stewardship contracting is a set of contracting tools that were designed to make it easier to implement forest restoration projects on national forests. The stewardship contracting law provides authority, not obligation, to use these contracting tools.¹ Nevertheless, Forest Service national headquarters has pushed field units to use them. For example, headquarters or regional offices directed field units to implement a certain number of stewardship projects each year for fear that field units might otherwise be reluctant to try stewardship contracting (Government Accountability Office 2008). And, the Forest Service Strategic Plan contained a performance measure and targets for the number of acres treated

¹ This law also applies to the Bureau of Land Management.

to restore fire-adapted ecosystems using stewardship contracts (USDA Forest Service 2007). Although agency staff at many levels can choose whether and how to promote and use the tools, field unit staff on national forests are responsible for initiating stewardship contracting projects (Government Accountability Office 2008). Use across the agency has been uneven, as one might expect given that stewardship contracting is optional rather than required. However, agencies frequently attempt to institutionalize new ways of doing business through policies that provide direction that is not legally mandated. We have also observed that mandatory policies within the Forest Service are often implemented in different ways and to different degrees at the ground level. Thus, the uneven use of stewardship contracting to undertake land management activities can provide insight into the micro-processes of institutionalizing policy changes more broadly.

With the lens focused on the ground level, the micro-processes of institutional change, we suggest, are site specific, contingent, and uneven. We seek to understand the drivers of these variable processes, and with that, shed light on the dynamics of macro-level policy institutionalization. To do this, we developed a conceptual model for analyzing the pressures from above, local external ecological and social conditions, and local internal agency variables associated with the use of stewardship contracting. Our findings suggest that micro-processes of change are driven by a mixture of large-scale institutional dynamics, and how actors understand and interpret these dynamics given the local context in which they operate. In turn, the extent to which (and ways) these actors make choices about how to implement a policy change on the ground affects whether and how macro-level institutionalization occurs. As a result, federal agencies and the political environments they operate within become not only complicated, but complex political arenas where policy entrepreneurs must operate and try to effect change through their actions.

Literature review: historical institutionalism, implementation theory, and something in between

Historical institutionalism

Political development scholars such as Orren and Skowronek (2004), Carpenter (2001), and Skocpol (1979) argue that political institutions—the structures, processes, practices, rules, and cultural norms of governance (Koontz et al. 2004)—play a significant role in structuring political action. These scholars contend that political institutions are sticky and difficult to change, and when they do change, there is a path dependency to that change (Pierson 2004). To understand the process of change, Orren and Skowronek (2004) focus on “intercurrence”—the complex layering of multiple histories and pathways that underlie a political institution, each of which has origins in a different time and purpose. New laws, policies, and programs are often layered on old ones because, although there may be political support for new efforts, the political support to change old institutions is much less common (Abers and Keck 2013). This literature helps explain the remarkable endurance and increasing complexity of institutions in the course of American political development.

Using the lens of intercurrence to understand the Forest Service is compelling. Despite massive political conflict over the management of federal lands, change in societal priorities for federal land management, and subsequent changes in the agency’s mission and policies, the Progressive Era’s focus on independent agency expertise and the Environmental Era’s focus on comprehensive planning prior to action still echo loudly in the Forest Service’s culture, norms, and habits. However, when looking at the Forest Service with a

finer lens, it is clear that the management of national forests varies considerably from place to place. As the saying goes, if you know one national forest, you know one national forest.

The combination of long-term, large-scale continuity mixed with fine-grain variation creates significant challenges for those who would change the agency because existing academic theories (and every day political practice) do not reveal where the levers for change are. Consequently, the historical institutionalism literature, with its focus on large patterns, has been inadequate for explaining variation in policy outcomes and institutionalization at the ground level, especially when efforts at policy change occur outside of critical junctures (however, see Cashore and Howlett 2007; Steelman 2010). This limitation derives from the scant attention given in this literature to processes of institutionalization at microscale, where “frontline” or “street-level” bureaucrats—those who actually implement policies—turn (or fail to turn) a new policy into the practice of an agency (Carpenter 2001; Skowronek and Glassman 2007).

Implementation theory

There is no shortage of theory about agents and actors in political science (Skowronek and Glassman 2007), but the roles they play in institution building have been understudied (Skowronek and Glassman 2007; Berk and Galvan 2009). For example, implementation scholars such as DeLeon and DeLeon (2002), Lipsky (1980), and Pressman and Wildavsky (1984) emphasize the discretion of frontline or street-level bureaucrats as key to understanding how policies are institutionalized (Keiser 2010; May and Winter 2007). They argue that policies morph as they are translated from presidential edicts or laws, through rules, regulations, and direction, to the ground level where they are finally implemented as land management activities, educational tests, labor law enforcement actions, Medicaid payments, veterans’ healthcare, and so on. The reason for this is that frontline bureaucrats frequently implement policies differently from what policy makers envisioned (Lipsky 1980; Pressman and Wildavsky 1984; DeLeon and DeLeon 2002). The challenge with this literature, especially as it has evolved, is that it largely ignores institutional or organizational constraints on actors’ behaviors. These scholars view the primary drivers of policy outcomes as being the values and beliefs of frontline bureaucrats.

Thus, whereas the historical institutionalists have had a limited focus on actors (however, see Skowronek and Glassman 2007; Berk and Galvan 2009), the implementation theorists saw individual agency everywhere. That implementation scholars focus on individuals absent of institutions alerts us to on-the-ground variation, but provide less insight into understanding institutional change. It is not clear from this literature which actors really matter in the process of institutional change, and why (Skowronek and Glassman 2007).

Something in between

Many historical institutionalists originally focused much of their energy on continuity, and understood change as being caused largely via shocks exogenous to the political system. More recently, however, they have begun to focus on gradual change, change outside of critical junctures (e.g., Mahoney and Thelen 2010), and on the role of actors (people) in bringing about (or preventing) political change (Skowronek and Glassman 2007; Abers and Keck 2013; Berk and Galvan 2009). Seeking to understand gradual change, Mahoney and Thelen (2010) identify endogenous institutional processes that can displace, layer, drift, and convert institutions. They move the conversation forward by highlighting change processes (Mahoney and Thelen 2010), but still focus on whole system dynamics, and see

political institutions as being relatively uniform across space. Thus, their approach sheds little light on the question of why there is such a wide array of outcomes that result from the process of policy implementation (Abers and Keck 2013).

Berk and Galvan (2009) argue that institutions should not be viewed as large systems that structure policy outcomes, but as packets of practice that can be shuffled, rearranged, changed, or used habitually in particular circumstances. They focus on the role of actors in making choices about how to arrange institutions to fit those circumstances. The default option may be to do things in the same, ordinary way. But sometimes people pursue what Berk and Galvan (2009) call “creative syncretism,” whereby people reassemble existing practices together in different and sometimes unique ways. When these new arrangements stick, they become a new way of doing things. The concept of creative syncretism may provide a way to understand the diverse outcomes that political action can create, especially at the front line, without assuming that policy outcomes are simply a reflection of free choice based on the values and behaviors of local-level bureaucrats. Berk and Galvan (2009) are working at a theoretical level that does not allow for much specificity about what the key practices that contribute to change are likely to be, however, and which kinds of new arrangements are more likely than others when the deck is being reshuffled. Consequently, one wonders if all institutions are equally likely to play a role in bringing about change, and if any outcome is equally possible.

Abers and Keck (2013) found in their study of watershed policy in Brazil that on-the-ground implementation had vastly different outcomes in different places. In some places, policies were implemented more or less as envisioned; in other places, policies never got to the ground; and elsewhere, policy implementation created an opportunity to invent something altogether different from what the policy makers at higher levels of government had envisioned. (See Moseley 1999 for an example of this diversity in US watershed policy). They argue that this array of outcomes is not predictable, but can be studied systematically. Thus, policy implementation is not simply a process by which an agent or group of agents implement the principles that have been envisioned. There are a wide array of factors and quirks that influence the particulars of what happens in a given place. Rather than seeing the prospect of policy change primarily as a reflection of strong institutional dynamics, or as the result of individual agents’ choices, Abers and Keck (2013) focus on “practical authority.” Practical authority is the way in which people come together to garner the collective understanding, resources, and organization needed to implement a new policy. Because these elements are variable across time and space, the ways in which policies are implemented will vary as well, often in unpredictable ways.

