



Last Chance to Save Bukit Tigapuluh

**Sumatran tigers, elephants, orangutans and indigenous tribes
face extinction, along with forest**



- Report of investigation findings -

Published by:

KKI Warsi / Frankfurt Zoological Society / Eyes on the Forest / WWF-Indonesia

December 2010

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Cover photo: Tropical rain forest in Bukit Tigapuluh landscape in concession of PT Artelindo is destroyed; GPS location 101° 52' 18.56" E; 0° 46' 55.67" S.

Profiles

KKI WARSI was established in January 1992 and has a vision of “Conservation with Community” to achieve sustainable development that can accommodate human needs without threatening the future of the next generation. KKI WARSI has been conducting conservation projects in Jambi, South Sumatra, West Sumatra, Bengkulu and Riau Provinces at four national parks and other protected natural forest areas. KKI WARSI has been working at Bukit Tigapuluh National Park since 2005 to expand the National Park and protection its wider ecosystem.

<http://www.warsi.or.id/>

Frankfurt Zoological Society (FZS) is a non-governmental/non-profit conservation organization established in 1858. Headquartered in Frankfurt/Main, Germany, FZS supports about 67 projects in 25 countries, financed through membership fees, private donations and bequests as well as investment returns from the “Help for Threatened Wildlife” Foundation. FZS’ commitment in Indonesia started in 1973 with the orangutan rehabilitation centre in Bohorok/North Sumatra. FZS Indonesia Program works in Bukit Tigapuluh since 1998.

<http://www.zgf.de>

Eyes on the Forest (EoF) is a coalition of 23 environmental and social NGOs in Riau, Sumatra, including two NGO umbrellas, Friends of the Earth Riau and Jikalahari "Riau Forest Rescue Network," and WWF-Indonesia, Riau Program. EoF has been monitoring the status of the remaining natural forests in Sumatra's Province of Riau and disseminating the information worldwide since 2005.

<http://www.eyesontheforest.or.id>

WWF-Indonesia is an Indonesian foundation, part of the WWF global organization, acting locally through a network of over 90 offices in over 40 countries around the world, with on-the-ground conservation projects in more than 100 countries to stop the degradation of the planet’s natural environment and to build a future in which humans live in harmony with nature. Headquartered in Jakarta, WWF-Indonesia has 25 field offices working for conservation in 17 provinces across Indonesia, including Riau Province.

www.wwf.or.id

1. Executive Summary

Bukit Tigapuluh – or “Thirty Hills” – is one of the last examples of the kind of landscapes that earned Indonesia the nickname “Emerald of the Equator”: dense canopy, lush rainforests of unbelievable biodiversity and rolling hills. Today, it is one of the few remaining areas in Sumatra that still hosts three of the island’s four endemic flagship species: the endangered Sumatran elephant and the critically endangered Sumatran tiger and orangutan, along with many other plant and animal species found nowhere else on Earth. Two tribes of forest-dwelling indigenous people also live here. It is a good example of a landscape that is considered a High Conservation Value Area.

A quarter century ago, the area’s natural forest was connected to other forests on the island. Now it has become an isolated forest fragment. Still, Bukit Tigapuluh harbors close to 320,000 hectares of natural forest, the largest concentration of the remaining blocks of lowland forest on non-peat soil on the island.

Around 30 tigers are estimated to survive here, nearly 10 percent of the population of critically endangered Sumatran tigers left in the wild. Its importance to the long-term survival of the species led a team of world-renowned tiger scientists to declare the Bukit Tigapuluh landscape a “Global Priority Tiger Conservation Landscape” – one of just 20 in the world – in 2006. In November 2010, the Indonesian government pledged at a global tiger summit to make the landscape one of its focal areas for tiger conservation. The tigers here share this habitat with more than 150 Sumatran elephants and 130 orangutans, survivors of the illegal pet trade that were released here, part of the only successful reintroduction program for Sumatran orangutans.

For nearly 30 years, the Government of Indonesia and conservation organizations have made attempts to preserve the landscape. However, today, only 42 percent (134,834 hectares) of the remaining forest – in the most hilly area – is under protection as Bukit Tigapuluh National Park. Despite high-level political commitments, a large portion of the remaining forest outside the park, mostly that lying on the flat lowlands, is under immediate danger of large-scale commercial conversion for pulp and paper production, much of it by Asia Pulp & Paper/Sinar Mas Group (APP/SMG) and its wood suppliers and affiliated concession holders.

Evaluation of likely natural forest loss in the future concludes that APP/SMG will become the single biggest destroyer of natural forest in Bukit Tigapuluh, threatening more than half of the remaining unprotected forest – close to 97,000 hectares – of a critically endangered “eco-floristic sector” in Sumatra, with a high presence of three flagship species. Like the pulp and paper industry, the tigers, elephants and orangutans prefer the flatlands to the hills, putting them in the direct path of the bulldozers that come to clear the forest. The ones that survive are subsequently threatened by conflict with the plantation workers, illegal encroachers and poachers who follow, once easy access is provided by logging roads.

APP/SMG has launched a global publicity offensive to counter the criticism and canceled contracts that have resulted from its destruction of Indonesia’s natural forests. But despite its claims to no longer source pulpwood from natural forests, our investigations reveal that APP-affiliated companies have systematically sought out inactive selective logging concessions in Bukit Tigapuluh on land with dense natural forests of High Conservation Values and obtained government licenses to switch their status to industrial timber plantation concessions, which allow for clear cutting and replacing the forest with commercial plantations. Since 2004, APP-affiliated companies acquired licenses to operate almost 129,000 hectares in total, with high natural forest cover and close to 75,000 hectares of natural forest area when they started to operate. By 2010, more than 60,000 hectares of these good forest was lost (an 81 percent loss) without appropriate professional assessments or stakeholder consultation. In some cases, the licenses have been issued under legally questionable circumstances.

In 2007, APP’s affiliates built a new and likely illegal logging and wood transport road that cuts the Bukit Tigapuluh Landscape in half and was constructed through High Conservation Value Forests without an environmental impact assessment. It further damaged the landscape by giving access to people who otherwise could not reach these forests.

In 2010, close to 60% of the remaining unprotected forest is expected to be in the direct line of bulldozers to supply APP pulp mills.

Despite our recent, repeated calls on APP to stop pulping High Conservation Value Forests in the PT. Artelindo Wiratama and PT. Tebo Multiagro Corporation concessions, the two concessions continue to clear close to 14,000 hectares of natural forest, 8 percent of the remaining unprotected forest in Bukit Tigapuluh baseline area in 2010.

An additional 83,000 hectares of natural forest, 48 percent of the remaining unprotected in Bukit Tigapuluh baseline area in 2010, could be cleared in eight concession blocks of PT. Rimba Hutani Mas and PT. Lestari Asri Jaya to supply APP's pulp mill. These concessions still contain dense canopy rain forest, home to one of the two local Sumatran elephant populations, as well as Sumatran tigers and reintroduced orangutans.

WWF's historical analysis of Sumatra's natural forest, biodiversity and carbon values between 1985 and 2009 identified some of the Bukit Tigapuluh natural forest remaining in 2008-09 as the number one conservation priority areas for non-peat forests in Sumatra. Most of this forest lies outside the national park. The analysis also identified some of the already-deforested areas as the number one restoration priority areas on Sumatran non-peat soil. By 2010, some of the top conservation priority forests were lost and had become top restoration priority area.

It is urgent that as much remaining natural forest in the landscape as possible is protected as expanded national park or Ecosystem Restoration Concessions and that no more licenses be issued for natural forest conversion. We also propose that the Government of Indonesia expand the moratorium on natural forest and peat conversion that it committed to in its agreement with Norway to apply to all existing concessions, which would further protect Bukit Tigapuluh.

2. Introduction

The Bukit Tigapuluh landscape in Central Sumatra, spread across Riau and Jambi provinces, is an area of High Conservation Values¹ (Chapter 3). It is a landscape of rolling terrain that is home to high flora and fauna diversity. Named by tiger experts as a “Global Priority Tiger Conservation Landscape” – one of just 20 worldwide deemed critical to ensuring a future for the species – it is also the world’s only successful reintroduction site for Sumatran orangutans. And it is home to two wild Sumatran elephant populations and two tribes of forest-dwelling indigenous people: the Talang Mamak and Suku Anak Dalam (also called Orang Rimba). The Bukit Tigapuluh landscape also includes the largest contiguous dry lowland forest in Sumatra, with important environmental services, high carbon stocks even in the logged-over areas and natural resources that are critical to the survival of indigenous tribes and local communities.

