

# Building the town in the country: official understandings of fire, logging and biodiversity in Oaxaca, Mexico, 1926–2004\*

Her own thoughts and reflections were habitually her best companions; and, in observing the appearance of the country, the bearings of the roads, the difference of soil, the state of the harvest, the cottages, the cattle, the children, she found entertainment . . . Miss Crawford was very unlike her. She had none of Fanny's delicacy of taste, of mind, of feeling; she saw Nature, inanimate Nature, with little observation; her attention was all for men and women, her talents for the light and lively. (Austen 1964 (1814))

Over the last century, Mexico has become an increasingly urbanised society; we have only to think of Mexico City, which, with a population of 22 million people, is now one of the largest cities in the world (Brinkhoff 2004). As Mexico has changed from an agrarian to an urban and industrialised society there has been a corresponding transformation in popular and elite conceptions of nature. In this paper I will trace the changes in understandings of forests and forest fires during the twentieth century, and show how nature has become more distant, more fragile and more protected as consumptive uses of forests come to be seen as increasingly destructive. For most of the twentieth century, the forests of Mexico were regarded by the state as being the legitimate objects of rational management, industrialisation and national development, which would foster the productive natural forces of the forests. More recently, logging has come to be seen by most people as destructive and immoral, and at present the only popularly legitimate uses for Mexico's forests are apparently non-consumptive activities such as ecotourism and nature protection. According to this new conception of nature, forests are fragile and have little ability to regenerate or recover on their own. The formerly powerful industrial logging sector and state natural resource management institutions are now faced with widespread popular scepticism, an array of national bureaucracies (e.g., the national protected areas commission, CONAP and the National Institute of Ecology INE) and biodiversity protection. NGOs both Mexican and international (WWF, TNC) have stepped forward with their own conservation programmes.

\* The data presented in this article is drawn from ethnohistorical research on Mexican forestry and conservation institutions in Oaxaca and Mexico City, and in forest communities in the Sierra Juárez of Oaxaca, carried out between 1998 and 2002, including over 140 interviews, notes from meetings, and archival and biological data.

Changing conceptions of nature have direct material consequences; recent conservation programmes in Mexico have pitted environmentalists against most natural resource production systems, from ranching and farming (Vasquez-Leon and Liverman 2004), to community forestry enterprises. Mexico is unique in the world in having almost 80 per cent of its forests in the hands of forest communities and *ejidos*, who have been widely praised (Bray, Merino-Pérez et al. 2003). It is therefore all the more troubling to find rural forestry communities in fear that the logging businesses upon which they rely may be shut down by urban conservationist interests.

Over the last fifteen years, anthropologists and geographers have become increasingly suspicious of conservation biology as a form of knowledge which erases local histories, cultures and practices (Zimmerer 2000), in the name of conservation and the creation of parks which all too often exclude local people and authorise draconian policies (Peluso 1993).<sup>1</sup> International conservationists and academic researchers in their turn have been rather bemused that anthropologists see them as the bad guys when they see themselves as being poorly funded and heroic. It is of course true that you would have to be as relatively powerless as an anthropologist or still more so as a peasant to see conservation institutions as being powerful and well funded.<sup>2</sup> However, I think the wider point remains correct; the nature/culture boundaries espoused by conservationists have authorised increasingly intrusive efforts to control rural people, even when the actual resources devoted to implementing conservation policies are relatively modest. Although conservationists have generally adopted a mantra of 'community in conservation', in many cases they appear to have paid no more than lip service to local interests and conceptions of nature. A recent review article concluded that community in conservation projects had made little use of participatory development techniques, and had used participation as an instrument to achieve conservation goals, rather than to genuinely consult rural people (Campbell and Vainion-Mattila 2003).<sup>3</sup>

I believe that anthropological critiques of conservation institutions have failed to communicate to conservationists the effects of the culture of centralised state conservation institutions and urban conceptions of nature upon conservationists' own knowledge and freedom of action. In this article I will use the example of the history of forestry and of fire management in Mexico to show how hierarchical and profoundly unstable state forestry and conservation institutions make use of urban conceptions of nature to bolster their fragile legitimacy. I will argue that this combination of fragile institutions and the overwhelming power of urban conceptions of nature may be inimical not only to the knowledge of rural people, but to the knowledge

1 Although conservation biology is a relatively new discipline, international conservation policies build upon a deep legacy of coercive colonial and national forestry laws which have been criticised by anthropologists for a long time. Among a vast array of authors, see Richard Grove on the colonial roots of modern western environmentalism (1995), K. Sivaramakrishnan on colonial forest policies in India (1994), on forestry and conservation in Mexico see L. Simonian (1995).

2 Conservation funds are small compared with for example national development budgets for road building. Nevertheless, the total amounts of money wielded by conservation organisations such as TNC or CI reach hundreds of millions of dollars and may have correspondingly powerful impacts in the remote areas where these funds are deployed (see Chapin 2004).

3 Environmental anthropologists Peter Brosius and Dianne Russel have both advocated a closer engagement between anthropology and conservationists – my own research and this paper seek to follow their suggestions.

of conservationists themselves.<sup>4</sup> In the past, scholars of indigenous knowledge have described the ways that states and development institutions destroy, displace or ignore traditional ecological knowledge, with catastrophic results (e.g., among others, Scott 1998). Although I think this critique is correct, I think that it too easily assumes that state power and expert knowledge are seamlessly allied in a more or less unified way. Recent ethnographies of conservation bureaucracies (Robbins 2000; Mathews 2005) and development agencies (Mosse 2004; 2005) have shown that these institutions are fissured and unstable, giving rise to patterns of concealment, suppression of information and poor knowledge transmission across uneven fields of power. Collectively, these studies suggest that expert knowledge is stabilised by networks of alliances (Latour 1987); the unstable and hierarchical nature of state and development institutions is in many cases antithetical to the stabilisation of expert knowledge. In this article I will argue that the practical knowledge of Mexican biologists and foresters has been systematically marginalised or suppressed within hierarchical and secretive Mexican environmental institutions. The apparently natural alliance of environmental sciences and state institutions has distracted attention from the empirical reality that these institutions are all too often inimical to the practical ecological knowledge of the foresters and biologists who work for them.

In the past, supporters of decentralisation and community based natural resource management have argued that these approaches would be more equitable, cheaper and more effective than direct state control of natural resource management.<sup>5</sup> I suggest that decentralisation and increased links between conservation institutions and local communities are also important because alliances with communities are more likely to support the local ecological knowledge of both conservationists *and* local/indigenous people than are centralised conservation institutions. In Mexico forest communities own most forests; despite internal conflicts and vicissitudes, these forest communities are more stable and likely to implement conservation agendas than are national or state institutions<sup>6</sup> (Bray, Merino-Pérez et al. 2003; Mathews 2004). On the contrary, I will show that the fragile national institutions within which biodiversity protection is implemented can actually suppress the knowledge of biologists. I suggest that environmental anthropologists can study conservation institutions to argue for an institutional structure which will accommodate more easily the ecological knowledge both of conservationists *and* of local communities. I will also show that at least in Oaxaca, communally managed forests are more stable than are state conservation institutions, and I will argue that international conservation institutions should look to communal forestry institutions as partners in designing conservation initiatives.

