Disentangling Tagbanua Lifeways, Swidden and Conservation on Palawan Island

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Abstract

Over this past century the Philippine state has sustained a campaign to criminalize swidden cultivation among small-scale farmers in the uplands of Palawan Island. This paper focuses on how such state conservation agendas unfolded to negatively affect swidden cultivation among the Tagbanua people who occupy upland forests flanking Puerto Princesa Subterranean River National Park. Ethnographic methods were used to examine a specific case where the traditional linkages between swidden cultivation and honey collection—the basis of Tagbanua livelihoods and cultural beliefs—were devalued as coercive conservation proliferated at the national park. Park managers upheld the state's conservation discourse that swidden disrupted "equilibrium" between livelihoods and forest ecology and, upon enforcing such views, neglected the local embeddedness of swidden cultivation. The conclusion asserts that park management can be enhanced on both moral and practical grounds by building on the interrelated ecological and cultural value of swidden cultivation.

Keywords: *coercive conservation, swidden, honey bees, Tagbanua, Palawan*

Introduction

The Philippine state continues to sustain a colonial legacy of criminalizing swidden based on the dominant discourse of it being irrational and unproductive agriculture. Since Spanish colonization, swidden farmers occupying upland areas in the "public domain" were subject to strict enforcement by national parks in fear they would destroy timber stands (Scott 1979; Anderson 1983).[3] Despite occupying upland areas for centuries, indigenous peoples farmed swidden on usufruct plots without title and could not claim lands legally. Without legal recourse, they faced evictions, displacement, and/or dispossession as national parks grew in the hinterlands (Anderson 1983; Poffenberger 1990).

This paper examines how in the 1970s, park managers followed centralized, "fences and fines" approaches to regulate swidden among the Tagbanua of Palawan Island to adversely affect their subsistence and cultural beliefs.[4] It contrasts how Tagbanua farmers viewed their relationship with swidden cultivation to how park managers and forestry bureaucrats characterized such cultivation. On the one hand, Tagbanua have viewed swidden with a moral undertone: it was an integral component of their livelihoods and lifeways (Fox 1954; Conklin 1954, 1957; Eder 1987, 1997).[5] On the other, park managers viewed swidden with resentment: it was a pervasive forest management problem that could only be overcome with coercive conservation (Peluso 1993).

The way state ideology toward swidden guided park management to affect Tagbanua beliefs and subsistence is highlighted by examining two interrelated resource use practices: swidden farming and honey collection. I show how "coercive" approaches to conservation at Puerto Princesa Subterranean River National Park in central Palawan criminalized both resource uses to neglect how each supported forest-based livelihoods, cultural beliefs, and basic ecological functions (Peluso 1993). The vulnerability of these resource uses to strict park management is quite pronounced, since both supported the subsistence base and cultural beliefs of Tagbanua. The production of land use categories such as "swidden" and "national park" was thus reproduced as social and political space. As state territory, national parks curbed access to forests used for swidden, while swiddening was part of household units that supported subsistence and cultural beliefs (Vandergeest 2003).

The paper builds on previous work, notably Dove (1983) and Eder (1997), to show how earlier misconceptions about swidden are still "taken for granted and rarely questioned truths" that obscure the relative productivity of shifting cultivation (Leach and Mearns 1996, 2). I argue further that the social and cultural beliefs associated with such resource uses are a core component of human agency, that is, how Tagbanua shape the outcomes of uncertain social, political, and environmental changes. Such uncertainty may involve unequal

conditions of resource access and use and/or rapid environmental change, such as flooding or drought. Tagbanua agency thus involves their ability to find "creative ways in which cultural ideas are adapted to meet new conditions, and [how] culturally informed practices—structure daily life" (Scott 1985, 33).

This paper first describes the ethno-ecological and historical context of Tagbanua swidden cultivation and honey collection in Cabayugan, Palawan, the study site of this paper. The second section describes the methods used for this paper, while section three describes how early approaches to park management began to criminalize swidden. It shows how the Philippine state's conservation discourse surrounding swidden—that it is primitive and unproductive cultivation—led to management that adversely affected the cultural and ecological ties between swidden cultivation and collecting honey. Section four describes this interrelationship in detail as a "swidden-honey complex." The penultimate section then describes how the cultural beliefs and indigenous knowledge underlying this "complex" merged and unfolded in practice. The conclusion advocates for the enhancement of park management by building on the ecological and cultural value of swidden agriculture.