We pursue a comparable task in this paper, suggesting that similar dynamics are at play in the federal forest management policy arena in the US. Our purpose is to understand the complex and uneven nature of policy adoption at the field level that occurs through micro-processes of institutionalization. This unevenness is likely to increase as the trend toward community-based collaboration and governance associated with federal land management grows, making it even more important to understand how the complex dynamics of policy implementation play out. For it is in this context that would-be policy activists create (or fail to create) change.

Conceptual model

To understand the micro-processes of institutionalization, we examine the ways in which frontline bureaucrats make sense of the political institutions of which they are a part; and

the social, economic, and biophysical context around them (Steelman 2010; Sabatier et al. 1995). Our conceptual model of the system dynamics that influence local decision-makers, and therefore micro-processes of institutionalization, has three dimensions: (1) pressures and incentives from “above,” that is, the hierarchy of which frontline staff are a part; (2) “external” social, political, economic, and biophysical conditions and context at the local level; and (3) “internal” leadership, values, culture, skills, and priorities of the local management unit where frontline staff who make decisions about policy implementation are located (Fig. 1). We derived this model from a combination of the literature and an initial analysis of our case studies, building it through a dialogue between inductive and deductive reasoning.

Pressures from above

First, there are vertical bureaucratic lines of authority and pressures from above. These include legal requirements, budget appropriations from Congress, and policy direction from the President, the administration, or senior executives within an agency. The strength and clarity of these signals can influence how important these pressures are (May and Winter 2007; Keiser and Soss 1998). However, pressure or direction from above to use a particular authority or make a particular decision may have limited impact on frontline bureaucrats, especially in agencies like the Forest Service that are decentralized and have significant goal ambiguity (Sabatier et al. 1995; May and Winter 2007; Keiser and Soss 1998), or limited bureaucratic capacity (Huber and McCarty 2004).

Pressures from above also include preexisting institutions that are longer-standing than the policy change in question (Steelman 2010; Moseley 1999; Abers and Keck 2013). Laws and policies that have already been handed down to frontline staff and institutionalized into agency-wide practices may contradict the new policies, or make the new policies difficult to implement, especially if the preexisting institutions are deeply imbedded in the culture of the agency. These institutional pressures may come from above in the hierarchy or from other agencies having formal or informal power over frontline bureaucrats (Steelman 2010). For example, requirements of the National Environmental Policy Act and Endangered Species Act, and associated litigation, play a powerful role in influencing the choices that frontline bureaucrats at the Forest Service make (Keele et al. 2006; Ackerman 1990).

Funding, budget priorities, performance measures and targets, and performance evaluations are also likely to be among the powerful pressures from above that greatly influence what national forest staff can do (Hirt 1994). Again, these pressures may at times be in conflict. For instance, an agency head may call for the implementation of a new approach or priority, but if there is no clear way to fund the new actions, they may never be implemented. This has been a common dynamic in the Forest Service’s history (Hirt 1994; Shannon 2003).

External context

Second, local economic, biophysical, social, and political conditions external to the agency create the on-the-ground context in which frontline staff operate. Some of this literature suggests that local political opposition to a new policy reduces the likelihood that frontline staff will implement it (May and Winter 2007). Similarly, community assets—such as local collaborative groups, capacity for mobilization, and leadership—can be mobilized for or against a policy, influencing its implementation (DeLeon and DeLeon 2002; Lipsky 1980;

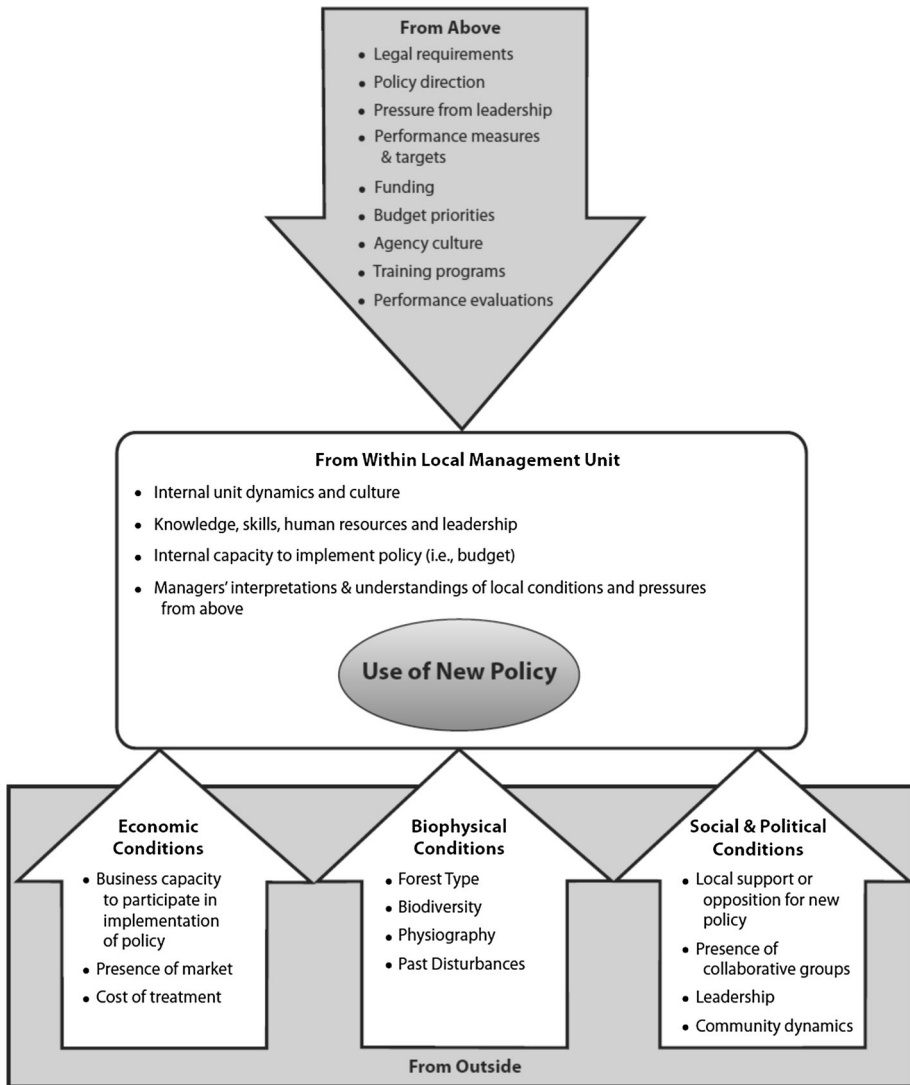


Fig. 1 Conceptual model of influences on Forest Service policy implementation

Gutmann and Thompson 1996). Local policy entrepreneurs and leaders may organize other actors to collectively suggest or pressure local agency personnel to act in new ways, or generate solutions that they may not have tried on their own. This is particularly true as the national bureaucratic state becomes increasingly dependent on nongovernmental organizations and for-profit businesses to conduct activities formerly in its hands (Milward and Provan 2000).

In the case of the Forest Service with its land management mission, local economic and biophysical conditions are also important. The Forest Service's reliance on contractors and partners to conduct land management activities means that the capacity of local businesses and organizations to implement projects may well influence whether and how frontline

staff use a new policy tool, as will the presence and capacity of local wood processing infrastructure (Goldsmith and Eggers 2004; Johnston and Girth 2011; McCrudden 2004). Biophysical conditions that affect whether a new policy might be appealing include the natural assets of a particular landscape and ecosystem (such as forest type, presence of threatened and endangered species), past disturbances (e.g., fire), and current forest conditions. Wet forests highly productive of commercially valuable timber present different opportunities for management than dry forests where timber productivity is low, for example, making new policy tools more or less applicable in a given context.

Internal dynamics

Third, local management units and their leaders bring personal values, beliefs, ideologies, priorities, and understandings along with unit-specific practices, habits, and cultures to the process of policy interpretation and decision-making (Golden 2000; Keiser and Soss 1998; Khademian 2002). There may be an innovator who likes figuring out and trying new policies. Or, local leaders may prefer to continue on as they have been (Minstrom 1997). A local unit's ability to absorb a new policy may also be limited by budget cuts, staffing gaps, or other demands that take up staff time and energy (Huber and McCarty 2004).

Rather than identifying a single best factor that influences the micro-processes of institutionalization, we argue that the ways in which frontline staff understand and interpret these three dimensions (pressures from above, local social and biophysical context, and internal dynamics within the local-level unit) will determine whether they try out a new policy option and incorporate it into standard unit practices. Their decisions, taken together, can then become the habits and norms of particular units—leading to micro-level institutionalization of a policy. The implications of these micro-processes of change are that, across an agency, macro-level institutionalization of a policy can be uneven, contingent, and messy.

