The Evolution of Conservation in the Commons:
Formal and Informal Forest Conservation in Oaxaca, Mexico

Chandni Navalkha
Yale University School of Forestry and Environmental Studies

As the formal establishment of voluntarily conserved areas on titled indigenous territories increases globally, there are few studies exploring why indigenous communities formally conserve their forest commons and what perceptions of conservation drive this decision. This paper examines voluntary formal and informal conservation by four indigenous communities in Oaxaca, Mexico in order to better understand community members' motivation for and perceptions of conservation. While two communities decided to formally dedicate areas of their territory to conservation as part of their management of forest commons, two communities opted to informally conserve parts of their land area. This paper presents community members' perceptions of conservation alongside an analysis of the use of forest commons across formal and informal conservation regimes. I find that both communities informally and formally conserving forest commons perceive of conservation as a strategy to maintain autonomy and communal forms of social organization. I find that regardless of formality or informality, all four communities feature similar conservation practices. My findings suggest that conservation in the forest commons of Oaxaca emerges in order to create the conditions for the persistence of indigenous forms of social organization. I argue that the conservation of forest commons in Oaxaca evolves as part of an ongoing renegotiation – an adaptive strategy- of cultural and territorial autonomy and self-governance in indigenous Oaxacan communities facing major social and ecological change.

Introduction

Forest conservation - the legal setting aside of forested land for non-extractive use - is on the rise globally as states strive to meet national and international terrestrial conservation targets. Legally protecting forests and other resources from exploitation through the establishment of protected areas has garnered such favor in the conjoined realms of conservation and development that the phrase Nature Needs Half has gained not only traction but a trademark. There are few countries in the world today where some fraction of the nation's forested terrestrial area has not been designated as "protected," and a diminishing number of people are unfamiliar with the term "conservation" itself as a moral imperative for human and planetary well-being.

Many protected areas have been established within indigenous territories (Colchester, 1997). Historically, conservation has had deeply contradictory effects for indigenous people. While conservation through the establishment of protected areas has often meant displacement and dispossession (Spence 1999, Brockington and Igoe 2006, Agarwal and Redford 2009, Loperena 2016), it has also created opportunities for indigenous communities to map, title and protect their territories and to garner international support for land claims and the protection of cultural identity (Stevens 1997, Chapin et al. 2000, Stocks 2003). Still, the general backlash against exclusionary conservation strategies has resulted in international law and norms protecting the rights of indigenous people and has created a new paradigm of rights-based conservation (Stevens 2014). Terrestrial conservation is thus coming up against international agreements to recognize indigenous rights and title, as well as national requirements to obtain free, prior and informed consent prior to actions on titled indigenous territories. Protected areas

created by state decree are consequently giving way to new types of protected area creation and terrestrial conservation strategies which center the roles and rights of indigenous communities (Brosius et al. 2005).

One such strategy is to encourage the voluntary, formal establishment of conserved areas by indigenous people on their titled territories (Pathak et al. 2004, Berkes 2009, De Koning et al. 2011). Much like conservation easements in the privately-owned forests of the global North, the formal conservation of what are called "community-conserved areas," "indigenous and community conserved areas," or "voluntary conserved areas" allows indigenous communities with communally-held land and resources to designate part or all of their commons as conserved (Oviedo 2006; Carroll 2014). Unlike collaborative management or many community-based conservation projects, this type of conservation does not demand that communities have in place models, management plans, or monitoring and evaluation frameworks (see Brosius 2004). Contrary to the rest of their protected area categories, the IUCN's definition of an indigenous or community conserved area does not require that conservation be the primary objective of management decisions by an indigenous community or group, only their outcome (IUCN 2008, Borrini-Fayerabend 2004).

Mexico, where 137 certified community reserves or "voluntary conserved areas" covering more than 150,000 hectares of forest had been established by 2011, is a much-cited example of the success of indigenous and community conservation (Bray and Velazquez. 2009; Martin et al. 2011).This proliferation of conservation has occurred largely in Oaxaca, a region of Mexico in which communities have historically been wary of state interference and resistant to the establishment of protected areas: of Mexico's total community reserves, nearly 70% of conserved land area is in 43 sites in the heavily forested southern state of Oaxaca. The majority of these 43 sites have been established by indigenous communities with communally-held land (Martin et al. 2011).

This paper examines indigenous communities' establishment of conservation areas in Oaxaca through the experiences and practices of four communities with extensive forest commons. I explore how indigenous communities came to decide to voluntarily conserve parts of their territories as a strategy to maintain indigenous autonomy and territorial security, as well as how they conceptualize and perceive of forest conservation as a tool for the persistence of important political and customary structures. At the same time, I look at how communities' use of conservation differs, where communities with certain kinds of forests and histories and facing certain kinds of change are more likely to formally conserve their forests while others choose to informally conserve. I take the position that whether formal or informal, conservation of forest commons by indigenous communities in Oaxaca is politically motivated to signify and maintain community autonomy by maintaining conditions in which indigenous social organization can persist and reproduce through forests.

I begin by situating the establishment of conserved areas on indigenous territories within the literature on community-based conservation, followed by a discussion of scholarship on indigenous people and conservation. I briefly discuss each of the four communities in the forested uplands of Oaxaca that comprise this study: the valley Zapotec communities of San Pablo Etla, Santo Domingo de Diaz Ordaz, and San Miguel del Valle and the highland Chinantec community of Santiago Comaltepec. I draw from observations and interviews in each community in order to understand why and how conservation is being implemented in their forest commons and what lessons can be surmised about why conservation has evolved in this

particular way in Oaxaca and may evolve in other areas of important conservation interest in future.

Community-Based Conservation and Voluntary Conservation

Conservation constitutes a significant part of environmental policy and management in developing countries (Agrawal and Gibson, 1999; Peluso, 1993; Heinen and Kattel, 1992; Anderson and Grove, 1987). Blaikie (2001) identifies three strains of political interest in conservation: first, colonial and post-colonial measures by states to protect pristine or wild nature from direct resource users; second, the globalization of environmental conservation initiatives through international institutions to achieve development targets; and third, renewed interest by the state and a vast array of non-state actors in local environmental management through participatory policies (see also Brosius, Tsing and Zerner, 2005; Berkes, 1999; Chambers, 1994). While all three strains of interest coexist and coproduce each other (Blaikie, 2001) and are based on particular assumptions and constructions of nature (Castree and Braun, 2001; Cronon, 1995; Guha, 1989), it is the last that currently dominates conservation policy and practice in the indigenous communities of Oaxaca.