The High Conservation Values (HCVs) of Bukit Tigapuluh have been well recognized and the Indonesian government and NGOs have been trying to protect this unique ecosystem for almost 30 years (Chapter 4). However, the pulp and paper industry, dominated by Asia Pulp & Paper/Sinar Mas Group (APP/SMG), has increasingly threatened this landscape through acquisition of more and more concessions, clearance of natural forest to supply its nearby pulp mills and construction of roads through the natural forest to transport harvested wood to the mills. Its activities inflict damage on people and wildlife and some are legally questionable (Chapter 5, 6 and 7).

Recently, there has been an increasing number of strong political commitments that, if enforced, should aid in the protection and restoration of natural forests in Bukit Tigapuluh.

Protection and restoration of HCVs and High Conservation Value Areas:

- In 2007, the Ministry of Forestry published its conservation strategies and plans for the Sumatran tiger, elephant and orangutan,² for which protection and restoration of habitat like Bukit Tigapuluh is crucial.
- In 2008, the then-Jambi and Riau governors, supported by four central government ministries including the Ministry of Forestry, made a strong commitment at the IUCN World Conservation Congress to protect and restore HCVAs in Sumatra³. Bukit Tigapuluh is a key HCVA.
- In 2010, as a follow-up to the 2008 commitment, Indonesian Government has announced Sumatra Vision 2020 and chosen Riau and Jambi as a part of the “RIMBA landscape,” including Bukit Tigapuluh, to demonstrate sustainable development based on a low-carbon economy.
- In November 2010, the Government of Indonesia declared at the International Tiger Conservation Forum in St. Petersburg, Russia, that the country would focus its tiger conservation efforts in six priority areas, including Bukit Tigapuluh⁴.

Reduction of carbon emissions from deforestation:

- In 2007, the current Riau governor called for “avoidance of deforestation and forest degradation” at the Bali UNFCCC COP⁵.
- In September 2009, the Government of Indonesia committed to an “emissions reduction target of 26% from business as usual by 2020, and this can be increased to 41% with enhanced international assistance.”⁶
- In February 2010, the then-Jambi governor committed to making a significant contribution to the national target by restoring the province’s ecosystems and conserving and managing its second-growth natural forest⁷.
- On 26 May 2010, Indonesia and Norway signed a Letter of Intent to form a partnership “to contribute to significant reductions in greenhouse gas emissions from deforestation, forest degradation and peatland conversion.”⁸ Norway committed to support these efforts with \$1 billion US.

Despite these high-level political commitments, the natural forest, wildlife and indigenous people of Bukit Tigapuluh continue to be threatened by conversion by APP/SMG to produce pulp and paper, as well as illegal encroachment by people who use the infrastructure constructed by the company for its operations (Chapter 5-8).

KKI Warsi, Frankfurt Zoological Society, Eyes on the Forest and WWF-Indonesia have been working for conservation of biodiversity and in support of indigenous and local communities in Bukit Tigapuluh since the

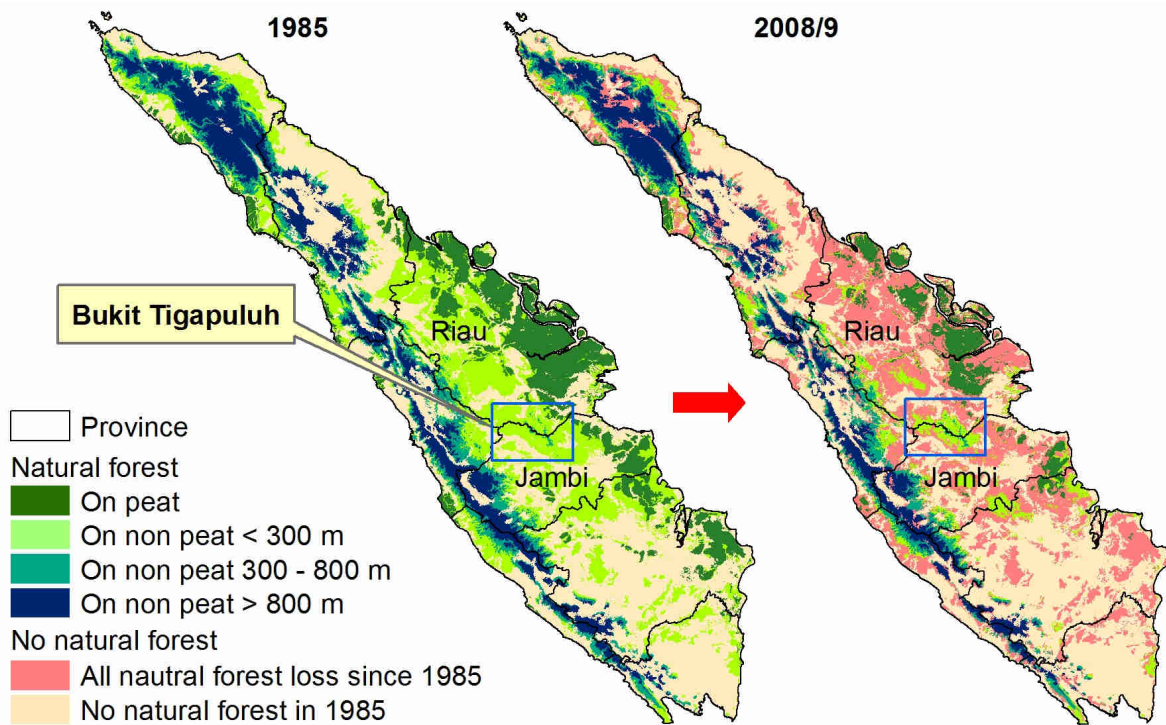
1990s. We wrote this report to provide updates as well as help the Indonesian government, its donors, APP/SMG and its main competitor APRIL/RGM, their buyers and investors understand the conservation value of Bukit Tigapuluh and come to consensus on the importance of protecting and restoring its natural forests.

Due to the global significance of the area, our calls for help have reached around the world. Close to 10,000 people around the world have signed a global petition⁹ asking APP/SMG to stop clearance of forest in Bukit Tigapuluh immediately. In addition, international conservation bodies, including the Australian Orangutan Project¹⁰, Perth Zoo¹¹, AOP/Australia Zoo/Auckland Zoo/Dreamworld/Zoos SA/HIS^{12, 13}, GRASP Australia¹⁴, IUCN Species Survival Commission^{15, 16}, IUCN Primate Specialist Group¹⁷, World Association of Zoos and Aquaria¹⁸ sent letters to APP and/or to the Ministry of Forestry in 2009 to ask for an immediate halt to the clearance of Bukit Tigapuluh's forests. However, as the chapters below show, threats to Bukit Tigapuluh's forests and HCVs by the pulp & paper industry continue to increase.

It is urgent that all stakeholders work together to implement commitments to save Bukit Tigapuluh's High Conservation Values and reduce emissions (Chapter 9). If we delay any further, this globally significant biodiversity gem will be gone.

3. High conservation and carbon values

The Bukit Tigapuluh landscape in Central Sumatra, spreading across Riau and Jambi provinces (Map 1), is a good example of a landscape that is considered a High Conservation Value Area (HCVA). The area's natural forest was connected to other forests on the island in 1985 (left map). However, by 2008-09, it had become an isolated forest fragment (right map). Still, Bukit Tigapuluh harbors close to 320,000 hectares of natural forest in 2010, the largest concentration of remaining blocks of lowland forest on non-peat soil on the island.



Map 1 – Location of Bukit Tigapuluh on Sumatra island and natural forest 1985 and 2008/9 by soil type (peat or non-peat) and elevation.

Of the remaining natural forest in 2010, only 42 percent (134,834 hectares) is protected inside Bukit Tigapuluh National Park and an additional 5 percent (15,313 hectares) is protected inside the Bukit Sosah-Bukit Limau-Bukit Batabuh Protection Forest. A large portion of the remaining forest outside the park, mostly that lying on the flat lowlands, is under immediate danger of large-scale commercial conversion for pulp & paper production (Chapters 5–8) as well as small-scale, but more chaotic and often illegal conversion, for palm oil and rubber production by individuals and small-holders.