Ethno-Ecological and Historical Context

Since the 1970s, national parks have played an instrumental role in protecting the rain forests of Palawan from swidden agriculture, with Puerto Princesa Subterranean River National Park being a particularly successful case (Cf. Redford and Sanderson 2000). Created under Presidential Decree 835 in 1971, the national park still protects significant levels of biodiversity and one of the largest blocks of forest on the island (see Figure 1) (Ganapin 1992; MaDulid 1998).

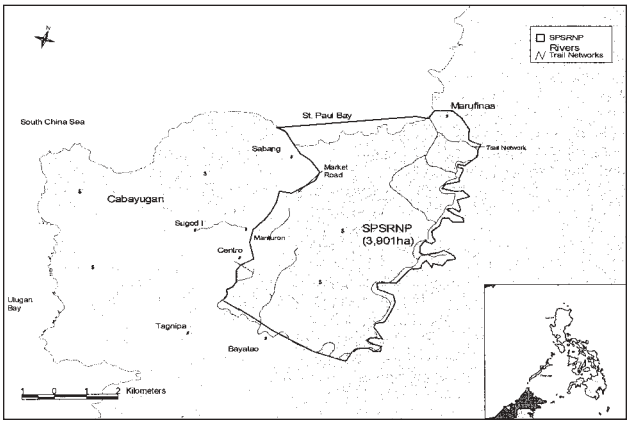

Figure 1. Map of Puerto Princesa Subterranean River National Park (3, 901 ha, before 1999).

Surrounding forests consist of lowland dipterocarp, karst, and molave varieties long cleared by Tagbanua and migrant settlers for swidden and paddy rice (MaDulid 1998). Although park managers aimed to preserve pristine "old growth" forest, the boundaries of the national park had actually encompassed an anthropogenic landscape.

Tagbanua settled in Cabayugan during the mid-to-late 1800s, well before the national park was delineated. They traveled north from Aborlan, Napsaan and Apurawan in small clusters to Marufinas and Malipien where they cultivated swidden on flat, fertile lands by St. Paul Bay (Fox 1954) (see Figure 1).[6] Marche ([1890] 1970), an early French explorer, writes that Tagbanua lived in the coastal inlets of Ulugan Bay, an area flanking Cabayugan. Fox (1954, 27) provides further evidence:

> *[That] it is probable the settlements north of Napsaan were formed by recent movements of the Tagbanuwa. Marupinas [close to Cabayugan], at least, was not established until about 1910, by the people from Apurawan. From the standpoint of social structure it is very interesting to note that the emigrants to Marupinas were seven siblings and their spouses. The emigrating group was self-contained; one of the brothers was a hereditary leader, a kapitan and another "medium" (babalyan) and a "midwife."*

The swiddens of early Tagbanua pioneers lay next to the St. Paul Mountain Chain, an area of kegel karst now inside the park core zone (see Figures 1 and 2). In time, Tagbanua with religious functions assigned cultural meanings to landscape features and resource uses to create a sense of place, belonging, and defined territory. From the 1950s onward, migrants departed from islands (Luzon, Mindanao, Mindoro, etc.) where civil conflicts, and land and resource scarcity were prevalent, to settle at Cabayugan (then Buenavista), Palawan (Kerkvliet 1977; Eder and Fernandez 1996). Palawan was regarded as resource abundant and peaceful, an exception to other Philippine islands. Upon settling in Cabayugan, pioneer migrants and subsequent waves of settlers cultivated swidden and then paddy fields to compete with Tagbanua and Batak (a neighbouring indigenous people) over land and forest resources (Eder 1987). Production and exchange relations once characterized by reciprocity became "asymmetrical" as Tagbanua cleared lands of forest and produced goods for migrants. By redirecting time to produce commodities for migrant markets, Tagbanua farmers lost increasing control over access to forest resources and subsistence production, particularly for familial needs.

While each group started on similar footing, with migrant and Tagbanua both initially cultivating swidden, mi-

Figure 2. The Central Karst of Cabayugan, Palawan Island, the Philippines.

grants soon controlled productive resources. In doing so, they claimed flat lands, converted swidden into paddy fields, and sometimes tendered lands as private title. With secure title, wealthier migrants easily subverted the management impact of the national park, while Tagbanua and poorer migrants cultivated swidden on usufruct plots. Very few Tagbanau completed the swidden-to-paddy rice transition. Their socio-political structures, culture and economic positions consequently became more differentiated over time. Nevertheless, considerable overlap between and internal differentiation within each group does exist. Migrants may, for example, adopt indigenous identity, aspirations, and livelihoods (including swidden and paddy rice), and vice versa. Ethnic heterogeneity is growing, intermarriage is frequent, and group members work on each other's lands.

