



# Knowing but not knowing: Systematic conservation planning and community conservation in the Sierra Norte of Oaxaca, Mexico



Eric Van Vleet<sup>a,\*</sup>, David Barton Bray<sup>b</sup>, Elvira Durán<sup>c</sup>

<sup>a</sup> Department of Global Sociocultural Studies, Florida International University, 11200 SW 12th Street, Miami, FL 33199, USA

<sup>b</sup> Department of Earth & Environment, Florida International University, 11200 SW 8th Street, Miami, FL 33139, USA

<sup>c</sup> Elvira Duran, Centro Interdisciplinario de Investigación Para el Desarrollo Integral Regional-Oaxaca, Instituto Politécnico Nacional, Mexico

## ARTICLE INFO

### Article history:

Received 5 November 2015

Received in revised form 5 September 2016

Accepted 14 September 2016

Available online 4 October 2016

### Keywords:

Community conservation

Systematic conservation planning

Biodiversity conservation

Oaxaca

Mexico

## ABSTRACT

Systematic conservation planning (SCP) seeks to propose new reserves through a scientifically rigorous process using databases and research selection algorithms. However, SCP exercises have been criticized for “knowing but not doing”, i.e. not implementing the proposed reserve. But there is an additional problem that can be called “knowing but not knowing”, knowing things from databases, but not knowing crucial contextual information about community-based social processes that have supported the high forest cover and biodiversity detected. Examined here is how a common property region of the Sierra Norte of Oaxaca, Mexico has maintained high forest cover in the absence of public protected areas, while multiple SCP exercises have advocated for the creation of public protected areas in communal tropical montane cloud forests and pine forests as strategies for biodiversity conservation and resilience to climate change. Methods included archival research, review of community documents, focus group interviews, semi-structured interviews, participant observation, land use transects, and GIS analysis and remote sensing. Conservation in the region originally occurred because of low population densities, steep slopes and a lack of agricultural subsidies, supported by locally adapted agricultural practices. In the 1990s, a transition from passive to active conservation took place with land use zoning plans, community conservation rules, community forestry enterprises and payments for environmental service programs that consolidated a trend towards high, unthreatened forest cover. Today, the study communities have an average of 88.3% forest cover, with 61% of that in informal conservation based on community land use zoning and rules and another 14% governed by forest management plans approved by the Mexican government. We argue that truly systematic conservation plans would seek to understand how communities in the region are already managing forests for conservation. It is pointless and uninformed to advocate for top-down conservation interventions of forests that are already robustly conserved and resilient to climate change due to community action.

© 2016 Elsevier Ltd. All rights reserved.

## 1. Introduction

Systematic conservation planning (SCP) is defined as “the design of conservation areas” and attempts to efficiently select representative and biodiverse sites that will expand existing public protected areas and also help to mitigate climate change by reducing carbon emissions from deforestation (Bottrill and Pressey 2012:409; Ponce-Reyes et al., 2012). Procedures include measuring and mapping biodiversity, identifying conservation goals for

the planning region, reviewing existing reserves and selecting additional reserves, implementing actions, and managing reserves (Margules and Pressey, 2000). Algorithms and geo-spatial data normally drive reserve selection with extensive use of databases (Sarkar et al., 2006). Some define the goal as including multiple forms of conservation, including categories I–VI of the IUCN protected areas classification (Bottrill and Pressey, 2012). However, other SCP exercises call only for blunter instruments for conservation and mitigation of climate change such as “immediate protection” (Ponce-Reyes et al., 2012). Such exercises do not consider a wide variety of more informal, community-based approaches to conservation in the design of conservation areas, despite substantial evidence that such conservation also can make

\* Corresponding author.

E-mail addresses: [evanv001@fiu.edu](mailto:evanv001@fiu.edu) (E. Van Vleet), [brayd@fiu.edu](mailto:brayd@fiu.edu) (D.B. Bray), [eduran3@hotmail.com](mailto:eduran3@hotmail.com) (E. Durán).

crucial contributions to biodiversity conservation and the mitigation of climate change (Robson and Berkes, 2011). Here we argue that SCP exercises have often been unsystematic and uninformed in the way they deal with equally important variables such as demography, land tenure, production systems, and community conservation.

Knight et al. (2008) have criticized SCP practitioners for “knowing but not doing” or for creating conservation plans that are never actually implemented. We argue that many SCP exercises are also guilty of “knowing but not knowing”. That is, they know about certain variables from widely available databases, but know nothing about the historical and social processes rooted in community ownership that are actually supporting conservation, without public protected areas, in a particular region. In our study region of the Sierra Norte of Oaxaca Mexico (SNO) multiple SCP exercise have called for strict public protected areas, when existing historical and community-based social processes have led to the extensive forest cover and biodiversity that is detected. They assume that lands owned exclusively by local communities must be antagonistic to conservation objectives. Our data demonstrate that these SCP exercises have failed to understand the role of existing government programs and strong community governance in increasingly active community conservation initiatives in tropical montane cloud forest and other associated forest types. These conservation initiatives are increasingly explicit and include rewriting community rules, creating land use zoning documents, implementing sustainable timber management plans, and entering Mexico’s payments for environmental services (PES) program. Most SCP exercises that includes the SNO do not mention these communities’ conservation efforts or their clear land tenure over the territories in question. This ignorance of communities’ practices raises the question of how truly “systematic” these plans are.