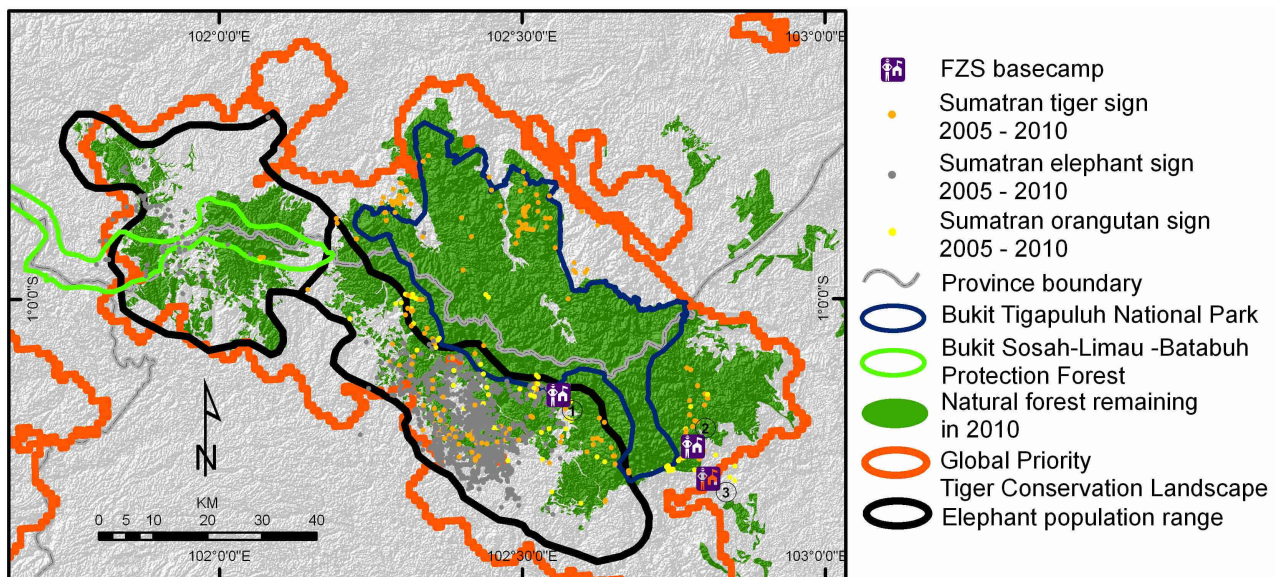
3.1. Fauna diversity



Sumatran tiger (© WWF-Indonesia), Sumatran elephant (© WWF-Indonesia), Sumatran orangutan (© FZS).

Bukit Tigapuluh is one of the few remaining natural forest areas in Sumatra today that still hosts three of the island's four endemic flagship species: the endangered Sumatran elephant and the critically endangered

Sumatran tiger and orangutan¹⁹. The wider Bukit Tigapuluh landscape is one of just 20 Global Priority Tiger Conservation Landscapes in the world, selected by the world's tiger experts as critical to protect for the survival of the species²⁰ (orange boundary in Map 2). Around 30 tigers are estimated²¹ to share this habitat with more than 150 Sumatran elephants²² and 130 reintroduced Sumatran orangutans, with nine more waiting to be released²³. All three species prefer to live in the lowland rainforest outside the national park; therefore these forests urgently need protection and restoration where necessary (Map 2).



Map 2 - Species signs in Bukit Tigapuluh 2005-2010, Global Priority Tiger Conservation Landscape boundary and natural forest cover 2010.

FZS, in collaboration with the Ministry of Forestry, has been running the world's only successful reintroduction program for Sumatran orangutans since 2002.²⁴ These orangutans, often rescued from the illegal pet trade, are rehabilitated and prepared here for life in the wild before their release into the Bukit Tigapuluh forests. The program operates three field camps: 1) the Sumatran Orangutan Reintroduction Center, 2) the Open Orangutan Sanctuary and 3) the joint FZS & Tanjung Jabung Barat Regency Forestry Office Forest Protection Base Camp (Map 2).

A population model simulation conducted by the IUCN Captive Breeding Specialist Group estimated that between 250 and 500 orangutans should be reintroduced to ensure the sustainability of the population over a period of 1,000 years, with the assumption that there is no human disturbance such as poaching or habitat destruction²⁵. Today, Bukit Tigapuluh is the home of the only sustainable orangutan reintroduction project in Indonesia that could potentially accommodate more than 1,000 orangutans²⁶. The majority of orangutans released at the boundaries of Bukit Tigapuluh National Park chose their home ranges in the fruit-rich lowland forests outside the national park²⁷. A recent study of orangutan habitat in slightly logged natural forest demonstrates that sustainable logging techniques in natural forest can maintain habitat quality for orangutan populations²⁸. The national action plan for the orangutan conservation²⁹ states that all remaining natural forest needs to be conserved as orangutan habitat and that all types of forest can host orangutan reintroduction projects except industrial forest plantations.

The natural forest inside the national park is not preferred by elephants as the park is famous for rugged terrain and deep slopes that are largely avoided by elephants. The threatened lowland rainforests outside the national park are the only habitat of about 150 endangered Sumatran elephants in two population ranges (black boundaries in Map 2)³⁰, which represent essential elephant conservation units in Central Sumatra³¹.

The same lowland forest has been identified as important habitat for the dwindling Sumatran tiger population. A study conducted by ZSL in 2007³² demonstrates the high density of tiger prey in the forests adjacent to the national park and its importance as tiger habitat. The national action plan for tiger conservation in 2007³³ declared the Bukit Tigapuluh landscape to be one of the top priority areas for tiger conservation in Sumatra and therefore an area of national conservation priority. At the 2010 International Tiger Conservation Forum in St. Petersburg, a first-ever summit of world leaders focused on saving the tiger, Indonesia declared that it

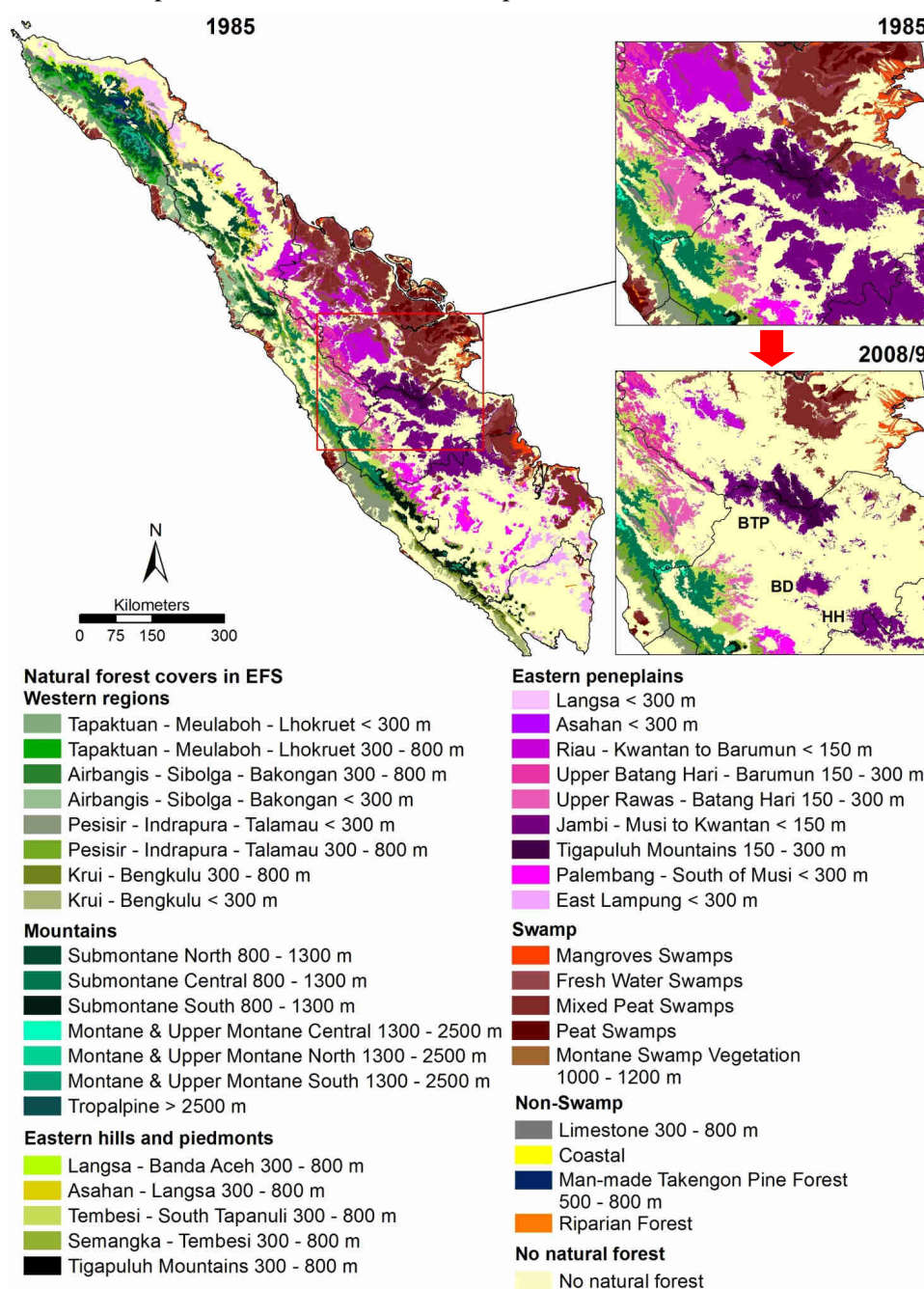
would focus conservation efforts in six priority areas, including Bukit Tigapuluh³⁴.