Most Tagbanua households relied heavily on swidden and continued to cultivate through a rotational cycle where forest areas were cleared, burned, and planted with dry rice, root crops, vegetables, and sometimes tree crops. After harvests, fields were often left fallow for several years to allow forest cover to regenerate, after which time forests were cultivated again. Tagbanua targeted forests for swidden based on several different factors, including, but not limited to age of regeneration and/or composition after disturbance. For example, since they often left large trees standing, they avoided swiddening in areas where there were many. It followed that farmers often made fields by clearing "secondary" growth forest (McDermott 1994). The long-term presence of Tagbanua cultivators in the area had thus left the forest as a mosaic of differently aged species and compositions.

Most farmers also engaged in a mixed economy because swidden harvests were often insufficient to cover year-round subsistence needs. They sought cash or payment in kind through wage labor, timber harvesting, and non-timber forest products (Fox 1954; Warner 1979; Novellino 1998). Almaciga resin (*Agathis philippinensis*), rattan (*Calamus* spp.), and honey were primary sources of income for Tagbanua.[7] However, when compared with other forest resources, Tagbanua valued honey most as a nutritious source of food, for its medicinal properties, and as a part of swidden culture and cosmology (Fox 1954; Warner 1979). Both honey harvesting and swidden farming—the core of Tagbanua subsistence—were regulated vigorously on public lands that overlapped with Puerto Princesa Subterranean River National Park.[8]

Methods

The research methods used for this paper included participant observation and oral history interviews among Tagbanua farmers over a 14 month period from 2001-2004. While living among Tagbanua, I observed and "participated" in daily life that centered on swidden production and other forest uses. I adapted Conklin's (1954) criteria for recording swidden size, history, and preparatory techniques in Cabayugan. Field visits involved sketch mapping, field measurements (slope, size, and general soil characteristics), species inventories, and oral history interviews with farmers. Elderly farmers with particular historical insights were asked about the importance of swidden to household reproduction and cultural/religious functions. Other questions focused on how park management affected swidden cultivation. Oral history interviews were guided by open-ended questions (e.g., covering changes in farming techniques and broader land use patterns, including conservation), conducted in face-to-face settings in homes or adjacent to swidden fields, and usually lasted 90 minutes or longer. Upon verbal consent, oral narratives were tape-recorded in either Tagalog or Tagbanua and then transcribed in English. All responses were cross-validated. Using the same method, I further investigated an emerging and interrelated theme involving swidden cultivation, honey harvesting, and the cultural beliefs of Tagbanua, the focus of subsequent sections.

Discussion

Upon official declaration in 1971, the Philippine state had finalized the zoning and management of the national park in order to eradicate swidden agriculture among Tagbanua and poorer migrants. These farmers had little defense to sustain swidden against strict park enforcement due to insecure tenure, access to productive resources, and political networks. Any farmers caught cultivating swidden in "old growth" by park boundaries were given verbal reprimands by rangers and failure to heed warnings led to several months in jail at Puerto Princesa City (i.e., the City Jail). It was in jail that farmers became sick and hungry. One elderly swidden

farmer explained how he wound up there[9]:

> *I did kaingin [swidden] in the area [...] next to Kawili. Now, I did kaingin there, my kaingin was more than one hectare... Exactly after I finished cutting the tree, two forestry [officials] arrived by my side. [...] Then they said, this is not allowed to be cleared because the area is timberland and also this is reserve. But I did not know this. I thought these lands were cleared before.*

