It was early morning, yet I was sweating heavily in rainforest heat having just climbed 500 meters through primary forest in Gunung Leuser National Park, North Sumatra. I was now in deep forest, alone, ascending an unknown series of ridges east of Ketambe in a forest with no trails. I was immersed in a wild area that is the last place on Earth where elephants, tigers, rhinos and orangutans still live together.

I had heard the loud laughing calls of Siamangs this morning, the large black gibbon that shares the forest with Lar gibbons and orangutans and tried to find an elephant trail that would lead me higher with less effort through the understory to view the ridge line above. No sign of prey species that would attract tiger, no claw marks or territorial signs. But I was aware of my vulnerability with the possible presence of tiger here, a concern fueled by reports a few months prior about several deaths in Aceh at the western boundary of Gunung Leuser. A female tiger had killed and eaten several villagers over the course of a month, and was finally trapped, tranquilized and brought into captivity. But there was also the destruction of forest habitat and poaching of sambar and deer that
removed the tigers prey, possibly forcing this tiger into a village to eat livestock, then people.

But the Sumatran tiger is now killed in snares as well, extensive poaching to meet the demand in Chinese medicine trade that offers a great deal of money for tiger bone parts. Villagers Surrounding Gunung Leuser have cleared and built their dwellings along the Alas River that connects both east and western sectors, cutting off the corridor for animal migration between these sections. The Shariah law Muslim government in Aceh has allowed it. Villagers are invading the national park because of less resources available as a result of an exploding population, and no control over illegal logging, deforestation, and poaching even in deep recesses of the National Park.

Gunung Leuser is one of the last strongholds of Sumatran tiger left, and the last place of a known Sumatran Rhino population which has recently become extinct in Borneo and Peninsular Malaysia. Sumatran tigers are a critically endangered species only found on the Indonesian island, and as few as 250 remain in the wild, the largest population in the Gunung Leuser national park.

And I was well aware of four Sumatran tigers that killed and ate a man deep into northwestern Gunung Leuser and forced five others to climb a tree to escape the animals. The six men, all from Simpang Kiri village in Aceh Tamiang district, had ventured into the national park in search of rare alim incense wood that brings 5 million rupees per kilogram. The group had illegally set wire snares set for deer and returned to check and found they killed a large tiger cub instead. The mother
and her subadult cubs were waiting nearby, aggravated and attacked the men, mauling, killing and eating one man, and treed 5 others. The survivors alerted their village using mobile phones from up in the tree, but it took several days traveling in the forest to where the men were to attempt a rescue. The rescue party had to retreat when they saw at the Sumatran tigers were still laying near the base of the tree.

I only ascended halfway towards the ridge that leads to Gunung Bandahara, 3012 meters (9881 feet) mountain, but did sees signs of wildlife further from Ketambe: Several rhinoceros hornbills feeding in a fig *Ficus* tree, rooting of the wild bearded pig, muntjac deer tracks, and finally a tree along a ridge where a beruang madu’ or honey bear had scratched the bark and scent marked a tree, marking its territory. It was an amazing experience to have time to myself and reflect and enjoy such a wild part of Gods creation. But I also was disappointed in a way, no elephant trails nor sign of any cats, which in Gunung Leuser included the golden cat, leopard cat, clouded leopard, and of course the tiger. I descended down a different ridge, only to discover that the forest had been slashed and burned, cleared in many places a kilometer above for small farms. The national park was being eroded away rapidly by squatters. *Rt: Captive sun bear*

Entering Leuser's primary rainforests is a privilege to experience such great biodiversity, a symphony of sounds from the whine and calls of insects, melodic songs in the early morning of birds, croaking frogs, and the whoops and calls of primates. Gunung Leuser is home to some 382 bird species, with 36 of the known 50 species endemic to Sundaland (a biodiversity hotspot area comprised of the western half of the Indo-Malayan archipelago) being found in the park.at least 129 of the 205 species of mammals of Sumatra, and 194 reptiles and amphibians. The forests are thought of as the last stronghold for a number of
highly endangered mammals, supporting the last remaining viable populations of Sumatran orangutan *Pongo abelii*, Sumatran tiger *Panthera tigris sumatrae*, Sumatran elephant *Elephas maximus sumatranus* and Sumatran rhino *Dicerorhinus sumatrensis*. Other mammals include the leopard cat, banded leaf monkey, silvered leaf monkey, long-tailed macaque, Malayan sun bear, red giant flying squirrel, Temminck’s golden cat, siamang, Sumatran Serow, and the clouded leopard. Of the 10,000 plant species recorded in the West Indo-Malayan region, it is estimated that 45% are found in the Gunung Leuser ecosystem. The *Rafflesia* which has the largest flower in the world is found here, as is the *Amorphophallus*, which has the tallest flower in the world.

