

INSTITUTE OF CURRENT WORLD AFFAIRS

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KUTAI NATIONAL PARK

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Dear Peter,

I first visited Kutai National Park in January. It hardly seemed to be a park at all, simply a piece of burned-over land stretching between the government's Pupuk Kaltim fertilizer factory on the edge of the city of Bontang and the Sangata oil field, run by Pertamina, the state petroleum corporation. The sharp contrast between the lush mangrove swamps and the scruffiness of the burned-out scrub just behind them was striking.

The orangutans we'd hoped to see at Teluk Kaba, a ranger post on the site of an old coastal logging camp, never came around. It's quite plausible they were hiding, since orangutans are wary of strangers and easily annoyed. But there were tracks all over, distinctive knuckle marks in the sand and clay-mud, alternating with those of sambar deer, mouse deer and otter. I was relieved when Rohani, a ranger newly arrived at the post, gave up on trying to exhibit the wonders of the park, and left me and Ginny, newly arrived from the U.S., to marvel at bulge-eyed mud-skipper and tiny crabs with rainbow-assortment colored pincer claws scampering around the slope of an old log skid. The peace and quiet of the place were welcome after the cacaphony of Samarinda, the putter of diesel boat engines, and Rohani's constant "monitoring" of cackling shortwave broadcasts.

But the jungle? A wildlife reserve? All I could see were potentials and history. The coastal areas I visited did not seem like national park material in their present condition. There were certainly more humans than other primates there, though several feisty groups of proboscis monkeys seemed to be holding their own in the mangroves. After a fruitless day of hoping to meet other wildlife, however, I cynically speculated to Ginny that perhaps the area had been declared a national park because nobody really wanted the land.

Wrong. It seems everyone wants a piece of Kutai National Park.

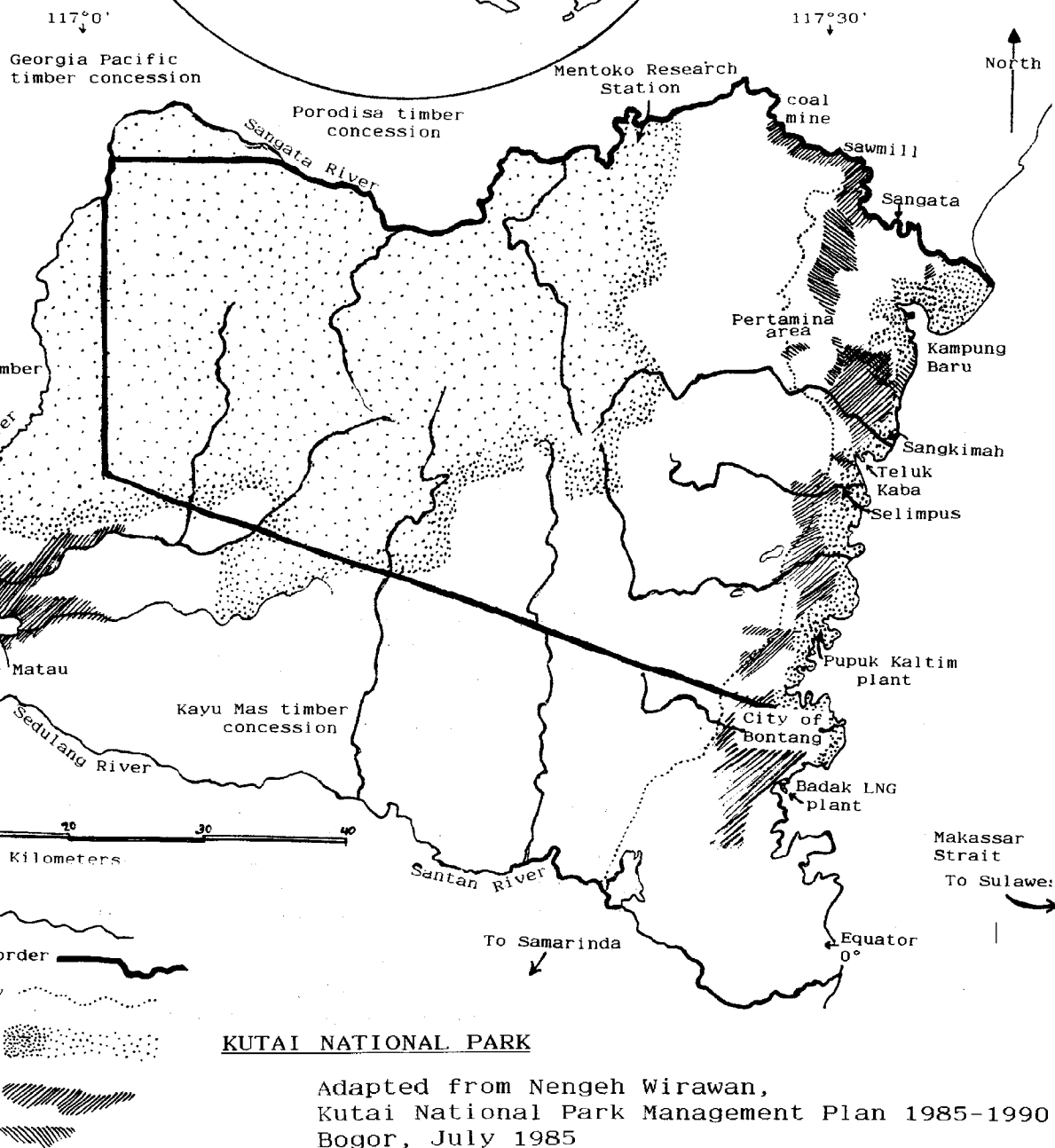
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Kutai National Park covers about 200,000 hectares along Borneo's east coast. Roughly 50 kilometers from north to south, the park reaches 60 kilometers inland, to the west. (There's a map on the next page.) It contains several types of lowland equatorial forest, and protects populations of Borneo's most notable wild mammals -- orangutans, three