This quote shows how enforcement was often subjective and harsh. Farmers now had to distinguish between "old" and "secondary" growth forest in order to ascertain where swidden cultivation would be tolerated. Regardless, forest guards still punished anyone who cleared plots if it infringed upon their subjectively imposed regulations. In some cases, trees that could not be cut were marked by foresters with an "X" so that swidden farmers could recognize them as such. By marking trees, foresters could identify illegally felled trees and, with material proof, could confiscate them accordingly. Forestry officers used this method to quickly identify illegal swidden so as to justify a charge. If the violator could not pay the prescribed fine, then he was imprisoned for two months in the City Jail. Although foresters had permitted some migrants to cut "secondary growth" for conversion to paddy rice, exceptions were generally not made for cultivating swidden in such forests. Yet it was title-less farmers who worked swidden on public domain that felt the brunt of this initial enforcement strategy. Park managers justified such coercive conservation on the grounds that swidden was unproductive, primitive, and apparently "robbed" the state of valuable timber, even if plots were cleared in "secondary growth" (Scott 1979). Colonial constructs of "pristine nature" were upheld by excluding Tagbanua from managing "original" ecosystems and diminished the cultural and ecological value of swidden in Cabayugan (Dove 1983; O'Brien 2002).

The fact that Tagbanua swidden not only supported their subsistence base, but also their religion and cosmology was not recognized by early park managers. Closer scrutiny reveals that cultivating swidden has remained a strategic and culturally-based practice. As a strategy, site selection, clearing, burning, planting, weeding, harvesting and the processing of upland rice was an elaborate procedure that followed the dry and rainy seasons. Knowledge of wind direction, slope, dryness of debris, and use of fire breaks allowed for prescribed burns, while seeding was done with spatial specificity according to soil conditions and type of intercropping. For example, farmers explained that certain root crops, such as wild yam (*Dioscorea alata*), preferred richer, organic soils at the bottom of swidden slopes (areas that are shaded and saturated with water), while burned out stumps, logs, and piled branches (*durok*) had a diverse array of vegetable shoots planted in them to benefit from nutrient rich ash deposits (see Table 1). Cycles of burning and fallowing also created patchworks of differently aged forest mosaics often used by various insect species, such as bees (*Apis* sp), and larger animals, such as wild pig (*sus barbutus*) for food. Other Tagbanua farmers have listed over 100 different varieties of rice for planting and ceremonies involving the clearing (*sagkat*), seeding/planting (*magpanitabnan*), and harvesting (*sungrud*) of swiddens (Fox 1954; Warner 1979). Swidden by Tagbanua remained an integral system originating "from a more traditional, year round, community wide...ritually sanctioned way of life" (Conklin 1954, 2).

Table 1: Select Crops in Contemporary Tagbanua Swidden Plots

Tagalog	English Vernacular	Scientific
Kamoteng Kahoy	Manioc	*Manihot esculenta*
Kamoteng Baging	Sweat Potato	*Ipomoeo batatas*
Sitaw	String Beans	*Vigna unguiculata*
Ubi	Wild Yam	*Dioscorea alata*
Talong	Eggplant	*Solanum melongena*
Kalabasa	Squash	*Cucurbita maxima*
Ampalaya	Bitter melon	*Momordica charantia*
Okra	Okra	*Hibiscus esculentus*
Tanglad	Lemon Grass	*Andropogon citrates*
Pipino	Cucumber	*Cucumis sativus*
Mais	Maize	*Zea mays*
Palay	Upland Rice	*Oryza sativa*

Source: Eder 1999, 45-50; Dressler 2005

At a cultural level, Tagbanua lifeways were further ordered by a variety of environmental spirits and anthropomorphic beings, the relationship between which was mediated by *babalyan* (shamanistic, religious mediums) (Eder 1997). These included malicious spirits called *panya'en* and benevolent deities called *diwata* that only *babalyan* could see. They inhabited cherished, unique, or excessively large natural features, such as the large and vein-laced *balete* tree (*Ficus* sp.), pandan (*Pandus* sp), and large karst outcrops (Fox 1954). Since these spirits regulated the forest domain, they affected the welfare of Tagbanua: violating the realm of *panya'en*, such as cutting in mature forests (*giba*) in their abode, caused low swidden yields, sickness, or death, while appeasing *diwata* offered the devout assurance of climatic certainty (Fox 1954; Eder 1997). Retribution form the *panya'en* was often levied upon an individual offender, while *diwata* offered benevolence to an individual, family, or community, depending on how the *babalyan* facilitated offerings during the ceremony (Eder 1997). Both the *panya'en* and *diwata* were involved in each swidden ceremony that supported each stage of the swidden cycle. Tagbanua often used such ceremonies to reinvest in cultural beliefs and ecological knowledge, which merged while applied during subsistence harvests.