Gunung Leuser National Park is 7,927 km² (3060 m² three times the size of Yellowstone National Park in the US) located in northern Sumatra, Indonesia. Named after the volcano Mount Leuser 3,119 m (10,333 feet), the park area includes lowlands that border the beach on the west coast, and the Barisan mountain range with some volcanic fumaroles, and protects a wide range of ecosystems. An orangutan sanctuary is located Bukit Lawang located in the South eastern section of the bark bordering oil palm plantations, and the area closest to Medan. Together with Bukit Barisan Selatan and Kerinci Seblat National Parks, it forms a World Heritage Site known as the Tropical Rainforest Heritage of Sumatra.
Indonesia is one of the seven countries of the world with the most biodiversity. It contains 10% of the world’s flowering plants, 12% of the world’s mammals and 17% of the world’s reptiles, amphibians and birds. The Indonesia Island of Sumatra is the sixth largest island in the world, following Papua New Guinea the second largest in the Indonesian Island chain, and Borneo being the fifth. Gunung leuser is rich in biodiversity like Peninsular Malaysia and Borneo in that it is stratified in elevation zones of lowland dipterocarp rainforest to peat forests up to 3000 meters of alpine zone that includes Asian temperate montane forest plants and animals. I had visited both Papua New Guinea and Sabah Borneo several times in the past and wanted to experience the pristine forest in Sumatra. My wife’s family is from Medan, so I had connections to get in to the park the first time to Bukit Lawang and Tangahan that was more commercialized for travelers being closer to Medan, and then access the more remote primary and less visited forests near Ketambe in Aceh. But a road developed through the park connecting Ketambe north to Blankejeren along the Alas River has separated the two halves, cutting off an animal corridor that once existed between them. National park land along the road has been logged, and continuous clearing for farms, and expanding illegal settlements and villages occurs, along with increased poaching of animals. Left early from Singapore on a 1.2-hour flight to Medan, northern Sumatra, the second largest island in Indonesia. I have never liked Medan, dirty, run down, and horrible traffic. After clearing customs, was met by my prearranged driver Augos with a sign."william boehm". My brother-in-law was busy and couldn’t meet me until the end of the trip. Medan is a human zoo of 4 million people. It can be
dangerous for foreigners according to my wife, and traffic in a city of 4 million
could make a grown man cry. Terrible confusion of swarms of car and
motorcycles at each intersection, then attack each block when the light turns
green, only to stop and be stuck in the next block. took almost an hour to get out
of Medan, then another 7 hours to get to Ketambe to the north, the mid-section of
Gunung Leuser national park. I had already visited the more accessible part of
Gunung and Bukit Lawang, and Tangkahan where most tourists encounter semi-
habituated Orangutans, and Asian elephants that one can ride for a fee. I never
saw much wildlife other than Lars gibbon, but there were many signs of golden
and leopard cat, sambar, the largest deer similar to our elk, barking deer,
chevrotain deer, bearded pig and civet cats. I observed many kinds of squirrels,
some of them as big as a large rabbit, some birds including the giant rhinoceros
hornbill, many species of trees including dipterocarps and a giant yew tree. And
there were Thomas leaf monkeys with punk rock hairdos, macaques...so many
butterflies, but the most common animals were ants, termites, and the notorious
leech. Leeches were everywhere and wore leech socks that kept away, but the
occasional guy feasted on my hand or made it into the sock down to my toes.

