



AN ALTERNATIVE VIEW:

Forest protection in the Philippines

The week before this manuscript was received the editor was being interviewed by a Californian TV script writer about coral reefs in the Philippines. She had recently visited Palawan, the southwestern island province of the Philippines. While she was there, a forest guard had seized a chain saw that was being illegally used. Later an armed military person, armed with an automatic rifle, reappropriated the saw and claimed it was his. Despite the vital need, protecting the few remaining forests in the Philippines is obviously a risky job!

[D.E.M.]

Caballo and Hari ng mga Bubule
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In 1992, in a *Canadian Biodiversity* article, Aris Ilagan painted an optimistic, if somewhat stark, picture of the current situation of forest protection in the Philippines. Ilagan contended that non-government organizations (NGOs) have been able to take up the slack left by the inadequate governmental efforts at reforestation to a certain extent.

Over the past two years, we have spent eleven months in the Philippines involved in various capacities in a vertebrate biodiversity and inventory survey of different islands. These surveys have attempted to assess the remaining biodiversity (some undiscovered) of tetrapods in as remote (and, by inference, pristine) a setting as possible. The very nature of these studies has also enabled an assessment of the status of forest cover and

condition in the areas visited as part of the surveys. The sad reality is that forests of the Philippines are in much worse condition than depicted by Ilagan (1992).

Based on satellite surveys (Swedish Space Corporation, 1988), current estimates of remaining Philippine virgin dipterocarp forests, which are lowland closed canopy forests, are closer to 8% than to Ilagan's stated figure of 25%. Originally, 90% of the Philippines were covered by forest! (Anonymous 1944; Dickinson and Kennedy 1992; Whitford 1911).

The loss of particular types of forest are even more alarming. For example, estimates of the original extent of Molave (*Vitex parviflora*) forest have been put at about 2% of total forest cover (Dickinson and Kennedy 1991). Currently, however, there appears to be no Molave forest left. In May and June 1993, there was a 50,000 peso award (equivalent to about US\$2,000) offered in southern Mindanao for the location of any Molave tree. Such a sum represents many times the annual income of any person liable to encounter a Molave tree in the course of routine work, but none of the woodsmen we spoke to had seen Molave trees recently. This reward was not offered by governmental organizations or departments, such as the Philippine Department of the Environment and National Resources (DENR), but rather by local logging companies. The reward offered was for the subsequent consumptive use and immediate short term financial gain of the Molave tree rather than for seed harvesting.

The dire environmental situation exemplified above is exacerbated by pressures from the fast growing population, inequitable land distribution, a faltering economy, poor development policies, and

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Figure 1. The change in forest cover (darkened areas) in the Philippines is shown here. On the left, a map prepared for the *Census Bureau* of the United States shows the forest cover in 1903; the map on the right shows the forest cover round 1990. Current estimates place the remaining all intact forest cover in the Philippines (including the different types of rain- and monsoon forests) at about 8-10% of the land area, down from 90-95% ninety years ago.

acute debt (Myers 1988; Goodman and Gonzales 1990). Reliable estimates of forest cover still are unavailable, but a preliminary assessment may be drawn from a number of sources. Figure 1 shows a map of the forest cover as estimated around the turn of this century (Ahern 1905) compared to more recent assessments of forest cover (compiled from: Forest Management Bureau 1988; Swedish Space Corporation 1988; Cox 1991; Dickinson et al 1991; Lean and Hinrichsen 1992). The reduction in forested area is quite evident. Indeed, Cox (1991) tabulates the extent of intact forest as 10.1% of the land area, while adding that there still exists some 22.1% of degraded forest of various natures.

There practically are no mangrove or lowland dipterocarp forests left in any of the islands except Palawan, although northeastern coastal Luzon is said to still contain some extensive tracts of lowland dipterocarp forest. In terms of percentage of land area covered, mangrove forests are down to less than 0.1% from about 2.1% in 1932, and lowland forests are down to 4.6% from about 75% in 1932! (figures from Cox 1991; Dickinson and Kennedy 1991). Thus, when any estimate of remaining forest cover is stated, the estimate basically refers to fairly inaccessible stands of montane and upper

montane ("mossy") forest. This means more than mere loss of forest cover and resulting immediate impact to humans (i.e., the massive flood at Ormoc in November 1991).