The creation of new protected area designations like "indigenous and community conserved area" (IUCN, 2008) comes off of decades of negotiation and contention in academic and conservation circles about the role of communities in conservation. The critique of exclusionary models of protected area establishment and a greater acceptance of the importance of including communities for conservation success led in the 1980s to including 'communities' in conservation goals through the linkage of conservation and development that is still a prevalent model today (see Murphree 2002, Salafsky and Wollenberg 2000, Kellert et al. 2000, Stevens 1997). Many conservation and development models, however, have failed to achieve the kind of success they promise, leading to critiques of these types of community-based projects and the definitions of community they assume or impose (Blaikie 2006; Redford and Sanderson 2000; Agarwal and Gibson, 1999; see also Li, 1996). Critics have also argued that community-based conservation interventions claim a commitment to equity but are often still dominated by unequal power relations, in which conservationists tout hybridity but create situations in which community members cannot negotiate with the scientific knowledge claims which define the environmental goals of conservation (Nadasdy, 2005 and Mosse, 2001). The same is true for the collaborative management paradigm embraced by the International Union for the Conservation of nature (IUCN) in response to the perceived failures of community-based conservation, in which actors from within communities and conservation organizations partner to undertake management actions in a protected area (Borrini-Feyerabend and Tarnowski, 2005).

At the same time as conservation practitioners and social scientists, amongst others, were coming to terms with the complexity and difficulty of community-based conservation as either an equitable form of conservation or successful in achieving benefits for either communities or the environment, indigenous people themselves were suggesting alternative forms of conservation disentangled from previous strategies (Brosius, 2004). They argued that indigenous forms of conservation do not require management plans or the scientific activities imposed on conservation areas to maintain forest cover or preserve biodiversity, as evidenced by the fact that indigenous people had maintained both of these key conservation goals through their own forms of management (see Ghimere and Pimbert, 2013). They argued that conservationists thus must be aware of the 'unintentional' conservation outcomes of indigenous and community life (Brosius 2004, cf. Smith and Wishnie 2000; Stearman 1994). Largely in response to this call, the

IUCN created a new category of conservation, even as, as I will show later in this paper, indigenous and community conservation in practice is more complex and has more in common with community-based conservation than indigenous people may originally have envisioned.

Indigenous Peoples and Forest Conservation

At least 40% of terrestrial and marine protected areas globally encompass lands and territories used and inhabited by indigenous peoples (IUCN 2016). Forests have a long history of being a subject of governance, whether by indigenous people or by states to the ends of what Scott terms "authoritarian high modernism" (Scott, 1998; Fairhead and Leach, 1995; Ostrom 1990). In this century, with its new technologies of sight and an attendant globalization of environmental discourse and planetary science (Taylor and Buttel, 1992) interest in forest conservation and management has intensified. Conservation interest in indigenous territories often centers around forests as habitat for biodiversity and, increasingly, as 'carbon sinks' which mitigate anthropogenic global warming (see Hannah et al. 2002; Schwartzmann et al. 2000; Alcorn, 1993). As Hecht (2014) notes, "21st century rural politics may revolve somewhat less around the agrarian question and rather more around...debates over environmental enclosures where re-wooded and inhabited landscapes vie with conservation and "re-wilding" set asides or with efficiency forests for the capital flows associated with the emerging carbon economy."

Indigenous people, recognizing the political power of conservation, are increasingly adopting these conservatiosn discourses and are consciously implementing conservation along these lines on their territories as traditional land use practices (subsistence agriculture, livestock grazing) fall out of favor or alter as a result of global economic forces (see Robson 2007; Otto et al. 2013; Posey 1985). Indigenous communities' strategies of forest conservation today are simultaneously more legislated and decentralized than in the North (Bray, 2012). Yet how indigenous people who inhabit landscapes targeted for conservation or who themselves voluntarily implement conservation measures translate and perceive of the concept itself is understudied (Dove, 2006). This paper aims to fill this gap and to examine how indigenous communities in Oaxaca, a place of high conservation interest, are perceiving of an implementing conservation within their forest commons.

Oaxaca: Indigenous Autonomy and Territorial Control

As a result of Oaxaca's colonial history and ongoing struggles for self-determination in their communities, indigenous groups in Oaxaca are highly organized and have, at least in Mexico, a unique degree of control and autonomy over their territories and natural resources. Organization and autonomy are the outcomes of historical processes and are deeply rooted in the colonial era, during which indigenous communities were given title to communally-held land, and to the post-revolutionary agrarian reforms in Mexico. Briefly, I will touch on how this history has shaped a forested landscape which is currently of high conservation interest.

Spanish settler-colonists confronted a daunting terrain when they arrived in Oaxaca's central valley, at that time dominated by the Zapotec indigenous group but home to more than 16 ethnicities, surrounded by mountains harboring communities of different indigenous chiefs or *caciques* governed by complex kinship systems. Unable to challenge the *de facto* autonomy granted to highland people by geographic isolation, the Spanish colonial authorities relied on the Catholic Church to assist in reorganizing and simplifying indigenous communities (Hamnett, 2007) and established a colonial common property system through which they could ease civic administration by imposing a system of "government through community" (Mosse, 1999).

As part of this process of simplification and restructuring, the Spanish state granted 'primordial' titles to commonly-held agricultural and forest land from the 16th through the 18th centuries. Following the Spanish system, indigenous communities were organized into municipalities whose political representatives were chosen by colonial authorities to act as intermediaries between indigenous municipalities and the colonial state (Chassen-Lopez, 2010). The civil-religious *cargo* system was established as the governance system within communities, requiring male village-members to serve in unpaid positions of a hierarchical public administration and organizing community life around religious *fiestas* or celebrations to which all community members were economically obligated (see Cancian, 1965). Colonial-era forms of organization became deeply entwined with how indigenous people came to view and understand their identities and communities, what Antonio Garcia de Leon has called "indocolonial syncretization" (Garcia de Leon, 1997: 124). This is exemplified in the post-revolutionary struggles of indigenous groups for autonomy within the territories demarcated and defined during the colonial period and confirmed by President Lazaro Cardenas during the agrarian reforms of the 1940s and 1950s.

