What is a forest? Competing meanings and the politics of forest classification in Thung Yai Naresuan Wildlife Sanctuary, Thailand

Theresa Wong a,*, Claudio O. Delang b, Dietrich Schmidt-Vogt c

a Department of Geography, The Ohio State University, 1036 Derby Hall, 154 North Oval Mall, Columbus, OH 43202, USA
b Department of Geography and Resource Management, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong
c School of Environment, Resources and Development, Asian Institute of Technology, P.O. Box 4 Klong Luang, Pathum Thani 12120, Thailand

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Abstract

Based on a case study in a Thai forest reserve, this article compares two modes of ‘reading’ the forest – official and local forest classification systems – and discusses how they imply different ideas about the forest, and how these competing knowledges interact with the politics of forest governance. Forest classification conventions are shown to slip, as ‘facts’ about the forest, from their origins in extraction-oriented forestry to the realm of conservation. Through a comparison of conventional vegetation classifications used in the state’s governance of the Thung Yai Naresuan Wildlife Sanctuary in Thailand, with the classificatory systems of resident Pwo Karen communities, this paper examines the slippage of conventional classifications through various uses and the emphases placed by competing representations of the forest within the context of conservation politics in Thailand. It was found that conventional classifications continued to prioritise the silvicultural potential of trees within a conservation context, downplaying other notions of forests – such as their importance to livelihoods and as lived spaces – which are present in Karen classifications.

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1. Introduction

“...the need for classification of vegetation in the context of forestry arises from the fact that particular silvicultural practices are broadly correlated with and relevant to particular forest ‘types’ and a rational workable system of classification of forest vegetation makes it possible to apply and evolve these practices in a controlled scientific manner.” (Champion and Seth, 1968, p. 35)

“It is not simply the idea of forest that is being constructed, after all, but the actual physical environment of trees and ground cover. The imagined forest becomes the real one and vice versa, through the enforcement of such constructs by powerful people over time. In this way, the line between objects and ideas is blurred.” (Robbins, 2004, p. 110)

Forest lands are some of the most contested spaces in the world. Having long been viewed as economic exploitables by the state, they were among the first territorial entities to be measured, categorised, and mapped (Scott, 1998; Peluso, 1995). Inhabited forest areas in particular have been viewed as spaces of struggle over competing definitions of the forest – simultaneously a resource, a cradle of biodiversity, a threatening frontier region, and a space of livelihoods. Ideas about forests and ‘natural environments’ can be traced as a history of invention, manipulation and institutionalisation (Robbins, 2004; Forsyth, 2002). They hold that definitions of and meanings behind ‘forest’, ‘swamp’, ‘grasslands’ and ‘wasteland’, often held as ‘truths’, are not inevitable facts derived from empirical observation, but are constitutive of and produced by particular rationalities and
networks of knowledge and people (Robbins, 2004; Zubrow, 2003; Forsyth, 2002; Dove, 2004). Lynch and Law (1988) have argued that orderings in nature are discovered and organised through the use of texts, and related to “situated practices of observing and describing” nature and its parts. These situated knowledges then become enrolled into the organization of forest cover, watershed classifications and grassland associations, allowing for specific visions of ‘nature’ to become stabilized and institutionalised (Laungaramsri, 2002; Dove, 2004).

As a means of reading and writing the landscape, classifications of vegetation and forest types contribute to reinforcing ideas produced about environments. Classification systems act as ‘immutable mobiles’ (Latour, 1987; see also Forsyth, 2002), those objects that move unquestioned between local and global scales, across localities, cultural settings and projects. Classifications are likewise produced by the interactions of a network of actors to become established as ‘facts’ about the forest, long after being taken out of the context of their formation. With forest classifications, established systems can be seen to move between shifting historical emphases or ‘frames’ (Buergin, 2003a,b), between forestry, logging, conservation and rural development, blurring the original purposes of the classification and giving categories the status of empirical observables. As objects are arranged in categories, a process of selection is used to group things according to certain values, resulting in non-important values and criteria being rendered invisible. In this way, classifications “seek to impose their standardised priorities over others of a more fluid complexion” (Murdoch, 1998, p. 360). More than that, the very debates and negotiations surrounding the establishment of the categories (Zubrow, 2003; Bowker, 2000; Bowker and Star, 1999) disappear from view, thereby ‘blackboxing’ the often unsuspected processes of their creation (Latour, 1987).

Recent examination of the power-effects of classifications form a useful starting point for understanding the historical, political and social contexts in which classifications play out. For one, the very act of naming produces inclusions and exclusions of people, communities and places (Tsing, 2005; Radcliffe, 1999; Carter, 1987). Tsing (2005) for example finds that the prevalent use of Latin names in expressions of Indonesian flora and fauna elides a rich ethnography of the human-inhabited Meratus forest habitus that accompanies a retelling of the forest through Meratus nomenclature. Indeed, the process of “forest-making” (Laungaramsri, 2002) involves the combination of forest laws and maps that assign names to lands and territories that are then enforced. Problematising the consequences of classifications, Bowker and Star (1999) have pointed out that classifications do not smoothly imbibe the assumptions built into them. Within these contexts, classifications and their spatial (and temporal) delineations are performed. New debates and meanings become attached to classes as they travel through different scales of application and through different contexts, transforming “both the discourses and the material objects being discussed” (Waterton, 2002, p. 196).