4 Environmental anthropologists have long mapped the traditional ecological knowledge (TEK) or indigenous technical knowledge (ITK) of non-western peoples (e.g., Conklin 1957); more recently they have moved to criticise the ways in which western forms of knowledge displace or ignore ITK (see Sillitoe 1998), to focus on the ways that western and non-western knowledge can be combined (Gupta 1998), or how the boundary between western and non-western knowledge is constructed (Dove in press).

5 For a review of the enormous literature on common property management institutions see Agrawal (2001).

6 International conservation institutions may be unstable for rather different reasons, due to their short project cycles and the changing interests of their financial backers.

## Background

During most of the twentieth century, the Mexican state and the forest service vilified traditional uses of fire by peasant farmers and livestock raisers as being irrational and unproductive, on the utilitarian grounds that escaped agro-pastoral fires destroyed the productive capacity of forests (García Díaz 1933; FAPATUX 1956). At present, timber production is no longer the primary project of the forest service<sup>7</sup>; but forest fires, which apparently destroy forests, continue to be vilified by the forest service and many conservationists. The forest service maintains grossly simplified official stereotypes of fire, confusing controlled agricultural fires with wildfires in the forests, and small light ground fires with large and uncontrolled stand-destroying wildfires which completely consume large areas of forest – as we shall see, international conservation programmes of which Mexico is a member deploy similarly simple stereotypes of forest fires and agricultural burning. Given their differences, it is somewhat surprising that conservationists and loggers agree that forest fires are uniformly destructive, and that both groups have used the threat of traditional fire use by swidden agriculturalists to justify their policies. In fact, both conservationists and loggers draw upon urban conceptions of nature as vulnerable to destruction by fire, which is conceptualised as being an unnatural event caused by humans which may destroy forests.<sup>8</sup> This delineation of nature and culture draws support from dominant urban understandings of fire, which are themselves the result of decades of official anti-fire propaganda. Newspaper accounts of forest fires depict fires as uniformly destructive, and fire prevention is one of the few government activities which garners favourable media depictions of the forest service (Enciso L. 2001; Ruiz Arrazola 2002).

Contrary to this representation of carelessly set agricultural fires leaping into the forest and becoming raging wildfires, there is abundant evidence that traditional farmers and pastoralists are careful fire users. There are a myriad variations of swidden agriculture<sup>9</sup> across Mexico, from complex polycultures with long periods of fallow in tropical moist ecosystems (Alcorn 1984) to relatively short fallow periods and less complex crop mixtures in temperate ecosystems (Nigh 1975; Tyrtania 1992). In all of these agro-ecological systems, farmers take great care to control fire, as has been repeatedly pointed out by Mexican agronomists as far back as 1916 (Calvino 1916; Toro 1981 (1945)). Farmers have to judge carefully when a successful burn is most likely to achieve an even coating of fertilising ashes and to prevent the fire from escaping: as Efraín Xolocotzi points out for the *milpa* farmers of Yucatán ‘When to burn, whether to burn or to delay the burn, is the annual problem which is most difficult to resolve’ (Xolocotzi 1959 (1987): 397).<sup>10</sup>

- 7 Responsibility for protecting and managing forests is currently spread across various directorates of the ministry of environment, SEMARNAT. Some of these directorates are relatively pro-industry, others are more closely aligned with conservation and protection. For the purposes of this paper, I will refer to the federal agency or agencies responsible for forests as the ‘forest service’.
- 8 Neither the forest service nor Mexican conservationists have made an effort to determine the incidence of lightning-caused fires, creating a presumption that most fires are due to human carelessness, which calls for prevention or control.
- 9 Locally known as *tumba roza y quema* i.e., ‘slash and burn’ agriculture.
- 10 Large farmers and ranchers probably have very different fire use practices from traditional farmers and livestock raisers. Large landowners (whether farmers or ranchers) systematically blame small

Why then is this myth of irrational and destructive rural fire use maintained by industrial loggers, government officials and conservationists? For the forest service, fire fighting directly justifies budgets and jobs for fire fighting and tree planting programmes (Anonymous 2003; CONAFOR 2003), whilst for conservationists it justifies ambitious programmes which seek to transform rural agricultural practices and link protected areas, as shown by the recent ambitious efforts to link protected areas across Central America in the Mesoamerican Biological Corridor project, in which Mexico is a participant. As we shall see, this project has recycled the longstanding anti-fire discourse of the developmentalist state for the new goal of conservation. The principal difference between present-day conservationist discourse of fire, and the longstanding discourse of the industrial forestry establishment, is that for industrial foresters fire was a temporary setback which could be rectified by judicious forest management activities and reforestation, whilst for conservationists destruction of forests is usually seen as permanent and irreversible. During my research in Oaxaca, I found that for the conservationists I talked to, logging and fires were both seen as agents of destruction; they saw forests as fragile and static and with little regenerative ability of their own.

Many of the technically trained members of conservation NGOs in Oaxaca in 2001 were trained as biologists, rather than as ecologists. As such, they were either unaware of, or in some degree of disagreement with, current thinking in ecology, which sees forests as a dynamic and continually changing landscapes continually impacted by disturbances of varying scales and intensities (but see Rzedowski, Vela and Madrigal 1977; Gonzalez-Espinosa, Quintana-Ascencio et al. 1991). One reason for this more static view of the forest is the lack of resources for ecological fieldwork, which limited most biologists in Oaxaca to the biological inventories which provided a snapshot of an ecosystem at a point in time. These studies could not follow ecological changes over time, causing forests to appear to be fragile and static. Thus, material limitations, and theoretical inclinations combined with the practices of knowledge production make many biologists in Oaxaca see forests as particularly vulnerable. An additional institutional support for this conception of forests was the fact that biologists in Mexico are trained principally at the National Autonomous University (UNAM), and are institutionally opposed to the resource extraction practices and theories taught at the principal forestry school at nearby Chapingo, which has historically been associated with industrial forestry.

One significant change in anti-fire discourse over the last century is that rather than attributing the destructiveness of rural fire use to the barbarous otherness of rural people (indigenous or otherwise), both foresters and conservationists can accept sustainable fire use at some point in the past, while claiming that present-day uses of fire are not sustainable, due to poverty, overpopulation and acculturation (e.g., INDUFOR 2000: 134). This conceptualisation of nature leads conservationists in Oaxaca to argue for ecotourism and protected area projects which will presumably better the lives of rural people, while claiming to protect a fragile and static nature which is at the mercy both of corrupt loggers and poor rural people. For example, one conservation NGO in Oaxaca, supported anti-logging factions in the community of Yavesia, advocating

farmers and livestock raisers for destructive fires; the little available evidence suggests that it is large landowners themselves who may be responsible for the largest and most destructive fires (see Barkin and García 1998).

ecotourism and water bottling, against the interests of logging interests in neighbouring communities. This NGO also represented the forests of Yavesia as being ancient, virgin and biologically unique. Another conservation NGO which took part in this conflict similarly downplayed (or was unaware of) the dynamic fire history of these forests, criticising the forest service, SEMARNAP, for ineffective firefighting, and minimising the ecological importance of fire. During my time in Oaxaca I talked with numerous Mexican conservationists working in the Sierra Juárez; they were almost uniformly unfamiliar with the dynamic nature of forest landscapes, and most of them considered the forests of the Sierra Juárez to be threatened and vulnerable, missing a historic increase in forest area over the last fifty years (see Mathews 2003). Thus, a re-conceptualisation of nature as static and fragile authorised some Oaxaca based conservationists to oppose industrial logging by forest communities in the nearby pine and pine-oak forests.