These post-Revolutionary agrarian reforms of Mexico recognized primordial titles and granted titles to indigenous communities with outstanding land claims, terming such communities *comunidades agrarias* or agrarian communities. Under agrarian reform, indigenous groups' land titles were distinct in that land was legally held communally by all registered members or rightsholders of a community; further, the reform required a reorganization of communal organization in order for communities to obtain such titles and be considered able to administer management of their land. *Comunidades agrarias* were required to be represented by a 3-member Council of Communal Resources (*Comisariado de Bienes Comunales*) as the chief governing body and liaison between the Mexican state and the community; this body would be overseen and assisted by a 3-member Vigilance Committee (*Consejo de Vigilancia*). Positions within these governing bodies were enfolded into the *cargo* system, requiring male rightsholders within communities to serve in these positions to administer the management of common resources.

Despite the success of agrarian reform in Oaxaca, the post-revolutionary Mexican state continued to violate indigenous autonomy over communally-held natural resources, particularly in the 1950s. Forests within indigenous territories were concessioned to parastatal pulp and paper companies as well as the timber industry. Simultaneously, indigenous communities faced the political stranglehold of the Institutional Revolutionary Party (PRI) and a lack of democracy in state politics. In the late 1970s and early 1980s, popular movements - with largely indigenous membership - for the democratization of local political life and control of natural resources destabilized governability in Oaxaca and forced the state government to institute constitutional reforms to recognize indigenous autonomy (Anaya Munoz, 2004).

The main form of recognition came with the institution of electoral reform in 1995, which recognized customary authority within indigenous communities, rooted in colonial-era organization (Recondo, 1999). This system of customary authority, known as *usos y costumbres*, allows communities to elect their own leaders and representatives through an assembly of community members to the *cargo* system of unpaid elected service and supports communal practices like the *tequio* (communal labor obligations) (Eisenstadt, 2007: 63; see also Mitchell, 2006). These reforms laid the foundation of indigenous autonomy in Oaxaca to the present, where of 570 municipalities, 417 are governed by *usos y costumbres*.

Alongside electoral reform, forest concessions were cancelled and communities given the right to manage their territorial forest resources in accordance with national forest management guidelines and requirements. The Council of Communal Resources is required to interface with the Mexican forest service (CONAFOR), environmental ministry (SEMARNAT), and environmental protection agency (PROFEPA) in order to ensure they are in compliance with state forest policy (Mathews, 2011). Territorial control by indigenous communities in Oaxaca is thus still a process of negotiation, in which partial autonomy interacts with state control and regulation.

Indigenous and Community Conservation in Four Oaxacan Communities

In 2008, in response to pressures to increase the nation's conserved terrestrial area but coming up against the secure land tenure of forest-holding communities, the Mexican government created a new legal instrument with which communities could designate conserved areas on their territories known as Voluntary Conserved Areas (*Areas Voluntariamente Destinado a la Conservacion*). Oaxaca, where Mexican environmentalists feared land use change for agriculture and pasture was threatening the integrity of pine-oak and cloud forests (Velazquez et al. 2003), was a main target for this initiative and has turned into a poster child for its success (Martin et al. 2011). Of its 6 million hectares of forests, an estimated 70% are held by indigenous communities as common property and are outside the ability of the state to directly intervene for conservation. But between 2003 and 2015, 64 such communities have designated more than 150,000 hectares of forests as ADVCs (CONANP, 2016).

The process to designate a certified community conserved area involves three steps. First, the forest to be conserved is inspected by the state Commission on National Protected Areas (CONANP). Secondly, communities are required to undergo a land use planning exercise known as a Community Territorial Ordering (*Ordenamiento Territorial Comunitario*) in order to specify the territorial areas in which agricultural activities, cattle grazing, and conservation are the acceptable land uses. Finally, community rules are created and established through community statute. In return for these actions and activities, communities who agree to establish Voluntary Conserved Areas receive small infrastructural investments or resources for ecotourism projects; there are no other articulated financial incentives.

Partially because of the lack of incentives, the majority of indigenous communities in Oaxaca have balked at this type of state-sponsored but community-led conservation. Even without legally establishing an ADVC, however, many of these communities are implementing the same plans and rules of conservation as those that have opted to formally conserve their forests. In the following sections, I outline voluntary conservation in four different forested indigenous communities in Oaxaca which occur either through formal certification or informally.

The four communities which comprise the case studies here are all agrarian communities (*comunidades agrarias*) in which land is held communally by all registered rightsholders; those which are also municipal centers (San Pablo Etla and Santo Domingo de Diaz Ordaz) can have other forms of land tenure (private property and *ejidos*, in which land parcels are individually owned) within their territories. Each community has more than 1,000 hectares of communally held forests and is identified as an indigenous community because it is governed by *usos y costumbres*. Each community is, however, unique in its demographics, history, and territorial extent as well as in its culture and strategy for dealing with change.

Regardless of whether a community has legalized an ADVC or not, the practices of conservation in the communities described above take just three or four forms and are present in

all: the creation and enforcement of restrictions on the cutting of green or dry trees for timber or firewood, the strict suppression of fire, fines for hunting without permission, and the creation of ecotourism infrastructure to encourage forms of passive resource use. Community members must apply to the Comisariado for permission to enter the forests, collect firewood, or hunt; in its turn, the Comisariado must apply to state environmental agencies for permission to take management actions in the forest, report violators, and account for land use change. In this sense, whether a community chooses to legalize its conservation area or not, forest conservation represents one of the many ways through which formal systems reach into the everyday lives of its members.

San Pablo Etla

Approximately 30 minutes by highway from Oaxaca City, San Pablo Etla is a municipal center made up of 4 villages which are home to 7,000 residents. The main village of San Pablo Etla, home to approximately 1,500 people, was originally an upland Zapotec settlement; the community demarcated its territory and received its title in 1686.

San Pablo was one of the first communities in Oaxaca to establish a formal community conserved area in its communally-held forests. Its territory borders the National Park Benito Juarez, established by presidential decree in 1937 to protect the forests around Oaxaca and ensure a clean water supply to the city. In the 1960s, San Pablo's 2,355 hectares of pine-oak forests were concessioned to a timber company known as Maderas de Oaxaca. In the 1980s, after state forest concessions were cancelled as a result of indigenous struggles in other communities in the Sierra Norte mountain range, the community had to decide what to do with its forest resources. Internal dissension developed amongst community members who wanted to establish a community forest enterprise and those which did not want to make the necessary investment, as well as between people regarding the number of trees to be allowed to be harvested each year. As a result, the community decided not to extract timber from its forests in the early 2000s.