Taking these ideas further to the work of classifications in the context of a politicised conservation arena, how does the persistence or mobility of classificatory systems, interact with actual practices of governance? In the case of forest governance, how do the different practices of classification interact with practices of ‘seeing’ and visualising forests, and what are the implications on the discourse and materiality of forest governance and politics? Many have argued against the neglect of a social ‘ground truth’, or an “intimate sensing” of locally contingent practices, in the privileging of hegemonic discourses and representations (Porteous, 1986; Harwell, 2002; Hoeschele, 2000). Harwell (2002, pp. 315–317) argues that while the accounts of the extent and causality of forest fires in Indonesia as told by users of remote sensing and GIS visualizations created “new discourses of disaster” – exposing large-scale plantations as major fire hotspots, these visualisations neglected the “out-of-sight” local impacts of the fires that could only be gleaned from delving into social ground truths. These ground truths are necessary when various environmental knowledges are excluded from certain ways of seeing, e.g. remote sensing and state mapping, also through their inability to visualise fuzziness in nature (Walker and Peters, 2001; Harris et al., 1995) or their ontological inability to detect land use/land cover categories that are meaningful to users on the ground (Robbins, 2003; Fox, 2002; Harwell, 2002; Robbins, 2001).

Based on readings of the UNESCO World Heritage-designated conservation forest of the Thung Yai Naresuan Wildlife Sanctuary located in west-central Thailand, this paper employs a genealogical perspective towards the history of conventional forest classification systems as it is deployed in Thailand. Genealogy (Foucault, 1977) involves the examination of the practices, events and histories, often plural and contradictory, around which knowledge is constructed and defined as normal or unacceptable. Conventional readings of the forest are then juxtaposed with a contextualized reading of one particular community’s classification of the forest – that of the Pwo Karen living in the wildlife sanctuary, in an attempt to re-read what is known about ‘the forest’ by exposing what is made visible and invisible through the use of one forest classification system or another. The paper then attempts to link these competing representations to the material practices whereby these different classifications and ways of knowing the forest interact with the politics of conservation and marginalisation.

2. Official geographies: a history of forest classification

A genealogy of the production of conventions used for classifying vegetation and forests, reveals their specific tailoring to a number of interests and interest groups. Genealogies such as this one demonstrate that histories of knowledge production are often marked by moments of problematization and crises of dissolution and incommensurability, within which conflicts arise (Foucault, 1980). Forest science emerged
in the late 1700s in Germany in order to simplify the complex biological dynamics of forest stands in view of setting up and managing forests for extraction and production (Scott, 1998). The maximization of wood production, the goal of state foresters, required the documentation, organization and division of forests according to characteristics useful for extraction. The practice of silviculture for timber production, in which forests are managed for extraction, idealizes the “freezing” of the forest structure at its most productive, i.e. “optimum” phase, and prioritizes the avoidance or acceleration of lengthy and – from the perspective of timber production – unproductive phases of regeneration and decay which commonly characterize natural forest development cycles.

Classification systems therefore emerged to account for spatial differences in vegetation and to establish the basis for silvicultural management. According to Mueller-Dombois (1984), the main purposes of vegetation classification have been to: (1) identify and delineate vegetation patterns for the purposes of overview and inventory; (2) explain vegetation patterns in terms of causal relations with the environment, and (3) extrapolate field observations and measurements to a relevant level of geographic or ecological generalisation. Contemporary forest classification criteria have been characterised as vegetation-related (i.e. physiognomic, floristic), biophysically- and climate-related (i.e. environmental, geographic) and management-related (utilizing combinations of vegetation and non-vegetation criteria). These classification criteria are scale-specific: while global-scale classifications are largely based on climatic criteria such as rainfall and temperature, classification systems used at country- or smaller regional-level scales emphasise floristic and physiognomic characteristics as well as physical site factors. The floristic/taxonomic method of forest classification that has influenced country- or regional-level scales of forest policy was developed by the Braun-Blanquet (1965) school of ‘plant ecology’, in which classifications were developed from the assembling of species into floristic groupings or associations, followed by an assessment of species abundance, i.e. the number of individuals representing a species. This method was adopted by forestry officials as the basis for forest classifications in temperate-zone countries such as Germany, where vegetation associations are largely dominated by one or a few species. However, for the tropics, this classification is deemed unsuited for two reasons: first, the biological and taxonomic characteristics of tropical flora are still poorly known by biologists, and second, tropical forests are characterised by floristically richer associations (Salovaara et al., 2005; Richards, 1996; Mueller-Dombois, 1984). Hence, classifications based on the physiognomic characteristics of vegetation and on environmental conditions have become more popular for characterising tropical plant communities.

Recent debate in ecological science has centred on the static nature of ‘scientific’ vegetation classifications, especially with regards to their lack of ability to take into account the dynamism of forest cover change (Maxwell, 2004). Physiognomic classifications adopted by forest managers, for example, often imply the constancy of species composition and structure. This debate follows on another in forest ecology over the theory of forest succession pioneered by Clements (1916). Forest succession was regarded by Clements as approaching towards a climax stage, where forests are adapted to the prevailing climatic conditions and no further changes take place. There is increasing acknowledgement today that forest communities are in a constant state of flux – changing from one developmental or successional stage to another – without terminating in a climax condition or stage of forest development (Johns, 1990; Wiens, 1984). Hence, the continued emphasis on static representations of the forest by some forestry practitioners is not only a reflection of dated views on forest dynamics but also the need for foresters to catalogue forest types for the purposes of silvicultural production.