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# LOCATION OF KUTAI NATIONAL PARK



types of deer, banteng (wild buffalo), sun bears, civets, wild pigs, and monkeys: proboscis monkeys, several langur and leaf monkey species, and two species of macaques. A wildlife reserve was originally proposed for the vicinity of the current park by a Dutch mining engineer in 1932, though the suggestion was for an area 10 times the size of the present park. Such a designation might have helped preserve remnant rhinoceros populations in eastern Borneo -- no one has seen traces of any rhinos since 1976. The current park is also known to contain representatives of over 80 percent of Borneo's bird species, including all eight species of hornbill. In 1936, a much smaller area, 306,000 hectares, was designated as a wildlife reserve by the Sultan of Kutai, and approved by the Dutch colonial government's Resident. The designation was confirmed by the Indonesian government in 1957. This reserve was bordered by clear topographic features: rivers to the inland sides and the Makassar Strait to the east.

In 1971, 106,000 hectares were excised from the wildlife reserve for petroleum and timber exploitation. The new borders to the south and west were straight lines on a map; the border has never been clearly marked on the ground. Prior to this, Pertamina, the state oil company, had begun exploring in the area and had created an enclave to support its activities at the north end of the reserve. About 60,000 hectares of the excised land, all virgin forest, were given to the Kayu Mas timber company as a logging concession. Two large petroleum-based industries were built near Bontang, at the southern end of the reserve, on logged-over coastal land -- Pertamina's Badak liquified natural gas plant, and the Pupuk Kaltim urea fertilizer and ammonia plant, which uses a portion of Badak's natural gas production as a feedstock.

Workers arrived from all over Indonesia, with a large contingent of foreign experts, to build the new factories. Production workers, shopkeepers, hawkers, and families in search of a piece of the action settled in Bontang, which became a boomtown overnight. On a much smaller scale, the Pertamina settlement near Sangata, at the north end of the reserve, overflowed its original boundaries, as people hired by contractors or hoping for work with Pertamina itself surrounded the "official" enclave. Many of these newcomers cleared garden plots and even dry rice fields in the vicinity of the Pertamina village.

Bugis migrants from South Sulawesi, across the Makassar Strait, began arriving in small groups in the late 1960s, mostly seeking their fortunes in as-yet-uncontrolled logging. Logging, in this case, meant mainly poaching trees within the borders of the wildlife reserve, though there were also a few jobs with the Kayu Mas timber company. Much of the pirated hardwood was chainsawed into rough planks and beams on the spot, and soon showed up in the construction of new houses in Bontang and Sangata. Mangrove wood was sold as poles and firewood to a seemingly insatiable market.

Forestry officials have tried to dislodge the prospering Bugis migrants for the past 20 years with no success. Many of the settlers claimed not to have known they were cutting protected forests; increasingly, they were making their living from farming rather than poaching timber in any case. Many of the "log pirates" went back to Sulawesi when they had put away a nest egg. Others brought their families over to

Kalimantan, opening forest land for rice fields and later cocoa gardens in their villages along the coast. The forestry staff, mild-mannered, young, underpaid, unarmed, and non-Bugis, have hesitated to confront or provoke a volatile and rapidly growing Bugis population.

During the 1970s, settlements continued to push into the wildlife reserve along its southern border, along the coast, and spilling over from the Pertamina complex and Sangata. Several studies in the 1970s identified good reasons for providing additional legal protection to the Kutai wildlife reserve by designating it a national park, which would also give it priority in conservation budgets. In 1982, the government's national park declaration was timed to coincide with the Third World Congress on National Parks, held in Bali.

Only a year later, most of the eastern portion of Kutai National Park burned in forest fires that lasted for months. From the landward edge of the mangroves to about 20 kilometers inland, 100,000 hectares burned, about half the total area of the park. Fires spread mainly on logged-over land. Wildlife populations were destroyed or fled. Studies a couple of years after the fires, however, indicated that small populations of orangutan, deer, and other mammals that had managed to escape the flames had returned to feed on young vegetation springing up on the newly fertile land, and were prospering. But for wildlife dependent on fruit or leaves of mature trees, times are tough. Survivors may have migrated to unburned areas of the park, or beyond its borders, but little research has confirmed guesses on the whereabouts of these wanderers.