Bukit Tigapuluh is also home to at least 80 species of mammals, 193 species of birds (one-third of Sumatra's bird species), 4 species of reptiles and 98 species of fish^{35, 36, 37, 38}.

3.2. Flora diversity

Bukit Tigapuluh is one of Indonesia's natural jewels in terms of its unique forest type. The tropical lowland forest surrounding the national park belongs to one of 38 unique ecosystems distinguished in Sumatra, called "Jambi -- Musi to Kwantan <150 m Eco-Floristic Sector"³⁹, today considered critically endangered, having lost 78 percent of its 1985 natural forest cover⁴⁰ (Map 3). Less than 550,000 hectares of natural forest remain of this eco-floristic sector in Sumatra, mainly as three fragmented blocks: around the Bukit Tigapuluh National Park (BTP in Map 3), in and around Bukit Duabelas National Park (BD in Map 3) in Jambi and in what is known as "Hutan Harapan" in Jambi and South Sumatra (HH in Map 3).

Bukit Tigapuluh also has high plant biodiversity: more than 1,500 types of flora have been recorded within the national park alone and most of them produce timber, resin, bark, fruits and medicine⁴¹. A biomedical expedition in 1988 by the Indonesian Institute of Sciences (LIPI), in cooperation with the Ministry of Health, recorded the use of the flora diversity by the indigenous communities in and around the national park for medicinal purposes. The Talang Mamak tribe used 110 species to treat 56 kinds of diseases, and 22 mushroom species to treat 18 kinds of diseases. The Melayu or Malay tribe used 182 species to treat 45 diseases and eight mushroom species to treat eight diseases.



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Map 3 – Eco-floristic sectors (EFS) in and around the Bukit Tigapuluh landscape, 1985 and 2008/9.

3.3. Environmental and carbon values

Bukit Tigapuluh landscape's natural forest sits upstream of rivers in the Batanghari and Pengabuan watersheds in Jambi Province and the Indragiri and Reteh watersheds in Riau Province. These natural forests provide basic environmental services of watershed protection and erosion control. In 1988, the Ministry of Transmigration, using the Regional Physical Planning Project for Transmigration supported by DFID as an instrument, classified 256,284 hectares as a protection area for terrain protection (Map 5).

Around 320,000 hectares of natural forest in this landscape could contain 53 megatons of carbon, using Intergovernmental Panel on Climate Change (IPCC)^{42, 43} default values of an average 350 tons of above-ground biomass per hectare for tropical rain forests in Asia and its suggested 47% carbon contained in that above-ground biomass for our calculations.

In 1995, almost all of the unprotected natural forest surrounding the national park lay inside several selective logging concessions that offered protection from conversion. Since then, many have become inactive and were switched into industrial timber plantation (HTI) concessions, allowing them to be cleared of large areas of natural forest and emitting carbon into the atmosphere (Chapter 5-8). The biggest concession of around 300,000 hectares, owned by PT. Industries et Forest Asiatique (PT. IFA), also expired and has been split into several HTI concessions. Some have already been mostly converted from natural forest and others are being prepared for clearing (Chapters 5-8). There are two more inactive selective logging concessions – the ex PT. Dalek Hutani Esa and ex PT. Hatma Hutani – that are also in the process of becoming industrial timber plantation concessions (Chapters 5-8).

A 2005 field study by KKI Warsi and the Bogor Agricultural University (IPB) concluded that the standing timber volume of many of the “logged-over” natural forests surveyed in the ex PT. IFA concession area was not significantly different from its primary status in 1991; therefore, it would be inappropriate to convert these “logged-over forests” into plantations for legal and conservation reasons.⁴⁴ Even when the natural forest's standing timber volume has been depleted from its primary state due to legal and illegal selective logging, it would make more sense to restore them since their potential to sequester carbon is very high. On the island of Sumatra, which has lost so much natural forest already, clear-cutting of the remaining natural forest should be halted.



Good natural forest in the former PT. Dalek Hutani Esa selective logging concession seen from the FZS Sumatran Orangutan Reintroduction Center. APP's sister company, PT. Rimba Hutani Mas of Sinar Mas Group, has been trying to convert this natural forest. © Norbert Guthier, 2008. GPS location 102° 34' 38" E 01° 09' 51" S.

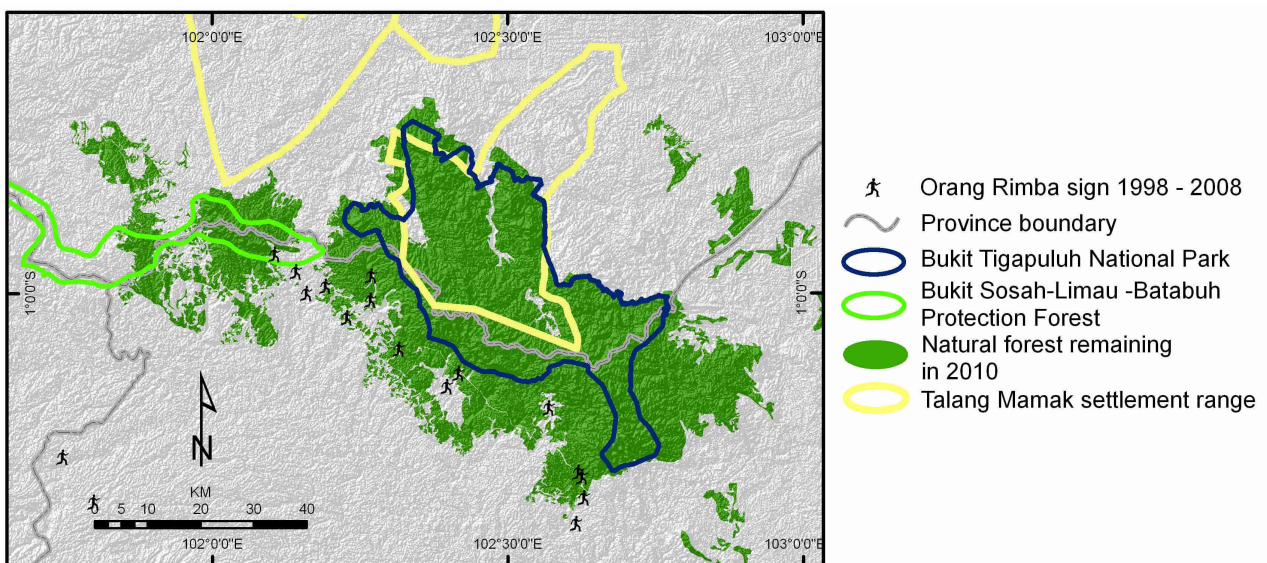


The main logging corridor road of APP/SMG through good natural forest inside the former PT. IFA selective logging concession, current PT. Lestari Asri Jaya industrial timber plantation (HTI) concession Blok IV in 26 April 2010. © Heriyadi Asyari/Doc. KKI WARSI.

3.4. Social values

Native Families

Two indigenous tribes -- the Talang Mamak and Suku Anak Dalam (also called Orang Rimba) – call Bukit Tigapuluh home (Map 4). The two tribes live primarily in Jambi Province.



Map 4 – Distribution of Orang Rimba and Talang Mamak in Bukit Tigapuluh.

The Talang Mamak are a sedentary tribe who live only in the Bukit Tigapuluh landscape. The Orang Rimba are nomadic and dependent on forest resources. The Orang Rimbans’ survival in particular is endangered by

logging, which is clearing Sumatra on a scale unseen almost anywhere else in the world.

The population of Orang Rimba in the Bukit Tigapuluh ecosystem numbers 551 people, divided into 15 groups and scattered in the area of production forest to the south of the national park, namely in the concession area of former PT. IFA and former PT. Dalek Hutani Esa⁴⁵.

The Orang Rimba people have inhabited the jungles of Sumatra for centuries, traveling in tight-knit family groups in the forests, hunting, fishing and collecting non-timber forest products on their traditional lands. Members of this indigenous tribe occasionally trade goods with villages on the edge of the forest, but prefer to keep to themselves. Now, as Sumatra's forests disappear, keeping to themselves is becoming impossible.

Experts who have studied the culture of the Orang Rimba, which literally means "forest people," estimate that there are perhaps 3,000-4,000 individuals. Orang Rimba families have become marginalized wherever their forest was opened, easily infected by new diseases and extraordinarily poor without forests to hunt and gather in.