2.1. Tropical forest classification and forestry in mainland Southeast Asia

Coming from a tradition of classifications designed for the purposes of forest management, the classification systems used in Southeast Asia went hand-in-hand with logging enterprises in the region undertaken by British and local concerns. In Thailand, the Royal Forest Department (RFD) – Thailand’s forestry authority – gradually granted logging concessions to British foresters from the 1880s, following the introduction of the logging concession system in 1829 in neighbouring Burma, a British colony at that time. At around the same time, European scientific institutions were racing to classify and record the world’s biological resources, notably in productive tropical zones, giving rise to the production of a raft of methods for characterising and cataloguing biological specimens and forest types (Raffles, 2002). The legacy of German forestry and vegetation science in Southeast Asia and in the tropics is clear: Dietrich Brandis, a botanist from Germany, was the first forester hired by the British to survey the forest resources of Burma and India. Moreover, the advancement of tropical forest classification is largely attributed to the German Andreas F.W. Schimper.

Schimper identified and characterised six formations of tropical vegetation mainly on the basis of climatic criteria in his classic treatise of 1898, which was translated into English as “Plant Geography upon a Physiological Basis” in 1903. These vegetation formations are still in use today: rainforest, monsoon forest, savannah forest, thorn forest, tropical grassland, and tropical desert. Since Schimper, there have been numerous attempts to improve the classification of tropical vegetation, such as Vareschi (1980) system of tropical life forms, which defines plant communities by diversity indices. A large number of regional classifications have also been produced, but a notable system for classifying forest types in Southeast Asia was designed by Whitmore (1984). It recognizes 16 types of tropical forest formations, which are defined not only in their relation to
bioclimatic attributes but also to variations in soil and topography.

In Thailand, the first scientific comprehensive classification of the vegetation types was designed by Wilhelm Credner, a German geographer who had travelled throughout the country in 1927–1929 in order to collect material and observations for a regional monograph. His book, published in 1935, contained the first scientific vegetation map of Thailand (Credner, 1935). In it, Credner distinguishes eight vegetation types: mangrove, tropical rain forest (also applying to the cool evergreen upland forests of Northern Thailand), deciduous monsoon forest, evergreen sclerophyllous forest, monsoon dry forest, thorn-bamboo scrub, pine-oak mixed forest, and alluvial plains and rice fields. Credner’s terminology and distinction of vegetation types according to climatic criteria, particular rainfall, was based heavily on Schimper (Maxwell, 2004). Interestingly, the vegetation classification systems developed by the RFD did not incorporate Credner’s work, but rather, bore the mark of British forestry. The RFD’s classification systems (Royal Forest Department, 1950, 1962) were strongly influenced by Champion’s system of forest types of India and Burma, based on the work of Champion (1936), Champion and Seth (1968) and Edwards (1950). Champion based his classification on rainfall-tree habitat relationships and distinguished between four main climatically-controlled forest conditions: evergreen (rain) forest, semi-evergreen forest, moist deciduous forest, and dry deciduous forest. The definition of the categories of evergreen and deciduous were subsequently adopted by the RFD, and resulted in the following 1950 categorisation: tropical evergreen, pine, deciduous dipterocarp, moist upper mixed deciduous, dry upper mixed deciduous, lower mixed deciduous forest, mangrove, savanna, beach, and swamp.

That Credner’s work was not drawn on in Thai classifications may be due to the fact that his book was published in German only, and points to the relative strength of the RFD’s institutional links with the British at that time. The Royal Forest Department was created in 1896 with the help of British foresters following a radical centralization and modernization of the administration in the Thai state in the late 19th century, and modelled after the forest department in British Burma. While the first forestry school was run by Siam forest officials trained in India and Burma, British foresters in Burma and Thailand had at some point received training in Germany and France (Bryant, 1997), following arrangements made by Brandis, who had also been instrumental in developing a ‘scientific’ management system for teak forests in Burma and who was later appointed Inspector General of Forests for British India. The long-standing connections between British, Thai, and German institutions, the latter credited with the invention of forest science (Scott, 1998), points to the likely connections of Credner’s work with British/Thai forestry through European networks of scientific exchange. In its formative years in Southeast Asia, these knowledge exchanges were heavily focused on one thing: the science of teak extraction (Laungaramsri, 2002, p. 93).

The established classification systems used by the RFD have not gone without debate or reassessment; however, later iterations continue to emphasise earlier production-oriented forestry needs. The 1962 RDF classification, for example, was further elaborated by Smitinand et al. (1978) and Santisuk (1988) developed elevation- and floristically-based divisions for montane and lowland vegetation developed for Northern Thailand. The latter included vegetation types, such as ‘lower montane oak forest’, that he acknowledged as having largely been the result of human impact. In spite of these elaborations, the choice of systems for classifying and mapping forests in Thailand continues to rely on traditions inherited from the extraction-oriented colonial period. The most recent attempt at designing a forest classification for Thailand was made by Maxwell (2001, 2004), who pointed out that most classifications of vegetation have relied on trees and/or rainfall as the chief indicators of forest types and that other factors such as vegetation dynamics or the floristic composition of the ground vegetation, have largely been ignored. When asked what categories of forest existed in the area under their purview, foresters in charge of the ranger station which policed the area surrounding the two villages studied provided these categories: dry evergreen forest, mixed deciduous forest, deciduous dipterocarp forest, grassland, bamboo forest, montane forest and evergreen forest. Also neglected in Thailand were anthropogenic and management-related approaches to forest classification. In Thailand, therefore, forest classifications continued to serve the immanent goal of scientific and state forestry: to make legible the extractive potential of trees. This goal is bound up in a century of timber harvesting, British colonial intervention, the exploration and governance of peripheral tracts of forest in the north, as well as fraught political relations with resident ethnic minority groups (Bryant, 1997; Laungaramsri, 2002).