Federal forest management, restoration, and stewardship contracting

Evolution of stewardship contracting

From the late 1970s through the mid-1990s, the Forest Service was at the center of an intense political conflict. At issue was whether the agency would provide large volumes of logs to sawmills, or protect species dependent on the forests being logged. This conflict reached a climax in the late 1980s over the management of the northern spotted owl (*Strix occidentalis caurina*) in the Pacific Northwest. It led to adoption of the Northwest Forest Plan in 1994, which sought to provide for sustainable use of forest resources while maintaining and restoring old-growth forests (USDA Forest Service and USDI Bureau of Land Management 1994). The plan was the beginning of a new management focus on environmental restoration across the national forest system (Stankey and Shindler 1997).

Although the Forest Service shifted its priorities in the 1990s, the main administrative tools it had to conduct land management were created in the timber era. Forest restoration and hazardous fuels reduction often involve the removal of both trees that cost more to remove than they can be sold for, and trees whose value exceeds the cost of removal. During the timber era, there was a strict separation between timber sale contracts, used to sell federal property (timber), and service contracts, used to acquire goods and services such as tree planting, plantation thinning, and building roads and trails. This distinction

became problematic when restoration became an agency priority. In a restoration context, there are often many different types of activities that need to be performed in a single location, making it physically difficult and inefficient to separate logging from other restoration. Restoration activities can be undertaken using service contracts, but service contracts preclude the removal of timber. Similarly, timber sale regulations constrain the activities that can be required of purchasers, especially activities not directly associated with timber removal.

To address these challenges, community-based forestry organizations and loggers from Montana proposed new legislation in the late 1990s. Meanwhile, Forest Service employees were trying to innovate within their existing contracting authorities. Eventually, these efforts led to “stewardship contracting.” As part of the fiscal year (FY) 1998 appropriations, Congress authorized the first of a series of pilot stewardship contracting projects. In FY 2003, Congress gave the Forest Service stewardship contracting authority until the end of FY 2013, when it would need to be reauthorized.

Stewardship contracting is a set of authorities designed to foster both integrated forest restoration and local community benefit. It provides for the integration of timber sale and service contracting authorities and permits a national forest to use timber revenue to pay for restoration services. In addition, stewardship contracting allows the Forest Service to enter into ten-year contracts (traditional service contracts are limited to 5 years). It also requires that the Forest Service select contractors that provide the best value to the government rather than selecting a bidder based only on price.

Revenue generated via the sale of timber in stewardship contracts is not shared with county governments, as is the case with traditional timber sales. Under the 1908 law known as Payments to States (16 USC 500), the federal government is required to give 25 % of timber revenue to local counties. In 2000, Congress passed the Secure Rural Schools and Community Self-Determination Act, authorizing payments to counties based on a formula rather than on timber receipts, which had declined dramatically as timber harvest on federal lands plummeted. During the period of this study, the Secure Rural Schools Act was nearing expiration and it was unclear whether it would be reauthorized. Since our fieldwork, the law has been extended on an annual basis. If the law were to expire, counties would return to the revenue-sharing formula of the 1908 Payments to States law.

At the same time that this shift in contracting tools was taking place, the Forest Service budget was undergoing change. The Forest Service budget is included each year in the President’s proposed budget to Congress.² Historically, the agency budget has had a stable number of line items (e.g., timber, wildlife, recreation). Following the large fires of 2000, however, Congress created a number of new line items. One of these was for hazardous fuels reduction, designed to increase focus on reducing fire hazard on public and private lands (Vaughn and Cortner 2005). Stewardship contracts have often been used for hazardous fuels reduction.

Each year the President’s proposed budget includes associated performance targets (see, for example, USDA Forest Service 2013b). One important target is the number of acres to be treated to reduce fire hazard; another is the timber sale target—the volume of timber sold. These targets are set through a political process involving Congress, the Office of Management and Budget, the Department of Agriculture, and senior leadership of the Forest Service. Approved targets are divided up by Forest Service region and then by

² For an explanation of how the federal budget process works, see Schick 2000 and Tomkin 1998. The Forest Service budget and associated justification can be found at <http://www.fs.fed.us/aboutus/budget/>.

national forest, so that each national forest receives targets to achieve with their budget allocation. Beginning in the 2000s, the focus on reducing fire hazard put considerable pressure on the Forest Service to increase the number of acres treated for hazardous fuels. Although funding was increasing for hazardous fuels reduction, the pressure to treat more acres was, arguably, increasing faster. The timber target also continued to be important. At the same time, there was significant pressure to reduce the “unit cost” of treatments (the amount of money it takes to perform a given activity per acre of land).³ These political dynamics put significant pressure on national forests to identify ways to treat acres in a cost-effective manner. Stewardship contracting became one mechanism that could potentially help.

Using stewardship contracting

During the pilot period, the Forest Service provided little direction about how and when to use stewardship contracting. However, following the passage of the 10-year authority, the agency’s national headquarters began to develop contracting templates, trainings, and detailed guidance to the field (FSH 2409.19, Chapter 60) about how to undertake stewardship contracting. The agency also created a performance target for stewardship contracting in its 2007–2012 Strategic Plan: number of acres brought into stewardship contracts to reduce the risk from wildfire (USDA Forest Service 2007). The creation of performance targets can be an important means of institutionalizing a practice within an agency because it creates pressure from above to meet the target. The Forest Service did not, however, have a source of funding to support stewardship projects. National forests relied mainly on appropriated dollars associated with fuels reduction, and vegetation and watershed management budget line items, to undertake stewardship projects (Government Accountability Office 2008).

The use of stewardship contracting increased slowly during the first few years of the authority (FY 1999–2003), with steady increases following the 2003 legislation (Fig. 2). But across national forests, the use of stewardship contracting was uneven (Pinchot Institute for Conservation 2013; USDA Forest Service 2013a). By 2008, some national forests awarded zero or one stewardship contract/agreement, while other forests awarded more than 20. Interestingly, in some places, adjacent national forests have made noticeably different decisions about whether to use stewardship contracting. In California’s Sierra Nevada, the Eldorado National Forest made considerable use of stewardship contracts between FY 1999 and FY 2008 (22), while its neighbor, the Tahoe National Forest, only awarded 3.

The fieldwork reported on here occurred in 2007–2008, prior to the uptick in use that occurred after 2008. Consequently, the focus of this paper is on understanding early and mid-term adoption of a policy rather than the long-term institutionalization that follows it. Although it is uncertain that Congress will reauthorize stewardship contracting in 2013, existing assessments and ongoing monitoring point to many successes (Hausbeck 2007; Government Accountability Office 2008; Mattor 2011; Kerkvliet 2010; Pinchot Institute for Conservation 2012, 2013; Moseley and Davis 2010). Our focus on early and mid-term adoption of the policy provides insight into the initial stages of what may become a long-term process of institutional change in how the Forest Service implements land management.

³ We heard this repeatedly from our interviewees.

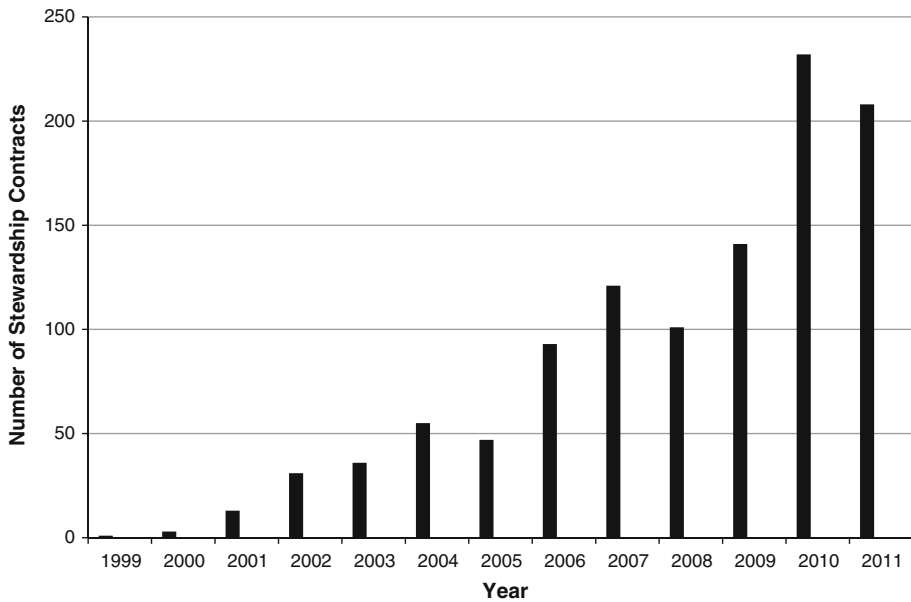


Fig. 2 Number of Forest Service stewardship contracts awarded nationwide, 1999–2011

Methods

We use four in-depth case studies of fire-prone national forests and surrounding communities to examine the use of stewardship contracting for hazardous fuels reduction. This study was part of a larger research project aimed at understanding agency and community dynamics in restoring fire-adapted ecosystems in Oregon and Washington (Forest Service Region 6) and northern California (part of Region 5). One study objective was to examine how different mechanisms for accomplishing hazardous fuels reduction on national forests (stewardship contracts, service contracts, timber sales, in-house staff, and agreements with nonprofit or other government organizations) create different types and degrees of local community social and economic benefit. Stewardship contracting emerged as the tool for fuels reduction that interviewees believed had the greatest benefits from both a community and environmental standpoint; however, it was also the least used tool. This finding led us to question why it is not used more, especially given policy direction from above to try it.