Distribution and migration of Orang Rimba community usually follow the availability of forest resources, either hunting and gathering or searching for non-timber forest products, such as sap jernang, which is well-known in China as dragon's blood (*Daemonorops draco*), rattan/manau, gum resin and herbs.

When there is death in an Orang Rimba family, they will "belangun" or move to another place far way. Belangun is also an Orang Rimba mechanism to avoid conflict, social attachment to a particular group, the outbreak of disease, or the diminishing results from the field. This residential mobility makes it difficult for the tribe to integrate into the system of village administration.

A survey by the Frankfurt Zoological Society in 2009 found 42 Talang Mamak families (with 165 individuals) living inside the concession of APP/Sinar Mas affiliate PT. Rimba Hutani Mas (the former selective logging concession of PT. Dalek Hutani Esa), which is adjacent to PT. Lestari Asri Jaya.⁴⁶

The Talang Mamak population as a whole is estimated to be around 1,500 families or 8,000 people⁴⁷. Although they are a hunting and gathering society, the Talang Mamak tribe's position is relatively stable. The Talang Mamak tribe lives exclusively in four districts in Jambi and Riau provinces.

The general farming activity by native local communities is rubber production. Limited manpower and funding results in the lack of maintenance of the rubber plantations, which is beneficial for conservation as mixed rubber plantations or "jungle rubber" are good habitat for endangered species like the elephant, tiger or orangutan. The local communities are generally aware that their livelihoods are highly dependent on intact forest land.

In April 2010, Warsi organized a workshop on Orang Rimba and local communities in Jambi and deforestation in Jambi. In his speech, Presidential Advisor Emil Salim called for protection of the forest in Bukit Tigapuluh, Bukit Duabelas and Kerinici Seblat to benefit people's livelihoods, the environment and the world's climate, which is affected by the massive amounts of carbon released as the forests are cleared.

Non-native communities

The increasingly easy access to the Bukit Tigapuluh landscape has encouraged a large number of immigrants to move in and establish settlements in the area. This is triggered by the high accessibility of the villages in the Bukit Tigapuluh landscape, the ease and affordability for non-indigenous settlers to purchase plantation land and the ongoing chain of migrants who hear about the area from earlier migrants.

Many of the transmigrants come from areas of Indonesia that do not have elephants and tigers and thus are not prepared to deal with them and are not familiar with the traditional methods of avoiding human-wildlife conflict that the native communities know.

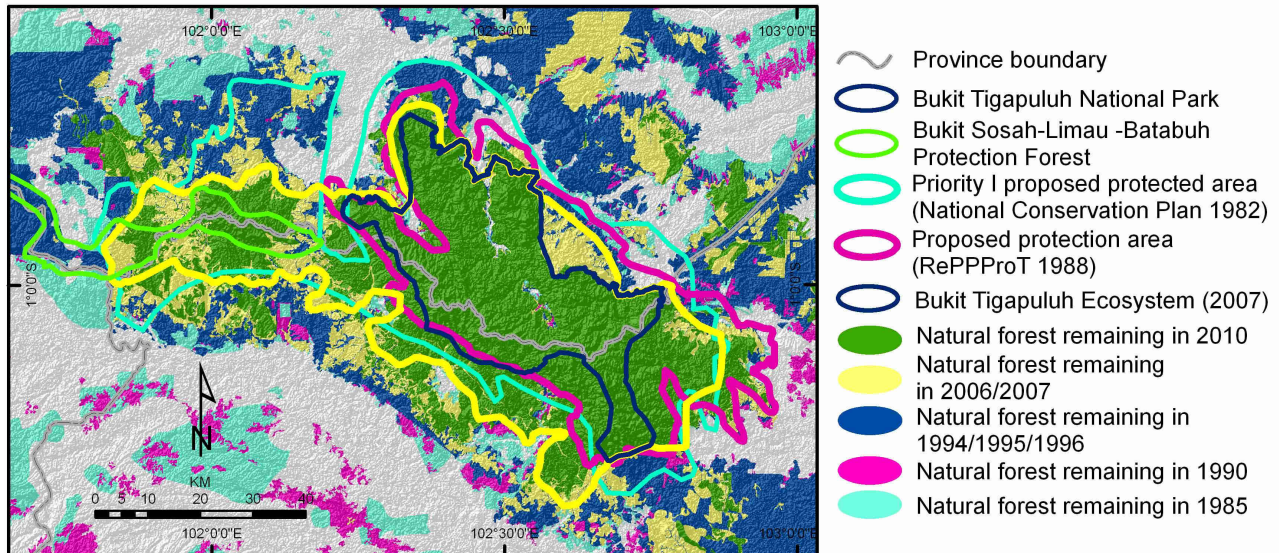
Meanwhile, the general farming activities of immigrants with adequate financial capital are oil palm plantations, in contrast to the much more environmentally friendly jungle rubber plantations of native communities.



Orang rimba family stranded when APP/SMG's PT. Tebo Multiagro Corporation cleared their natural forest to plant pulpwood trees (see Chapter 5-8) © WWF-Indonesia, 17 April 2010 at S1°1'37.60"; E101°55'36.50".

4. Thirty years of conservation efforts and natural forest loss in Bukit Tigapuluh

The High Conservation Values of the Bukit Tigapuluh landscape have been well recognized and the Indonesian government and NGOs have been trying to protect this unique ecosystem for almost 30 years. The chronology (Table 1) and historical map (Map 5) contrast these efforts and the historical loss of natural forest during this time inside our “analysis baseline area,” which was defined as a contiguous area of 651,232 hectares, with a 1-kilometer buffer from all natural forest cover in 2004, but without peat soil areas (see Map 6 for its boundary).



Map 5 – Historical proposed protected areas and loss of natural forest loss in Bukit Tigapuluh.

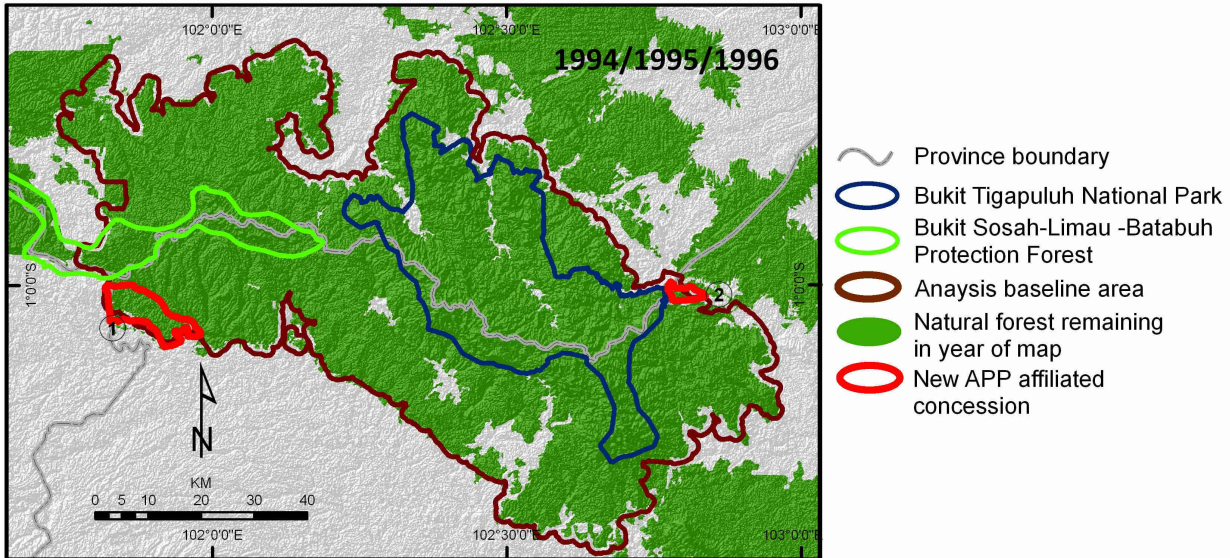
Table 1 - Chronology of conservation efforts and loss of natural forest in Bukit Tigapuluh