3. Thai environmental politics and the Karen in Thung Yai

Environmental politics in Northern Thailand is closely linked with the cultural politics of the Thai state vis-à-vis the ethnic minority groups (Buergerin, 2003a,b; Vandergeest, 2003; Gravers, 2001; Laungaramsri, 2002). The Thai state’s attempts to establish control over economically- and geographically-peripheral lands (Thongchai, 1994) have led to repeated interventions in the livelihoods of ethnic minorities living in the mountainous highlands in the north and central parts of the country. While these large tracts of forested and highland areas had remained peripheral for hundreds of years, a push for resources and the determination to strengthen state control over its lands saw the increasing penetration of state policing of the border and highlands. Ethnic minority groups became the ‘scapegoat’ of the environmental problems seen to be perpetuated in, and brought about by, people living in the northern highlands (Delang, 2002).
In the 1980s, as rapid deforestation and logging exhausted much of Thailand’s forest, the national policy turned towards conservation (Delang, 2005; McKinnon, 1997). The issue of conservation is one of the more recent foci around which these politics have been played out. As Laungaramsri (2002, p. 100) points out, ‘nature conservation’ epitomised a highly politicised arena in which the “fundamental beliefs of foresters pertaining to forests and forest dwelling people have been manifested”. This abrupt shift in policy focus has been said to be spurred on in large part by a disastrous mudslide in 1989 that drew widespread public attention to the state of the environment in the country (Vandergeest, 2003). By that time, Thailand’s forest cover had halved to 14.8 million hectares, and the mudslide prompted the Thai government to pass a nation-wide logging ban, transforming Thailand from a major exporter into a major importer of logs (Fahn, 2003). From their role as overseers of forest extraction, the RFD became the appointed guardian of the remainder of Thailand’s forests. The RFD began classifying all forests as protected areas, disproportionately affecting the livelihoods of marginalized ethnic minorities living in the forested mountainous areas and who were directly dependent on forests for food and land. In some areas the struggle has been marked by violence, including forced resettlements and the curtailment of subsistence activities (Delang, 2002; Laungaramsri, 2002). Just as mapping played a significant role in constructing the “geo-body” of the modern Thai nation-state (Thongchai, 1994), forest mapping was likewise a powerful tool of exercising control over classified lands and forests. Representations of forests and boundaries, simplified on maps, were enrolled in projects aimed at the control of territory, access, and property rights (Laungaramsri, 2002; Vandergeest, 1996).

Located in Kanchanaburi Province, about 170 miles west of Bangkok, Thung Yai Naresuan (where the fieldwork for this paper was conducted, see Fig. 1) became designated a national park in 1974, and in 1991 was made a UNESCO World Heritage Site. The designated area is part of the largest remaining contiguous primary forest complex in mainland Southeast Asia. Covering an area of about 3600 square kilometres (889,579 acres) adjacent to

Fig. 1. Location of the study site, the Thung Yai Naresuan Wildlife Sanctuary. Source: Delang and Wong (2006).
the Thai–Burmese border, it is a biologically diverse region populated by endangered and rare species including the gaur (*Bos gaurus*), the banteng (*Bos javanicus*) and wild water buffalo (*Bubalus bubalis*), and numerous unique plant and animal assemblages (Wild Animal Rescue Foundation of Thailand, 2005).

### 3.1. The Karen in Thung Yai Naresuan

The wildlife sanctuary has been inhabited by the Pwo-speaking Karen for over 200 years (Buergin, 2003a,b). The Karen are an ethnic minority group indigenous to the highlands of Eastern Burma and Northern Thailand (for ethnographies see the edited volumes of Delang (2003a) and Keyes (1979)). In Thailand they are the largest of the nine ethnic minority groups living in the Northern highlands, and number about 500,000. The majority of the Karen in Thailand speak the Sgaw dialect, while Pwo Karen is spoken by a minority, including those living in Thung Yai.

During the 19th century the Karen began to experience land scarcities and gradually sedentarised and swiddened secondary forests (Renard, 1979; Grandstaff, 1976). Secondary forest swiddening, as practiced by the Karen, requires farming the land for one year before leaving it fallow for a number of years, usually 10–15 (see below). As a result of new stipulations over the park’s formation, and especially after its UNESCO designation, the Karen’s shifting cultivation and livelihood activities involving forest use have been progressively curtailed. After declaring the area a Wildlife Sanctuary, and throughout the 1980s, the Thai government tried to forcibly remove the Karen from the park. Although these orders were rescinded owing in part to the pressure of local, national and international NGOs, and to the reputation of the Karen as good forest stewards (Walker, 2001), tensions continue to exist between the Royal Forest Department’s desire to police the ‘naturalness’ of the wildlife sanctuary, and the Karen’s efforts to continue swiddening (Buergin, 2003a,b). It is a common argument of the RFD that the Karen method of swiddening is not sustainable, and threatens the integrity of forests and national parks in which they reside (Laungaramsri, 2002). Continued pressure by the RFD on villages have come in the form of attempts to increase the restrictions on Karen farming practices, the most significant being the shortening of the fallow period to 5 years from the original 10 to 15. Such restrictions attest also to the power of the RFD over the daily life of the Karen, upheld through tacit methods of intimidation and veiled threats. The climate of intimidation is consistent with the long history of the often-violent suppression of ethnic minority groups in the country (Buergin, 2003a,b).