For the larger study, we selected a random sample of four fire-prone national forests from those located in Oregon, Washington, and northern California. We chose the Okanogan-Wenatchee and Fremont-Winema National Forests in Forest Service Region 6, and the Eldorado and Modoc National Forests in Region 5. The Fremont and Winema National Forests administratively merged in 2002, but we found that these two forests were quite different, especially with respect to stewardship contracting. Consequently, for the purposes of this paper, we analyze them separately (Fig. 3). We do not include findings from the Okanogan-Wenatchee National Forest because our data on stewardship contracting there are incomplete.

Although randomly selected, the case-study forests proved useful for examining what caused forests in our study area to adopt stewardship contracting, or why they did not. At the time we undertook fieldwork, the Fremont and Eldorado saw stewardship contracting

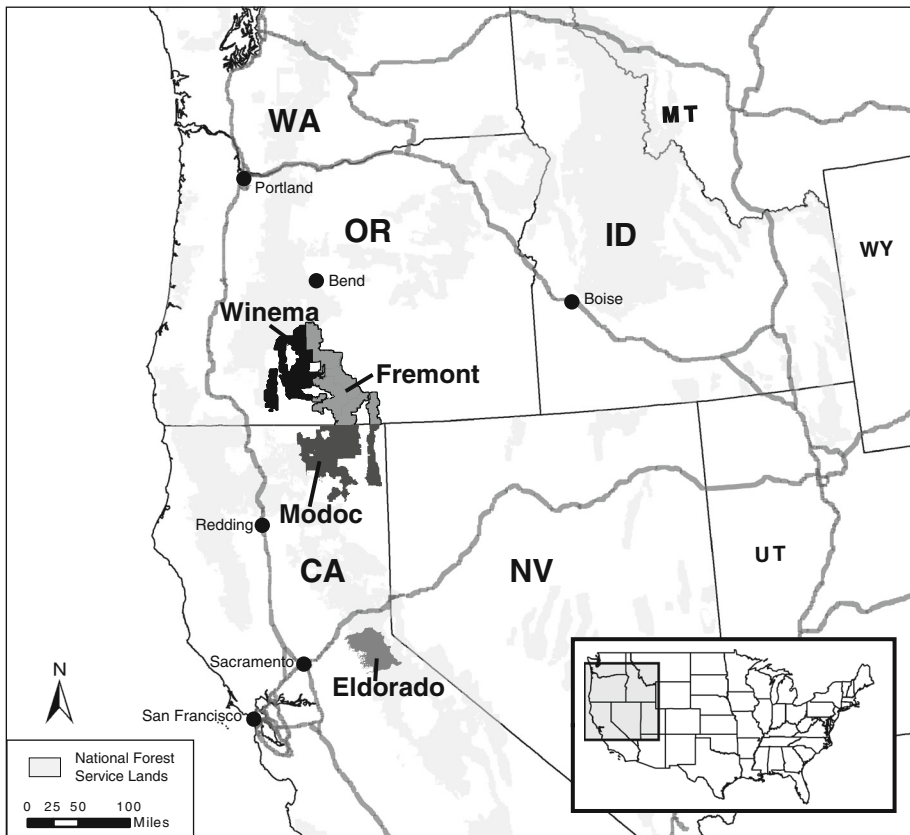


Fig. 3 Case-study forests

as a critical tool for management (and still do). In contrast, the Winema and Modoc had not yet incorporated stewardship contracting into their management strategies, though this has since changed on the Modoc.

We conducted in-depth, semi-structured interviews with a purposive sample of Forest Service personnel and community members in each location between spring 2007 and winter 2008 (Bernard 2006). Forest Service personnel included district rangers, fire and fuels staff, silviculture staff, natural resource specialists, and community outreach staff. Community members included contractors, wood products manufacturers, government representatives, and agency partners. Interviews were carried out face-to-face using an interview guide. Among other things, we asked interviewees to describe hazardous fuels reduction treatments, how they were implementing them, and why they chose to use stewardship contracting (or not). We interviewed to the point of near saturation, when the amount of new information obtained from interviewees was minor, and the majority of the information was repetitive of prior interviews. In total, 76 interviews were conducted across the four cases. Fifty-one of these were with Forest Service employees and 25 with community members (Table 1).

We recorded the interviews and transcribed them verbatim. The analysis began with thematic coding using Atlas.ti to identify the instances where interviewees described how and

Table 1 Number of interviewees

	National Forest	USFS employees	Community members	Total
Eldorado	16	10	26	
Modoc	12	7	19	
Fremont	11	5	16	
Winema	12	3	15	
Total	51	25	76	

why they chose particular mechanisms to implement hazardous fuels reduction projects, particularly stewardship contracting. The research team reviewed the initial codes inductively to develop a more detailed narrative analysis and to identify reasons and processes for deciding whether to make use of stewardship contracting. Using the conceptual model described here, we sorted the factors into pressures from above, local external conditions, and local internal conditions on the national forest. After synthesizing the results from each forest, we conducted a cross-case comparison (Miles and Huberman 1994).

Results

Case-study analysis found that pressures from above, especially those associated with budgets and targets, were major drivers of local agency staff decision-making. Both agency and nonagency interviewees constantly brought up the need to meet targets with limited budgets. Whether local staff considered stewardship contracting to be a solution to their larger budget-target challenges had a lot to do with local context, and with their understanding of how stewardship contracting worked. Those local staff members who believed that stewardship contracting helped them achieve their timber and hazardous fuels reduction targets in a cost-effective way used stewardship contracting if the local social and ecological context was conducive to doing so. Those who did not only tried it when pressed by their superiors. Thus, forest personnel are not simply independent agents who evaluate and weigh the set of external circumstances in which they operate when making decisions, as many implementation theorists argue. Nor are their actions only a response to institutional pressure and direction from above, as many historical institutionalists believe. Institutions structure their decision-making framework and condition their range of choices; but frontline staff still make choices.

We demonstrate this finding in our presentation of case studies below, using the analytical framework depicted in Fig. 1. First we discuss the two national forests that were early adopters of stewardship contracting: the Eldorado and the Fremont. Then, we discuss the two that were not: the Modoc and the Winema (Table 2).

Early adopter: The Eldorado National Forest

The Eldorado National Forest is located east of Sacramento in the Sierra Nevada mountain range of California. At the time we conducted our interviews in summer and fall 2007, the Eldorado was using stewardship contracts to do nearly all of its timber removal and much of its fire hazard reduction work. The Eldorado began using stewardship contracts in 2004 and has used them consistently since that time, awarding between two and seven annually. It led the nation in stewardship contracting at the time we did fieldwork.

Table 2 Number of stewardship contracts awarded and acres treated on case-study forests, fiscal years 1999–2011

Year	Eldorado		Fremont		Modoc		Winema	
	Number	Acres	Number	Acres	Number	Acres	Number	Acres
1999							1	1,644
2000								
2001								
2002								
2003								
2004	4	2,757						
2005	3	2,109						
2006	7	4,708	1	2,020				
2007	5	6,406	2	3,601				
2008	3	1,298	2	2,964	1	1,045	1	95
2009	3	5,104	2	2,164	2	1,584		
2010	3	4,399	3	4,313	5	9,168		
2011	2	1,964	2	3,498				
Total	30	28,745	12	18,560	8	11,797	2	1,739

Pressure from above

A dominant pressure from above that caused the Eldorado to be an early adopter of stewardship contracting was the need to meet annual fuels reduction and timber sale targets with limited funding. According to forest staff interviewed, almost all of the appropriated dollars received by the Eldorado were used to cover fixed costs (e.g., staff salaries); there was little money left over to put into service contracts to remove hazardous fuels. Moreover, there was no local market for biomass (small logs and brush) to make it economical to remove this material. Thus, the Eldorado had to find another way to pay for hazardous fuels reduction. As one Forest Service interviewee explained (ELD_SC11),

Funding drives it all... that's why we've relied so much on the stewardship contracting. That's the most economically efficient for us, because we're using the receipts from our timber to fund other treatments, and more acres.