Year	Conservation effort	Hectares (ha) of natural forest cover and the percentage of baseline area they covered in data year
1982	National Conservation Plan for Indonesia (NCP) is produced, based on an eight-year (1974-1982) national park development project managed under the auspices of FAO/UNDP ⁴⁸ , and proposes 511,982 hectares of natural forest for government protection , consisting of a 218,287-hectare wildlife reserve (Bukit Besar in Jambi), a 197,393-hectare nature reserve (Seberida in Riau) and a 96,302-hectare hunting reserve (Peranap in Riau) (light blue boundary in Map 5).	621,910 ha – 95% (1985)
1988	The Ministry of Transmigration, using the Regional Physical Planning Project for Transmigration (RePPPProT) as an instrument, classifies 256,284 hectares as “protection area for terrain protection (pink boundary in Map 5).” Some area overlaps with the 1982 NCP’s proposed area, but also includes additional area outside the NCP boundary in the east.	596,126 ha – 92% (1990)
1992	Indonesia presents the NCP (1982) proposed area at the Earth Summit in Rio de Janeiro, Brazil.	
1994	The Ministry of the Forestry sends a letter to the World Bank (Ref. No. 1289/Menhut-IV/1994) mentioning a plan to designate a 250,000-hectare national park in Bukit Tigapuluh, similar to the RePPPProT proposal area.	583,475 ha – 90% (1994/1995-/1996)
1995	Ministry of Forestry designates the Bukit Tigapuluh National Park (Minister of Forestry Decree No. 539/Kpts-II/1995). However, it is only 127,698	

	hectares , just a quarter of the 1982 NCP proposed area. The designated area originally consists of some protection forest and limited production forest in Riau and Jambi provinces and excludes the existing selective logging concessions, some of which were owned by a key Soeharto ally. The park is generally of steep, mountainous terrain that is not attractive for forestry operations.	
2002	Minister of Forestry Decree No. 6407/Kpts-II/2002 dated 21 June 2002 increases the area of the park to 144,223 hectares (blue boundary in Map 5). Based on a memorandum for technical cooperation between the Ministry of Forestry and FZS ⁴⁹ , FZS sets up a field camp in ex PT. Dalek selective logging concession and starts to reintroduce Sumatran orangutans (Map 2).	537,344 ha – 83% (2002)
2005	KKI Warsi, PKHS and FZS proposes to “rationalize” the Bukit Tigapuluh National Park on 20 July to close to 240,000 hectares to include the dry lowland forest around the park and to tackle the problems of the park having too long boundaries to secure and a too small and out-of-reach core area. It also took into account that many of the selective logging concessions around the park had expired or were inactive. In October, the proposal is supported and signed by the Natural Resource Conservation Agency (BKSDA) Jambi and the National Park Management Authority and submitted to the MoF ⁵⁰ .	500,152 ha – 77% (2005)
2007	WWF, KKI-WARSI, FZS, ZSL and PKHS submit a joint proposal to the Ministry of Forestry on 3 September ⁵¹ to zone 348,084 hectares (yellow boundary in Map 5) for protection, mostly covered by natural forest, and recommend companies holding HTI concessions with natural forest in the landscape conduct professional assessments to identify and protect High Conservation Value Forests and professional environmental impact assessments to ensure that their natural forest conversion activities did not cause negative impacts.	446,518 ha – 69% (2006/2007)
2008	In August 2008, the National Park Office and Jambi and Riau provincial BKSDA agreed with the 3 September 2007 proposal boundary by the five NGOs. It was decided that this area would be called the “ Bukit Tigapuluh Ecosystem, ” an integral management unit of BTNP and the buffer zone for conservation and sustainable development	404,582 ha – 62% (2008)
2009	“The Bukit Tigapuluh Ecosystem Conservation Implementation Plan ⁵² ” was produced through collaboration by the Bukit Tigapuluh National Park Office, all the four District governments, local companies and the five NGOs with support from Directorate General Forest Protection and Nature Conservation and Federal Ministry and Economic Cooperation and Development of Germany and launched in May. KKI Warsi, WWF Indonesia, FZS, ZSL and PKHS also sent a joint letter to the Minister of Forestry to stop conversion of natural forest in Bukit Tigapuluh ⁵³ .	343,662 ha – 53% (2009)
2010	The same five NGOs, an alliance of NGOs working on land use planning (ForTrust), and three joint initiatives between the PHKA and NGOs on conservation of flagship species (Forum Orangutan Indonesia, Sumatran Tiger Conservation Forum and Forum Konservasi Gajah Indonesia) sent a joint letter to the Minister of Forestry in April ⁵⁴ to protect and restore natural forest in the Ecosystem, specifically to expand the national park or amend the existing overlapping HTI and HPH concessions into Ecosystem Resotation concessions and stop new license for natural forest conversion, including Annual Cutting License (RKT).	320,776 ha – 49% (2010)

5. Natural forest loss in Bukit Tigapuluh as of 2010

When the national park was designated in 1995, Bukit Tigapuluh’s forest was still connected with some of the surrounding forests. In 1996, the first two industrial timber plantation (HTI) concessions – which come with licenses to clear cut the forest – appeared in this landscape (Map 6, Table 2). Almost all of the rest of the unprotected natural forest (outside the national park and protection forest) was inside selective logging (HPH) concessions at that time, still safe from conversion.



Map 6 – Natural forest cover around 1995 and the first two HTI concessions in the area.

Our historical forest cover data between 1985 and 2010 for our Bukit Tigapuluh “analysis baseline area” (Map 6) shows that this landscape lost almost 50% of its original natural forest cover. The loss occurred relatively slowly until 2004, when the loss gained speed – even up to above 10% loss per year between 2005 and 2006, again between 2008 and 2009 and from then until the first half of 2010 already close to 7% is lost (Figure 1, Maps 7-8). We also followed the increase of HTI concessions in the baseline area during the whole period to evaluate their contribution to the total natural forest loss (Map 7-8, Table 2). The loss of 301,134 hectares of natural forest over the 25 years could have caused the emission of a total 182 megatons, or average of 7.3 megatons of CO₂ emissions per year, using IPCC default values.