### 3.2. Methods

Fieldwork was conducted in December 2004 in two Karen villages (Sanepong and Gomongta) in Thung Yai Naresuan by the first and second authors of this paper. The villages were chosen for their relatively sizeable populations (440 and 840, respectively) and a history of resistance and interaction with forest officials that was also due in part to their proximity to the regional capital and major government forest stations. Both villages are an hour by motorcycle from Sangkhlaburi, the district capital, and an RFD station lies on the dirt track to the smaller of the two villages.

Information was gathered from key informants identified through the snowball method, as well as 35 interviewees in the two villages, 19 men and 16 women. The snowball method tended to bring forth the names of senior male heads of households as key informants, because of their familiarity with the forest, traditionally the domain of male household members, and because males customarily handle interactions with outsiders. Care was taken to include at least a third of women informants, as they share responsibilities with their male partners in a number of livelihood activities involving forest use, such as the gathering of Non-Timber Forest Products (NTFPs) and working on swiddens. The two villages were internally stratified also by length of residence in the villages, with newer migrants being less socially integrated. In the larger of the two villages, newcomers were spatially segregated as well. Our snowball technique applied to informants of either village largely did not bring up references to newer members, with the exception of the larger of the two villages, in which two of the interviewees were relatively recent arrivals – having stayed in the village for about four years.

A combination of surveys of classification categories and semi-structured interviews were conducted by the first and second authors in two of the villages using the Pwo Karen language, with the help of two Karen interpreters. In the classification surveys, key informants from the villages were first asked to identify Karen land cover categories according to their own knowledge and in their own language, and to define and describe the features of each category. These land cover categories were then corroborated with semi-structured interviews with informants about swiddening practices, interactions with government officials, communal property rules, and changes in systems of governance and classifications, especially from the time of the wildlife sanctuary’s formation in 1992. Sketch maps by interviewees of the rough boundaries of these land cover categories were obtained from eleven of the informants. Transect walks were also conducted with four key informants, two from each village, in which the characteristics of these forest covers and the forest products obtained from the different forest types, were pointed out. This helped the researchers gain a better understanding of the nature and scale of the categories articulated, and their roles in and connections with livelihood and everyday practices. Apart from villagers, interviews were also conducted with two officials from the

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1 Non-Timber Forest Products refer to wild food plants, medicinal plants, wildlife products, firewood, bamboo and raw material for handicrafts, such as rattan, vines and grasses.
Royal Forest Department, and two teachers from the school in Sanepong. In addition, the first and second authors observed a meeting held between RFD officials and Karen elders from at least four villages in the park, that was also attended by Thai and international NGOs.

4. Forest classifications of the Pwo Karen in Thung Yai

Karen forest classification appeared to be intimately tied up with the socio-ecological practices of secondary forest swidden farming. Secondary forest swiddening involves farming plots of land in the forest for one-year periods followed by 10–15 years of fallow. After this long fallow, the vegetation is cut, left drying, and burned. This process ensures the killing of weeds while allowing ashes to fertilise the soil, limiting the need for weeding to once or twice during the growing season. However, for the harvest to be maximised, the vegetation in the plot has to be at a particular stage of growth and biomass. The burning of insufficiently mature trees will not produce sufficient biomass for an abundant harvest. At the same time, excessive biomass caused by trees that are allowed to grow above a certain size does not burn well, and results in poor harvests (Mertz, 2002).

The Pwo Karen in Thung Yai Naesuan classify the forests along two axes: forest land that can potentially be farmed, and that which cannot be farmed because of soil properties or slope. Within the first set of classifications for potentially-farmable land, forest stands are identified by the growth conditions of the vegetation (see Table 1). At one end of the range of growth conditions lies hrao peuh, which refers to land currently under cultivation. When harvesting is completed the land undergoes fallow and is known as hui peuh. The maximum number of years a field can be left fallow and be considered hui peuh varies from less than 10 to 50, depending on informants (see below). As forest growth conditions become more advanced, areas move from the category hui peuh (fallowing forest) into the general category of mae la sa peuh (mature forest), areas in which are considered too mature to be cleared for swiddening.

Within category of mae la sa peuh, several sub-categories can be delineated, according to growth conditions. When a forest area can no longer be cut and burned for cultivation, and therefore stops being a hui peuh, it is first categorised as mae la sa peuh, the same term for mature forest. As the area known as mae la sa peuh ages, it is called mae la thei kla, and later deung peuh. Deung peuh refers to a forest that has never been used (at least in living memory) for swiddening and is characterised by the denseness of its undergrowth, old trees and the profusion of vines. It is considered ‘wet soil’ forest and therefore difficult to burn for the creation of swiddens. Deung peuh forests are frequently found adjacent to villages, as the abundant vegetation helps to keep temperatures near the village ambient, while being an abundant source of NTFPs (Delang, 2006a). Forests classified as mae la thei kla are less dense and have a more open canopy than deung peuh forests. Most informants maintain that a mae la thei kla will become a deung peuh after a number of years. However, the Karen are divided about this shift, with some maintaining that thei kla forests do not necessarily become deung peuh, depending on biotic and abiotic factors. What is pertinent to the Karen is that both mae la thei kla and deung peuh are not farmed but rather drawn on for the extraction of NTFPs, and occasionally timber for house-building. The ability of Karen residents to obtain timber products, however, has been increasingly curtailed since the establishment of the national park and the establishment of RFD surveillance.