The driver took me through an endless horizon of oil palm plantations and rice
fields towards the mountains until we ascended the first pass. The road was full
of pock marked deep holes that could break an axle, and there were long delays
from broken down trucks until we finally reached the beautiful volcanic farmland
and the small town of Brastiagi, with views of volcanoes still steaming. Brastagi is
a lovely tourist town in the Batak Karo highlands on the way from Medan to Lake
Toba. Berastagi is famous for its flowers, vegetables and fruit, most famous of
which is the "Marquisa" passion fruit. The local markets were swarming with
activity and scenes of

traditional Karo life. From
Gundaling Hill I had good
views of Mt. Sibayak
and Mt. Sinabung volcanoes.
The Batak Karo people that are found in the mountains from lake Toba north to here are a large indigenous tribe that are Christians. The obvious difference from the lowlands were roads and houses were much cleaner without piles of garbage filling the roadside and ditches, contrasted to the trash and dirt of the lowlands. The area has rich volcanic soils and there are rice paddies in the distance, farmland and green jungle on the mountain ridges. Looked like the beautiful coffee fields of the highlands of Uganda near Bwindi impenetrable forest where I journeyed to see mountain gorilla in 2000.

We followed the Alas River upriver by road that coursed through the middle of the park, but unfortunately a road built along the river 25 years ago brought a stream of Aceh settlers that cleared the forest and created large villages in the national park. I was heading to the pristine western sector of the two halves of the park situated in the lowlands. Stopped in Kutacane for a questionable lunch of curried chicken that was left out in the heat most of the day, rice, some cooked vegetables that were hot with chilis, and other stuff I couldn't recognize. Ha ha I paid the price that night, as my intestines reacted to bacteria foreign to me.

Finally arrived in Ketambe, a small farming village carved out of the national park on the edge of the Alas River. Across the river from the road was an abandoned
biological research center as WWF and WCS had given up on efforts to conserve here. But the forest was still pristine untouched. I stayed in a small homestay bungalow by the river, owned by Johan, a 43-year-old Indonesian. He guided into the interior but had a back injury. We became good friends by the end of the week and was amazed how I served him and his family with Christ love, and raised a Muslim, he seemed open to my sharing about my faith and the gospel. He had five kids, took care of 7 more from extended family. That evening I spent the time as it got dark sitting by the Alas River, a large river the size of the Snohomish near my home. Forested mountains rose steeply up from the river to the west. Like most of Indonesia and Malaysia, this rainforest is dominated by large dipterocarps, a large family of trees with large double winged seeds that can exceed 85 meters (281 feet), then many trees in the legume and fig *Ficus* family. Walking the forest floor nearby before dark, I encountered so

*Fallen fruits not identified except bottom row, mangosteen, wild mango, shelf fungus*

many fallen fruits demonstrating this diversity: wild species of mango *Mangifera*, Anacardiaceae, mangosteen *Garcinia*, Clusiaceae, breadfruit *Artocarpus*, Moraceae and rambutan *Nephelium*, Sapindaceae. I could hear above the tranquil hiss of the turquoise colored river as the evening turned dark, an orchestra began of katydids, crickets, and frogs croaking, chirping and belching. Insectivorous bats wheeled in sweeping arches over the river capturing insects,
and fireflies glowed in their flight to attract mates. I missed the forest and how alive it is with life, thankful to be out of the city.

I walked back to my bungalow and picked off the first leech stuck between my toes and filled with blood. I made the mistake of wearing floppy sandals. I tried to end its life by stepping on the sucker. Didn’t work as it was like rubber. I stepped on it hard, rotating my heal squishing it, but it seemed to come back to life. Finally crushed it with my hiking boot, one less leech in the forest. I ate my dinner by headlamp: a can of sardines, 4 rye crackers, one granola bar, and a liter of water. You don’t get so hungry in this humidity heat during the day, and thankfully this location is high enough in elevation to cool off in the evenings. A firefly landed on the veranda of my bungalow, and I meditated on the Lords love. Wonderful evening.