### 1.1. Systematic conservation planning in Mexico

Mexico has been a frequent focus of SCP exercises. In several of these exercises, the state of Oaxaca, and particularly the SNO region, emerge as an area of sustained interest for SCP assessments (Arriaga, 2000; Brandon et al., 2005; CONABIO, 2010; Ponce-Reyes et al., 2012; Rojas-Soto et al., 2012; Toledo-Aceves et al., 2011). A few others focus on Oaxaca or just the SNO, given its existing reputation for high forest cover and high biodiversity (Gómez-Mendoza et al., 2006; Illoldi-Rangel et al., 2008; Ponce-Reyes et al., 2012). The SNO has more primary tropical montane cloud forest (TMCF) than any other region of Mexico, and this forest type has received special attention (CONABIO, 2010; Toledo-Aceves et al., 2011; Ponce-Reyes et al., 2012; Rojas-Soto et al., 2012) TMCF is estimated to cover less than 1% of the national territory but harbors the greatest diversity of flora and fauna in relation to its area of any forest type (Challenger and Elizondo, 1998). The SNO also has extensive stands of pine-oak forest and montane tropical forest, found to have very high rates of biodiversity in multiple studies (García-Mendoza et al., 2004; Meave et al., 2006). Along with the reported high biodiversity, Gómez-Mendoza et al. (2006) find high rates of deforestation for cloud forests and other forest types in the SNO, although she uses an official definition of the region that includes an area with high forest fragmentation and little tradition of forest management. The conclusion of most, but not all, of these SCP studies, is that more public protected areas are necessary in Sierra Norte to protect biodiversity and mitigate climate change (Brandon et al., 2005; Illoldi-Rangel et al., 2008; Ponce-Reyes et al., 2012). This need appears to be more urgent to some of these scholars since there are virtually no public protected areas in Sierra Norte (Illoldi-Rangel et al., 2008). However, with a few exceptions (Brandon et al., 2005; Toledo-Aceves et al., 2011), these methodologically sophisticated studies nonetheless miss crucial biophysical and social variables

associated with the documented high biodiversity and forest cover. Our study demonstrates the historic and contemporary biophysical, demographic, institutional, and policy processes that have led to high forest cover and biodiversity in a case study subregion of Sierra Norte.

SCP has been criticized by pointing out that most exercises are never implemented, in what Knight et al. (2008) call “knowing but not doing”. However, evidence from the SNO suggests that there are further problems with the narrow focus of SCP on technical exercises focused exclusively on biological data and the calls for more public protection than only “not doing”. There is also “not knowing”. That is, not knowing other crucial data about the areas that are proposed for protection and succumbing to “false forest narratives” (Fairhead and Leach, 1995), of threats to forests where threats do not exist. These two factors lead to unthinkingly proposing the “protectionist paradigm” (Wilshusen et al., 2002), where it may not be appropriate or necessary.

Despite continued calls for more protected areas throughout Mexico (Arriaga, 2000; Brandon et al., 2005), the most careful national study found only around half of current protected areas are effective (Figueroa and Sánchez-Cordero, 2008). In contrast, studies of community forest management, both in Mexico and elsewhere, have found that these communities have maintained forest cover as well or better than public protected areas (Bray et al., 2008; Duran-Medina et al., 2005; Ellis and Porter-Bolland, 2008; Barsimantov and Kendall, 2012; Porter-Bolland et al., 2013). In Mexico, communities have been successfully managing forests for timber for decades, and more recently have begun managing them consciously for strict protection (Anta, 2007; Figel et al., 2011; Bray et al., 2012; Duran et al., 2012). Such results are particularly relevant since communities have secure land tenure (Bray, 2013) and own 60.3% of forests in Mexico and 82.3% in the state of Oaxaca (Madrid et al., 2009).

This high incidence of community ownership of forests is either not acknowledged or considered as a deficit for conservation goals (Ponce-Reyes et al., 2012). Yet other studies have shown such ownership to be an asset for forest conservation. Where local communities and indigenous peoples have strong legal rights to their forests, they tend to show low deforestation and thus reduced carbon dioxide emission, successfully mitigating climate change (Stevens, 2014). Mexico has a longstanding common property system with strong rights over forests (Bray, 2013). The strong incentive provided by rights over sometimes valuable forests has encouraged sustainable forest management for both timber production and strict protection, broad community participation, the establishment of rules through community statutes, vigorous monitoring and clear sanctions for rule breakers (Bray, 2010). For a subregion of the common property regime of Sierra Norte, we present qualitative and quantitative data on a historical shift from forest conservation being primarily a precipitate of low population density, remoteness, and low agricultural potential, crucially framed by secure land tenure, to a form of increasingly conscious and active community conservation. This active community conservation is based both on community forest management for timber with conservation-oriented restrictions and widespread informal conservation based on community practices and rules (Robson, 2011). In the 2000s, these tendencies have increasingly been supported by public policy in the form of community land use zoning, payments for hydrological services program, and formal recognition of community conserved areas.

Thus, in this article we examine the varying roles of systematic conservation planning (SCP), public protected areas, and community conservation processes in the conservation of forest cover, biodiversity and the mitigation of climate change in the Sierra Norte of Oaxaca.

Download English Version:

<https://daneshyari.com/en/article/6461596>

Download Persian Version:

<https://daneshyari.com/article/6461596>

[Daneshyari.com](https://daneshyari.com)