Forest staff saw stewardship contracting as a way to respond to the funding and target pressures they faced.

External conditions

The Eldorado relied on mechanical treatments to reduce fire hazard on the forest because air quality and climate conditions severely constrained the Eldorado's ability to use prescribed fire. Because of good growing conditions, the forest has valuable timber to sell. For stewardship contracts to be economically viable on the Eldorado, it was necessary to harvest one or two merchantable trees per acre above 20" in diameter, enough to pay for the service component of the contract. There is a ready supply of such trees. As one employee stated (ELD_SC16),

...stewardship contracts worked out really well for us because we do have timber value, and we do generate a lot of money to put right back into the ground to the fuels treatments.

From an economic standpoint, there is both a local market for timber from the Eldorado and sufficient local business capacity to engage in service work for fuels reduction. The 19 stewardship contracts that were awarded between 2004 and 2007 went to five different bidders. One local contractor had even diversified his business just to accommodate stewardship contracts. These purchasers all sold their logs to the nearby Sierra Pacific Industries Camino mill. Initially, the mill was not enthusiastic about stewardship contracts; their interest was in purchasing timber, not in performing restoration work. However, the mill depended on federal timber, and mill managers realized that the Eldorado had to meet multiple objectives—not just timber production. They worked with the Eldorado's timber sale administrator to learn how to do stewardship contracts and became one of the main bidders, subcontracting out the logging and service work to local contractors.

Similarly, the Eldorado had a strong interest in supporting the Camino mill because it provided the only nearby market for its logs. Without this local market, the Eldorado would have had difficulty earning enough money from timber sales to pay for fuels reduction work, and meeting its fuels reduction and timber targets. As one staff member said (ELD_SC02),

...the Camino sawmill is integral because it provides the source of revenue to do these projects – it's the market.

This interdependence between the national forest and the mill provided incentive for both parties to collaborate in making stewardship contracting work.

The political climate around the Eldorado was also conducive to stewardship contracting. Some environmental groups opposed cutting commercially valuable trees on Sierra Nevada national forests and appealed timber sales there. However, when packaged in a stewardship contract having the goal of hazardous fuels reduction, timber harvesting was less controversial. The Eldorado also had the support of local fire-safe councils, community groups that were mobilized to protect their communities from wildfire.

Finally, the Eldorado faced no opposition from county supervisors. Unlike other counties in northern California that were traditionally highly timber dependent, the counties in which the Eldorado is located now have relatively diversified economies. Consequently, concern over the lack of 25 % payments to counties from stewardship contracts was not a barrier.

Internal dynamics

Another key in the Eldorado case was the presence of two internal champions who proactively worked with internal and external stakeholders to promote stewardship contracting. Prior to 2003, the Eldorado typically accomplished hazardous fuels reduction by using Knutson–Vandenberg (K–V) funds and other trust fund deposits from traditional timber sales to fund service contracts to complete cleanup work directly associated with the sales.⁴ Interviewees explained the drawbacks of this strategy: (1) A percentage of K–V funds is

⁴ Knutson–Vandenberg (K–V) funds are obtained from timber sale receipts and can be used to pay for a variety of forest protection, improvement, and restoration activities in the timber sale area; to maintain biological diversity there; and to protect and improve other resource values on timber sale areas, including wildlife, soil, watershed, range and recreation values (Forest Service Handbook 6509.11 g, Chapter 70).

lost in Forest Service overhead charges, reducing the amount available to fund project work; (2) it can take several years to get a service contract administered after a timber sale is complete; and (3) the administrative burden is higher. In contrast, stewardship contracts allow a national forest to retain all timber receipts to pay for work on the ground, and the timber and service components of a project can be included in one contract, reducing the administrative burden and enabling work to be accomplished in a more timely and cost-effective manner.

Another key to the forest's success has been cooperation between the timber and hazardous fuels staffs, who became administratively integrated and combined budgets to accomplish timber and fuels targets together using stewardship contracts. As one Forest Service staff member described (ELD_SC02),

We have two different targets, and we get money to meet each target, but probably not enough money to meet each target if we looked at them as two separate programs.... We found it more efficient to combine our money...in [sort of] one big pot and accomplish our timber targets and our fuels acres in the same projects.... through the use of these contracts, we can get a lot of acres done.

In sum

In sum, the Eldorado faced pressures from above to accomplish fuels reduction and timber sales with limited funding to do so, and staff saw stewardship contracting as a way to solve this problem. External conditions favored stewardship contracting: constraints on prescribed fire treatments making mechanical treatments necessary, timber value, a local market for sawlogs, local businesses willing to bid on stewardship contracts, local contractor capacity to undertake the work, and lack of political opposition. Internally, two champions who saw stewardship contracting as a way to treat more acres with less money taught themselves about stewardship contracting and developed both internal and external support for it. As one interviewee noted (ELD_SC11),

So we're tied at the hip with these stewardship contracts, and if that legislation, or that tool, ever went away, the region would have to rethink... their [budget] allocation to our forest.

Early adopter: The Fremont National Forest

The Fremont National Forest lies primarily in rural Lake County, Oregon, near the Oregon-California-Nevada border. By the time we conducted our interviews in 2007 and 2008, stewardship contracting had become an important tool for implementing comprehensive restoration work on the Fremont. Five stewardship contracts had been awarded by 2008, and more were in the works. In addition, the Fremont and a local collaborative group had spent several years developing a 10-year stewardship contract that was awarded in July 2008, the second 10-year stewardship contract awarded nationwide (Government Accountability Office 2008).

Pressure from above

Throughout our interviews, Fremont personnel made clear that they were under significant pressure from above to treat many acres to reduce hazardous fuels at the lowest possible

cost. In contrast to the Eldorado, the Fremont often used prescribed fire to meet their fuels targets because it was easier and cheaper than mechanical treatments, and there were few social barriers to burning. But over time, stewardship contracting came to be seen both inside and outside the Fremont as a tool that would allow the forest to treat high-priority areas mechanically at a reasonable cost, while still meeting targets and producing wood products to support the local economy. As one Fremont employee said (FW_CM02),

[W]e have heavily moved into stewardship contracting because it will definitely be a way of comprehensively treating a particular landscape, generating revenue, and using the revenue for some of the service type work we used to pay for, but really don't have money to pay for.

Direction from above to do stewardship contracting did not seem to have much effect on this national forest, as staff had already come to see it as a tool for responding to pressure from above to achieve fuels reduction targets with limited budgets, and accomplishing the broader management goals of their unit.

External conditions

External conditions were key in leading to the adoption of stewardship contracting on the Fremont. To understand why, it is necessary to briefly examine the forest's history. In 1950, the 492,642-acre Lakeview Federal Sustained Yield Unit was created within the Fremont National Forest (representing about 40 % of its total acreage), with the goal of producing sustainable timber harvests to benefit local communities (Cheek 1996). With the decline in federal timber harvesting during the 1990s came the closure of all but one local mill (Moseley and Kauffman 2000). These closures prompted a review of the unit to determine whether it should be dissolved. The review was undertaken through a collaborative process that included local residents, managers from the remaining sawmill, county commissioners, and regional environmental organizations. In 2001, the Secretary of Agriculture reauthorized the unit as the Lakeview Stewardship Unit with a new purpose—to integrate ecological, social, and economic sustainability. Another outcome was the formation of a strong local collaborative group and associated nonprofit organization that have been actively engaged in forest management within the unit.

This history meant that the community and the national forest had a long-standing relationship and social commitment to supply timber to local mills. Thus, a critical factor that fostered the use of stewardship contracting was the collaborative process that built broad agreement among agency and nonagency participants to pursue comprehensive ecological restoration while maintaining the remaining local sawmill. The collaborative group and the national forest came to believe that, although prescribed fire was important, used in isolation it was not accomplishing their ecological restoration goals.