Numerous vertebrate species in the Philippines are limited to individual islands or island groups, and, within said groups, to specific types of habitats or mountain tops (Inger 1954; Heaney et al 1987; 1991; Ruedas et al., 1994). As an unfortunate consequence of the ongoing forest clearing documented above, the trapping of rodents throughout much of the Philippine lowlands results in an almost invariant mixture of six introduced species associated with humans: *Rattus rattus*, *R. exulans*, *R. argentiventer*, *R. norvegicus*, *R. nitidus* and *Mus musculus* predicted by Musser (1977). In addition the Asiatic House Shrew (*Suncus murinus*), another introduced species, is taking over much of the lowlands. On some islands, such as Panay, we have found this species even in mossy forest at an elevation of 1,760 m. Similarly, the giant cane toad, *Bufo marinus*, yet another exotic (New World), is seen in most habitats of the Philippines. This is disturbing, to say the least. Ideally, the trapping should have resulted in exciting new finds, or confirmation of old records of presence.

We concur with Ilagan (1992) that current reforestation efforts are inadequate. However, we will go one step beyond stating that the inadequacy is based merely on rate of reforestation. It is an uncontested fact that the rate of reforestation in the Philippines is much too slow, but even more distressing is the *type* of reforestation being undertaken. Formerly heterogeneous stands of lowland, primarily dipterocarp, forest are being replaced by monoculture stands of relatively fast-growing South American Mahogany (*Sweetenia macrophylla*), and by secondary forest indicator species such as the Australian *Acacia mangyum*.

Is the problem one merely of rapacious loggers? Yes—and no. Often tribal communities are more concerned merely with day to day survival than the long term interests of the community. Thinking with a long term perspective is a luxury that can be afforded only after survival is assured. Thus, if particular tribal groups are given stewardship of their forest, it means nothing more than business as usual with no change in hunting patterns. In fact, we repeatedly observed poaching of CITES listed birds—hornbills, parrots, and many others—and mammals—most obviously, deer, wild pigs, and macaques, as well as others. The one thing that does change is the ease of access to the forests. Previously, loggers could come in only with the authorization of the DENR or other regional environmental authorities. Now they need only the approval of local chieftains. Such approval is easily secured with small sums of money.

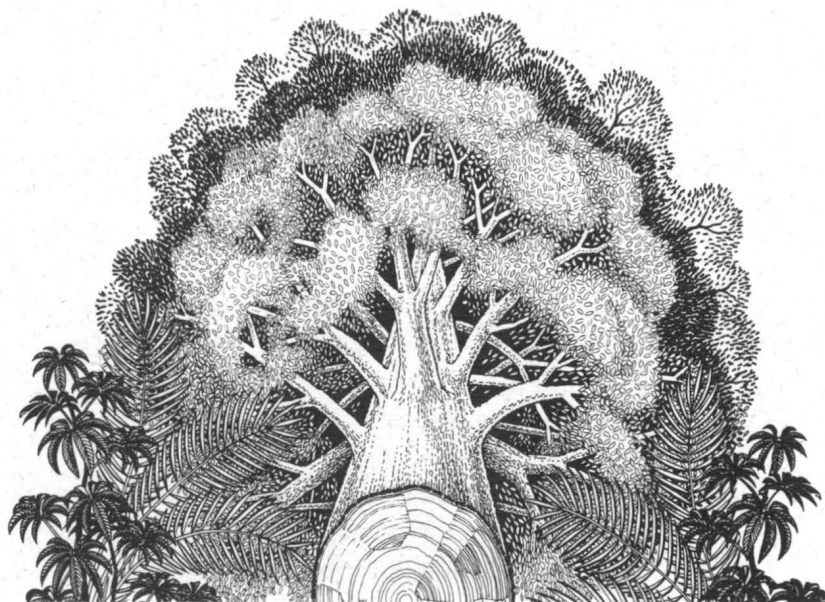
As an example, although the T'boli tribespeople of Sarangani and Cotabato provinces (Mindanao Island) nominally control their territory, extensive logging and mining operations are under way in their tribal lands. When we visited these areas in April and May 1993, the mining operation was in the exploratory phase. It is, therefore, difficult to gauge the potential impact on the community.

The logging operation clearly was detrimental. Ilagan (1992) mentions that the illegal ventures using “sophisticated timber-cutting” equipment are the culprits. Nothing could be farther from the truth. Insofar as the logging operations that we have witnessed, it is the *lack* of sophisticated techniques that causes the damage. Logging operations rely on nothing but a chain saw and World War II surplus military vehicles. In order to gain access to a single, particularly lucrative tree, an entire area of forest will be laid waste. When we attended the

cutting of one tree in the hopes of sampling the fauna in the crown, we actually had to move five times during the cutting process, because the chain saw operator did not know where the tree would fall. In a similar vein, when all logging within 20 m of waterways is purportedly prohibited, cut logs covered over streams.

The clear cuts resulting from this method of logging are invariably strewn with logs of secondary commercial value that are left to rot. Apparently they are not worth removing. As a result of logging near watersheds, the common stream frog, *Rana signata grandocula* (*sic.*), seems to have been extirpated downstream from cutting areas, where the streams were red from topsoil run-off. Similarly, edible freshwater shrimp are almost impossible to secure downstream of logging operations.