From the perspective of tropical rainforest research, the forest fires have provided a wealth of opportunities, a disaster-chaser's dream. There may be no better place to study the ecological effects of fire on a rainforest ecosystem relatively unaffected by human activity. Much of the northwest portion of the park was untouched by forest fire (although the 1982-1983 drought took a heavy toll on canopy trees) and there are no permanent settlements in the area. Most of the former Dayak population migrated downstream over the past two centuries. Their descendents converted to Islam and now identify as ethnic Kutai. The northwest portion of the park, beyond the Mentoko research station (28 kilometers up the Sangata River from the village of Sangata) can only be reached by long, trailless treks or by dragging boats upstream over rapids. This region offers an enormous and as-yet almost untapped potential for rainforest ecology research.

Adi Susilo, of the Forestry Research Institute in Samarinda, hopes to be able to monitor the forest's recovery near Mentoko, comparing burned and unburned areas, observing long-term changes in wildlife populations, their behavior, and their habitats. I accompanied Adi and three park staff a couple of weeks ago when they were recording what will become baseline data on some new plots near Mentoko.

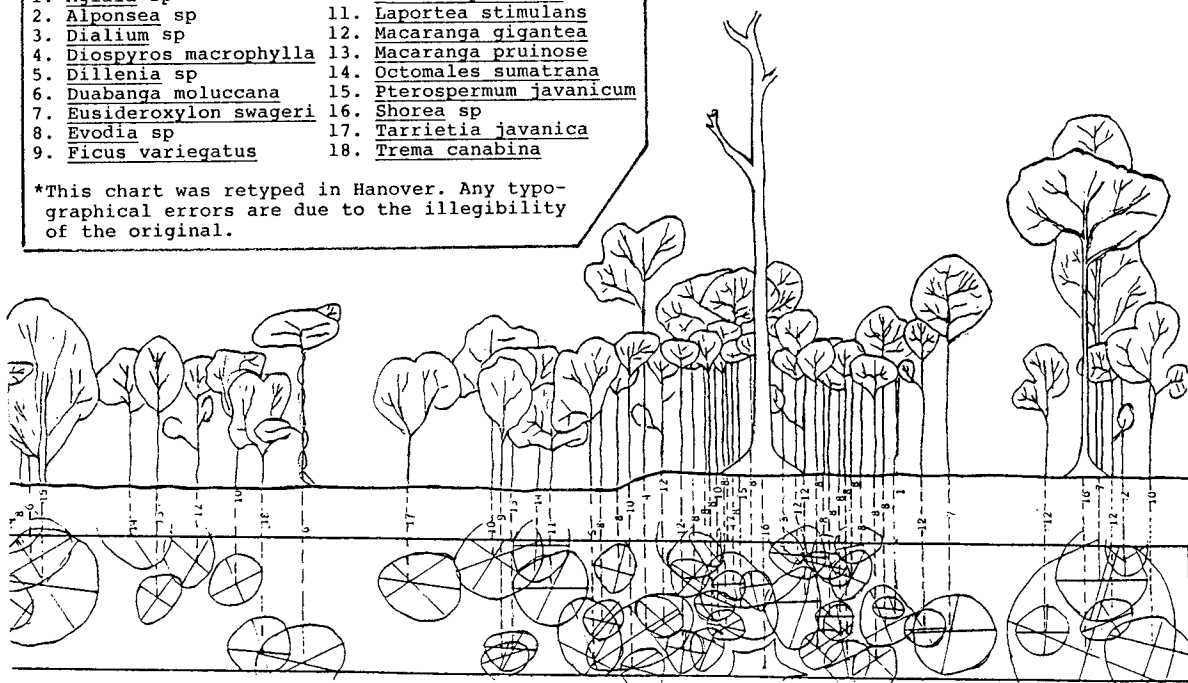
Starting out late in the morning to give the forest time to dry off (the mud is less slippery then, and the leeches less likely to bite) we climbed into the ketinting and swerved around three kilometers of turns in the Sangata to an area where Akira Suzuki, of Kyoto University, did research on primates a few years back. A trail, of sorts, to the highest point in the vicinity was left from that time. Bastar, Juwadi, and Komari, the park staff, marked a 10 by 90 meter plot, whacking down saplings at about knee height in a line around the periphery. It's

not the lowest-impact marking method, but one that is likely to be quite obvious a year or two from now when someone might try to find the plot again. Then the mapping of trees within the plot began. In this case, all growth 10 centimeters or more in diameter at chest height was recorded.

#### Tree species \*

- |                                 |                                   |
|---------------------------------|-----------------------------------|
| 1. <i>Aglaiia</i> sp            | 10. <i>Guensia petanira</i>       |
| 2. <i>Alphonsea</i> sp          | 11. <i>Laportea stimulans</i>     |
| 3. <i>Dialium</i> sp            | 12. <i>Macaranga gigantea</i>     |
| 4. <i>Diospyros macrophylla</i> | 13. <i>Macaranga pruinose</i>     |
| 5. <i>Dillenia</i> sp           | 14. <i>Octomales sumatrana</i>    |
| 6. <i>Duabanga moluccana</i>    | 15. <i>Pterospermum javanicum</i> |
| 7. <i>Eusideroxylon swageri</i> | 16. <i>Shorea</i> sp              |
| 8. <i>Evodia</i> sp             | 17. <i>Tarrietia javanica</i>     |
| 9. <i>Ficus variegatus</i>      | 18. <i>Trema canabina</i>         |

\*This chart was retyped in Hanover. Any typographical errors are due to the illegibility of the original.