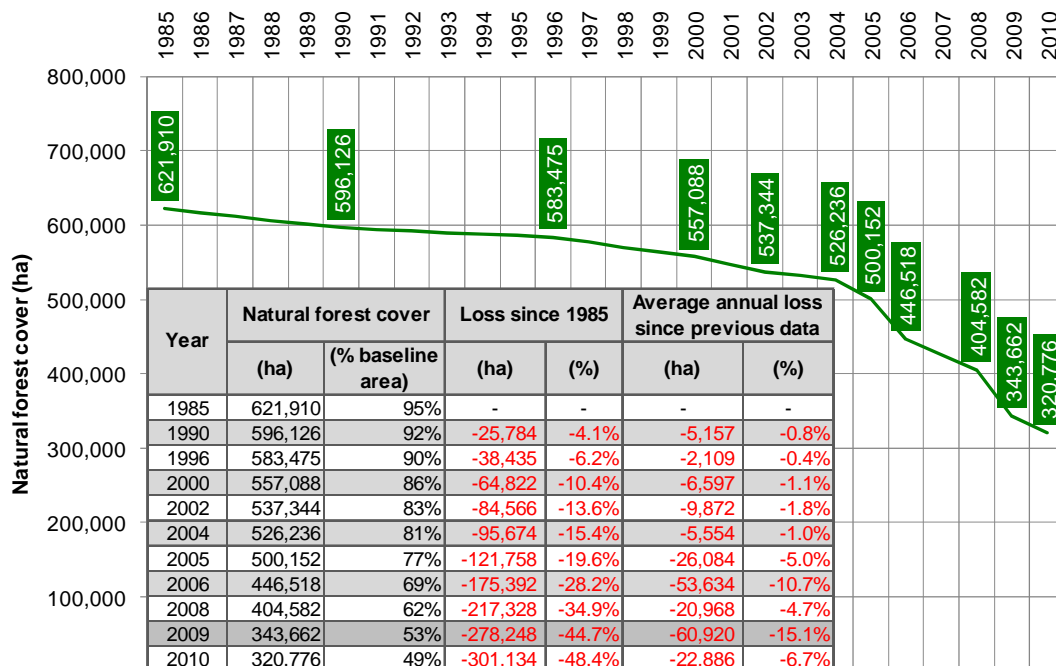
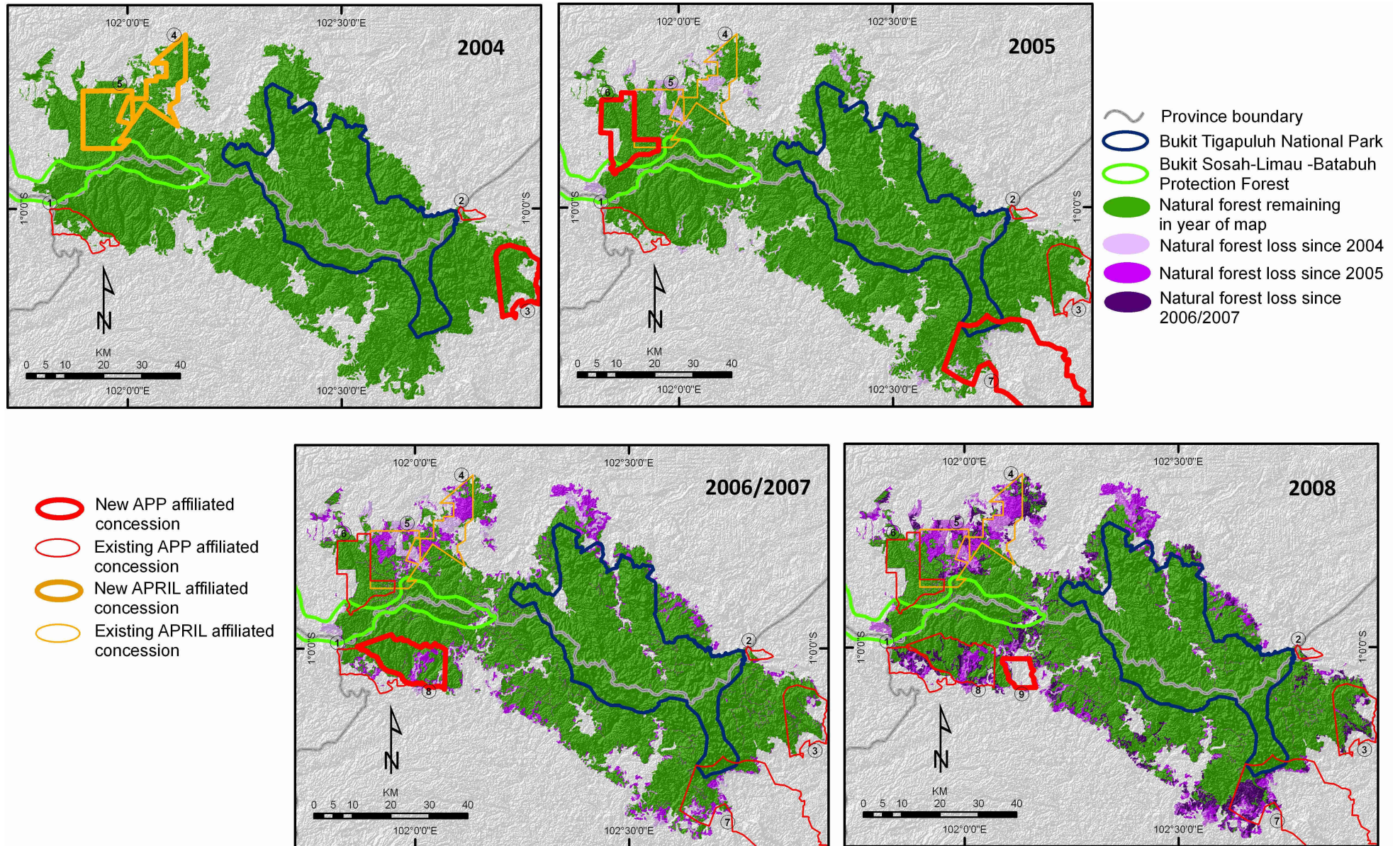
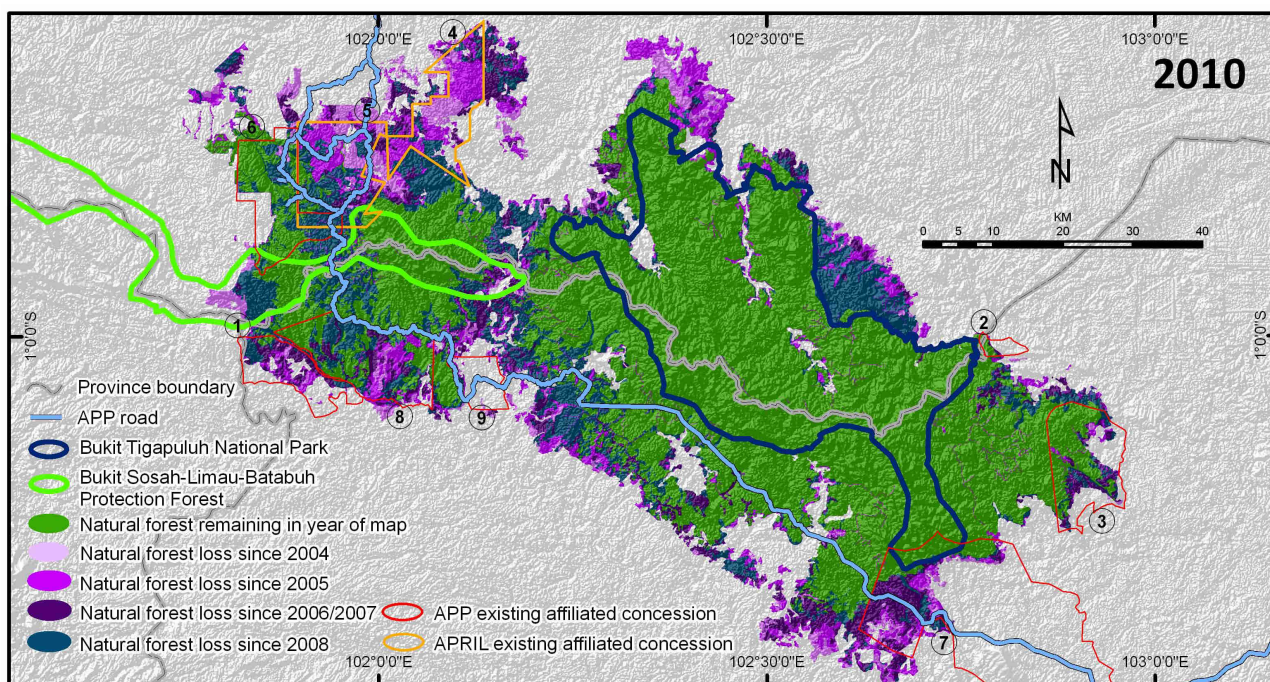


Figure 1 - Natural forest cover in the baseline area (651,232 ha) and loss between 1985 and 2010.



Map 7 – Natural forest cover 2004 and 2008 and loss inside the baseline area, in relation to increasing HTI, or industrial plantation concessions, which started to operate since 2004.



Map 8 - Natural forest cover 2010 and forest loss since 2004 with all nine existing HTI concessions and the APP logging/wood transport road.

Our baseline area lost 205,460 hectares of natural forest in total between 2004 and 2010, of which 15% occurred inside seven APP-affiliated concessions and 12% inside two APRIL-affiliated concessions (Table 2). In addition, we can roughly estimate 8% of the total forest loss occurred alongside an APP logging/wood transport road constructed through this forest landscape to clear natural forest and transport wood out to its pulp mills in Riau and Jambi provinces (see Chapter 7.3). We have investigated and publicly reported on this forest destruction^{55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65}. The rest – 65% of the forest loss – occurred due to illegal and/or unsustainable forest encroachment, mostly by migrant people from Java Island, North Sumatra, West Sumatra and Lampung, to plant rubber and subsistence crops. Sometimes the deforested lands simply became “wastelands.”

Table 2 – Natural forest loss in the baseline area inside existing HTI concessions since 2004 or a later year in which they started to operate. Concessions are listed in consecutive order from the year they started natural forest clearance operations.

(1) # in maps	(2) Name	(3) Affiliation	(4) The year when operation started	(5) GIS concession size (ha)	(6) GIS concession size inside the baseline area (ha)	(7)-(10) Natural forest cover in the baseline area			
						(7) In 2004 or year in (4) if operation started after 2004	(8) In 2010	(9) Loss between (7) - (8)	(10) % total forest loss 2004-2010
						(ha)	(ha)	(ha)	(%)
1	PT. Arangan Lestari	APP/SMG	1996	9,229	8,364	4,889	227	-4,662	2%
2	PT. Wana Teladan (Transmigrasi) West	APP/SMG	1996	1,381	881	515	415	-100	0%
3	PT. Rimba Hutani Mas (Taman Raja)	APP/SMG	2004	15,380	14,161	10,798	6,744	-4,054	2%
4	PT. Bukit Batabuh Sei. Indah	APRIL/RGM	2004	13,718	13,577	11,360	40	-11,320	6%
5	PT. Citra Sumber Sejahtera	APRIL/RGM	2004	16,489	16,489	16,028	1,752	-14,276	7%
6	PT. Artelindo Wiratama	APP/SMG	2005	15,719	15,015	12,920	7,468	-5,452	3%
7	PT. Wirakarya Sakti (Distrik VIII)	APP/SMG	2005	63,954	18,830	13,442	4,667	-8,775	4%
8	PT Tebo Multiagro Cooperation (Blok 2)	APP/SMG	2006	18,333	18,333	14,408	6,281	-8,127	4%
9	PT. Wanamukti Wisesa	APP/SMG	2009	4,874	3,099	300	202	-98	0%
								-31,268	15%
								-25,596	12%
								-56,864	28%
								-15,680	8%
								-132,916	65%
								-205,460	100%