To a certain extent, NGOs are trying to take up the slack where the government's work stops. Most of these efforts are inadequate, or worse still, ill conceived. One archetypal example of the positive work of NGOs is the stewardship agreement obtained by the Mangyan community over their forest (Ilagan 1992). Again, however, there is a disparity between handing over stewardship and the economic realities of the native peoples of the area. The Mangyan tribespeople of Mindoro are one of the poorest communities of the Philippines. When we visited Mt. Halcon Highlands (part of the Mangyan Heritage area in northern Mindoro) in May and June of 1992, *all* logging was prohibited. Nevertheless, extensive logging was under way up to an elevation of about 900 m. In fact, the sound of chain saws



would cease abruptly as we approached and would resume after we were past, indicating a look-out system. Local DENR officials claimed to be powerless in the face of staff shortages. The Mangyans themselves were adamantly opposed to logging, as they have witnessed detrimental effects already, specifically the silting of streams. But the short-term economic reality is that individuals must survive, and logging does provide a steady source of revenue.

Our last commentary will be on the sources of illegal logging in the Philippines. Ilagan (1992) reported that illegal logging primarily has been linked to military personnel and police, as well as government officials (usually of the DENR) who are "closer to the action." The larger problems are caused by companies that have a legal concession, but carry out logging in an illegal manner. For example, if permission is granted to carry out selective logging, that is one thing; however, if there is complicity with local DENR officials, it is very easy for the company to carry out clear-cutting and cutting in watershed areas (as was the case in the T'boli domains). Once the wood leaves the area with official papers, it becomes legal.

Problems are often compounded when the logging operations are under the direct or indirect control of former speaker of the House and presidential candidate Ramon Mitra. Operations in Mindanao are variously controlled by the Mayor of General Santos City (southern Mindanao) or former members of the Philippine Senate (Surigao area, northern Mindanao). Often non-compliance with such individuals is fatal. In 1991, the director of the Philippine National Botanic Garden was gunned down by unidentified assassins after attempting to block illegal logging in the Quezon Real Province reserve. The culprits are still at large.

It is easy to exemplify the complicity between DENR local officials and logging companies. One area DENR office that we visited had guest quarters built with supplies and materials "donated" by the local area logging company, as well as direct radio communication with the company headquarters. Officials from this office kept macaques (*Macaca fascicularis* sensu lato, a CITES listed species) as pets, regularly ate deer, wild boar, and civets for meals, and were observed to partake of sea turtle on one occasion. DENR officials in a different area had direct communication with another logging company, this time via cellular telephone; the same logging company supplied chauffeured vehicles to DENR officials. Finally,

another team of scientists, who were engaged in similar work to ours, found that illegal logging was going on in Mt. Kitanglad (Bukidnon Province, Mindanao Island) under direct supervision of local DENR and police officials.

The above vignettes point to a much more alarming perspective of the forest protection and loss situation in the Philippines than was painted by Ilagan (1992). Ultimately the problem stems from a population issue, which results in financial and education shortages for the majority of the people of the Philippines. If nothing is done to stem the ever increasing population of the Philippines (1920's 10 million; 1983 52 million; 1993 about 73 million, including 8 to 10 million in Manila alone), then the deforestation problem has no solution. Increasing numbers of people need increasing amounts of space and materials to live. Education is also of prime importance, but unfortunately, many of the NGOs are more concerned with educating the wealthy and well to do as a means of obtaining funds, than they are in educating those peoples most affected by the deforestation problem.

Perhaps the Philippine Eagle Foundation (PEF), in Davao City, Mindanao Island, could be taken as a refreshing example of the power of education. Philippine Eagles (*Pithecophaga jefferyi*) only breed in undisturbed primary forest below 1,200 m. Using the link between forest survival and eagle survival as a paradigm, the PEF personnel can go one step further and explicitly point out complex ecological interactions in easily comprehensible terms, including direct effects by people and on people.

Our wish in the foregoing discussion has *not* been to provide a point by point refutation of the salient elements mentioned by Ilagan (1992), nor do we wish for this to degenerate into an emotional battle of opinion and counter opinion. We do wish to point out, however, that we have a strongly differing perspective of forest protection and environmental degradation in the Philippines. In our opinion, only a strongly backed political and financial effort can help maintain, let alone recover, the forested areas of the Philippines. This two-pronged effort would target population growth and education efforts intensively, with a strong emphasis on enforcement of existing environmental laws and the will to oust corrupt officials.

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Philippine tarsier,
Tarsius syrichta