Profile of 10 meter by 90 meter plot showing trees 5 years after the area was burned by forest fire (Plot at Mentoko, location TH 24; reproduced courtesy of Adi Susilo and Juwadi)

This area recovering from forest fire contains many small trees of pioneer species but no closed canopy

I walked up to a vantage point at the peak of the hill. Although the site was only about a half a kilometer from the river (as the hornbill flies, but not as we walked) the slope was steep, and the summit was at least 100 meters above the river, with a fine view of the valley. I recognized several bird calls through the mild mid-morning insect buzz, and located a tiong bird by its distinctive multi-note song. Jet-black with bright yellow flanged collar and beak, these grackles or hill mynas (*Gracula religiosa*) are prized as pets. Many populations in Kalimantan are being depleted as hunters bring them to market. Gazing over the river valley, I noticed five hornbills break away from a fruiting tree and fly across the stream, disappearing into the foliage of another tree. Hornbills are deeply symbolic to many of Borneo's people. Heroically strong flyers, clear-sighted and loud-voiced, they are also among the most social birds. The female nests in a hole in a tree behind a mud wall that the male builds to protect her from predators, along with her eggs and later the hatchlings. Until the

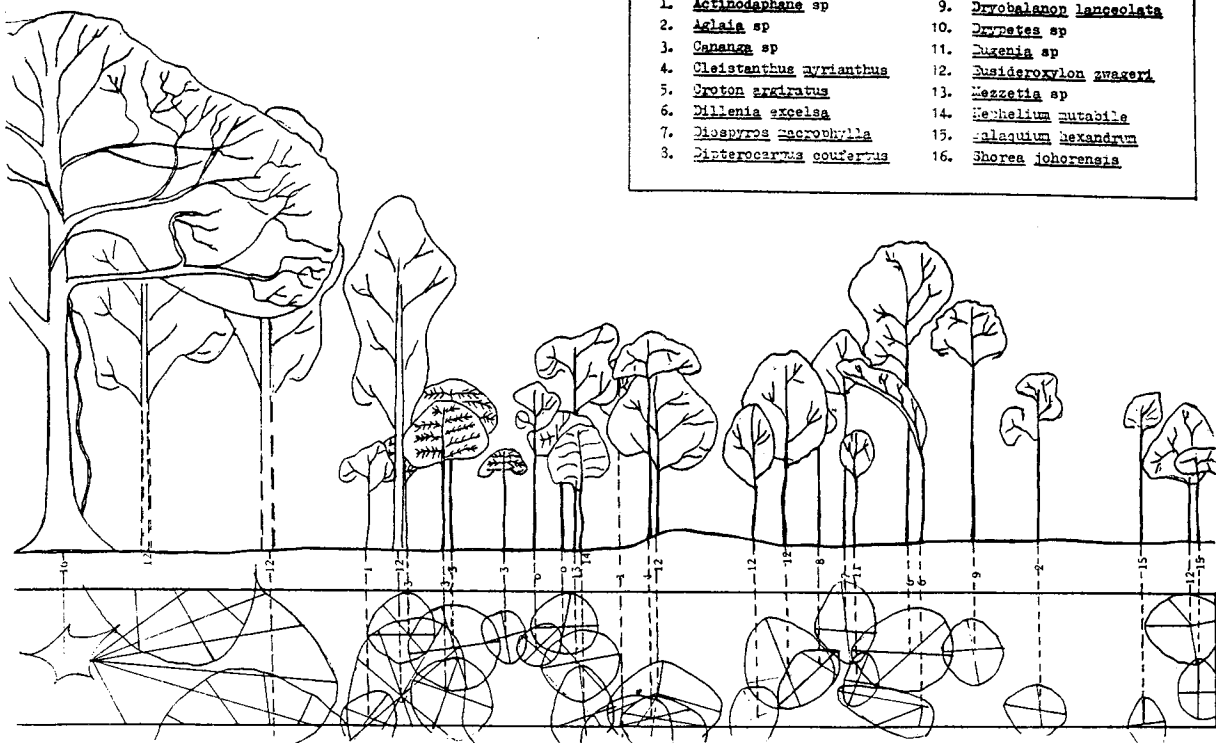
young birds are fledged, the male passes food to the female through a small hole in the wall. If the father bird is hurt or killed, another male will take over the feeding. Several Dayak peoples use the hornbill as an example of strength, beauty, and social cohesion.

A human call drifted up the hill, and I went back to see how the mapping was going. "Number five!" called Juwadi, moving toward a new tree. This plot was going quickly. The site had not been burned. Old trees provided lots of shade and there were few younger trees to measure. I joined Adi on a fallen tree trunk as he wrote data in neat columns in his notebook.

"Keruing!" called Bastar, identifying the old Dipterocarp. Almost ten more minutes of measuring and calling back and forth provided data on this tree trunk's diameter (well over a meter), the tree's total height (about 30 meters, according to Bastar's estimate) the height up to the first branch, and other information. In the past, this team lugged aluminum angles and surveying equipment into the forest, but they found that Bastar's guesses were usually just as accurate.