Figure 3. Tagbanua Swidden in Cabayugan (Spring 2002).

The Swidden-Honey Complex

Swidden farming by Tagbanua represented a core livelihood component that also tied into and supported other, more proximate resource uses. Among several, the relationship between swidden and honey collection was particularly important since it showed how cultural beliefs and ecological knowledge merged in practice.[10] I demonstrate next how swidden and honey bees together supported rice harvests, honey collecting, and the cultural beliefs of Tagbanua. This swidden-honey complex involved a socio-ecological interrelationship between swidden and honey production that was shaped by landscape changes (i.e., forest patches) and a "bee kingdom" particular to Cabayugan. Tagbanua knew, for example, that honey bees originated from a spiritual world comprised of deities that shaped how, when, and where they collected honey and/or harvested swiddens. In this sense, the beliefs Tagbanua associated with this "complex" provided them with the ability to negotiate uncertain social and environmental changes.

What surfaces here, then, is the validity of scientific knowledge (empirically tested and reductionist) and indigenous forms of knowledge (diachronic and holistic). Rather than scrutinizing and contrasting the two, I emphasize below the need to accommodate indigenous knowledge as a way of reasoning and/or adjusting to uncertainty that is equal to and as valuable as western scientific knowledge (see Gadgil et al. 1993 vs. Agarwal 1995).

Given this background, what did the swidden-honey complex entail and how did it support the subsistence and beliefs of Tagbanua? To begin with, Tagbanua found great cultural and practical value by settling and cultivating swidden adjacent to the central karst. Lands were fertile, water was abundant, and adjacent karst forests supplied honey. Over time, however, a mutually beneficial relationship had developed between swidden cultivation and honey production: bees fed on rice pollen from swiddens for nourishment and to produce honey, while Tagbanua harvested rice from swiddens and collected honey from nearby forests. The harvests of swidden rice and honey that Tagbanua relied upon for subsistence and cash income were shaped by ecosystem changes, and how harvesters and bees functioned together in an all-encompassing spirit world (Eder 1997, 16).

Enchanted bee deities were the "regulators" of the swidden-honey complex and shaped honey bee ecology to benefit the collector. Tagbanua distinguished between *nigwan* (*Apis florae or Apis indica*) and *putyukan* (scientific name unknown), the types of hives they made, where the hives were located, the flowering season, and honey production. (Smaller varieties of bees build small hives and produce negligible amounts of honey (Novellino 1998)). They claimed that *nigwan* made nests in hollow logs and/or tree stumps and that *nigwan* honey was harvested from March until August. *Putyukan* built hives in the upper storey of forests surrounding the central karst, which made harvesting their honey quite precarious. Harvesting honey from *putyukan* was usually done from January through early June.[11] [12]

Tagbanua knew well that bee behaviour and their ability to collect honey were influenced by powerful *diwata* and *panya'en* living in the forest and karst.[13] Both spirits took the form of bees (often anthropomorphic in shape) and used the karst as their home; refuge in the karst offered spirits and bees a cool shelter and source of water. The *Kawili* outcrop, for example, once had swidden fields next to it and was revered as the home of *Sinada*, the highest ranking *diwata* among four lesser spirits. *Sinada* set specific "ordinances" that four bee spirits—*Ungao*, *Kamarwayan*, *Kalae*, and *Pakuwao*—followed to regulate the use, ease of access, and abundance of honey. All of the bee spirits lived together by *Kawili*.[14]

As the highest ranking deity, the *babalyan* "spoke" with *Sinada* during the *pagdiwata* (deity ceremonies), a prayer that expressed hope and security to the other spirits. In this way, *Sinada* bestowed upon lesser bee spirits the duty to give assistance to honey collectors. The collector's confidence, for example, grew as *Sinada* transmitted strength and security to items used for climbing: tree branches became stronger, ropes retained strength, and collectors were protected from bee stings as they smoked out bees and cut honey from hives. *Sinada* thus governed the social order and function of the "bee kingdom" while offering honey collectors strength and fortitude.

Sinada's subordinate is the *panya'en*, *Ungao*, the creator and guardian of honey bees in Cabayugan. *Ungao* transmitted *Sinada's* "message of assistance" as laws instructing

other spirits to influence the behaviour of honey bees. *Ungao* asked his subordinates to "convince" bees to build hives visibly and in permanent locations, rather than have them relocate their hives. Once bees found a "permanent" home, *Ungao* directed them to multiply and produce honey for the collector. The task of each bee deity made the honey hunt easier at a physical and psychological level. Since *Ungao* guarded and protected his domain as *panya'en*, he influenced how beliefs and ecological knowledge merged to shape honey collection and swidden cultivation.