## The history of conservation and forestry in Mexico

Beginning with the first post-revolutionary forest law of 1926, the Mexican state has asserted its authority over the forests of Mexico, citing a variety of concerns, from industrial timber production, to watershed protection and climate control, to prevention of forest fires (Calva Tellez, Paz Gonzalez et al. 1989; Simonian 1995). The 1926 law was to be applied through a highly intrusive code of regulations – all forms of logging, firewood cutting and conversion of forest to agriculture were theoretically strictly controlled. In practice these regulations were largely unenforceable because of the limited resources of the forest service, which usually applied regulations only near towns and in selected cases.<sup>11</sup>

A unique feature of Mexico's forest history is that the draconian federal control of forests through regulation has in many ways been contradicted by the state's hand over of legal title to forests to Mexico's rural communities.<sup>12</sup> In two episodes of massive land grants during the Cárdenas (1934–40) presidency and between 1958 and 1976 (Challenger 1998: 203), the vast majority of Mexican forests were transferred to the ownership of rural communities and *ejidos*,<sup>13</sup> under the guise of agrarian reform policies which purported to restore *agricultural* land to the landless (Nugent and Alonso 1994). Most of the best irrigated agricultural land remained in the hands of large farmers; rather, it was forest land that was handed over, resulting in a level of community title to forests that is unique in the world (Bray, Merino-Pérez et al. 2003). Although forest land

11 The institutional weakness of the forest service has caused the responsibility for forests to be shifted frequently between various branches of the federal government. At present forest management and protection is the responsibility of SEMARNAT and the National Forestry Commission (CONAFOR), while responsibility for conservation rests with the National Biodiversity Commission (CONABIO) and the National Institute of Ecology (INE).

12 The apparent conflict between simultaneously asserting discursive control and relinquishing legal title to forests testifies to the conflicted and fissured nature of the state (see Abrams 1988; Foucault 1991; Robbins 2000).

13 Mexican agrarian communities consist of two similar legal forms, the *comunidad* and the *ejido*. Both of these institutions usually own forests in common, with agricultural land divided and owned privately by community members. I will use the term 'community' to refer to both of these forms of land tenure.

theoretically belonged to rural communities, from the 1940s to the 1980s the federal government awarded *de facto* control over commercially attractive forests to private and then nationalised logging companies, which organised logging and timber processing, and gave a minimal share of the proceeds to rural communities. The official justification for this policy was forest protection and forest industrialisation. This was the apogee of the Mexican developmentalist state, which was apparently successful until the economic crisis of the mid 1980s. During this period, logging companies and foresters trained at the University of Chapingo near Mexico City, were in firm control of industrial forest management in Mexico.<sup>14</sup> Even at the height of industrial forestry, the spatial extent of forest management activities was highly uneven; in the areas controlled by logging companies, forests were mapped out in some detail, management plans were drawn up, and a network of logging roads was built. In other areas neither the logging companies nor the forest service penetrated the countryside, whilst a rapid conversion of forest to agriculture and pasture took place in the tropical lowlands.

In Mexico as in industrialised countries, the moral authority of environmental protection has been taken over from foresters by biologists and ecologists who have pressed for increased controls over logging and production forestry in the name of ecosystem protection. Starting with the environment law of 1986, and with increasing success since 1992, biologists have attempted to control forests and industrial forestry which has now come to be seen as illegitimate and destructive by the majority of urban and many rural Mexicans. Foresters have been accused of being complicit in illegal logging and of manipulating regulations so as to extort bribes (e.g., Bradomin 1953; Salazar 1999; Enciso L. 2001). From their previous claims to represent modernity, development and progress, as the avatars of industrial forestry, foresters are now seen as implicated in environmental destruction, corruption and dirty dealing. Logging is almost universally viewed by urban Mexicans as one of the principal culprits of forest destruction. Television programmes which discuss deforestation, for example, inevitably show logging trucks and forest fires, and government foresters complained to me that they lacked public credibility. During numerous conversations with educated and progressive young Mexicans in Oaxaca in 2000–01, I realised that for them any defence of logging was a politically suspect position. On one occasion, a young documentary film maker, Roberto Olivares, told me of the despoliation of forests in the Sierra Juárez, describing the logging trucks that he had seen on a recent visit. When I told him that these were community owned trucks, and that these forests were sustainably managed, he smiled in disbelief: for him as for other people I met, logging was by definition corrupt and illegitimate.

Although the rise of conservation and the decline of industrial forestry are similar to the experience of many developed countries, the Mexican case is complicated by the vast economic gulf between urban and rural Mexicans, and by the precipitous decline in prestige of the Mexican state. Since the economic crises of the 1980s, the Mexican state has increasingly been seen as corrupt and incompetent; the popular culture of the state is characterised by a widespread belief that the state is corrupt, and is responsible for natural resource degradation. From the 1930s onwards the government justified control of forests by claiming that it would sponsor national development and prevent

14 Non-industrial fuelwood production has been largely clandestine and uncontrolled, although it is at least as large as industrial timber production (see Nikinmaa 2001; Mathews 2006).

climate change (García Díaz 1926; Serrato 1931). At present, popular beliefs about the relation between state and environment are more or less an inversion of this, so that the state is seen as responsible for deforestation and the resulting climate change. For example, a taxi driver in Oaxaca in 2001 told me, as a commonplace observation, that the climate of the city was hotter because of deforestation caused by corrupt officials who had allowed illegal logging. This is a common theme of daily conversation, all kinds of people, from rural agriculturalists to big city taxi drivers or university students will repeat a narrative of official corruption, deforestation and climate change – in a real sense, the perception of climate change has become one of the ways in which the Mexican state is felt and criticised.

Urban Mexicans are participants in a developed and industrialised economy which lies in stark contrast with the income and lifestyle of rural Mexicans. The disparity in income and power between urban and rural is made all the more acute by the concentration of political and economic power in the hands of Mexico City based elites, and by a highly uneven income distribution, which make the productive practices of rural people relatively insignificant for city dwellers. Many educated city dwellers, among them the conservationists whom I got to know in Oaxaca, are in contact with international environmentalism, which has made ecotourism and protected areas preferred solutions to deforestation. As urban interests have turned to seeing nature as an object of contemplation and recreation, ecotourism has boomed. All over Mexico, ecotourism has been sponsored as a panacea to environmental degradation, from state sponsored ecotourism and nature protection (as in the Calakmul biosphere reserve, see Haenn 2005), to the growth of ecotourism operators around established tourist centres such as Oaxaca. Ecotourism projects in the Sierra Juárez of Oaxaca seek to represent the forest as a place of biodiversity (Ramos 2000), contemplation and adventure (Comisariado de Bienes Comunes de Ixtlán de Juárez 2000), but not as an active agent with a history and resiliency of its own. Just as former state projects of industrial forestry were generated in Mexico City, and were justified by the supposedly degrading practices of rural people (FAPATUX 1956), new projects of ecotourism are generated largely by and for urban Mexicans and international tourists, and are based upon visions of nature which ignore local productive practices (at best), or denigrate them (at worst). Just at the time that forest communities are beginning to gain control of the concepts and methods of industrial forestry, urbanites have shifted their interest to biodiversity protection and ecotourism, re-creating the discursive and material distance between urban and rural projects of nature. Ecotourism and biodiversity protection projects require the conceptual transformation of forests, as they are re-made from a place for logging or watershed protection into places to encounter a fragile and protected nature. As the epigraph to this article suggests, the contrast between urban and rural views of nature is not unique to Mexico<sup>15</sup> – nevertheless, the strong divide in the relative income, power and beliefs between rural and urban Mexicans, makes for a particularly acute contradiction between urban Mexicans who wish to enjoy nature as an object of contemplation or recreation, and members of rural forest communities who wish to cultivate, pasture animals, or log forests.