Nov 7 Wed. Woke up early to the loud calls of black gibbons known as siamang across the river, a loud series of bellowing hoots that rises in intensity ending in a laugh that you can hear for miles. Such an amazing animated and acrobatic ape

*Siamang family group, large black gibbon common in Gunung Leuser*
that swings with powerful arms through the canopy. Witnessed a sunrise on the forested mountains in view that once touched with light turned shades of crimson, lavender and electric green. It was the beginning of the rainy season yet I was blessed with clear weather today. The forest held much mystery for me here, with an amazing array of hidden wildlife first described by Dutch explorers, and described in detail by Alfred Russel Wallace, a contemporary of Darwin and published his work in 1868. He explored Indonesia including Sumatra from 1854 to 1860 and during those eight years made 70 journeys through the entire Indonesia archipelago. In 1868 in his published work *The Malay Archipelago: The land of the orang-utan, and the bird of paradise*, where he concluded that animals are not representing a fixed shape and capabilities, but being highly versatile, ever adapting to their changing environments. Unlike Darwin, through his 8 years of research in SE Asia he saw the hand of Intelligent design, or what he termed Intelligent evolution. He was not welcomed for his spiritual viewpoint, but also did not believe in the scripture of the Holy Bible.

I met my Indonesian local guide Udin at 7:30 AM, and we began from the road and cleared hillside cornfields and headed into the forest. Udin was 27, a stocky young Indonesian with dark brown skin, stout in build who shared a great smile and enthusiasm. He had a young daughter and a wife, and carried a full pack of Marlboro cigarettes in his pants pocket to stop every 15 minutes, a definite chain smoker. He carried a small pack with our lunch, fried rice with an egg wrapped in banana leaves, and wielded a small ponga, a machete shaped in a curved arc, like a blunt sickle. We both wore leech socks, a complete sock that goes over your regular socks inside your shoes and ties off over the pants at the knee. Smart design as Johan had them made up and gives them to his clients. Only Udin's were full of holes where leeches could get in.

We climbed a small clearing and field by the road near our bungalow and once a few hundred meters above the road, gained a tremendous view of the untouched
forested mountains across the Alas River to the west, beautiful site. Once inside the forest and under the protection of the canopy, it was cooler, although humid. Working our way up a game trail through a deep leaf litter, I became quickly soaked with sweat, and was so wet my glasses fogged up and was soaked in minutes. Heard black gibbons calling nearby, and saw a giant millipede crossing the trail, the size of a large sausage. Ulysses Swallowtail butterfly with iridescent green-blue markings on the upper wing landed on a leaf next to me; life was so full here.

Lots of forest tree species here, many with fruit that was ripening. We passed under a group of Thomas leaf monkeys, and a fruit they had picked dropped to the forest floor next to us. Udin picked it up and asked me to taste it, assuring me it was safe. It had a delicious with a flavor like lemon. The monkeys scurried above us, and one male had a comical punk rock ridge of grey fur on his head. The Thomas leaf-monkey’s diet consists primarily centered around fruits, leaves, and seeds. However, it will eat other things such as flowers, bark, twigs, stalks of coconuts, leaf stalks, birds, bird eggs, algae, and some insects. They stay in the mostly in the canopy and find water in tree holes, but sometimes come to the forest floor when food is scarce to eat ants, toadstools, soil, and snails.
They must be wary as the predators of leaf monkeys also have the ability to climb trees, and include reticulated pythons, clouded leopards, tigers, and golden cats. Because Thomas’s langurs are able to move swiftly, their predators have been found to attack only when the there is an element of surprise. Females are more prone to predation due to their preference for snails lower in the canopy and on the ground. Males will act as sentinels in trees looking out for predators when females venture down to the ground by themselves.

Continued climbing, stepping carefully, silently, listening and searching the canopy and the forest understory ahead for movement when we heard a loud rustling in the canopy above us. Three orangutans: with two females carrying young, and a young male feeding on fruit 30 meters up, about 110 feet above us. The we heard a large fruit hit hard near us and under them and the occasional branch snapped as they moved to feed in different parts of the tree. Female orangutans don’t breed until about 15 years old and have young only every 6-9 years. This is why the population has been crashing to critical levels as Orangutan females are shot to get the young, sold as pets to buyers. Orangutans are generally solitary, and amazing in their using tools and in building nests at
night complete with leaf pillows, mattresses, and a cover to protect them from the usual night downpours. I was immersed in a wonderful primary forest around us with trees supported by huge giant buttresses, and such a great diversity and high density of fruits.