#### Tree species

- |                                   |                                   |
|-----------------------------------|-----------------------------------|
| 1. <u>Actinodaphne</u> sp         | 9. <u>Dryobalanop</u> lanceolata  |
| 2. <u>Aglala</u> sp               | 10. <u>Drypetes</u> sp            |
| 3. <u>Cananga</u> sp              | 11. <u>Dugenia</u> sp             |
| 4. <u>Cleistanthus</u> pyrianthus | 12. <u>Disideroxylon</u> zwaeseri |
| 5. <u>Croton</u> exaltatus        | 13. <u>Hexetia</u> sp             |
| 6. <u>Dillenia</u> excelsa        | 14. <u>Merhelim</u> mutabile      |
| 7. <u>Diospyros</u> macrophylla   | 15. <u>Paladium</u> hexandrum     |
| 8. <u>Dipterocarpus</u> coriaryus | 16. <u>Shorea</u> johorensis      |



Profile of 10 meter by 90 meter plot showing area that has not been burned (Plot at Mentoko, location AW 33; reproduced courtesy of Adi Susilo and Juwadi)

Old growth forest characterized by fewer, larger trees of species common in "climax" lowland rainforest in Kalimantan

The most time-consuming data were the location of the trees within the plot and the dimensions of the crowns. These were established using tape measure and compass. Each tree's location was plotted relative to distances and directions from other trees and from the edges of the marked plot. Eight directional measurements were made from the trunk of each tree to the outermost extent of its crown. (Whoever held the tape measure just kept moving back from the trunk until he was directly under the end of the branch in the direction he was moving.) Mapping the entire plot took the rest of the morning. In the afternoon and evening, Juwadi used the recorded data to draw a schematic profile on graph paper, to scale, of all trees in the plot.

Several similar research plots are being established along the northern border of Kutai National Park, near the Sangata River. They will be used to compare species mix, habitat, and the succession in plant life between areas burned in forest fires and those relatively unaffected. Over time, changes in dominant species within each plot may be monitored, thus providing a profile of how the lowland rainforest in this area recovers from fire, and how species succeed each other in the "architecture" of the forest. Over time, these data may help construct a detailed picture of the process of change in "stable" primary forests as well, and the processes by which severely degraded land becomes "primary" forest again.

Combined with observations of animal life, such insights will also help ecologists figure out the habitat needs of many animals and plants apparently wiped out or severely threatened by the fires. When will such species recolonize an area where they once lived? What do orangutans, for example, need to survive in a badly burned but recovering area? Likewise, how do the presence and habits of wildlife affect the recovery of the forest's trees?

We spent much of our time at Mentoko on the lookout for orangutans. On several occasions, we were four or five hours behind the travelling apes, their paths marked by bent, broken, or shredded vegetation, and half-eaten fruit scattered on the ground. Abandoned nests were perched in the crotches of trees, the younger trees somewhat leaning. Bastar, who was trained by his father and uncles as a hunter and fisherman along the Sangata River, has worked as a ranger and research assistant to virtually every project that has used the Mentoko station, and was involved in cutting most of the trails that crisscross the area. He can guess where orangutans or other wildlife are likely to be by figuring out which trees are in fruit, and where those trees grow. Sometimes, Bastar and Adi explain, if new people just sit and wait near a place where an orangutan may be hiding, it will eventually start scolding (a noise that sounds like juicy human kisses) or throwing things down at the intruding would-be observer. The missiles of choice are fruit rinds. I was not so lucky as to get pelted.

The area's gibbons seem to make less of a mark than its orangutans, but to me they were no less elusive. Most mornings at Mentoko, just as the stars were beginning to fade before dawn, I woke to the gibbons' rising hoot-song in the distance. But by the time it was light enough to see anything, they had fallen silent and disappeared in the treetops. (Oddly enough, the largest and closest groups of calling gibbons I've found in Borneo have been in heavily logged areas and near timber camps.)

As pristine habitats are increasingly altered or destroyed by fire, land clearing, or logging, there may still be many opportunities for these or other marginal lands to support forest-dwelling wildlife. Survival of several species of animals in Borneo may depend on increased human understanding and attention to the interlocking needs of animals and the forests where they live.

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Even a cursory review of regional plans for East Kalimantan shows that within 20 years, Kutai National Park may be completely surrounded by new development. Government-sponsored and unplanned forest clearing for agriculture and industrial tree plantations will destroy large tracts of neighboring jungle. Logging, coal mining, and petroleum exploitation may seriously affect other lands. New settlements in the interior and urban growth along the coast will turn the park into one of the last pockets of natural habitat anywhere near East Kalimantan's shoreline still relatively untouched by land clearing, despite the settlements that already exist there.

But even within the park, there is some question as to how the areas that were spared from the forest fires can best be preserved in their natural state, and whether efforts should be made to strictly protect or rehabilitate burned lands and those that have been cleared for farming. Whether and how to promote tourist visits to the park is also an issue, but not a pressing one at this time.

The need to decide what to do with the national park once it was designated and to assess damages after the devastating fires convinced the Forestry Ministry's Directorate General of Forest Protection and Nature Conservation that the park needed a management plan. Nengeh Wirawan, a lecturer at South Sulawesi's Hasanuddin University produced a near-term plan for the period 1985 to 1990. Funding for the plan came from the World Wildlife Fund and the International Union for Conservation of Nature and Natural Resources. Background work was done quickly, with a rough assessment of fire damage, several treks around the park (mainly along rivers, old logging roads, and established trails) for wildlife surveys. Evaluations of human settlements in the park, outlines of tourist potentials, and reviews of border development and security issues were also parts of the plan.