15 The contrast between urban and rural lifestyles has an ancient cultural history, going back at least as far as Herodotus and Aristotle. For a classic analysis of the meanings of urban and rural in British culture, see Williams (1973).

In keeping with their long history of interpreting and accommodating outside influences, forest communities in the Sierra Juárez of Oaxaca have initiated community ecotourism projects, but as yet these have had only mixed success, in part because community members have not yet mastered the cultural skills required to present their forests to outsiders in the requisite terms. For example, in Ixtlán de Juárez, a community ecotourism project has had little success, because the leader of the project was not familiar with how to publicise the town, nor with how to provide the interpretation or facilities that visitors would ask for. In contrast, ecotourism operators had already been setting up offices in the city of Oaxaca, offering tours in the nearby communities of Benito Juárez and Cuajimoloyas.

A final element in the valorisation and protection of forests as a location for biodiversity protection has come from increased national concern over forests as genetic information which can become the basis for medicine, and can become intellectual property to be bought and sold (Hayden 2003). The project of bioprospecting in Mexico has been largely a failure due to the legal and scientific complications inherent in the project of bioprospecting,<sup>16</sup> and more importantly, due to the heated criticism of 'biopiracy' in the Mexican media, which caused the high profile failure of a US sponsored bioprospecting project in the state of Chiapas. Other controversies have included the contamination of native maize varieties by imported genetically modified maize (Anonymous 2002), and heated criticism of a bioprospecting agreement between a forest community association in the Sierra Juárez of Oaxaca, UZACHI and a multinational drug company. Although bioprospecting has had little success, the net effect of these controversies has been on the one hand to make forests a place of value which may be threatened by outside interests, and on the other hand to make alternative productive uses of forests appear all the more threatening, as precious genetic information is seen as threatened by deforestation caused by illegal loggers and farmers.

By denigrating production forestry on the one hand, and forest fires on the other, conservationists in Oaxaca and Mexico City have created a discourse of nature as fragile and in need of protection. Allied to this discursive construct is a new set of national institutions – the National Institute of Ecology (INE), and the National Biodiversity Commission (CONABIO); these agencies make use of the expertise of biologists, who are employed in mapping the location of biodiversity, searching for endangered biomes or species, and are responsible for restricting or eliminating human activities in biodiversity-rich areas. These institutions have maintained a discourse of forests as threatened nature which delegitimises the expertise of rural agriculturalists, loggers and foresters, making the only non-destructive project of forest transformation that of biologists who can map endangered species, or prepare information for non-destructive ecotourism projects.<sup>17</sup> Mexican biologists have sought to capitalise on their moral authority by pushing for the creation of new forms of territorialisation;

16 Bioprospecting is in fact a relatively unimportant part of pharmaceutical research, and has produced few successful and profitable drugs (see Hayden 2003).

17 In this context, Cori Hayden's ethnography of bioprospecting in Mexico is particularly significant (Hayden 2003). Bioprospecting is a project which authorises the expertise of biologists and ethnobotanists who can codify their knowledge in such a way as to create valid intellectual property. This inevitably delegitimises other projects of nature transformation, such as traditional agricultural practices, which do not dispose of the legal/scientific networks which might give them a less destructive appearance.

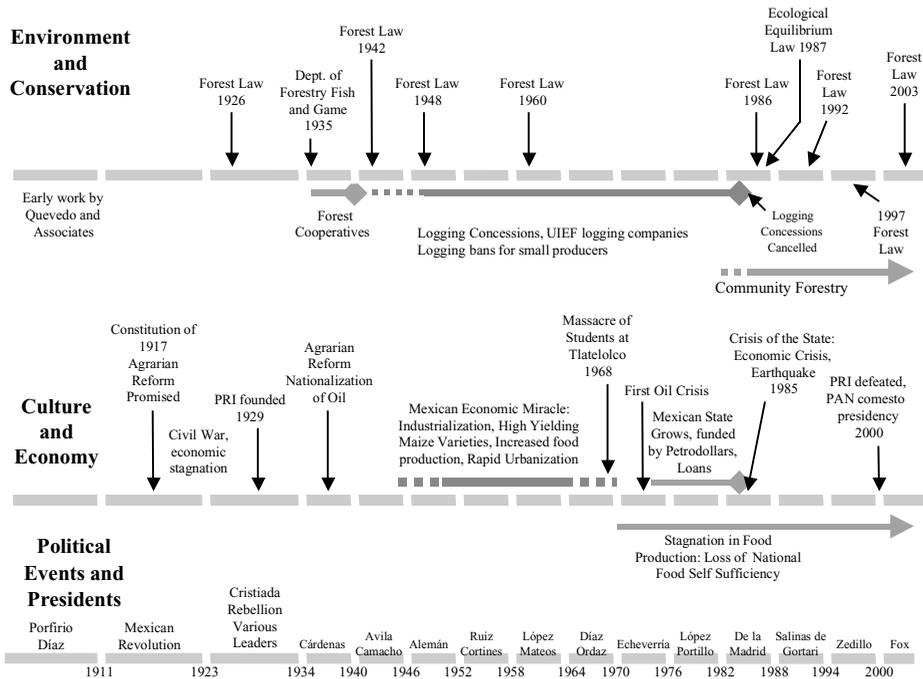


FIGURE 1. *Timeline of Mexican twentieth-century political and cultural events.*

parks, protected areas, buffer zones and, more broadly, through national environmental regulations which regulate the harvesting of endangered species (SEMARNAT 2003). These biologists have relied upon alliances with international NGO's such as the World Wildlife Fund, forcing the Mexican government to accord a great deal of attention and legitimacy to environmental concerns. Between 1994 and 2001, the widely respected biologist Julia Carabias was secretary of SEMARNAP (equivalent to the US EPA). During her tenure biologists had more influence over forest management than ever before, both through their presence in state institutions such as the National Institute of Ecology, and through the ability of biologists and environmental organisations to question the authority of SEMARNAP in the media.<sup>18</sup> The legitimacy of state environmental institutions was so compromised that it was only by inviting the collaboration of international and Mexican environmental NGOs that SEMARNAP was able to retain any measure of credibility for its environmental policies.