The collaborative group viewed stewardship contracting as a way to treat more acres holistically using mechanical treatments, and increasing the volume and stability of logs supplied to the sawmill. Stewardship contracting also offered the potential to create a supply of biomass that could support a local biomass electric facility at the mill. County commissioners were willing to forego the 25 % payments to counties from timber sales in order to stimulate job creation and a local restoration economy. These considerations led to the development of the ten-year stewardship contract, and smaller stewardship contracts along the way. As one Fremont employee observed (FW_MP04),

... if you're going to try to maintain an infrastructure that allows you to continue restoration work, or if you're trying to attract new investment to a region that has divested its wood processing industry for the most part, you know a lot of people aren't going to put multi-million dollars of their own money down, or their investors' money down, if there isn't some kind of confidence that the supply's gonna be sustainable over time.... A ten-year contract helps.

Internal dynamics

The Fremont National Forest supervisor and the district ranger overseeing the Lakeview Stewardship Unit were committed to the collaborative process that had developed around management of the unit, and to undertaking land management activities that met the local collaborative group's goals. Forest leadership believed that stewardship contracting would help do this, and organized their staff to ensure that it would happen. For example, the Fremont deliberately hired a timber sale contracting officer who had significant experience developing stewardship contracts. Our interviews suggest that many Fremont personnel had a sophisticated understanding of how stewardship contracting worked and what it could accomplish, and used it creatively to increase the quality of the work on the ground while helping them accomplish their targets.

In sum

Fremont National Forest staff felt strong pressure from above to achieve fuels targets with limited budgets and believed that stewardship contracting would help them do so in the medium term. Their ability to use prescribed fire to treat numerous acres at low cost allowed staff to worry less about meeting short-term targets. Instead, they could spend time developing a relatively complex stewardship contracting program that would generate revenue, allow for more holistic restoration treatments than were possible either with timber sales and K–V funds, or with prescribed fire alone, and address the sustainability concerns of the community. Externally, the long-standing, sophisticated collaborative group built broad support for stewardship contracting both within the community and among national forest staff; this group was the key external factor motivating its use. As members of the collaborative, the local mill saw stewardship contracting as a way to sustain and expand its sawmilling and biomass utilization capacity; environmental organizations believed that restoration could not be done without the sawmill; and local county leaders were supportive. Internal staff came to believe that stewardship contracting was the way to achieve broader, integrated restoration goals that responded to the social and economic sustainability concerns of the community.

Slow adopter: Modoc National Forest

The Modoc National Forest is located in northern California, just south of the Fremont National Forest. Like the Fremont, the Modoc has a sustained yield unit on its Big Valley Ranger District, created in 1950 to ensure a sustained timber supply to local sawmills (Cheek 1996). The Modoc's first stewardship contract, located in the sustained yield unit, was not awarded until 2008, after nearly 5 years in development. After getting off to a slow start, and subsequent to our fieldwork, the Modoc undertook several more stewardship

contracts (Table 2). Staff on the Modoc had mixed feelings about stewardship contracting; some opposed it, while others felt it had potential.

Pressure from above

As with other national forests in this study, Modoc staff felt pressure to achieve fuels reduction targets but did not have sufficient funding to pay for service contracts. Interviewees reported that the Region 5 office had required each national forest in the region to try at least one stewardship contract, and several employees had been to talks or taken training on how to use them. However, most forest staff did not see a need for stewardship contracts. Instead, they solved their budget-target pressure problem using timber sales for biomass removal. As one interviewee said (MOD_SC05): "... the tool is really almost irrelevant other than politically...." However, pressure from above to try a stewardship contract did influence the Big Valley district ranger to try it, leading to its adoption there.

External conditions

Ecological conditions on the Modoc National Forest are similar to those on the Fremont, with pine forests on north-facing slopes at higher elevations, and juniper woodlands and sagebrush steppe at lower elevations. What gave the biomass from this national forest higher commercial value than on the Fremont was the presence of five biomass electric facilities within an economic haul distance. The presence of a local market for small logs and chips made it possible for the Modoc to accomplish hazardous fuels reduction in a manner that paid for itself, using timber sale contracts. Modoc staff recognized that stewardship contracting was a valuable tool in places lacking local markets for biomass utilization, but this was not the situation there.

Moreover, the public expressed little interest in stewardship contracting, and several interviewees stated that county supervisors did not support it because they needed timber revenue if the Secure Rural Schools Act were allowed to expire. As one remarked (MOD_SC13):

...if we don't get Secure Rural Schools reauthorized, the county is not gonna be supportive of any stewardship contracts that would produce timber receipts. They can't afford to be.

The only place on the Modoc where external conditions were somewhat different was on the sustained yield unit. There were four mills operating in Big Valley when the unit was created in 1950; by 1996, only one was left (the Big Valley Lumber Company) (Cheek 1996), and it shut down in 2001. A dwindling supply of federal timber and other economic pressures caused these mills to close. In 2004, the Big Valley Lumber Company plant reopened as the Big Valley Power Company, with a sawmill that had been retooled for smaller diameter wood, and a biomass cogeneration plant for electricity. Unlike the Fremont, collaboration around the sustained yield unit was nascent at the time of our interviews.

However, the Big Valley Power Company believed a stewardship contract was advantageous because (1) they were the only competitor in the unit and could likely get it for a reasonable price; (2) it would ensure a longer-term supply of wood than a typical timber sale, helping them get their facility on-line; and (3) it could lower their costs by trading service work for sawlogs and biomass, and through the coordinated extraction of both from the same location. Once the Big Valley district ranger decided to develop the Modoc's first stewardship project, a formal stewardship committee was established to

participate in its development, comprised of local stakeholders. The committee and local communities in the sustained yield unit were enthusiastic about stewardship contracting, though their engagement dwindled as the time it took to finalize the contract dragged out.

Internal dynamics

Internally, Modoc employees had mixed feelings about stewardship contracting. Most staff we interviewed were not motivated to use it. When the Modoc began treating fuels in earnest in the early 2000s, it relied on prescribed fire treatments, which were cheaper than mechanical treatments. Forest staff eventually found this problematic because the trees they were burning were a product that could benefit local communities, and because mechanical tree removal makes subsequent burns easier and cheaper. Frustrated that they lacked funding to accomplish fire hazard reduction at a meaningful scale and in the most effective manner, staff experimented with using timber sale contracts for biomass removal, and were successful.

By the time we conducted fieldwork, the main approach to accomplishing fuels targets on the Modoc was through timber sales for biomass removal. Although these sales only received about 10 cents per ton of biomass removed, this was preferable to paying several hundred dollars per acre to accomplish the same work using service contracts. Another advantage was that the forest could use K–V funds generated through the sales to pay for staff time to plan and administer sales, which is not possible with stewardship contracts. Important to the Modoc’s success was the willingness of fuels and timber program staff to integrate and combine their budgets to meet their targets in the same projects.

Despite opposition to stewardship contracting on the Modoc, the Big Valley district ranger—responsible for projects within the sustained yield unit—supported it. He was inspired by Forest Service leadership; interested in retaining receipts from timber sales to fund fuels reduction; and liked the collaborative aspect of developing stewardship contracts. He also believed that stewardship contracting would help create jobs in local communities, consistent with the mission of the unit.

The district ranger was also concerned that undertaking biomass removal through timber sales meant that fuels reduction projects would only take place in stands that could pay for themselves to be treated. Restoration treatments were also needed in stands where it was uneconomical to remove biomass. As one district employee observed (MOD_SC23b),

...it directly influences where those projects are performed at. It’s all, it’s economics, you know.

With a stewardship contract, the district ranger believed it was possible to combine stands that would not pay for their own treatments with stands having timber value in one project, increasing treatment efficiency and the likelihood of accomplishing landscape-scale restoration goals. As another employee noted (MOD_SC23a),

We want to have quality projects that nobody will come back and question...we want to be able to say when they do question, “what were you doin’ out here?” ...we don’t have to tell ‘em four years down the road... “Uh well, low budget easy acres.” We don’t want to be doin’ that.

Thus, stewardship contracting was initially adopted on the Modoc because one local leader was willing to pursue it. It was not easy, however. There was a steep learning curve and a number of problems along the way. Things moved slowly.

In sum

Modoc National Forest staff had different approaches to, and attitudes toward, stewardship contracting on different parts of the forest. As with the other national forests, they faced significant pressure to accomplish timber and hazardous fuels reduction targets with limited budgets, but had different ideas for how best to accomplish this task. For the most part, Modoc staff had figured out how to meet their fuels targets without relying on stewardship contracting. The presence of a local market for biomass, willing bidders, and staff who integrated their programs made doing so economical using a traditional tool—timber sales—that both forest staff and purchasers were long familiar with. Timber sales also had more local political support than stewardship contracts. And, they had the advantage of generating K–V funds that could be used to pay some staff salaries. Though there was pressure from above to try stewardship contracts, there was little local incentive to do so because staff had developed a system that worked that was economically feasible, socially acceptable, and met management objectives on the ground. In contrast, the Big Valley Sustained Yield Unit had a local manager who wanted to try stewardship contracting. He was, in part, influenced by pressures from above, but he also faced somewhat different external circumstances. The forest's recent upswing in stewardship contracting indicates that this first step has since led to increased adoption.