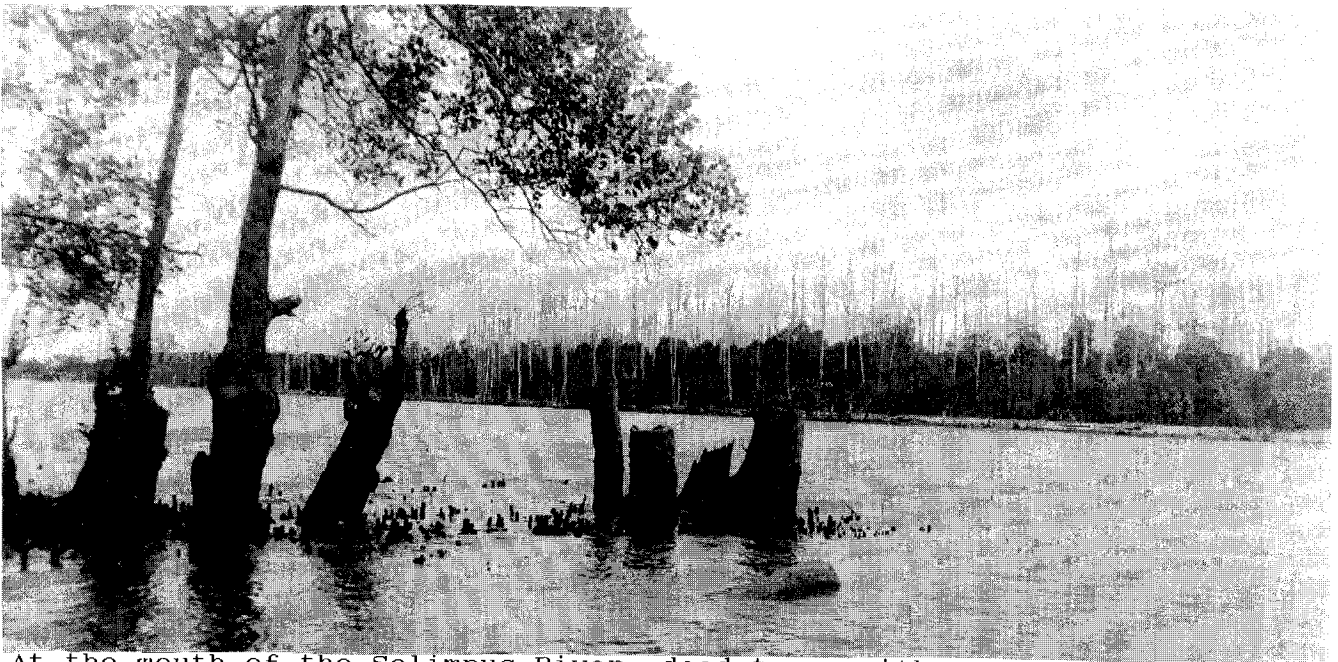
The management plan relies upon designations of land use zones within the park to limit activities that will be permitted in each general area. Zones range from "intensive use" zones and existing villages that will be allowed to remain for the time being to "sanctuary" zones where no development of any kind and no casual visits would be allowed. The "sanctuary" zone includes much of the 100,000 hectares that have been neither logged nor burned. A "rehabilitation" zone would allow logged and burned areas in the aquifer outcrop crucial for water supplies to Bontang's industries to restore themselves, though the plan recommends planting indigenous tree species having fruit, flowers, and leaves attractive to local wildlife on lands that have been cleared for shifting cultivation.

The plan also designates "traditional use" zones, mainly around Lake Mantau in the southwest corner of the park. The designation ensures that the area's native people, the Menemang and Sedulang communities, will be able to live and fish as they have for hundreds of years, but



prohibits them from opening new land for ladang and from cutting logs for sale. However, the plan foresees a very different future for the new Bugis settlements along the coast, portraying them as opportunist, expansionist former log pirates. (A 1987 census of population within the borders of the park, including the legal enclaves, came up with a figure of 19,653 people. About 60 percent of household heads were from Sulawesi, or Sulawesi ethnics, 20 percent were from Java or Madura, and only 18 percent were from Kalimantan itself.) The plan recommends that the government "translocate" the coastal villages in particular to sites outside the park, and in the meantime try to keep villagers from clearing additional land. But any prospects of relocation have been put aside for the time being, and park administrators have reaffirmed their old policy of simple containment.

However, even that doesn't seem to be working, as I noticed on visits to several of the coastal villages. I accidentally spent a night in Selimpus. On a walk with Rohani, the ranger from Teluk Kaba, we decided to take a detour to this Bugis village. Rohani seemed anxious to go there, since Selimpus was his old post. He didn't mention, however, that no one had been on the five-kilometer trail to Selimpus for months, or that the last stretch was through a swamp thigh-deep in mud that smelled like rotten eggs. We got there in time for Rohani to ask for cocoa pod samples from some of the settlers (and for a quick lesson in the basics of cocoa planting) but not in time to get back to Teluk Kaba before dark. Apparently, Rohani had a friend who was trying to buy 13 tons of cocoa seeds to send to a new plantation in East Java, and had heard that those being used in this area were doing very well. I wondered at a ranger openly making business deals with farmers planting illegally on park land, but didn't give it too much thought at the time. Even if they are full-fledged civil servants, these rangers' salaries are only about Rp. 60,000 per month (about US \$40); casual park staff get less. It's no surprise they try to earn money on the side, most notably from such business deals or by showing visitors around the park.