In 2003, representatives of the Commission on National Protected Areas (CONANP) approached the then-Council of Communal Resources about conserving their 2,355 hectares of communally-held forests in order to expand upon the National Park Benito Juarez. The Council of Communal Resources in 2006 was influenced at the time by Juan Jose Canseco, the founder of the Institute for Nature and Society in Oaxaca (INSO) and partnered with INSO and CONANP to initiate conservation. In March 2006, after a discussion in the community assembly, the community decided to establish a voluntary conserved area for 15 years in return for a small investment by the Ministry of Environment and Natural Resources (SEMARNAT) in an infrastructural investment in an ecotourism welcome center and for receiving Payments for Hydrological Services for a 5 year period from 2007 to 2012. The community conducted a Territorial Ordering exercise in order to designate land use zones within their territory; in the conserved forest area, the only extractive activity allowed is the removal of dry wood for fuelwood by community members who obtain permits.

Over the past two decades, San Pablo has experienced an increasing population due to an influx of people from outside of the community - including foreigners and people from other parts of Oaxaca and Mexico - who are looking for housing in the proximity of Oaxaca City. Community members allowed outsiders to lease or purchase parcels of land, and some describe the entrance of people from the city as an "invasion" and a "contamination" of the original village. One informant noted that of the approximately 500 families that make up the main village of San Pablo Etla, just 100 are the 'traditional' families with roots in the Zapotec community; of these, many family members migrate to Santa Ana del Valle in California, and

many do not return. Foreigners include American retirees who settled in San Pablo Etla; in 2010, American retirees living in San Pablo Etla encouraged the Comisariado to set up a conservation demonstration area known as La Mesita and funded the establishment of a tree nursery in order to promote reforestation and forest restoration on the denuded hillsides. As a result of outmigration and the in-migration of foreigners, the number of *comuneros* or registered rightsholders required to take part in the *cargo* system and communal work obligations in San Pablo Etla has decreased. Several community members noted that because of forest conservation, that residents of San Pablo Etla who are not registered rightsholders have begun to participate in work obligations related to reforestation and monitoring of the forests.

Santo Domingo de Diaz Ordaz

Diaz Ordaz is located an hour from Oaxaca along a major highway. It is a municipal center of about 6,000 people, but the population of the main village is small; about 3,000 year-round residents. The majority of the community identifies as valley Zapotec, but many community members are from other towns in Oaxaca or Mexico and identify either as a different indigenous group or as *mestizo*.

Like San Pablo Etla, Diaz Ordaz has a unique mix of land designations; the agrarian area is an *ejido*, forested land is communally owned by registered community rightsholders or *comuneros*, and residential areas are the private property of the community member. Also like San Pablo Etla, Diaz Ordaz was one of the first communities to establish a formal community conserved area. In 2003, the Comisariado de Bienes Comunales designated all communal forested land - 3,548 hectares- as a formal community conserved area in 2003 for a period of 30 years. Unlike San Pablo Etla, the forests of Diaz Ordaz were never concessioned. As a result, no logging roads or infrastructure were already in place by the time the concession era ended and communities were allowed to set up their own forest enterprises. In the early 2000s, the community came to consensus in deciding to conserve the forests rather than create a community forestry enterprise due to the cost of infrastructural investments. After undergoing a Territorial Ordering process, the community also began to receive Payments for Hydrological Services.

Diaz Ordaz used to primarily consist of families living off of subsistence agriculture, growing maize, beans and squash and occasionally cash cropping coffee. Informants in Diaz Ordaz noted that now, however, people are more likely to be working as day laborers (*jornaleros*) than to be practicing subsistence agriculture. Informants connect these changes primarily with climate change and with drought conditions that have made subsistence agriculture insufficient to feed families, as well as with outmigration and a decreasing number of *comuneros* along with an influx of people who participate in wage labor who are not originally from Diaz Ordaz.

The Comisariado of Diaz Ordaz is currently engaged in setting up an ecotourism infrastructure in the conservation area, soliciting funds from community members who live abroad to finance a road and the construction of cabins in the community's forested mountains. Of the four communities referenced in this study, Diaz Ordaz is the community whose Vigilance Committee patrols the forest at the least frequent intervals - monthly, as compared to San Pablo Etla's weekly forest patrols. In an interview, informants within the Comisariado suggested that the funds from ecotourism would help to bring in the resources necessary to pay for the gas and meals required for more frequent forest monitoring activities.

San Miguel del Valle

The most traditional of the four examples given here, San Miguel del Valle is an indigenous community an hour and 30 minutes from Oaxaca. It is also the smallest, with approximately 1,000 year-round residents who overwhelmingly speak Zapotec and where women, unlike in the other communities, still wear traditional attire.

San Miguel del Valle has an extensive forest area, the majority of which is pine-oak forest which encompasses the majority of their titled land. Although approached in the early 2000s, San Miguel has refused to legally conserve any part of this forested land, preferring to keep the option for a community forestry enterprise open. They have only agreed to a 1,000 wildlife conservation area in the interior of their forests, which form part of the range of the jaguar.

Nonetheless, they follow many of the conservation practices of the previously described communities; the Comisariado de Bienes Comunales has instituted rules against hunting, burning of trees or land, and the cutting of live trees for firewood or construction, and sends a monitoring crew out each day to ensure no such activity is taking place. Land use change to agriculture is forbidden on the communal land without permission from the communal authorities. San Miguel has created an ecotourism center with the help of an international NGO, bypassing the Mexican government agencies; they also received Payments for Environmental Services. Still, the community has a historically long and contentious relationship with federal and state governments; informants in the Comisariado say that they would rather wait for "nature's benefits" rather than for "government benefits," saying that the former are likely to materialize more quickly than the latter.

When asked why they conserve informally, informants in San Miguel del Valle stress that they conserve forests internally in order to show that they are good stewards of their lands and to preserve clean air and water for community members. They emphasize that it is important to do this without government benefits because if state attitudes towards property shift towards considering those who pay for conservation to be the rightful owners of land, it is important that San Miguel show that it has invested as a community in conservation without the financing and incentives of the state and of organizations like the World Bank.