### Centralisation and the institutional culture of Mexican environmental institutions

Over the last century, fire discourse has been stabilised by primarily urban-based forestry and conservation institutions which use official fire discourse to justify

18 The Carabias administration was also well informed about and friendly to community forestry, creating the PRODEFOR programme, which was the first government programme ever to give forest communities financial support for forest management activities.

their continued existence (Mathews 2005). State environmental institutions have been characterised on the one hand by a striking continuity of the content of regulations, and on the other hand, by continuing instability. Responsibility for forests has frequently been moved from one institution to another, and there has been a rapid succession of environmental and especially forestry laws. In this uncertain environment regulations and official fire discourse are critical symbolic resources for officials who have little career or institutional stability. Historically most senior officials have lost their position at the beginning of each six-year presidential term (Grindle 1977) and this continued to be the case for conservation and forestry officials in the presidential succession of 2000–01. Environmental regulations are applied sporadically and unevenly; indeed, to apply them everywhere would be far beyond the ability of the state. Rather than being strictly applied, regulations delimit the boundaries of public discourse; low-ranking officials are careful to avoid openly contradicting the official version of reality. As one senior official told me:

They tell you ‘yes we are going to do it’, but then they don’t . . . their job is to pretend that the machine works as you tell it to. They say that the person who controls an office is the head of the organization, when in reality he doesn’t even know if [his subordinates] do their jobs or not, when they don’t want to accept what the chief says. (Moguel 2001)

Official discourses therefore, are stabilised by powerful norms which dictate that they can not be publicly contradicted. For example, according to the regulations which regulated logging between 1944 and 1986, a single officially prescribed logging system was mandated across all of Mexico (Rodríguez Caballero, Mendoza Medina and Barrena Guerrero 1960). In practice, loggers and foresters were able to do more or less what they wished, as long as they did so discreetly or in secret. The use of fire has similarly been controlled by national regulations since the 1930s (Gutiérrez, Jose L. 1930), and at present all use of fire is controlled by a single national regulation, which requires anyone who wishes to carry out a burn to apply for permission in advance by filling out a detailed form (SEMARNAP 1997).<sup>19</sup> This regulation is routinely ignored both by officials and by rural people. Estimates for rural fire use of 3,000,000–4,000,000 ha/year (Catterson, Cedeno Sanchez and Lenzo 2004: 28) suggest that if people really did apply for permission to burn, the forest service would grind to a halt. Foresters themselves have become aware that fire suppression may be biologically problematic in fire dependent pine forests,<sup>20</sup> but they feel that they can not contradict the dominant

19 Around the world, colonial and post-colonial states have used the threat of fires set by local people to justify state control of forests (Pyne 1993). To give but one colonial example, in West Africa, Fairhead and Leach (2000) have shown how state anti-fire discourse justified forest protection. The first wave of studies of state environmental discourses largely assumed that states were able to exercise real as well as discursive control. It is only with a more recent wave of ethnographies of environmental institutions that it has become apparent that this apparent control often relied upon ‘public secrets’ (Moore 2001; Watts 2001), where official discourse could not be publicly contradicted, but where environmental regulations were nevertheless largely evaded or ignored by local people (e.g., see Fairhead and Leach 2000; for Mexico see Mathews 2005).

20 Pine species are largely dependent upon fires of varying intensity to ensure their regeneration and fire contributes to the regeneration and life histories of many Mexican pine species (see Agee 1998; Fule and Covington 1996; 1999; Rodríguez Trejo and Fule 2003).

urban myth that fire is uniformly destructive.<sup>21</sup> As one government forestry researcher based in Oaxaca told me: ‘We foresters, know quite a bit about fire, but the people of the city, the politicians, criticise the use of fire a lot, so foresters have to do it in secret’ (Negrete 2000).

The norms which prevent both officials and members of the public from openly challenging official declarations lead to strategies of avoidance and collaboration between local level officials and their clients. Rather than report that regulations are inappropriate or misconceived, subordinates make local political accommodations, which they conceal from their superiors. For example, in 2001 the SEMARNAP official responsible for all firefighting in the state of Oaxaca circulated the new fire control regulation (SEMARNAP 1997) to all rural communities but did nothing to enforce it, explaining to me that this would have interfered with his relationship with local communities.

## Fire in modern conservation discourse

Conservationists both national and international have largely adopted the long-standing official and urban myth that fires set by swidden agriculturalists and pastoralists are primarily responsible for forest destruction. The largest conservation project currently being pursued in Mexico is the *Corredor Biológico Mesoamericano* (Mesoamerican Biological Corridor) which seeks to link protected areas in Mexico and Central America, and is funded by the Global Environmental Facility and other international donors (Barry 2004).

This project represents a massive expansion of the territorial extent of conservation, as it seeks to control land use change and agricultural practices in areas of land *between* protected areas and logging concessions, which have hitherto received little attention from the state. It is highly significant that from its very inception, the CBM has continued to make use of stereotypes which represent slash and burn agriculture (i.e., swidden) and livestock raising as the principal causes of deforestation. The conceptual link made between forest fires and agriculture allows conservationists to intervene directly in agricultural and livestock raising practices. To give but one example: in the press release reporting the initiation of the CBM, some of its principal policy initiatives were stated to be to: ‘eradicate traditional practices of slash and burn agriculture and extensive pasture’ (Galan 2002). Another important actor in the CBM is NASA, which seeks to provide imagery to help planners and government officials control fires and prevent forest destruction. On a NASA web page about the CBM project, the threat of fire set by poor farmers is cited as the principal threat to the forest:

Flying over the lush, mountainous landscape of Central America, a local environmental official points out plumes of smoke where ‘slash and burn’ agriculture is destroying hundreds of acres of rain forest. In the distance, dark-tinted waters of a red tide nearing coastal fishing villages are clearly visible from this altitude. He points to a silt-filled river snaking through the forest below – a symptom of soil erosion caused by unsustainable farming practices upstream, he explains. The

21 For the ways in which official fire discourse imposes official ignorance of agropastoral uses of fire by rural people see Mathews (2005).

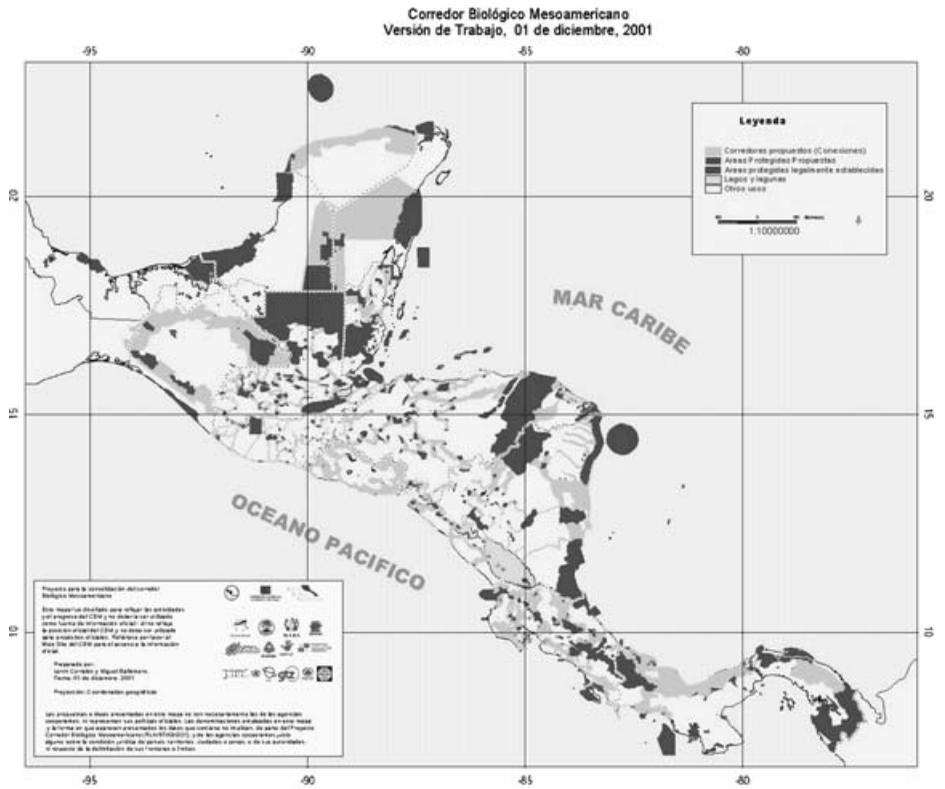


FIGURE 2. *The Corredor Biológico Mesoamericano (Corrales and Ballestera 2001).*



FIGURE 3. Source: Barry (2004). Original title reads: 'Much of Central America's rich biodiversity is being destroyed by "slash and burn" agriculture'.

view evokes a kind of intuitive understanding of these environmental concerns that words alone can not provide. (Barry, 2004).