The work of *Ungao* and his three lesser bee spirits (*Camarwayan, Kalae, and Pakuwao*) thus ensured, in respective order, that hives were easily accessed, flowers were in bloom, and collectors could locate hives quickly. All members of the "bee kingdom" inhabited the karst and directed how bees fed on flowers in nearby forests and swiddens. To believe in this spirit world provided Tagbanua with the ability to understand the uncertainty associated with unexpected changes in resource harvesting and forest environments.

Cultural Beliefs and Ecological Knowledge in Practice?

The cultural beliefs and ecological knowledge associated with the swidden-honey complex further supported the "wise use" of each resource in Cabayugan. One example shows how Tagbanua believed that enticing *Ungao* to call honey bees to feed on pollen supported honey production and (potentially) the cross-pollination of rice flowers, a means of enhancing both rice and honey yields.[15] As I show below, such reasoning represented Tagbanua agency—a culturally mediated understanding—in supporting both types of resource production in Cabayugan (Li 2002).

Tagbanua elders recounted how they called *Ungao* by hitting a bamboo shaft (*pendag*) seven times at the side of swidden fields. Upon hearing its hollow sound, *Ungao* released *nigwan* from the karst and forest into swidden fields to feed on rice pollen and (potentially) pollinate rice flowers (the panicle). After feeding, the bees returned to the opening they had departed from. Thereafter, honey collectors entered different cracks and caves known to hold honey and poured it inside the *pendag*. Storing honey inside the hollow shaft for 15 days allowed the honey to ferment and be consumed by those working the swidden.

Not only did the flat, fertile lands by the karst produce bountiful rice yields, but honey bees (*nigwan* and *putyukan*) living inside the karst and forests fed on rice pollen to produce honey. A mutually beneficial relationship thus evolved whereby honey bees collected pollen from rice flowers for nourishment, to produce honey, and to possibly cross-pollinate rice flowers. While rice is generally wind pollinated (see Song et al. 2004), Tagbanua claim that honey bees both feed on rice pollen and facilitate cross-pollination. Irrespective of scientific validity, claims by Tagbanua elders that honey bees and swidden rice function in this way remain legitimate since they allow farmers to rationalize the existence, availability, and production of honey and rice yields.

Yet what Tagbanua elders profess about bee behaviour in flowering swidden fields does make sense, since all honey bees require pollen for nourishment. Most will seek pollen selectively based on its quality, taste, flying distance from hive, among other variables (pesticides, smoke, etc.) (Aizen and Feinsinger 1994). Without tasty and/or easily accessible pollen, honey bees may seek the next best source: swidden fields in "bloom." If this is so, the rice pollen that bees bring to hives may facilitate honey production. Indeed, it is well documented that forest breaks brought on by disturbances, such as from swidden, do yield flora that attract honey bees in both tropical and temperate forests (see Aizen and Feinsinger 1994; Cook et al. 2003; Klein et al. 2004; Baum et al. 2004).

Further local evidence of the "mutualistic" relationship between honey bees and swidden cultivation comes from a Tagbanua elder who explains how bees removed from rice stems the pest called *dugma* (scientific name unknown) (Cf. Fox 1954):

> *When the palay [rice] begins to bear fruit in July, and by the end of July, the fruits will be ripe, [we] fumigated at all times, fumigate the palay with dried beehives...and bring with you a boho we call 'pendag.' The care taker of the bees will hear this and then will cover it with smoke coming from the beehive. There are no eggs (anira) from the bees. Then the nigwan will rest on it and when there are many nigwan, the illness of the dugma will not affect the palay.*[16]

As documented by Fox (1954), once the rice fruit had been eaten it was an indicator that *dugma* had affected the entire rice harvest. However, if *nigwan* were present, "any sickness will be afraid to rest upon the fruits of the palay. The dugma are afraid of the bees; they are afraid of the nigwan."[17] Once again, swidden farmers called *Ungao* to summon and direct honey bee activity to rid the rice crop of pests and to allow honey bees to feast on rice pollen.