Santiago Comaltepec

Comaltepec is a Chinantec community located two and a half hours away from the city of Oaxaca; no major roads lead directly to the town. It has roughly 2,000 year-round residents, and like San Pablo Etla, many community members have migrated to the United States. Comaltepec was at the forefront of the indigenous movement in the late 1980s against state forest concessions and the the paper company, Fabricas de Papel Tuxtepec (FAPATUX) to which its forests were concessioned. The community took back the forests under communal control and established a community forestry enterprise, and joined the Union of Zapotec Forest Producers (UZACHI) formed to unite indigenous communities with community forest enterprises.

Despite having three times the amount of land area than San Pablo, only a third of Comaltepec's forested land area is comprised of pine-oak forest; the rest of the forested area is tropical montane and tropical rain forest with little to no timber value. These 11,730 hectares of forests are *de facto* conserved, but the Comisariado de Bienes Comunales have refused to establish them as formally conserved areas. Informants cite that the government incentives for conservation are too little for the community to want to formally go through the certification process. Comaltepec has received Payments for Ecosystem Services for hydrological services for 12 years, longer than almost any other community in Oaxaca; additional benefits do not

amount to much given the community's income from its forest enterprise alongside its PES payments. Even though Comaltepec has engaged in territorial land use mapping and planning, and carry out many of the practices that the other communities do, then, they take such actions without government recognition of these as conservation actions. Community members say that they prefer to conserve "in their own way" so that the credit for conservation is given to them and their land title remains secure.

Why Conserve the Forest Commons?

Each community discussed above represents different experiences and perceptions of forest conservation. While some communities have decided to establish community conserved areas, others have not; and yet all communities are conserving some part of their forested area either with or without state recognition of conservation. The question that emerges is why indigenous communities in Oaxaca with different histories and backgrounds are all taking similar voluntary conservation measures.

To some degree, conservation has come to mean in these communities a break with the past and progress made from a time in which natural resources were exploited without question. The narrative of a move to control and regulation of forests from a past in which they were rampantly destroyed was reflected in each of the four communities presented as cases here. "Now there is control – now we have to ask for permission" was a constant refrain, referencing this control as a change from past destruction not just by pulp and paper companies but by their ancestors who would take down trees for construction and firewood. Community members are building a relationship to forests that emphasizes present restraint and sustainability - real or rhetorical - that attributes present forest conditions to present efforts.

The stakes of this narrative are high. Conservation is seen by many in indigenous communities as an unspoken requirement if communities are to retain their forest commons and the territorial basis of their identity. One interviewee who I accompanied on a patrol of the forest admitted that he thought that "the community owns the forest, but really it is the government that owns the forest." Asked whether he thinks the community's conservation strategies are a good thing, an informant said that he didn't know, but that "the government says you can't kill animals or cut trees, so I imagine they do it because the government says so." Comisariado members remarked that they follow the process for asking permission to cut trees and reporting those who convert forest to agriculture in a conservation area because it is a "compromise" – a commitment – between the community and the state. If a community does not practice "technical" forest of conservation and forest management, there is an underlying perception that in the future, it would be possible for rights over forest resources to be taken away and given to those who do conserve. In a related sense, conserving forests is seen as insurance against such state actions, or changes in state attitudes and rules. These communities have experienced cycles of change in state attitudes towards property; they are by no means sure that the current Agrarian Code will not be reformed to their disadvantage.

Conserving parts of their forested areas gives communities the grounds to claim territorial authority through stewardship of the forest. It also plays a role in the maintenance and persistence of autonomous forms of communal organization that enable communities to administer this authority. As one person said, "conservation is a good thing because ...there are outlets and reasons to do *tequios* which are part of our community." As the numbers of registered rightsholders in communities decrease, and as subsistence agriculture becomes a less important part of indigenous peoples' life strategies, forests become the new entity to which communal

forms of organization rooted in the colonial era attach themselves and are able to persist and be reproduced. Forests, as the last and major communally owned resources in indigenous communities, become the basis for communal authority and the reproduction of the community itself.

Perceptions of Conservation

In interviews with people in the communities described previously, multiple definitions and perceptions of forest conservation arose. It became clear that there were four general attitudes towards conservation, which intersect but also deserve to be at least partially disentangled. The first is that conservation is a form of respect, and that respect takes the form of "cleaning," "maintaining," and "taking care of" the forest. Conservation in this mold does not demand rules or regulations but rather a careful relationship with a material source. The second attitude stems from a perception of destruction and harm, whether caused by concessionaires, ancestors or people far away, that constitutes a lack of respect for the forest: that conservation means the implementation of rules and institutions that reflect the first attitude of respect. The third attitude is that conservation is a state requirement to secure claim to forest land, and must be undertaken technically in order to fulfill this unwritten requirement. The fourth attitude is that conservation is a type of insurance against forces of change, whether biophysical or sociopolitical, that will make the survival of both the physical and institutional aspects of a community more likely.

In all of my conversations, nobody was against conservation or took a strong negative attitude towards how it was being enacted within their communities; this could be because they imagined this was what I wanted to hear, but my observations led me to the conclusion that this is because conservation has very little direct impact on people's lives. None of the people I interviewed mentioned restrictions to land use - the prohibition of conversion of forests to agricultural land – as a concern. Conservation is seen as part of a set of processes, including outmigration, urbanization, and occupational changes that have already altered elements of community life and which poses no more threat than these alterations.

For those who cited "cleaning" the forest or "taking care of it" as informing their conception of conservation, forests are associated with clean air and clean water – a connection made by Mexican foresters and scientists and promulgated in Oaxaca for a century. Maintaining the forest, however, included removing "mature trees" that were preventing younger trees from becoming established and growing and removing "dead wood" or clutter from the forest for firewood. These forest management methods, informed by a century or more of forest management discourse, nonetheless create an idea of forest conservation that does not exclude certain kinds of use. The use of timber for construction and dry wood for firewood constitute the major forest needs of indigenous communities; this definition of forest conservation suits people's subsistence practices. Some people for whom this was the primary attitude towards forest conservation were thus frustrated with what they perceived to be forests as a place of "work" replaced by forests as a place of "leisure": as one informant put it: "before everything was free, now everything is controlled. And so people go to the forest to enjoy it and relax, whereas before people went to the forest to work."