Sweaty and hot, we continued to walk upslope, encountering and hearing woodpeckers of all colors, and two huge rhinoceros hornbills whose wingspread were as great as a bald eagle, creating loud whooshing sounds as they flew overhead. We came to a large, cascading stream and it was so inviting to stop and swim to cool off. We stopped at a large deep pool at the edge a large rock outcrop, stripped down naked, and jumped in. So refreshing to lay in a clean mountain water jacuzzi. Refreshed, we ate lunch in the shade surrounded by butterflies of all colors at the edge of the river. A female white handed gibbon moved towards us making enormous leaps from limbs between trees at the edge of the forest lining the stream. It began to forage on fruit, and was joined by a black colored male. Males and females are dimorphic in coloration. I rested in the serenity and beauty here listening to the peaceful cascades of flowing mountain water. Female Lars (white-handed) gibbon dimorphic brown

After lunch we moved upstream back into the forest and followed another ridge leading up the mountain when I heard an almost gibbon like whoop, loud call close by. It was an Argus pheasant male calling, which was then answered by another male responding in the distance. We approached the nearby bird by crossing the ridge and descending until we were close yet out of view. I could
hear the foot stamping of the bird, so we stalked and crawled to within 25 meters, but then male calls stopped. The bird had heard us and left.

Argus pheasant lek/clearing. males clear area for feet thumping and call females with loud cries

We got up and walked towards a large cleared area and had discovered its lek, a staging area cleared of vegetation where a male displays and calls to attract a female. This large species of pheasant has brown plumage and a small blue head and neck, rufous red upper breast, black hair-like feathers on crown and nape, and red legs. The male is among the largest of all pheasants, weighs 2–2.7 kg (4.5–6.0 lb.) and has very long tail and its huge, broad and greatly elongated secondary wing feathers decorated with large ocelli used in display. If a female appears, he dances before her with his wings spread into two enormous fans, revealing hundreds of "eyes".

More Thomas leaf monkeys above us chattering away in a tree. Udin first heard, then spotted a large bees nest high up on a large Kompasia tree branch. Bees attract the Indonesia honey bear known as beruang madu that not only forages on termite and ant nests, but loves to climb after bee's nests. We then heard a loud hollow hammering on a nearby tree, and as we approached saw a large black woodpecker with a red crest, the White-bellied woodpecker Druplopus javandus. They are one of the largest woodpeckers in the world 40-48 cm (16-
And there were many unseen snakes and lizards, until we continued along a narrow game trail, I spotted along the side a skinny, green 1.5-meter-long snake laying on a plant next to the trail, a Colubrid, the largest snake family that lack of teeth on the premaxilla. I later identified it as a non-poisonous Red-tailed Green rat snake *Gonyosoma oxycephalum* that lives and spends its life in the trees and in cavities in trees, and feeds almost exclusively on birds. And here the bird diversity is great, listening alone to the bird songs that were so varied, full and rich. There are about 380 species of birds in the lower dipterocarp and mountain forests of Gunung Leuser ecosystem.

The game trail brought us to an area on the forest floor where the ground was dug up exposing fresh mineral soil. I knew it was a family of bearded pigs, a large native pig with abundant whiskers on its chin and a bristly, wartlike protuberance beneath each eye, that had freshly rooted around for insects or fungus. Bearded pigs consume roots, fungi, invertebrates in soil and rotting wood, small vertebrates, turtle eggs, carrion, and items from at least 50 genera and 29 families of plants. Fruit supply is believed to have particular influence in determining growth rate, fat deposition and reproduction, with the oil-rich seeds
of members of the tree families Fagaceae (oaks and chestnuts) and Dipterocarpaceae (dipterocarps) being especially important. Of these, oaks are an important food source because of their relatively continuous or regular fruiting behavior, and they can come to dominate sub montane habitats.

In Sumatra bearded pigs exhibit large scale population movements, and groups of up to 300 individuals may journey on long migrations, arriving at a given location at irregular intervals yearly or once every 2-4 years. In the highlands there is no relationship to the seasons, pigs tend to move out of the inundated forests of the lowlands to higher ground in the rainy season, then return in the dry season. The basic social structure is a female and her litter, but much larger aggregations are formed occasionally, with up to hundreds of pigs traveling together. In any one area, the rut coincides with synchronized flowering in the forest, with the timing being centered on the transition between late flowering and early fruit formation, with falling petals offering a possible visual cue. A certain nutritional status may have to have been attained by females before they become responsive to whatever stimulus acts to trigger mating. Fat reserves in the mother are used up quickly during lactation, and females accompanied by small piglets are very thin. Those with large piglets are fatter and have presumably gained weight after weaning. This fattening process seems to depend on what fruit is available, with dipterocarp seeds and acorns having most impact. If these are abundant, it seems likely that two litters can be raised by a female within a year. Besides rooting, evidence of pigs is seen along clay banks where they create clay depressions for mud baths.