Slow adopter: Winema National Forest

The Winema National Forest is mostly located on the east side of the Cascade Mountain crest in Klamath County, southern Oregon. Though adjacent to the Fremont National Forest, it is less rural and much wetter, with more productive forests. Over half of the Winema was once part of the Klamath Indian Reservation. The Klamath tribes retain rights to resources on the forest, and must be consulted by Winema staff when their decisions may affect those rights (Klamath Tribes 2013).

Despite significant support for and excitement about stewardship contracting on the Fremont National Forest, staff on the Winema were largely ambivalent about it. Ironically, one of the stewardship pilot projects—the Antelope Pilot Stewardship Project—was developed on the Winema National Forest, beginning in 1998. However, the Winema did not follow it up with additional stewardship contracts and returned to using timber sales and service contracts to accomplish most of its fuels reduction. It was not until the fall of 2008, after our fieldwork was complete, that the Winema awarded another stewardship contract. The Winema did not do any more stewardship contracts in FY 2009, 2010, or 2011; it did one in FY 2012.

Pressure from above

Like other national forests, the Winema experienced strong pressure from above to accomplish timber and hazardous fuels targets, but felt it had insufficient funding to do so. Meeting timber targets was particularly important because much of the forest has valuable timber, and the Winema side of the combined Fremont–Winema National Forest is expected to meet over half of the total forest target for timber. Although the Region 6 Regional Office encouraged stewardship contracting and had issued a lengthy and detailed stewardship contracting user guide to help field units use the authorities, Winema

employees we interviewed did not feel compelled to respond to regional direction to use stewardship contracts. Because the Winema was administratively combined with the Fremont, stewardship contracting on the Fremont side may have eased this pressure from above.

External conditions

Neither ecological nor economic conditions imposed barriers to stewardship contracting on the Winema. Like the Eldorado, the Winema has valuable timber that can be sold to produce retained receipts and fund restoration work using a stewardship contract. The local area also had sufficient business capacity for undertaking stewardship contracts, and local markets for sawlogs and biomass. Staff also believed that there were companies willing to bid on stewardship contracts.

Local politics proved to be the main external constraint to stewardship contracting on the Winema. At the time of our study, there was significant conflict over water rights, hydroelectric dam removal, and forestland ownership in Klamath County. This conflict overshadowed any collaborative efforts focused on national forest management. The Klamath Tribes expressed interest in stewardship contracts, but had not developed the capacity to bid on them, and no local collaborative groups were advocating for their use.

To the contrary, there was active opposition to stewardship contracting on the part of Klamath County commissioners. They were concerned that stewardship contracting would reduce timber payments to counties if Congress did not reauthorize the Secure Rural Schools Act. As one employee explained with respect to a fuels project that was ready to go to bid (FW_CM02),

...we're watching the politics around Secure Rural Schools, and the 25 percent receipts. Stewardship contracting does not offer any 25 percent receipts. And so then it becomes this choice, of do you go stewardship contracting, and will the community support new infrastructure, new jobs, or do they want the cash for 25 percent? ...in Klamath County ... they get huge Title I Secure Rural Schools funds [payments to counties for roads and schools]. And we were just on the very day of making a decision to package it up as a stewardship contract, or a traditional timber sale, and the headlines are going "Twenty five people to be laid off because of Title I reductions." And we're saying, you know ... "I think we'll defer a stewardship contract right now, and go with the traditional timber sale contract ..." So the politics of the minute are even driving sometimes our choice of the tools.

In addition, the Winema received significant funds from Title II of the Secure Rural Schools Act to pay for on-the-ground restoration work. Title II of the Act provided money that counties could use for restoration projects on national forests. Klamath County received a high level of Secure Rural Schools Act funding because of its history as a timber-producing area. County resource advisory committees (RACs) select the projects, and a top priority on the Winema was hazardous fuels reduction treatments. These projects were carried out using service contracts. As one interviewee commented (FW_SC06),

... [the] RAC has paid for better than 50 % of anything we've done on the forest over the past five, six years...if we had to depend on money from Region 6 we would not be anywhere as near where we're at today.

Internal dynamics

Several Winema employees interviewed saw advantages in stewardship contracts and predicted more future use; others expressed no interest in them; and others simply thought they were impractical, given opposition by county commissioners. The Winema National Forest typically conducted mechanical fuels reduction using timber sales and service contracts. Prescribed fire treatments were limited by air quality restrictions, concerns about using fire in wildland-urban interface areas, and concerns about smoke. The forest considered timber removal an important component of their fuels reduction treatments and used timber harvests to meet both timber and fuels targets simultaneously.

The Winema had used timber sales for years; it was a familiar tool. The Winema stipulated that timber sale purchasers remove trees down to four inches in diameter. As in the Modoc case, favorable biomass markets had begun to make it economical to undertake biomass removal using timber sales. For the most part, staff felt that timber sales went a long way in meeting their fuels management objectives on the forest. Additional fire hazard reduction work was carried out with RAC funding using service contracts.

Timber sales had the added advantage of producing K–V funds to pay staff salaries to plan and administer them. Maintaining staff was a key worry for the forest. The Winema had experienced significant downsizing of staff since the early 1990s due to declines in budgets linked to diminishing timber production. Maintaining enough staff to keep up with planning and environmental analysis associated with timber and fuels projects was necessary to meet targets. Staff was well aware of the drawbacks associated with losing part of their K–V revenues to regional and national overhead, leaving them less money to work with on the ground. Nevertheless, they felt dependent on this money to fund staff. As one forest employee explained regarding K–V funds (FW_CM05):

... it maintains the silviculture department, maintains the timber department, allows us to do salvage work. So if you go to stewardship, you know... you have a problem with that up front salary piece.

Another barrier was a lack of experience and knowledge about stewardship contracting, together with lack of staff time to learn how to use them, and to engage in the collaborative processes associated with them. One interviewee stated (FW_CM06),

It takes quite a long time to lay the foundation for that, to build relationships with your collaborators. And often times we don't, quite frankly, have the staffing or the funding to stretch that process out far enough to really build that, because lots of times it's, boy, we have a volume target [to meet]....

In sum

Despite the fact that the Winema relied on mechanical treatments for most of its fire hazard reduction, had favorable external ecological and economic conditions, and interested partners and purchasers, staff did not find stewardship contracts appealing. The Winema had two traditional tools that worked well for them in accomplishing timber and fuels program goals: timber sales and service contracts, and an external funding source (RAC money) to pay for the service contracts. Moreover, stewardship contracting was unpopular among county commissioners. Using them required time to learn how, and to invest in collaborative processes in the course of developing and implementing them. Staff felt spread too thin to make these time investments and were dependent on funding associated with timber sales to pay their

workforce. Thus, staff was ambivalent about integrating stewardship contracting into their way of doing business. One employee summed it up nicely (FW_CM06):

...the thing with stewardship is, I think it's a wonderful concept, but it's difficult for us few remaining survivors here to have the resources and the time to lay that out...we do great with our basic old commercial timber sales. We've been very successful in getting a lot of fuels reduction done and, and stand improvement, wildlife improvement.

Discussion and conclusions

This paper uses the example of stewardship contracting and national forest management to understand the micro-processes through which new policies become integrated into the everyday practice of government agencies. The conceptual model and case studies presented in this paper offer some guideposts for understanding how and whether micro-level policy change will occur. We use them to suggest a way to begin articulating a middle ground between the structuralism of historical intuitionists, and the behaviorism of implementation theorists.

Our case studies make clear that institutionalization of a new policy is not simply a matter of providing direction to the field to use a policy tool. Rather, our cases indicate that the complex environment in which frontline management units operate influences decision-making and policy adoption in multiple and interconnected ways. They also indicate that frontline actors matter. These actors simultaneously take into consideration pressures from above, local external social and environmental context, and local internal unit dynamics when deciding whether to use a new policy. Although one of these three dimensions may hold more sway than others in a particular moment, they operate together in shaping the outcomes of policy adoption. Their relative importance can also shift over time, as can the nature of the influences from above, without, and within, leading to increased (or decreased) policy adoption, as the Modoc case suggests.