Formal and Informal Conservation

While two communities discussed here established formal conservation areas, two communities informally or internally designated conserved forest areas on their territories.

Several factors seem to be important as to whether indigenous communities, based on the case studies above, decide to formally or informally conserve. The first is the types of land tenure existing within their territories and whether the community is a municipal center; the second related factor is the degree to which people from outside of the community are able to enter, reside in, and influence the culture of a community; and the third is distance and accessibility from the urban center of Oaxaca City.

Communities like San Pablo Etla and Santo Domingo de Diaz Ordaz, which feature multiple types of land tenure within their territories, decided to formally conserve all of their communally held forests in contrast to Santiago Comaltepec and San Miguel del Valle, where only one type of tenure - communal land ownership - exists. Informants in San Pablo Etla and Santo Domingo de Diaz Ordaz noted that the presence of different forms of land tenure creates clear zones in communities: a residential zone (private property), an agricultural zone (ejidos), and a conservation zone (communally-held forests), creating a context in which land use is not contested. In the other two communities, where all land is communally held, forest conservation is informal and people are warier of efforts to legally demarcate some areas as unavailable for certain forms of land use. In these communities, people used to live in forested areas away from what are currently the village centers and are more interested in maintaining the option to use communally-held resources.

The presence of private property and ejidal land in communities also allows the entrance of outsiders into indigenous villages. Land which features these types of tenure can be sold or leased outside of the circle of rightsholders registered in a community, whereas when all land is communally held outsiders can only lease land - and even then only if the entire community assembly is in consensus. In San Miguel del Valle, for example, an Australian retiree has asked the Comisariado permission to lease communally held land for raising sheep to sell wool to indigenous artisans for weaving; because the community assembly decided against it, she was not allowed to lease the land. The presence of outsiders, as in the case of San Pablo Etla, has tangible consequences on the conservation decisions of indigenous communities; relationships with people and institutions representing conservation-mindedness and the capability of linking with national and international funding encourages the establishment of formal conservation areas through the Mexican state.

Again related to the entrance of foreigners is a community's distance from Oaxaca City. From the four cases cited here, those communities closest to Oaxaca City and most accessible by road and public transportation have established formal conservation areas whereas communities that are more remote or difficult to get to have not. Pressure on forest resources from population growth might make indigenous communities more likely to formally conserve forest areas than communities where isolation precludes or slows down population pressure, particularly as isolation coincides with out-migration.

Conclusion

I began this paper by setting out the ways in which globally, conservation of the commons by indigenous communities is gaining momentum as a conservation strategy that can be implemented in geographies where indigenous land tenure precludes the establishment of protected areas. I referenced the literature on community-based conservation and the multifaceted interactions between indigenous communities and conservation, in order to situate indigenous and community conservation in a continuum of conservation strategies and within a longstanding conversation about the role of communities in protecting forests. I drew out the

background of indigenous autonomy and forest management in Oaxaca to illustrate that indigenous forms of organization sparked in the colonial era continue to the present day and form the backbone of indigenous identity and community life. I went on to look specifically at formal and informal conservation in four Oaxacan communities with extensive forest areas, in order to understand why indigenous communities are deciding to conserve their forests; what perceptions of conservation are operative in these communities; and why some decide to formally establish formal conserved areas whereas others prefer to informally conserve. This exploration of conservation in Oaxaca makes evident that indigenous communities in this geography are conserving their forests not necessarily in response to changing environmental conditions, but changing social and political conditions.

The case studies of communities here are instructive for thinking about indigenous and community conservation in other geographies. Conservation emerges in these indigenous communities as a response to social and demographic pressures, in addition to political negotiation of land use and stewardship. Adapting to out-migration and the in-migration of people from outside of the community, indigenous communities closer to the urban center and with fewer hectares of forest to support large populations are more likely to conserve than communities in which extensive forest areas further from the city are communally owned by a small number of community members. Understandings of conservation within indigenous communities in Oaxaca are based in how people view and negotiate with the state and with what they perceive as changing national and international attitudes towards property, as well as the well-being and reproduction of the community and communal organization. Formal or informal conservation, then, is not only a strategy for forest management and protection but a strategy through which indigenous communities in Oaxaca - and elsewhere - are able to create the potential for their reproduction and persistence over time through the conservation not just of forests, but of the forms of organization forests require and allow. As terrestrial conservation efforts increase, and as more indigenous groups become involved in conservation of their territories, it is increasingly important to understand people's perceptions and motivations outside of environmental factors if community-led conservation of the commons is to benefit indigenous communities and their autonomy.

Figures

Table 1: Tenure and Voluntary Conservation in Four Oaxacan Communities

Study Site	Land Tenure	Certification as VCA	Duration of Certification	PES (Hydrological Services)
San Pablo Etla	Agrarian community, ejido and private property	Yes	2006 - 2021	2007 - 2011
Santo Domingo de Diaz Ordaz	Agrarian community, ejido and private property	Yes	2013 - 2028	2012 - Present

Santiago Comaltepec	Agrarian community	No	N/A	2004 - Present
San Miguel Del Valle	Agrarian community	No	N/A	2005 - 2010

Source: Interviews, Comisariados de Bienes Comunales; CONANP 2016

Table 2: Land Use and Conservation in Four Oaxacan Communities

Study Site	Territorial Area (ha)	Forested Area (ha)	Area Under Production Forest (ha)	Area Under Pasture (ha)	Area Under Cultivation (ha)	Conserved Area (ha)
San Pablo Etla	4,183	2,335	N/A	N/A	93.2	2,335
Santiago Comaltepec	18,366	15,852	3,000	500	989	11,730
San Miguel Del Valle	16,160	13,000	8,000	1,950	969.6	1,000
Santo Domingo de Diaz Ordaz	4,589	3,548	N/A	309	1088	3,148.44

Source: Interviews, Comisariados de Bienes Comunales

Table 3: Population and Communal Governance Characteristics of Four Oaxacan Communities

Study Site	Population	Number of *Comuneros*	Number of *Comisariado* Members	Number of *Vigilancia* Members	Frequency of Activities
San Pablo Etla	7,000	140	6	3	Weekly
Santiago Comaltepec	1,100	350	6	3	Every 15 days
San Miguel Del Valle	3,500	980	6	20 (rotating)	Daily
Santo Domingo de Diaz Ordaz	2,700	580	6	3	Monthly

Source: Interviews, Comisariados de Bienes Comunales; INEGI

References

Agrawal, Arun, and Clark C. Gibson. "Enchantment and Disenchantment: the Role of Community in Natural Resource Conservation." *World Development* 27, no. 4 (1999): 629-649.