At the mouth of the Selimpus River, dead trees with new growth beneath bear witness to the devastation done by drought even in coastal areas not actually burned, and to the gradual process of recovery (background)

In the village of Selimpus, a ranger post was built on the inland edge of the land villagers had already cleared a couple of years ago. The rangers and "special forest police" announced that it was forbidden to clear any additional land beyond their post, and erected a large, unmistakably worded sign to that effect. Yet, only two growing seasons later, fields planted in padi, corn, pineapple, bananas, and young cocoa trees stretch beyond the post to the western horizon.

I asked rangers, park administrators, and some of these settlers themselves about alternatives to this take-over of park land for farming, a process that does not appear to have abated. "Trying to get these people to leave is unrealistic," I was told by the burliest of the rangers, who has been in Selimpus for about four years. "Many of these people have seen Transmigration projects like the government has proposed for them, and are not impressed. If they are ordered or forced to move, there could be a blood bath. And can the government pay compensation for gardens, crops, and houses that are here illegally in the first place? People here are doing so well, everyone is having lots of children (no family planning here!) and many families are still bringing relatives over from Sulawesi to help with the work. And they are saving money. Look how many haji there are here!" (Many men in Selimpus proudly wear the crocheted white caps reserved for men returned from the pilgrimage to Mecca.)

Another ranger told me that he warns people it is illegal to open new fields or cut trees in the park, but when he catches them, the most he can do is to scold them. Fining them, arresting them, and bringing them to trial do not seem to be possibilities, although they are the officially mandated responses to offenses. These penalties would require turning suspects over to the ordinary (as opposed to forest) police, and several trips to either Bontang or even to Tenggarong, the district capital, two days away, for legal proceedings. Park officials have occasionally confiscated tools of people caught opening new land, but people can go to Bontang or Samarinda and buy new ones.

For the farmers who invested in cocoa since the 1983 fires, the money is rolling in, as the first crops start to mature. People in the villages are understandably reluctant to move now, and an entire generation has now grown up in the coastal kampung. Ironically, by declining to provide any services to these "illegal" communities, the government has fostered a level of self-reliant organization unusual in Indonesia. No extension agents helped raise these bumper crops (although some seedlings originated in government nurseries); government health care workers do not visit these villages; and the elementary schools (up to grade 3) are supported only by donations from parents, with teaching along Moslem lines under thatch roofs. Yet, the uncertainty of the future has kept villagers from investing in such crucial amenities as wells for fresh water; water now comes from rain and shallow surface wells vulnerable to contamination.

Kutai people from Sangata on the park's northern border have also planted rice fields and fruit trees on the park side of the Sangata River in the past, up to 10 kilometers from the edge of town. Park officials have ruled that it's okay for them to continue collecting produce of trees they have planted, but have prohibited any additional land clearing or planting inside the park's borders. These rules appear to be strictly enforced along the shore of the Sangata River;

it's hard to tell where planting is continuing away from the water. However, on the west and south sides of the park, border enforcement is even more difficult, especially because no one is positive precisely where the borders are on the ground. Park officials have accused the Sylva Duta timber company, which has a concession bordering the park, of cutting trees well within any conceivable park borders.

Illegal hunting and quarrying are also common. Pak Memet, Kutai National Park's director for the past two years, tries to enforce borders and prevent poaching on 200,000 hectares of national park plus another 20,000 hectares of protected forest with only 36 field staff (and 33 office workers!), no boats or vehicles in working order, and for the past two years, no maintenance budget to fix broken equipment. Park staff rely on people from the coastal villages for transportation to their posts and up and down the coast, paying the same fares as any other passengers on the small wooden boats. The lack of independent transport has been a sore point with the rangers, but the situation may improve: next year's budget carries funds to fix the park's own boats and engines, and for fuel. Pertamina has also promised to supplement the maintenance budget, in part to ensure that rangers are able to take visiting company bigwigs on tours of the park!



Pak Bastar, expert naturalist and boatman, adjusts the motor of a ketinting in mid-stream on the Sangata River

Large-scale industrial development and rapid population growth in Bontang has both subtle and pronounced effects on the park. Pupuk Kaltim is expanding production to a third unit. Under new regulations requiring environmental impact analyses for all major capital investments, the company, a state enterprise, commissioned the Environmental Studies Center at Gadjah Mada University (in Yogyakarta, Java) to analyze potential impacts of the expansion. The study, submitted in 1986, went into some detail about the plant's expected effects on water and air quality in the vicinity of the chosen site, next to the two existing units. It noted that some coral formations might be threatened by effluent and increased water traffic around the plant, and that vegetation and people living near the plant could suffer subtle effects of air pollution. But the impact on Kutai National Park from additional population the expansion is likely to bring to the already strained resources of Bontang was mentioned in only the most cursory manner. However, recommendations for mitigating adverse impacts of the expansion included the need for a long-term urban development plan for Bontang.