It is likely that the Mexican conservation institutions such as SEMARNAT and the Comisión Nacional de Biodiversidad, both of which participate in the CBM, do not seek to actively suppress swidden agriculture or pastoral burning (in any case, they would probably lack the necessary resources); rather, a rhetoric of fire suppression and the prevention of forest fires creates a discursive distance which authorises interventions into agriculture, grazing and the livelihoods of rural people in the form of specific conservation and development projects. Individuals within SEMARNAT or conservation NGOs may themselves be well aware that official fire discourse is incorrect, and work to accommodate local concerns, just as individual state forestry officials during the industrial logging era turned a blind eye to local fire use or 'illegal' logging practices. However, these local practices remain 'secret' because they are not officially recorded and only rarely repeated in public. Thus, it is at the level of institutions that fire discourse is entrenched, so that this private/secret knowledge of foresters and conservationists is marginalised or suppressed.<sup>22</sup>

These generalised depictions of out of control fires, set by poor and desperate agriculturalists underpin conservation policies which seek to expand protected areas and to enforce environmental regulations. Fire suppression is an important symbolic resource for gaining popular and elite urban support for conservation policies, because the media represent fire as uniformly destructive. In the context of Mexico's highly centralised and hierarchical forestry and conservation institutions, this means that the knowledge of conservationists, like that of foresters before them, is in danger of being marginalised or suppressed. At present, a small group of Mexican researchers (Rodríguez Trejo and Fule 2003) and allies from such international institutions as the Nature Conservancy and the World Wildlife Fund, are advocating the importance of prescribed fire to maintain or restore protected areas in Mexico (Comunidad de Aprendizaje de Manejo del Fuego 2005). However, this is a very marginalised group which has been criticised by Mexican and international conservationists for threatening to 'mix the message' of fire suppression (Catterson, Cedeno Sanchez et al. 2004). Conservation institutions and foresters continue to need an 'unmixed message' of fire suppression in order attract funding for fire fighting and conservation policies. Conservationists and foresters who would like to move away from strict protection and fire suppression must do so discreetly in order to avoid jeopardising the wider message of fire suppression.

Just as fire suppression to support forest production was one of the justifications for the era of industrial forestry and timber concessions in Mexico during the period 1940–80, fire suppression to protect fragile nature has been adopted by the newer conservation institutions which seek to protect nature. This fire discourse invokes pre-existing popular understandings of fire to protect a threatened nature and has come to obscure both the reasons rural people have for setting fires, and the ecological knowledge

22 In fact, in Oaxaca in 2000–01 most members of conservation NGOs were unaware of the biological or cultural importance of fire in agriculture and livestock raising; as regards forest fires they were similarly unaware of the possibility of light understory fires being beneficial to forest regeneration. Some leftist and urban environmentalists have begun to valorise traditional agricultural uses of fire, but negative representations of fire use are overwhelmingly predominant.

of conservationists who might like to initiate a programme of prescribed burning in order to restore ecosystem processes. Just as centralised forestry regulations suppressed foresters' practical ecological knowledge in the past, a centralised conservation discourse is putting powerful pressure on the ecological knowledge of conservationists who threaten to 'mix the message'. It is highly significant that it is international conservation institutions like the Nature Conservancy who have been the most vigorous proponents of prescribed burning (Nature Conservancy 2004). It is possible that more decentralised international conservation institutions may be able to modify the centralised national conservation institutions and urban environmental concepts that drive forest policy and conservation in Mexico. Nevertheless, the rapidity with which the incorporation of rural communities in conservation projects was first adopted and then called into question by international conservation institutions (Agrawal and Gibson 1999; Chapin 2004) suggests that international conservation institutions are just as unstable as the national environmental institutions and environmental NGOs who are their principal partners in implementing conservation.

### **Conservationists and community forestry enterprises: the case of the Sierra Juárez of Oaxaca**

Amidst this widespread institutional instability, the most stable set of environmental institutions in Mexico are the forest communities which own and manage most forests (Bray, Merino-Pérez et al. 2003). Unlike fragile state forestry and conservation institutions, and similarly ephemeral international conservation projects, community forest management institutions are stabilised by the existence of a semi-autonomous sphere of community politics, where forest land becomes the symbolic and material base for the assertion and maintenance of community autonomy. Some of the most successful of these community forestry enterprises (CFEs) are found in the Sierra Juárez of Oaxaca, where I carried out research in 2000–01.

In Oaxaca, as elsewhere in Mexico, Community Forestry Enterprises (CFEs) are the result of historic struggles with para-statal logging companies; and are the latest version of the *cargo* system of municipal government whereby rural communities have been able to maintain a degree of autonomy from the state (Chance and Taylor 1985; Parnell 1988). The secular *cargo* system which controls the community and *ejido* forests is only the latest in a series of syncretic political practices among indigenous communities over the last 500 years. Community institutions have had to accommodate colonial and national period legal reorganisations and political and economic pressures, but they have proved astonishingly durable and have allowed the indigenous communities of the Sierra Juárez to maintain a degree of community autonomy while integrating new concepts and relationships into community life. As Claudio Lomnitz points out, Mexican municipalities and towns are the only political sphere to 'have uninterrupted traditions of public representation of a people and of popular will' (Lomnitz 1995). Most recently, industrial logging has been integrated into the *cargo* structure of forest communities through another round of institutional innovation, as communities have set up a variety of organisational forms which seek to balance traditional concerns for hierarchy and the power of elders with the need for financial management and technical expertise (Alatorre Frenk 2000; Antinori 2000).

These communities are not isolated enclaves of harmonious decision making;<sup>23</sup> they are often deeply conflicted, and suffer from recurrent crises caused by such problems as financial mismanagement, marginalisation of non-commoners,<sup>24</sup> corruption or abuse of power by internal factions (Klooster 1997; Taylor 2003) In some communities in Oaxaca, and in other parts of Mexico, traditions of violent big men (*caciques*) who monopolise power have made community life anything but harmonious. In other cases ethnic differences within communities have caused violent conflicts (e.g., Haenn 2005). Nevertheless, rural communities in Mexico continue to display striking durability and relative stability, especially when contrasted with the violent zig-zags in state natural resource policy over the last century.

Outside conservationists and foresters have often been frustrated by the communities' traditional political system, which change office holders on a three-year cycle, so that developers and conservationists alike complain of having to continually re-educate new community leaders. On the positive side, this spreading of information among community elders creates shared understandings of forest management and conservation, and gives legitimacy and stability to community forest management institutions.