Agrawal, Arun, and Kent Redford. "Conservation and Displacement: An Overview." *Conservation and Society* 7, no. 1 (2009): 1.

Alcorn, Janis B. "Indigenous Peoples and Conservation." *Conservation Biology* 7, no. 2 (1993): 424-426.

Muñoz, Alejandro Anaya. "Explaining the Politics of Recognition of Ethnic Diversity and Indigenous Peoples' Rights in Oaxaca, Mexico." *Bulletin of Latin American Research* 23, no. 4 (2004): 414-433.

Anderson, David, and Richard Grove. "The Scramble for Eden: Past, Present and Future in African Conservation." Cambridge: Cambridge University Press, 1987.

Berkes, Fikret. "Sacred Ecology: TEK and Resource Management." London: Routledge, 1999.

Berkes, Fikret. "Community Conserved Areas: Policy Issues in Historic and Contemporary Context." *Conservation Letters* 2, no. 1 (2009): 20-25.

Blaikie, Piers. *Social Nature and Environmental Policy in the South: Views from Verandah and Veld*. Blackwell Publishing. Malden, 2001.

Blaikie, Piers. "Is Small Really Beautiful? Community-based Natural Resource Management in Malawi and Botswana." *World Development* 34, no. 11 (2006): 1942-1957.

Borrini-Feyerabend, Grazia. "Governance of Protected Areas, Participation and Equity." *Secretariat of the Convention on Biological Diversity (SCBD), Biodiversity Issues for Consideration in the Planning, Establishment and Management of Protected Area Sites and Networks.* SCBD, Montreal, Canada (2004).

Borrini-Feyerabend, Grazia, and Christopher B. Tarnowski. "Participatory Democracy in Natural Resource Management: a 'Columbus's Egg?'." In *Communities and Conservation: Histories and Politics of Community-based Natural Resource Management* (2005): 69-90.

Bray, David Barton, and Alejandro Velazquez. "From Displacement-based Conservation to Place-based Conservation." *Conservation and Society* 7, no. 1 (2009): 11.

Bray, David, Elvira Duran, and Oscar Molina. "Beyond Harvests in the Commons: Multi-scale Governance and Turbulence in Indigenous/community Conserved Areas in Oaxaca, Mexico." *International Journal of the Commons* 6, no. 2 (2012).

Brockington, Daniel, and James Igoe. "Eviction for Conservation: A Global Overview." *Conservation and Society* 4, no. 3 (2006): 424.

Brosius, J. Peter. "Indigenous Peoples and Protected Areas at the World Parks Congress." *Conservation Biology* 18, no. 3 (2004): 609-612.

Brosius, Peter J., Anna Lowenhaupt Tsing, and Charles Zerner, eds. *Communities and Conservation: Histories and Politics of Community-based Natural Resource Management*. Rowman Altamira, 2005.

Cancian, Frank. *Economics and prestige in a Maya community: The religious cargo system in Zinacantan*. Stanford University Press, 1965.

Carroll, Clint. "Native Enclosures: Tribal National parks and the Progressive Politics of Environmental Stewardship in Indian Country." *Geoforum* 53 (2014): 31-40.

Castree, Noel, and Bruce Braun. "Social Nature: Theory, Practice, and Politics." Oxford: Blackwell Publishing, 2001.

Chambers, Robert. "The Origins and Practice of Participatory Rural Appraisal." *World Development* 22, no. 7 (1994): 953-969.

Chapin, Mac, Zachary Lamb, and Bill Threlkeld. "Mapping Indigenous Lands." *Annual Review of Anthropology* 34 (2005): 619-638.

Chassen-López, Francie R. *From Liberal to Revolutionary Oaxaca: The View from the South, Mexico 1867-1911*. Penn State Press, 2010.

Colchester, Marcus. "Salvaging Nature: Indigenous Peoples and Protected Areas." In *Social Change and Conservation: Environmental Politics and Impacts of National Parks and Protected Areas,* edited by Michel P. Pimbert, 97-130. London: Earthscan, 1997.

Cronon, William. *Uncommon Ground: Toward Reinventing Nature*. Vol. 95. New York: Norton, 1995.

De Koning, Free, Marcela Aguiñaga, Manuel Bravo, Marco Chiu, Max Lascano, Tannya Lozada, and Luis Suarez. "Bridging the Gap Between Forest Conservation and Poverty Alleviation: the Ecuadorian Socio Bosque Program." *Environmental Science & Policy* 14, no. 5 (2011): 531-542.

De Leon, Antonio Garcia. *Resistencia y Utopía: Memorial de Agravios y Crónica de Revueltas y Profecías Acaecidas en la Provincia de Chiapas Durante los Ultimos Quinientos Años de su Historia*. Ediciones Era, 1997.

Dove, Michael R. "Indigenous People and Environmental Politics." *Annual Review of Anthropology* 35 (2006): 191-208.

Eisenstadt, Todd A. "Usos y Costumbres and Postelectoral Conflicts in Oaxaca, Mexico, 1995-2004: An Empirical and Normative Assessment." *Latin American Research Review* (2007): 52-77.

Fairhead, James, and Melissa Leach. "False Forest History, Complicit Social Analysis: Rethinking Some West African Environmental Narratives." *World Development* 23, no. 6 (1995): 1023-1035.

Ghimire, Krishna B., and Michael P. Pimbert. *Social Change and Conservation*. Vol. 16. London: Routledge, 2013.

Guha, Ramachandra. "Radical American Environmentalism and Wilderness Perservation: A Third World Critique." *Environmental Ethics* 11, no. 1 (1989): 71-83.

Hamnett, Brian. "Recent Work in Mexican History." *The Historical Journal* 50, no. 03 (2007): 747-759.

Hannah, L., G. F. Midgley, T. Lovejoy, W. J. Bond, M. L. J. C. Bush, J. C. Lovett, D. Scott, and F. I. Woodward. "Conservation of Biodiversity in a Changing Climate." *Conservation Biology* 16, no. 1 (2002): 264-268.