Our four case studies—two national forests that integrated stewardship contracting into their operations early on, and two that did not—reflect this variation. Pressures from above were similar across the cases: direction to try stewardship contracts, guidance and training opportunities, and budget and target pressures. Budgets and targets were far more powerful than direction to use stewardship contracting in promoting its adoption. Each forest had a different strategy for responding to these pressures. National forest staff who saw stewardship contracting as a useful tool for accomplishing forest restoration and achieving targets with declining budgets used it if local circumstances were conducive to doing so. If stewardship contracting was not viewed as a useful tool, policy direction was disregarded or complied with to the minimum required. In the latter case, old institutions held more sway than the new policy, and system dynamics resisted the new policy. Indeed, as the historical institutionalists have observed, political institutions are sticky and hard to change. However, this paper suggests that a new policy may well become institutionalized when it is understood to solve problems that old institutions at once create and demand to be solved. This was most obvious on the Eldorado National Forest where staff saw stewardship contracting as a solution to their budget and target problems. By contrast, when current practices are believed to be working well enough, a new policy threatens the local management unit, or there is external opposition to change, investing time and energy in trying a new policy may not seem worthwhile, and inertia can carry the day.

Whether stewardship contracting was seen as a useful tool also had to do, in part, with how local Forest Service personnel understood and responded to external environmental, economic, social, and political conditions. Forests having high timber value, a local market for that timber, local contractors and timber purchasers willing to try stewardship contracts, a supportive political environment, or local partners promoting its use were better positioned to make it work than those that did not. Nevertheless, not all forests having one or more of these external conditions used stewardship contracting, and not all forests using it had these traits. Internal conditions were also important. These conditions included the internal culture of the unit, existing practices, staffing, local priorities, and leadership. External and internal pressures can be reinforcing or contradictory. For example, in the Winema case, the county commissioner's opposition to stewardship contracting and the Forest Service staff's desire to use K–V funds to pay for personnel reinforced each other, especially in the absence of external or internal actors pushing for stewardship contracting. In contrast, variable influences in the Modoc case led to differential views and use of stewardship contracting on different ranger districts.

Taken together, this analysis suggests that there is no single dimension that is definitive. Local staff responds to pressures and dynamics from above, without, and within, seeing some as barriers and others as opportunities. Certainly, some dynamics put more pressure on staff than others; some dynamics were easily ignored or minimized. Despite the complexity our multi-dimensional conceptual model represents, we believe that it can be applied to other contexts (outside of federal land management agencies) because it begins to describe the kind of system that frontline actors operate in and interact with more generally.

Returning to the debate addressed at the outset of this article, this model represents a move away from the implementation theorists who see frontline action as primarily a reflection of values and beliefs by placing them in a structure that creates opportunities and constraints in which local actors choose whether to practice political creativity. This draws attention to frontline actors as key players in political change.

Like the historical institutionalists, we find that long-standing, powerful institutional dynamics influence the decisions that frontline agency staff make, and can act as significant barriers to change. These older, more powerful institutions sometimes overwhelm newer policy opportunities. Given this, we cannot conceptualize agency actors as untethered from the institutions in which they operate (Sheingate 2010), as the implementation theorists might. Our study re-affirms the importance of preexisting institutions—such as budgets and targets, agency culture, routinized practices, and inter-governmental relationships—that structure the range of problems and solutions facing frontline bureaucrats.

Yet, within these larger institutional dynamics, there is room for field staff to make choices about whether to adopt a new policy. We call attention to the important role of frontline staff in micro-processes of policy institutionalization, not simply implementation. Their choices influence whether a new policy becomes a habit, or everyday practice, in any given place by opening a pathway to slow incremental change, albeit a messy and highly variable one. When this happens, the new policies can foster small, but important changes to existing institutional arrangements.

This study also suggests that the ways in which actors make choices about whether to adopt a new policy is not as straightforward as it might seem. We do not agree with the argument that everything rides on the values of local bureaucrats. Local external dynamics also play an important role. Consider the Fremont case. There, policy entrepreneurs inside and outside the agency saw stewardship contracting as a key tool to provide logs to mills—

a long-standing social compact between the Fremont National Forest and Lake County residents—and to address the (relatively) new-found focus of the Forest Service and many stakeholders on forest restoration. While local agency actors played a key role in policy adoption, “choosing” their particular brand of stewardship contracting required significant mobilization of political will, not only locally but regionally and nationally over a half decade, in order to overcome the inertia of existing institutions. This again points to the importance of the interplay between external conditions, internal actors, and institutions. Frontline staff could have chosen stasis fairly easily. Choosing the new policy was not only a matter of selecting an option, but also required mobilization, organizing, learning, and authority building (Abers and Keck 2013). This is not process where actors simply arrange policies and tools to suit their needs. Rather, some arrangements are easier than others, and any given outcome may be as much a matter of how actors organize, mobilize, shift dynamics to create space among existing practices to implement their choice as it is the choice self.

Regarding Berk and Galvan’s (2009) notion of creative syncretism, we found evidence of this sort of creativity among those who did take on stewardship contracting. Among those national forests that used stewardship contracting, the approaches were quite different. For the Fremont, stewardship contracting was one integral component of a larger collaborative approach to integrated forest restoration and forest-based economic development. For the Eldorado, stewardship contracting was not part of a grand innovative plan, but rather allowed staff to solve the immediate problem of how to pay for forest restoration activities and meet their targets. These differences in conceptualization and purpose were reflected in the ways that the two national forests created stewardship contracting programs, and even in the contracts themselves. Moseley and Davis (2010) found that the Eldorado’s stewardship contracts largely mirrored their older timber sale contracts in structure, content, and methods of offering, while the Fremont’s stewardship contracts made a greater break from older models of contracting, mirroring the larger vision of the staff and their partners to build a restoration economy. As Berk and Galvan (2009) suggest, local actors can shuffle the deck quite differently, practicing creative syncretism to meet their local circumstances and needs.

Finally, this study suggests that macro- and micro-processes of institutional change are connected. They are not connected mechanistically or deterministically; changing a policy at the top of the political system may not lead directly to change on the ground. Rather, they are connected in incomplete and contingent ways, because policies handed down from above are translated differently and incompletely on the ground. Similarly, innovation at the ground level may occur, but may or may not move upward or diffuse to adjacent units. Recall, for example, that the Fremont National Forest, which embraced the stewardship contracting authorities, has as its closest neighbors the Winema National Forest to the west and the Modoc National Forest to the south—both slow adopters of stewardship contracting. Thus, passage of a law cannot always be assumed to create change in meaningful ways. It may structure new opportunities for policy entrepreneurs, but it does not guarantee change. Policy implementation is critical to policy institutionalization. Scholars cannot simply look at national policy dynamics to understand all that is important about political development (Carpenter 2001). And the tasks of political actors who want to foster political change are not done when Congress passes a law, or even when the Executive Branch issues direction and guidance.

If the downward flow of new policy institutionalization is an inexact and contingent process, how can we understand and bridge back upward from the micro- to the macro-

processes of institutional change? Our study does not address this question, although it is an important one for future research. The implications of our findings are that, in agencies like the US Forest Service, macro-level institutional change will also be uneven, incomplete, and gradual, mirroring uneven, contingent micro-level processes.

Currently, there are no large windows of opportunity to make major changes to the legal framework governing the Forest Service. These political moments have come only a few times in the agency's history. In addition, the stalemate in the larger American polity is reflected in natural resource politics, despite growing frustration from many quarters that the agency is not functioning as it should be, and that significant change is needed (e.g., Thomas 2009). The micro-processes of institutionalization described here are a far cry from the rationalist planning model that some policy scholars envision. Rather, we find an accumulation of small-scale, contingent adaptations that occur unevenly across time and space. If the micro-processes of institutionalizing stewardship contracting within the US Forest Service are representative of the way that implementation occurs across multiple policies, and within other federal agencies, it quickly becomes apparent why federal agencies are not only complicated but complex places, where political actors are at once constrained by the systems in which they operate, yet at the right moments, can find opportunities to do things differently and create change (Sheingate 2007, 2010). It is important to take seriously the fact that these agencies are complex systems that cannot be reduced to being an artifact of their own history, or a sum of the actions and decisions of individual actors. There is a high degree of variation in external and internal conditions at the local unit level of federal agencies, and this variation plays a critical role in the choices frontline bureaucrats make about whether and how direction from above to implement a particular policy will be followed. Understanding these micro-processes of institutionalization is critical if policy entrepreneurs hope to bring about change within the Forest Service, and agencies like it.

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