The implementation of RFD surveillance has also introduced some ambiguity into Karen classification and its relationship to practices on the ground. For one, the restrictions imposed on the Karen by the RFD have blurred the

<table>
<thead>
<tr>
<th>Classification based solely on growth conditions</th>
<th>Characteristics</th>
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<tbody>
<tr>
<td>Hrao peuh</td>
<td>Swidden field under cultivation</td>
</tr>
<tr>
<td>Mae la hui peuh</td>
<td>General term for swidden fields under fallow</td>
</tr>
<tr>
<td><strong>Sub-group of fallow areas</strong></td>
<td></td>
</tr>
<tr>
<td>1–5</td>
<td>Mae la hui bon</td>
</tr>
<tr>
<td>1–15</td>
<td>Mae la lom bohn</td>
</tr>
<tr>
<td>5–15</td>
<td>Mae la bon peuh or Mae la bon</td>
</tr>
<tr>
<td></td>
<td>Fallowed area less than 5 years old</td>
</tr>
<tr>
<td></td>
<td>Fallowed area less than 15 years old</td>
</tr>
<tr>
<td></td>
<td>Fallowed area that can be cut and farmed. Vegetation: more bamboo than trees, but not very high</td>
</tr>
<tr>
<td>Mae la sa peuh</td>
<td>More mature forest than Hui peuh (mae la meaning ‘forest’). This term is also used as a general term to denote all forest land that is not hui peuh</td>
</tr>
<tr>
<td>Mae la thei kla</td>
<td>Less mature forest than deung peuh –mostly trees and some bamboo. Less dense, not as many vines and bushes than deung peuh, one is able to walk in it</td>
</tr>
<tr>
<td>Mae la deung peuh</td>
<td>Area of dense, very old forest. Wet, cold forest, many vines, very dense, thick undergrowth. Too old to be cleared for farming, either because it has been left fallow for too long, or because it has never been farmed</td>
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<th>Classifications based on composition</th>
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<tr>
<td>Mae la wa kla</td>
<td>Bamboo forest. Area of the sa peuh dominated by bamboo, with some trees</td>
</tr>
</tbody>
</table>

* There is some disagreement on the number of years a forest has to be left fallow to enter each of these categories. See text.
boundaries between certain categories. While the categories of forest types were agreed upon by informants, there were some disagreements about the number of years a forest had to be left fallow to be called hui peuh, mae la hui bon, mae la bon peuh, or mae la lom bohn. For example, mae la bon peuh usually referred to a field that had been left fallow for a 'sufficiently long' time to regain fertility and which could be cut and farmed again. The number of years corresponding to this time period was now under debate because of RFD restrictions. Whereas mae la bon peuh had been used to indicate a 15-year fallow period prior to the RFD’s arrival, this category is now used to denote an area that had undergone 5 years of fallow, as this was the maximum number of years the RFD were allowing the Karen to leave the fields fallow before withdrawing them from cultivation. Therefore, for some, mae la bon peuh referred to land that has been left fallow for 15 years, whereas others used the term to indicate an area that has been left fallow for 5 years. It is possible that 15 years was the benchmark for older people who have experienced the practice of the longer fallsows, whereas younger Karen tended to view five years as a limit. While insufficient information is available to corroborate this generational difference, these disagreements demonstrate that Karen categories are liable to shift and adapt to change.  

Table 2  
Pwo Karen classification for land unsuitable for cultivation

<table>
<thead>
<tr>
<th>Terms</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mae la via peuh</td>
<td>Grassland area</td>
</tr>
<tr>
<td>Peu rao peuh</td>
<td>Swamp-like muddy forest with big trees similar to those in deung peuh</td>
</tr>
<tr>
<td>Mae la kon lo</td>
<td>Forest on the mountains with not many rocks. Vegetation on kon lo can change, so this is not a vegetation type. All kinds of forest types (e.g. thei kla, sa peuh, deung peuh) found on a mountain are termed mae la kon lo, except that on rocky slopes, in which case it is lai kla</td>
</tr>
<tr>
<td>Lai kla</td>
<td>Vegetation on rocky mountainous slopes, the vegetation – trees and bamboo – being much sparser than in mae la kon lo</td>
</tr>
</tbody>
</table>

species is used for the construction of houses and fences, and in the making of farming, cooking and household implements. Apart from classifications for land that could, or could have once been swiddened and farmed, a separate classification was set aside for land that cannot undergo swiddening because of soil properties or slope. These include conditions of soil infertility or the presence of large rocks (notably on higher slopes), the humidity of the area, or steep topography. This second system of categorisation does not go by growth conditions because these areas are not farmed, and therefore the Karen are not concerned with the growth conditions of the vegetation. Instead, land cover is differentiated by the physical attributes and topography that prevents the land from being farmed (see Table 2). The fieldwork area only included two of these four habitats, mae la kon lo (forests on mountains) and lai kla (rocky slope) – these areas are not farmed, but are associated with some edible herbs and plant parts found there (Delang, 2006a).