The representation by outsiders of forest communities as unstable (e.g., Anta Fonseca, Plancarte Barrera and Barrera Teran 2000), obscures the historic and continuing instability of state environmental institutions. As the Figures 1 and 4 show, there have been numerous forest laws and changes in policy over the last century. The current environmental agency, SEMARNAT, was formed only in 2001; predecessor institutions moved between ministries a total of eighteen times over the last hundred years. In many cases, these moves are associated with the wholesale dismissal of administrators and the loss of many documents and files, causing state environmental institutions to suffer from lack of long-term memory. In contrast, with all their vicissitudes, rural communities have been an enduring feature of the rural landscape: some communities in the Sierra Juárez have land titles which date back to the colonial period; in the case of Ixtlán, a map from the 1880s is proudly displayed in the town hall. In fact, by many criteria it is forest communities which are stable and outside environmental institutions which are unstable. The Sierra Juárez of Oaxaca is littered with the remains of past environmental policies, with signs proclaiming defunct forest management entities and government initiatives (e.g., the now defunct Papaloapan Watershed Commission); government programmes come and go, but communities remain stubbornly part of the landscape. Community members are all too aware of the weakness of state and international institutions. In meetings of the Oaxaca regional forest forums in 2000, community members repeatedly complained about the rapid series of forest and environmental regulations, upon which they had not been consulted, and which they doubted would ever be applied. On the other hand, they were also aware that individual forestry officials were likely to lose their position with a new presidential administration, and thanked them publicly for their past assistance.

23 Representation of harmony before outsiders is a traditional strategy for maintaining community autonomy (see Nader 1990).

24 This is the case in Ixtlán, where there is tension between *comuneros*, who enjoy the financial benefits of logging, and *vecindados*, who do not. The division between commoners and *vecindados* is endemic in rural communities across Mexico. A *comunero* is a legally registered member of an agrarian community, entitled to vote on community decisions. In other parts of Mexico an *ejidatario* (ejido member) has similar rights and responsibilities within an *ejido*.

Years	Name(s) of agencies carrying out responsibilities of Forest Service	Institutional Location of Forest Service and Comments
1904-1908	Junta Central de Bosques y Arboledas (Committee of Forests)	Ministry of Public Works
1908-1912	Departamento de Bosques	Agricultura y Fomento (Agriculture and Development)
1912	Depto. de Conservación de Bosques	Agricultura y Fomento (Agriculture and Development)
1920-1929	Dirección Forestal y de Caza y Pesca (Forests and Fisheries)	Agricultura y Fomento (Agriculture and Development)
1927-1929	Direc. Gral. Forestal y de Caza y Pesca (Forests and Fisheries)	Agricultura y Fomento (Agriculture and Development)
1929-1934	Departamento Forestal	Dirección de Fomento Agrícola (Agriculture Ministry)
1934	Depto. Forestal y de Caza y Pesca	Independent Forest Department
1940-1951	Dirección Gral. Forestal y de Caza	Ministry of Agriculture- (forests within low level agency as Dirección General)
1951	Subsecretaria de Recursos Forestales y de Caza (Forests and Hunting)	Ministry of Agriculture Forests promoted to Sub Secretaria within agriculture
1960-82	Subsecretaria Ftal. y de la Fauna (Forests and Wildlife)	Ministry of Agriculture
1982-1985	Subsecretaria Forestal (Forests)	Ministry of Agriculture Wildlife moved to another agency
1985	Subsecretaria de Desarrollo y Fomento Agropecuario y Forestal Dirección Gral. de Normatividad Forestal	Forest service demoted and divided between two different agencies in Ministry of Agriculture. (Economic crisis year)
1986	Comisión Nacional Forestal (Comisión consultora integrada por la SARH, SEDESOL y la SRA)	National Forest Commission divided between Agriculture, Agricultural Reform, and Social Development.
1986	Subsecretaria de Desarrollo y Fomento Agropecuario y Forestal	Ministry of Irrigation and Agriculture (SARH)
1988-1995	Subsecretaría Forestal	SARH
1995	Subsecretaría de Recursos Naturales - SEMARNAP	SEMARNAP (Ministry of Environment and Natural Resources )
1997	Subsecretaría de Recursos Naturales y Pescas (Natural Resources, includes Fisheries)	SEMARNAP
2001	Fisheries is Moved to Agriculture, Many Responsibilities to Comisión Nacional Forestal	SEMARNAT, Comisión Nacional Forestal

FIGURE 4. Institutional location of forest service 1904–2002 (data from Mejía Fernandez 1988) and author's notes).

The predominantly indigenous forest communities of Mexico have long been supported by NGOs and have been touted as examples of sustainable forestry (Bray 1991; Chapela and Lara 1995; Alatorre Frenk 2000). In the past urban progressives sympathised with these forest communities, and supported their struggle to gain control of their forests from industrial logging companies in the early 1980s (Ortega Pizarro and Correa 1983; Bray 1991; Mathews 2004). With the increasing moral ascendancy of biodiversity conservation, these forest communities now fear that urban

conservationists will impose logging bans which will cripple their business. During meetings of regional forest councils in Oaxaca in 2000–01, *comuneros* repeatedly voiced fears that the state governor, Jose Murat Casab, would impose a ban on all logging in the state. Oaxaca-based conservation NGOs have been largely willing to accept that forest communities are corrupt or in collusion with logging companies, and have often allied themselves with anti-logging factions within forest communities.

The national conflicts between urban conservation agendas, the logging industry and community forestry enterprises are mirrored by factional struggles within forest communities themselves. In some cases, biodiversity protection has displaced logging altogether, as communities decide to pursue ecotourism alone.<sup>25</sup> However, in other communities the uniquely open public sphere of community decision-making has made community logging businesses modify management plans and logging practices in response to criticism from proponents of biodiversity protection. During my stay in Ixtlán I had long conversations with community members from all factions who were worried about possible negative impacts of logging upon biodiversity. Loggers were concerned about protecting endangered species, but they were at pains to emphasise that they too were concerned to protect biodiversity, as one logger told me:

When we began to manage our forests, we didn't know well, we didn't know how to manage the hook, the chainsaw, how to leave cutting areas with slash cut and piled, that is the maintenance of the forest. Not cutting as one wants, taking care of oaks and other plants, taking care of the little animals that are in the forest, pheasants, birds, snakes, sources of water, one has to maintain them. (Goya 2000)

The fact that it is loggers and *comuneros* in Ixtlán who are the most likely to seek to balance biodiversity and production, and that the community has so far been able to contain conflicts between biodiversity protection, ecotourism and logging, suggests that it is forest communities rather than state agencies or NGOs which may be the best place to achieve an integration of biodiversity protection with logging, and to build enduring conservation practices in the forests of Mexico. In Oaxaca, foresters, officials and conservationists represent forest communities as being unstable, but these forest communities are in fact notably more stable than are state forestry and conservation institutions. For example, due to institutional and economic instability, forest management plans in Mexico have typically ignored the impact of all previous plans, making foresters' claim to manage forests over the long term a hollow one. To my knowledge, the only forest management plans in Mexico which have ever taken into the account the long-term impacts of previous management activities were being written for community forestry enterprises in Oaxaca in 2000–03.<sup>26</sup> The institutional instability of the forest service actually subverted the impact of foresters' knowledge; it is only in alliance with forest communities that foresters' technical knowledge has achieved a longer term stability, in the form of the new logging plans being written for Oaxacan forest communities.