Finally, since *Ungao* served as the guardian spirit (as *panya'en*) and protected his domain, he punished any Tagbanua who mistreated bees by sending them elsewhere or calling them back to the karst (Eder 1997, 16). If, for example, a hunter dropped, wasted, or cut out larvae (*anira*) from the hive, he offended *Ungao* and no longer found the same abundance of honey. Any abuses that angered *Ungao* led to uncer-

tain harvests and/or potential sickness, even death (ibid). However, during the lambay ritual (for thanksgiving), small offerings (*pagmama*) could appease *Ungao* and entice him to order lesser spirits to bring good fortune to collectors. According to one Tagbanua elder, if the babalyan and collector "won't give back after they have been given something, he [Ungao] will tell them: 'You are not giving me something!' 'So from now on, you will not find anything. Unless they asked for it again from me, I won't give them again.' "[18]

Collectors also begged for forgiveness by performing several smaller *lambay*. The same elder stated that if honey was unavailable "after three or four days, they would plead to the "guardian" and would tell them: "Please give us back [honey] even though I found something and did not give you anything back; now, please give us a chance. We will give you back again [an offering], it will not happen again; we will be ready."[19] However, only if *Ungao* accepted the collector's offering was a bountiful harvest ensured.[20] Coupled with the examples above, a collector's fear of retribution by *Ungao* and his own knowledge of bee reproduction was a partial measure to ensure prudent harvests.

Gleaning Lessons from Past Failures

Tagbanua swidden cultivators thus clearly recognized the ecological value of honey bees "tending" swidden rice and how such "tending" supported honey production, facets of which were embedded in their worldview. The merger of beliefs and ecological knowledge shaped how each resource use unfolded and spurred on certain ecological relationships. Unfortunately, while it took centuries for Tagbanua to construct and sustain such beliefs and resource uses, park managers had little interest in how such beliefs and knowledge could support resource management (Conklin 1954; Fox 1954). Swidden fields with rice, forests, and undulating karst that "hosted" the honey bees were all well within the enforcement radius of the national park.

Yet lessons can still be gleaned from past failures. The knowledge base and ecosystem functions underlying each resource use offers new insights into achieving an equitable and ecologically sound management platform at Puerto Princesa Subterranean River National Park. New management priorities must center on supporting the right of Tagbanua to cultivate swidden and harvest honey as they had done before the national park was delineated. Management priorities must involve three primary and interrelated considerations: political and cultural rights, economic empowerment, and legally secure tenure.

First, park managers should work with Tagbanua swidden farmers to use a greater diversity of indigenous crop varieties and increase the length of follow periods with indigenous tree species. Second, centers for apiculture should be established at the margins of swidden fields where the hives of *nigwan* and *putyukan* are known to exist. The diversity that park managers lament about losing could thus be partly maintained while also prioritizing the livelihood needs of those they have impoverished. Third, overcoming the marginal economic conditions brought on by coercive conservation and trade with migrants also rests in their ability to pool and redistribute rice yields for consumption among households and/or for sale at external markets. Fourth, Tagbanua *must* acquire *de jure* title in the form of the tenurial provisions offered by Certificates of Ancestral Domain Title (under Republic Act No. 8371 of 1997, otherwise known as the Indigenous Peoples Rights Act), while existing or new indigenous peoples' organizations must be strengthened and tied to such property rights (IPRA 1997). Only by reforming park management to consider "rights-based conservation" can resource dependent people shape and benefit from conservation on their ancestral lands.

Conclusion

This paper has shown that coercive approaches to conservation have neglected how the interrelationships between forest uses and species can sustain traditional harvests and cultural belief sets. As park managers criminalized swidden—buoying the discourse of it being irrational and unproductive agriculture—they curbed rice yields, affected honey production, and dislocated cultural beliefs from ancestral lands. State desires to protect valuable timber from swidden by-passed Tagbanua efforts to sustain livelihoods through both types of resource uses. By neglecting how such resource uses have sustained ecosystem functions and cultural beliefs, and vice versa, managers neglected the ways in which locally relevant resource management may have supported state conservation objectives.