Hecht, S. B. "The Social Lives of Forest Transitions and Successions: Theories of Forest Resurgence." *The Social Lives of Forests: Past, Present, and Future of Woodland Resurgence, edited by SB Hecht, KD Morrison, and C. Padoch* (2014): 97-113.

Heinen, Joel T., and Bijaya Kattel. "A Review of Conservation Legislation in Nepal: Past Progress and Future Needs." *Environmental Management* 16, no. 6 (1992): 723.

Kellert, Stephen R., Jai N. Mehta, Syma A. Ebbin, and Laly L. Lichtenfeld. "Community Natural Resource Management: Promise, Rhetoric, and Reality." *Society & Natural Resources* 13, no. 8 (2000): 705-715.

Li, Tania Murray. "Images of Community: Discourse and Strategy in Property Relations." *Development and Change* 27, no. 3 (1996): 501-527.

Loperena, Christopher A. "Conservation by Racialized Dispossession: the Making of an Eco-destination on Honduras's North Coast." *Geoforum* 69 (2016): 184-193.

Mathews, Andrew S. *Instituting Nature: Authority, Expertise, and Power in Mexican Forests*. MIT Press, 2011.

Martin, Gary J., Claudia I. Camacho Benavides, Carlos A. Del Campo García, Salvador Anta Fonseca, Francisco Chapela Mendoza, and Marco Antonio González Ortíz. "Indigenous and Community Conserved Areas in Oaxaca, Mexico." *Management of Environmental Quality: An International Journal* 22, no. 2 (2011): 250-266.

Mitchell, Ross E. "Environmental Governance in Mexico: Two Case Studies of Oaxaca's Community Forest Sector." *Journal of Latin American Studies* 38, no. 03 (2006): 519-548.

Murphree, Marshall W. "Protected Areas and the Commons." *Common Property Resource Digest* 60 (2002): 1-3.

Mosse, David. "Colonial and Contemporary Ideologies of 'Community Management': the Case of Tank Irrigation Development in South India." *Modern Asian Studies* 33, no. 02 (1999): 303-338.

Mosse, David. "'People's knowledge', Participation and Patronage: Operations and Representations in Rural Development." In *Participation - the New Tyranny?,* edited by Bill Cooke and Uma Kothari , 16-35. London: Zed Press, 2001.

Nadasdy, Paul. "The Anti-politics of TEK: the Institutionalization of Co-management Discourse and Practice." *Anthropologica* (2005): 215-232.

Ostrom, Elinor. "Governing the Commons: The Evolution of Institutions for Collective Action." Cambridge University Press, 1990.

Otto, Jonathan, Charles Zerner, John Robinson, Richard Donovan, Marianne Lavelle, R. Villarreal, Nick Salafsky et al. *Natural Connections: Perspectives in Community-based Conservation*. Island press, 2013.

Oviedo, Gonzalo. "Community Conserved Areas in South America." *Protected Areas Programme* (2006): 49.

Pathak, Neema, Seema Bhatt, T. Balasinorwala, Ashish Kothari, and G. Borrini-Feyerabend. "Community Conserved Areas: a Bold Frontier for Conservation." *TILCEPA/IUCN, CENESTA, CMWG and WAMIP, Tehran* (2004).

Peluso, Nancy Lee. "Coercing Conservation?: The Politics of State Resource Control." *Global Environmental Change* 3, no. 2 (1993): 199-217.

Posey, Darrell Addison. "Indigenous Management of Tropical Forest Ecosystems: the Case of the Kayapo Indians of the Brazilian Amazon." *Agroforestry Systems* 3, no. 2 (1985): 139-158.

Recondo, David. "Usos y Costumbres y Elecciones en Oaxaca. Los Dilemas de la Democracia Representativa en una Sociedad Multicultural." *TRACE (Travaux et recherches sur les Amériques du centre)* 36 (1999): 85-101.

Redford, Kent H., and Steven E. Sanderson. "Extracting Humans from Nature." *Conservation Biology* 14, no. 5 (2000): 1362-1364.

Robson, James P. "Local Approaches to Biodiversity Conservation: Lessons from Oaxaca, Southern Mexico." *International Journal of Sustainable Development* 10, no. 3 (2007): 267-286.

Salafsky, Nick, and Eva Wollenberg. "Linking Livelihoods and Conservation: a Conceptual Framework and Scale for Assessing the Integration of Human Needs and Biodiversity." *World Development* 28, no. 8 (2000): 1421-1438.

Scott, James C. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven: Yale University Press, 1998.

Schwartzman, Stephan, Adriana Moreira, and Daniel Nepstad. "Rethinking Tropical Forest Conservation: Perils in Parks." *Conservation Biology* 14, no. 5 (2000): 1351-1357.

Smith, Eric Alden, and Mark Wishnie. "Conservation and Subsistence in Small-scale Societies." *Annual Review of Anthropology* 29, no. 1 (2000): 493-524.

Spence, Mark David. *Dispossessing the Wilderness: Indian Removal and the Making of the National Parks*. Oxford: Oxford University Press, 1999.

Stearman, Allyn MacLean. "Revisiting the myth of the ecologically noble savage in Amazonia: Implications for Indigenous land rights." *Culture & Agriculture* 14, no. 49 (1994): 2-6.

Stevens, Stanley. *Conservation Through Cultural Survival: Indigenous Peoples and Protected Areas*. Island Press, 1997.

Stevens, Stanley, ed. *Indigenous Peoples, National Parks, and Protected Areas: A New Paradigm Linking Conservation, Culture, and Rights*. University of Arizona Press, 2014.

Stocks, Anthony. "Mapping Dreams in Nicaragua's Bosawas Reserve." *Human Organization* 62.4 (2003): 344-356.

Taylor, Peter J., and Frederick H. Buttel. "How Do We Know We Have Global Environmental Problems? Science and the Globalization of Environmental Discourse." *Geoforum* 23, no. 3 (1992): 405-416.

Velázquez, Alejandro, Elvira Durán, Isabel Ramírez, Jean-François Mas, Gerardo Bocco, Gustavo Ramírez, and José-Luis Palacio. "Land use-cover Change Processes in Highly Biodiverse Areas: the Case of Oaxaca, Mexico." *Global Environmental Change* 13, no. 3 (2003): 175-184.