5. Discussion

Classification is fundamental to the interactions between the Karen and the RFD in two ways: one, the systems used are the basis of competing definitions of forests and forest use; two, the conflicts over forest use demonstrate that classifications are not just representations of nature but contingent practices of power, contested on a daily basis. The story of forest use governance is complicated by discourses of conservation that are at the same time troubled by the reliance on extraction-based classification systems elaborated above. As shown elsewhere (Braun, 2002; Adams et al., 2004), this conservation ethic replicated around the world idealizes pristine, people-free ‘natural’ areas, when in reality many so-called biodiversity areas have been inhabited and modified for centuries. By privileging tree cover and ignoring the presence of human intervention in forests, species-based classifications serve the purposes of both extraction-based forestry and modern conservation.

Whereas the possibility of succession is implied for forests in the Karen classifications, it is absent in conventional models used by the RFD. Leaving certain vegetation types that are part of the succession cycle out of the RFD forest classification has material and spatial implications for governance practices in Thung Yai. For the RFD, which relies

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2 Bamboo forest succession dynamics and growth conditions are still not fully understood by modern science, although many believe such forests are part of a succession strongly determined by fire and disturbance (Credner, 1935; Maxwell, 2004).
on a system in which forest types are designated by tree species and their classification by physiognomic and environmental criteria that exclude bush and scrub, land covered in bush is considered wasteland. For the Karen, land covered in bush is a *hui peuh*, in the process of fallow and growth towards maturity. On the one hand, when the Karen clear and burn a 10–15 year old *hui peuh* to farm rice on that land, they are accused by the RFD of forest destruction. On the other hand, when the Karen leave the vegetation on the *hrao peuh* to regrow, they are blamed for creating ‘wastelands’ of scrub and bush. The Karen practice of swiddening that involves the cyclical use of the forest – allowing them to use the distinctive characteristics of different forest growth stages (Delang, 2006a) – comes under especial scrutiny under the new regime of conservation, to which the forest appears as static categories. The idea of forest cycles have no place in this regime.

Unlike the RFD forest classification system, the Karen classification system recognizes that the forest is physically dynamic, and a space of human activity. The Karen system of forest classification is predicated on an understanding that all land under fallow and swidden cultivation are part of what they imagine to be ‘forest’. The term *mae la*, meaning forest, is attached to all the land under fallow (eg. *mae la hui bon*, *mae la lom bon*, *mae la bon peuh*). Interestingly, the prefix *mae la* is attached to the naming of a tract of land as soon as cultivation on that land is over and fallowing begins. Only *hrao peuh* – fields that are used to grow rice – are not given this term. However, once the harvest is completed, the field immediately enters the forest cycle, becoming a *mae la hui peuh*, a *mae la hui bon*, or a *mae la lom bohn*. By extension, even *hrao peuh* areas are considered to be part of the forest cycle as there is an understanding that once cultivation ends, the land will revert to forest. The reverting of *hrao peuh* to forest constituted an essential part of Karen farming systems, since the forest provides the field with the nutrients and biomass required for sustainable yields.

Numerous studies have pointed to the intensity of the Karen dependence and stewardship of forest areas surrounding their settlements. For example, Mischung (1990) refers to Karen forest-village composite areas as *Siedlungs-Kammern* (settlement cells). These cells refer to the ‘extended river valley bilateral joint descent group [which for the Karen is] the basic unit of social identity’ (Marlowe, 1969, p. 54). The kin relationships that exist between most of those who inhabit the settlement cells arguably help prevent conflicts over water or land. Roth (2004) characterizes areas constitutive of Karen-forest co-dependence as ‘dwelling spaces’, signalling the inseparability of forest, paddies, rivers, and the villages in Karen livelihoods. Forests are not only the source of land for the swiddens in which the Karen grow rice, but also the source of construction material, firewood, materials for fashioning farming and household implements, and game and wild edible plants that supplement their rice diet (Delang, 2006b,c). The forest also secures a year-round supply of water in the streams, which are not only the source of water for people’s paddies, but also the habitat that provides most of people’s protein consumption. Cattle and buffalos are the most important form of household savings, and are left in the forest during the rainy season. Thus, while the forest, the paddies, and the river are distinct habitats, they all form part of the cycle of life of Karen livelihoods. Forest classification is a means of expressing the cyclical and interconnected nature of Karen activity spaces. These habitats are interdependent and at the same time imbued with specific, sometimes mutually-exclusive roles. A *mae la deung peuh* cannot be farmed the way a *mae la hui peuh* is, and food collected from *mae la hui peuh* is often different from that found in a *mae la deung peuh*. A *mae la thei kla* is not put to the same uses as a *mae la wa kla*, and a *mae la wa kla* does not have the same tenureship rules than any other forest type.

Time, rather than species, frames Karen notions of forest categories and change. For the Karen, the forest is a set of lands in constant change, with the understanding that fallow areas are explicitly part of a cycle. There is also an understanding that this change takes place over several generations, with the evolution of *hrao peuh* into *deung peuh* taking place beyond an individual’s lifetime. This is not to say that all *deung peuh* has once been *hrao peuh*, or that all *hrao peuh* will become *deung peuh*. Forest categories denote the potentiality for change, rather than a static, immanent state of vegetation. Karen practices of swiddening, land governance and the spatial organization of activities operate under these conditions of possibility, and ensure these practices maintain the possibility of forest succession for future generations through ensuring the maintenance of forest stands of different growth conditions within their lived space. On the other hand, the species-based classifications used by the RFD assumes the immanence of forest types – that a forest tract has ‘always been’ and will ‘always be’ a certain way. In this way, the RFD system of classification does not account for the possibility of change. Even when changes take place and enter into new maps as changed categories, this system of classification elides the possibility of the development of forest areas from one condition to another. New maps mark new forest states, precluding the idea of transformation, evolution and maturation.