Tagbanua knowledge and the use of forest ecosystems was thus embedded within and shaped by cultural beliefs about how humans and nature functioned within a broader spirit world. It was in this context that the interrelationship between swidden and honey production formed to serve as an important buffer in sustaining both subsistence and cultural beliefs in the face of park management impacts. Contrary to state assumptions, such resource uses partly sustained genetic and cultural diversity. Swidden cultivation, for example, may have sustained genetic diversity, as fallows produced a mosaic of forest classes and seed rice from locally-developed cultivars (Warner 1979; McDermott 2000). A patch-work of human-induced mosaics added to forest disturbances already present and amounted to a cycle of forest destruction and renewal. In this way, a "nature-society" couplet was formed through the continually "interacting features of...organisms

and environment [that] define a multiplicity of landscape scales" (Zimmerer 2000, 362). Tagbanua swidden cultivation, honey collection, and the worldviews they were embedded within, left just such a patchy imprint on the Cabayugan landscape. Such "internal heterogeneity" reveals how humans and forests are in flux in the context of "healthy forests" and "sustainable resource uses" (ibid 363). It is the very idea that Tagbanua farmers have agency—that they can work the forest productively—that contrasts with conservation approaches that viewed humans and nature to be in equilibrium (ibid).

Endnotes

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2. E-mail: wolfram.dressler@mail.mcgill.ca
3. Upon their first arrival in the Philippine Islands in 1521, Spanish colonizers imposed the Regalian Doctrine, holding that all lands not registered as private title were vested in the Crown as public domain. This principle was upheld and applied in an expansive way by the American colonial government, which set about further classifying the public domain it had claimed in 1899. Since independence in 1946 the Philippine state had carried over this classification of state lands.
4. The Tagbanua are one of three main indigenous groups of Palawan's central coastal interior and far north (Calamian). This paper focuses on the "Tagbanua central" or the Tagbanua Apurhano, an indigenous people of Malay descent (Fox 1954). They resemble lowland Filipinos and retain a syncretic religion of Catholicism and animism.
5. In Cabayugan, Tagbanua swidden cultivation once held a long fallow period (up to 15 years), a diverse array of crops, and was associated with ceremony, ritual and cultural belief sets. That this remains the case today is certainly up for debate since many Tagbanua have responded to contemporary demographic, economic and resource use pressures by reducing their fallow period to three to four years. Fifth generation Tagbanua also engage in ritual less often than do elders. Possibly reasons include a change in preference due to intermarriage with migrants, stigmatization, and wage labour in Puerto Princesa City, among other factors.
6. Aborlan lies in south-central Palawan and is considered the "cultural cradle" of Tagbanua society (Fox 1954).
7. Rattans are woody, climbing palms (mostly *Calamus spp.*) from which cane products are derived. Honey, wild pig, wild fruits and orchids are also sold for cash, and a much greater diversity are collected for subsistence, medicinal, ornamental, and ceremonial purposes (McDermott 1994).
8. See Kaal (1991) and Molan (2001) for evidence of the curative potential of honey.
9. Key Informant Interview, Tony Bacaltos, Manturon, Summer 2002.
10. Tagbanua often find areas adjacent to swidden fields as ideal grounds for hunting game, such as wild pig and monkey, since animals tend to feed on field crops.
11. *Mayway* makes one to two bee hives at the upper story of *Dipterocarps* and requires a climbing implement to access hives (make shift ladders or rattan veins). An additional variety of honey bee is *Kamantane*, which makes a hole in the ground with a round nest.
12. Both types of bees collect most pollen from the flowers of bushes, shrubs, and/or trees. As I show, other informants suggest that bees also sourced out rice pollen in swidden fields.
13. Oral history interview, Lolita Rodriquez, Cabayugan, Summer 2001.
14. Alternate spellings include Ungaw, Camarwayan, Kalawi and Pakwao. Batak believe Ungao is married to Baybay (Eder 1997).
15. The findings of Dario Novellino (social anthropologist) attest that Batak also claim that honey bees facilitate the pollination of upland rice in swidden plots (personal communication, March, 2005).
16. Oral history interview, Thomas Madarcos, Martape, Summer 2001.
17. Oral history interview, Thomas Madarcos, Martape, Summer 2001.
18. Oral history, Rudy Billartes, Nasaduan, Summer, 2002.
19. Oral history, Rudy Billartes, Nasaduan, Summer, 2002.
20. Collectors may also conduct *lambay* in May in anticipation that the *nato* (*Palaquium luzoniense*) and *balisangkad* tree (*Nephelium lappaceum*) are in full bloom. By allowing seven days to pass after the lambay, Tagbanua ensure more flowers are in bloom and that bees are given a "rest period."

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