25 E.g., in the community of Yavesia in the Sierra Juárez of Oaxaca.

26 The problem of unstable management plans is not unique to Oaxaca. In 2000, the senior forester Javier Musalem complained to me about the short time horizons of management plans. 'The problem with the system of requiring new management plans every 10 years, in order to allow exploitation to continue, is that each new plan totally disregards the data for the old plan, so they start again from scratch . . . and act as if the stand had no history of management' (Musalem 2000).

## Analysis and conclusion

Over the past century, centralised Mexican conservation institutions have rejected evidence from anthropologists and other researchers that swidden farmers were not ignorant and destructive fire users. To find international conservation institutions routinely repeating such a stereotype after so much empirical evidence to the contrary, suggests that this myth of nature has powerful implications for the legitimacy of state forestry and conservation institutions and is deeply embedded in the urban environmental imaginary. Over this period, there has been a shift in dominant understandings of forests; for most of the twentieth century forest fires were destructive because they destroyed standing timber and affected the productive capacities of the forest. Logging and forest management were legitimate because they could increase the natural productive capacity of forests. Since the 1980s, this productivist vision of forests has lost moral authority to conservationists' vision of forests as passive and unable to recover from disturbances, whether caused by logging or forest fires, leaving forests as the location of biodiversity which can be the subject of ecotourism and contemplation, or be threatened by biopiracy and deforestation. New state conservation institutions implement policies which seek to protect forests from logging and forest fires, and use the threat of irrational fires to expand conservation mandates from industrial forests into the broader countryside, as in the *Corredor Biológico Mesoamericano* project. Oaxaca-based and national NGOs largely see forest fires as being uniformly destructive, leading to criticism of the minority of conservation institutions which seek to experiment with prescribed burning.

My study of Mexican state forestry and conservation institutions shows that high level officials have retained discursive control over low level officials and rural people; leading them to conceal their practices from the official gaze, as in the widespread and illegal use of fire by agriculturalists across Mexico. Recent conservation discourse has made forests appear even more passive, fragile and threatened than hitherto, and has increased the distance between rural productive practices, and urban concepts of forests as vulnerable to fire, logging and deforestation. These conceptions of nature authorise conservation projects and obscure local practices; as in the case of simplified binaries of destructive fire and protective fire suppression. In this paper I have argued that it is the structure of conservation institutions themselves which entrenches official environmental discourse; Mexican forestry and conservation institutions have coped with institutional uncertainty and the overwhelmingly urban character of their constituency by re-inscribing fire suppression discourse, even when some conservationists and foresters are well aware that not all fires are destructive, and that some fires are biologically necessary.

The inability of foresters and conservationists to openly apply their local ecological knowledge within centralised conservation institutions suggests a possible point of entry for an anthropological critique of forestry and conservation policies. As conservationists have turned away from the past panacea of community based conservation, it is worth highlighting the point that biological knowledge is applied within institutions, and that over-centralised conservation institutions may suppress or marginalise the knowledge of conservationists themselves, as is presently occurring with the efforts of some conservationists to introduce prescribed burning in the forests of Mexico. The application of local ecological knowledge requires the construction of institutions and official categories which accept local autonomy and which do not

seek to retain discursive control for the centre; community conservation institutions may be the best allies to help local level conservationists and project managers resist centrally imposed conceptions of nature. Community natural resource management has long been advocated because of the alleged benefits of common property management systems, with stable and legitimate rules regulating access to natural resources (Ostrom 1991). What has not been argued is that decentralised natural resource management institutions may be better allies for the ecological knowledge of scientists themselves. As I have shown, conservationists' knowledge may be suppressed or ignored when it conflicts with the urban elite's conceptions of nature and culture, which underpin the legitimacy of conservation institutions themselves. It is the confluence of powerful urban conceptions of nature with unstable environmental institutions which marginalises the local ecological knowledge of foresters, biologists and swidden agriculturalists, and which threatens to destabilise the hard-won successes of community forestry enterprises in Mexico.

International environmental NGOs such as the World Wildlife Fund, the Nature Conservancy or Conservation International may wish to argue that they do not resemble Mexican environmental institutions. They may believe that Mexican conservation institutions are weak, poorly funded and otherwise flawed, and that it is these flaws which cause the suppression of scientific and traditional ecological knowledge which I have described. Nevertheless, I believe that international conservation institutions resemble Mexican state conservation institutions much more than they may wish to believe. In this regard, ethnographies of development institutions are particularly suggestive. In the early 1990s, Arturo Escobar launched a critique of the discursive hegemony of development, and of the power of development institutions (Escobar 1995), calling for more detailed ethnographies of conservation and development institutions (see also Ferguson 1994). Partially in response to this critique, a new wave of ethnographies of development institutions were carried out; however, rather than finding a development juggernaut rolling over local opposition, they show a development apparatus which is conflicted, fissured and much weaker than had been assumed. As Michael Watts points out: 'On reflection, this work was empirically weakest where it seemed theoretically strongest; it rested not on careful institutional ethnographies, or on discursive analysis of economic development as profession and practice, but rather on poorly substantiated claims about purportedly all powerful development institutions' (Watts 2001: 286). In particular, the practical effects of the discursive hegemony of development have been called into question, as institutional ethnographies reveal the ways in which development discourse is evaded or ignored in practice. In a recent ethnography of British aid projects in India, David Mosse argues that local level development practitioners deal with constantly shifting policies which emanate from London by concealing what they actually do, and representing their work as conforming to new policies (Mosse 2005). Although there is as yet relatively little published ethnographic research on international conservation NGOs, these ethnographies of development institutions suggest that international conservation NGOs are likely to display similar instability. It is likely that conservationists working in these institutions must pay close attention to shifting first world environmental priorities, and that these institutions are characterised by short project cycles and frequent reorganisations, closely resembling the history of unstable conservation and forestry institutions in Mexico. In this context, the turn away from community in conservation by these international NGOs may marginalise the social and ecological

knowledge of their own field level officials – the conservation biologists and project managers who may have to conceal the practical politics of community conservation from their superiors, because this knowledge is not well supported or is no longer approved of.

The deep structural binaries of nature and culture, indigenous and modern have long been a topic for environmental anthropologists (e.g., Li 2000). By focusing on the middle ground, where conservation and forestry institutions link general conceptions of nature with local practices of burning, logging and biodiversity management, I have shown how the institutional culture of conservation is critical in determining the ways in which conservation is produced on the ground. Simplified urban conceptions of nature, envisioned as threatened forests, need not impede productive alliances between local, national and global actors; on the contrary, a strong network which links urban environmentalists, government officials and rural people would seem to beg for creative translation and mistranslation between these different interests (e.g., Tsing 2005). Indeed, this is one possible outcome in Mexico – as the federal government attempts to decentralise power to the states, and some conservationists attempt to introduce prescribed burning. Another possibility is that the pervasive urban distrust of rural people, and the growing wealth and power of urban Mexicans may continue to drive conservation policies, as government officials seek to build the state in the countryside.<sup>27</sup>

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27 The tension between manipulating urban conceptions of nature and maintaining strong links with rural communities has been illustrated by the career of the recent Minister of Environment Alberto Cárdenas, who has consistently painted swidden agriculturalists as the authors of destructive forest fires while greatly increasing resources directed to community forestry (Gómez Mena 2003).

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