Photographed more butterflies hovering near a stagnant rainwater pond and observed a rhinoceros hornbill Buceros rhinoceros in the lower canopy feeding in a fig tree in the late afternoon. The Rhinoceros hornbills are the largest of the hornbills here of 11 species that include the Bushy-crested Hornbill Anorrhinus galeritus, Wreathed Hornbill Aceros undulatus, and Helmeted Hornbill Buceros vigil. Hornbills spend their entire lives in the canopy feeding on fruits that include
Pieri d sulpher and Hairstreak butterflies, Black, Great, Rhinoceros and Oriental Pied Hornbills

figs, and are able to predate on small animals that include squirrels. As with most other hornbills, they pair for life and in season look for old or dead trees to nest in a natural cavity along the trunk. The female seals the entrance, except for a narrow vertical slit, that allows her to discard droppings and receive food from the male. The female goes through a complete molt and breaks out of the nest after about three months. The half-grown chicks reseal the slit, fledging and breaking out when ready to leave the nest. The parents usually feed the chicks for at least six months after fledging. The availability of nest holes are often a limiting factor for hornbills and other cavity nesting birds.
Udin and I had spent 10 hours in the forest and returned, descending back to the road. We heard the calls of a Crested Serpent Eagle, a medium sized stocky bird of prey with rounded wings and a short tail. Its short black and white fan-shaped nuchal crest gives it a thick-necked appearance. Its call is a loud, piercing and familiar three or two-note call. Their prey varies from small mammals to snakes. Got back by four thirty and I am tired. I love this place, with the beauty of the forest, bird songs, butterflies, mountain. The forest was now quiet, with very few birds in the heat of the late afternoon, but encountered a variety of butterflies and flowers. We came across a giant strangler fig with a massive base of spreading trunks and a huge canopy. There was a huge vine to swing on, which hung out over a slope leading down from the fig. Awesome experience to grab and swing and feel like a kid again, and this one was much better than the large swing at
our old maple tree on the acreage in Monroe. Great fun. I returned back to the bungalow, tired but thankful to have seen so much today.

I also took time to explore along the road upriver, and discovered there was still about 5 kilometers of untouched rainforest adjacent to the Alas River through a canyon with beautiful primary rainforest. But north and south along the road was developed, and farms and villages have taken over with the river basin that is officially within the park. But the difficulty was seeing that everything north in the National Park that was to connect the remote eastern section with the western section through the Alas River headwaters was all deforested with farms and villages. The Gurah tribe lives here, and they have been influenced by Islam for over 600 years. Garbage along the side of the road, so difficult to see this destruction, and the corruption of the local Indonesian government and local officials has allowed squatting, poaching, and illegal logging. The demand by the poor for farmland cut from forest was overwhelming.

The population explosion in Aceh in Indonesian north Sumatra is destroying the forest at an overwhelming rate. We stopped at a small village on the way to Blangkejeren, and I saw the farms cut on the sides of the hills where they grew corn, cacao, banana and ginger. The streets were lined with tarps where corn and cacao nuts were drying, and a woman was deep frying bananas in a fired oven with a large wok fueled by poached wood in the park. The Alas River is no longer wild, and I now understood why Richard Bangs pulled his Sobek rafting trips down the river as the forest was cleared for villages and housing in the park. The park was being invaded 30 years ago with no local respect for conservation.

Back at the Bungalow on the veranda sitting by the river, I journaled. As it was getting dark I saw lightening flash and several strikes on the mountains across the river. I sketched a rose-laurel like shrub with lavender flowers and tried to identify it, and also drew in my journal the various fruits I had seen on the forest floor that day, but so many different kinds. One was shaped like a large round plumb, colored yellow and tasted like lemon. Thanked the Lord for this day.
Alas River above Ketambe, a remnant 5 km section of river still left unlogged in the park