More than simply representations of broad meanings attached to forest spaces, Karen classifications are embedded with numerous community rules for local governance. Since different forest categories are used for different purposes – *hui peuh* for farming, *deung peuh* for the collection of NTFPs, *thei kla* and *deung peuh* for timber for construction, or *wa kla* for bamboo – the sustainable use of each of these different forest types are dependent upon different tenureship rules and governance practices. *Hui peuh* are communal holdings, allocated yearly to households according to their needs. While the produce of swiddens belongs to the household that farmed it, once the land is left fallow the plot returns to the community, which then re-allocates it again after the fallow period to individual households. On the other hand, land with older forests (*thei kla*, *deung
peuh) is never distributed to households, but conserved under the control of the community. In these older growth areas, the gathering of NTFPs for consumption is open access, within limits set by self-surveillance and community pressures, while the extraction of wood stems is limited to dead trees and is more closely regulated through public meetings moderated by village committees of elders and headmen. On the other hand, the individual stands of bamboo in a wa kla can be laid claim to by villagers – contingent on their needs at the time and the acceptance of their claim by the other members of the community. A number of social and ecological constraints encourage the adherence to these tenureship rules, and the reduction of conflicts over the use of the natural resources: kinship ties between the villagers; the threat of exclusion from work parties, which would ultimately force rule breakers to leave the village; the lack of a social network outside the ‘Siedlungs- kammern’, which makes migration more difficult if people were expelled from their village or the villagers exhausted the local resources; and the fact that their farming practices are adapted to an ecological complex that they have created and is not found elsewhere, even if they were allowed to settle ‘virgin’ forests (Marshall, 1997 [1922]; Delang, 2003b). These conditions serve as incentives for the careful stewardship of forests, especially compared to migratory forest-dwelling communities (Cooper, 1984).

6. Conclusion

This paper has pointed to classification systems as significant but often overlooked passage points in the conflictual process of knowledge production and codification. Through the example of how forest classifications are formed and how they interact with other classifications in the politicised conservation space of Thung Yai Naresuan, this paper demonstrates that the way forest classifications came into existence, and how they slip into practices such as conservation, can continue to play out in conflicts over landuse such as that between the RFD and the Karen.

The paper points to genealogy as an important method for the exploration of how ideas, simplifications and classifications came to be, especially in the way they expose points of problematisation and conflict, showing that the production of fact is not neutral, but the result of political and social processes. A genealogy of Western-based classifications applied to tropical centres of colonial forest extraction found that official categorisations assume forests to be silvi-cultural resources to be managed and optimised for extraction. While the act of classifying land cover hardly result in dramatic changes in discourse or material realities, their disappearance into the fabric of daily life and even politics means that the origins of their creation and possible effects are easily obscured. Western classifications, which have been demonstrated to have emanated from extraction-based forestry make little sense either for the governance of conflicted conservation spaces or the understanding of livelihood-based forest uses. Their categorisations expose the assumption of forests as static spaces, composed of unchanging stands of tree species. Therefore, in order to understand the work that classifications do, it is necessary to go beyond genealogies, to examine “the explicitly spatial and social contexts that inform the encounters between local and scientific knowledge” (Sletto, 2005, p. 77). These social contexts and encounters between different knowledge bases show classifications to be ‘messy’ in practice, and forces us to view such systems as dynamic practices rather than static, bounded representations of nature. Classifications such as that of the Karen in Thung Yai are seen to evolve and adapt to new rules and changing circumstances which are then taken up as ‘new’ knowledge. An exploration of Karen classification shows that a fundamentally different basis of defining space can be not only possible but logical to the purposes served by forests to communities that depend upon them for swidden land and livelihood products. The division of Karen classifications according to vegetation age and growth conditions, succession dynamics (hui peuh, deung peuh, thei kla) and soil properties (mae la kon lo, lai kla), is aligned with swidden farming practices, livelihood needs and rules for maintaining the balance between communal and private needs. The dual role of the RFD is reflected in the shift of the same set of classifications from forestry into conservation, and serves to strengthen the RFD’s moral authority over Karen practices in Thung Yai. Classifications are therefore not mere representations of reality, but contingent practices of power, struggle and negotiation.

While an understanding of forests as lived spaces has been emphasized in academic political ecology (Rocheleau, 2001; Roth, 2004), it remains marginal to the practice of conservation. Interrogating indigenous/local classification is a way of examining the compatibility of practices, such as the Karen 15-year fallow system, to conservation ideals, and a way of contesting hegemonic knowledges. Here, these classifications unveil a more inclusive view of forests as lived spaces, expanded to include areas under swidden and fallow, with the lands shifting between categories in a cyclical manner. An age-based classification entertains the possibility of understanding forests as dynamic spaces, and provides a way of combining conservation values with the needs of forest-dwelling people. These alternative classifications are a way forward in giving prominence to hybrid, complex characterizations that move away from the ‘pristine forest’ myth, towards characterizations that do not view conservation and livelihood activities as diametrically opposed to each other. Classifications provide a potential ontological node serving to demonstrate that the relations between conservation and livelihoods is not contingent but necessary.

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