Partly in response to this suggestion, Managers of Pupuk Kaltim and the Badak liquified natural gas plant agreed to pay expenses for the regional government to hire Jakarta consultants to do a plan. The most pressing need appeared to be guaranteeing a water supply to the growing city, where there is already a critical shortage each dry season.

The factories have licked their own water supply problems by drawing groundwater from aquifers in the national park and adjacent protected forest. Although potential impacts were pointed out only a year before in the park's management plan, the fertilizer factory's environmental impact analysis said nothing about potential effects on the park's hydrologic patterns from tapping increasing volumes of groundwater that also contributes to the park's own hydrologic stability. Company engineers and managers see clear benefits, however, in protecting the rainforests in the aquifers' recharge areas, after careful study of their long-term water supply prospects. A few years ago, in response to the industries' request, the government rescinded logging concessions around the park that could affect the industries' water supplies; this was part of the justification for designating a protected forest near Bontang. Yet it is somewhat ironic, and perhaps indicative of the priorities of development planning in Kalimantan, that while the industries have guaranteed their cheap, pure water supply into the 21st century, the people working for them must often pay a third of a day's wages for one oil-drum of clean water.

The 1985-1990 management plan also warns of potential future threats to the park's integrity from a planned segment of the long-envisioned Trans-Kalimantan highway that would cut right through the park. While this road would hardly be East Kalimantan's major inter-urban corridor, it would be the only overland link between Samarinda and the Sangkulirang-Muara Wahau region, which is slated for the province's next major development push. (An all-weather highway has just been completed between Sangkulirang and Muara Wahau, paid for with West German aid, and jokingly called the road "from nowhere to nowhere." Transmigration sites are planned along this route, but as current budgets have pushed those plans into the more distant future, it is likely that the roadsides will fall to "wild" settlers first.) The management plan seeks to avoid a situation like that of Bukit Soeharto National Park, which straddles the Samarinda-Balikpapan road, which is the province's major

interurban corridor. Bugis pepper planters there, clearing land illegally through much of the park and neighboring protected forests (also burned in the 1982-1983 fires) are among the most successful farmers in East Kalimantan. While the Kutai National Park management plan does not go so far as to suggest realigning the proposed road out of the park altogether, it politely calls for the road to follow a stabile sandstone ridge with sections of an existing logging road still passable after no maintenance for 10 years. For the time being, however, possible impacts on the park from the road are a minor issue since there will be no money to build the road in the immediate future.

According to Pak Memet, the issue of exactly who has authority over land use at the southern end of the park, near the city of Bontang, has caused major confusion. Rocks for construction in Bontang have been quarried in the park and protected forest buffer zone. When confronted by park officials, several quarry managers have produced mining permits from the regional government for that land! (Up to 400 people are employed as casual workers at these quarries.) Likewise, people caught farming, clearing land, and building within even commonly acknowledged boundaries, have submitted land title certificates from Agraria (the land title agency), properly signed and sealed. In each case the issuing agencies claimed their officials had not realized the land was protected from development, and that activities like farming and quarrying are prohibited there. They had "forgotten" to look at the land use maps!

An active speculative market has developed for land (with title certificates) that is actually inside the park or adjacent protected forest. Where structures have already been built, the regional government and regular police have not supported orders that buildings be taken down, and have only recently gone along with prohibitions on quarrying. The city of Bontang, its industries, and the regional government have a solution to these conflicts of jurisdiction and authority: all land with any settlement or development on it already should be excised from the park to give the city and industries a generous margin for expansion. Reluctantly, Pak Memet appears to agree. If the local authorities can't agree on who controls what, let the staffs of the ministries hash it out once and for all in Jakarta, excise enough land now to satisfy realistic development demands for the future, and open the way for strict enforcement of clearly defined boundaries

So it seems that's the way things will go. Last week, meetings were held in Jakarta to discuss whether to allow Pupuk Kaltim's next planned expansion, for which the company has demanded national park land. Pupuk Kaltim and the city of Bontang have proposed to "trade" coastal park land for inland timber concession land. This would give the factory its few hundred acres, and the city up to a few thousand hectares for future growth. While there is no agreement yet among all the parties in this instance, it has become clear that the time is over-ripe for better coordination of planning, development, and conservation at the southern end of Kutai National Park.

The proposed exchange would work this way: in order to get the land they need for expansion, most of it with no development on it yet, Pupuk Kaltim and the city want to take land from the Kayu Mas timber concession, which is due to expire in a couple of years, and add it

to the park. Strangely enough, this is land that was originally part of the 306,000 hectare wildlife reserve, and which the park's long-term planning hoped to restore to wilderness anyway, as part of an expanded national park.

All should be fine, but there's a catch: the land the Pupuk Kaltim and the city of Bontang propose adding to the park has already been committed for clearcutting and replanting as an industrial forest estate, using fast-growing exotic tree species (i.e., trees not native to this region). There is already a contract for land clearing and seedlings...

And so it goes,

*Judith Mayer*

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Ginny Conger accompanied me to Kutai National Park in January 1988; Adi Susilo and Bastar accompanied me on a return trip in June.