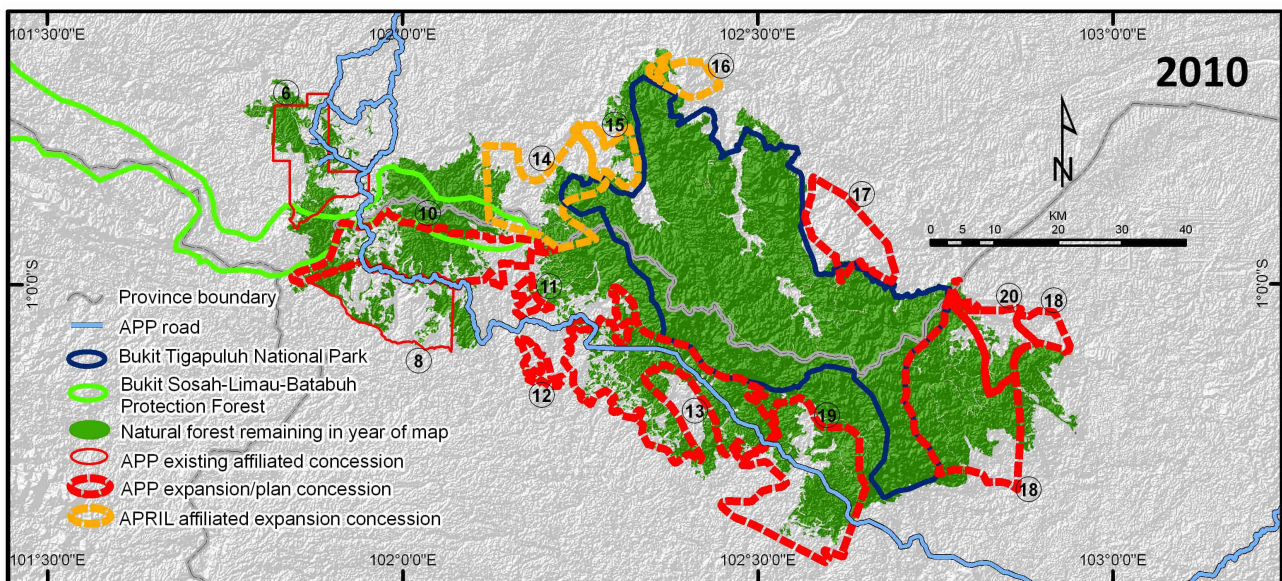
6. Natural forest loss in Bukit Tigapuluh in the future

Evaluation of possible natural forest loss in the future concludes that APP/SMG will become the single biggest destroyer of natural forest in Bukit Tigapuluh, especially in the key ecological areas – critically endangered dry lowland forest, which has a high presence of three flagship species. Local and indigenous people also rely on these forest resources to live.

In 2010, 53 percent of the remaining forest in the baseline area lies outside the national park and protection forest. Of this unprotected forest, more than half – close to 97,000 hectares – lies inside the following APP-affiliated HTI concessions slated for conversion to plantations (Map 9, Table 3):

- Two existing concessions, PT. Artelindo Wiratama (#6) and PT. Tebo Multiagro Corporation (#8), which are still clearing natural forest in 2010.
- Eight pending HTI concessions, including those of PT. Lestari Asri Jaya of Barito Pacific Group, which could start clearing natural forest when permits are given by the government to supply the wood to APP.

Even if APP's partners do not clear these forests, NGOs are concerned that illegal encroachers could cause as much forest loss because of easy access from the APP road in the western and southern half of the landscape, especially in the natural dry lowland forest inside concession blocks 13 and 19 – Bukit Tigapuluh's flagship species are dependent on this forest for their survival (Map 2, 9). At the worst location, the road passes as close as two kilometers from the national park boundary and we have already identified a small encroachment entering into the national park (Map 9).



Map 9 – Natural forest 2010 in the baseline area and the two existing HTI concessions still clearing natural forest and new concessions which could start clearing natural forest if permits are given.

NGOs are especially concerned about the clearance of HCVPs by existing and potential APP wood suppliers in these 10 concessions, that their “business as usual” clearance of HCVP as described in Chapter 7 would be repeated in these concessions. Loss of 97,000 hectares of natural forest could cause 58.5 megatons of CO₂ emissions using IPCC default values.

Regarding the new concessions APP have been trying to secure wood from, NGOs have been fighting to keep the expired/inactive selective logging concessions from being switched into HTI concessions, which would allow clear-cutting and conversion to plantations (Chapter 8).

There are other threats to this landscape that also need to be remedied. Our recommendations for each of the threats are included in Chapter 9.

Table 3 – Natural forest in the baseline area inside the two existing HTI concessions still clearing natural forest and new concessions that could start clearing natural forest if permits are given.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
# in Maps	Name	Affiliation & status	The year when operation started	GIS concession size (ha)	GIS concession size inside the baseline area	Natural forest cover inside the baseline area in 2010		
						(ha)	(% total forest)	(% total unprotected forest)
6	PT. Artelindo Wiratama	APP Existing	2005	15,719	15,015	7,468	2%	4%
8	PT Tebo Multiagro Cooperation (Blok 2)	APP Existing	2006	18,333	18,333	6,281	2%	4%
10	PT. Lestari Asri Jaya (Blok 1)	Likely APP	RKT issued, but operation not started	23,205	23,205	12,711	4%	7%
11	PT. Lestari Asri Jaya (Blok 2)	Likely APP		1,454	1,454	76	0%	0%
12	PT. Lestari Asri Jaya (Blok 3)	Likely APP		1,994	1,831	0	0%	0%
13	PT. Lestari Asri Jaya (Blok 4)	Likely APP		35,009	35,009	23,188	7%	14%
14	PT. RAPP - Pontianai	APRIL Expansion	Licensing pending	18,898	18,288	8,075	3%	5%
15	PT. Sumber Maswana Lestari West	APRIL Expansion	Licensing pending	5,256	4,541	1,544	0%	1%
16	PT. Sumber Maswana Lestari East	APRIL Expansion	Licensing pending	3,999	3,999	895	0%	1%
17	PT. Mapala Rabda (eks SWS) West	APP Expansion	Licensing pending	11,548	11,548	471	0%	0%
18	PT. Rimba Hutani Mas (eks PT. Hatma Hutani)	APP Plan	Licensing pending	36,474	34,471	26,269	8%	15%
19	PT. Rimba Hutani Mas (eks Dalek)/Perluasan	APP Expansion	Licensing pending	31,692	31,365	16,364	5%	10%
20	PT. Rimba Hutani Mas (eks Hatma)/Perluasan	APP Expansion	Licensing pending	7,990	7,592	3,661	1%	2%
				APP affiliated total	179,823	96,489	30%	57%
				APRIL affiliated total	26,828	10,514	3%	6%
				HTI total	206,651	107,003	33%	63%

7. APP group's standard operating procedure: HCVF destruction

For NGOs working to preserve Bukit Tigapuluh, APP's operations are of great concern today since their wood-sourcing operations would cause destruction of key tropical dry lowland forests around the national park. We fear that APP wood suppliers will continue their "business as usual" clearance of HCVFs despite all conservation efforts and calls by conservation groups and people around the world.

APP/SMG claims it does not clear high-quality forests: "APP's fibre suppliers operate pulpwood plantations according to legal concessions granted by the Government of Indonesia on land identified as being the lowest-value forested areas in the country, comprised largely of what it categorises as degraded or wasteland. Prior to plantation development the land is subjected to several ecological and social assessments to ensure that any areas of high conservation values are identified and protected."⁶⁶

Our analysis of the operations by APP wood suppliers in Bukit Tigapuluh since 2004 shows clearly that they are clearing good natural forests (Table 3, 4, Map 7-9, Chapter 7.1 - 7.3):

1. APP-affiliated companies solicited inactive selective logging (HPH) concessions on land with a high coverage of dense natural forests with High Conservation Values, far from "degraded or wasteland," and obtained government licenses to switch their HPH status to industrial timber plantation (HTI) concessions, which allow for clear cutting and replacing the natural forest with monoculture plantations. They acquired licenses to operate almost 129,000 hectares in total, with high natural forest cover and close to 75,000 hectares of natural forest area together when they started to operate. In some cases, the licenses were issued under legally questionable circumstances and there are some allegations of corruption involved (Chapter 7.1 & 7.2).
2. APP-affiliated companies clear cut a lot of these HCVFs to supply mixed tropical hardwood for pulp production. The concessions lost more than 60,000 hectares of good forest altogether from the start of operation until 2010 (an 81 percent loss) without appropriate professional assessments or stakeholder consultation.
3. APP's new logging and wood transport road was constructed through High Conservation Value Forests without an environmental impact assessment and ended up facilitating loss of a lot of natural forest around it by giving access to people who otherwise could not reach these forests (Chapter 7.3).

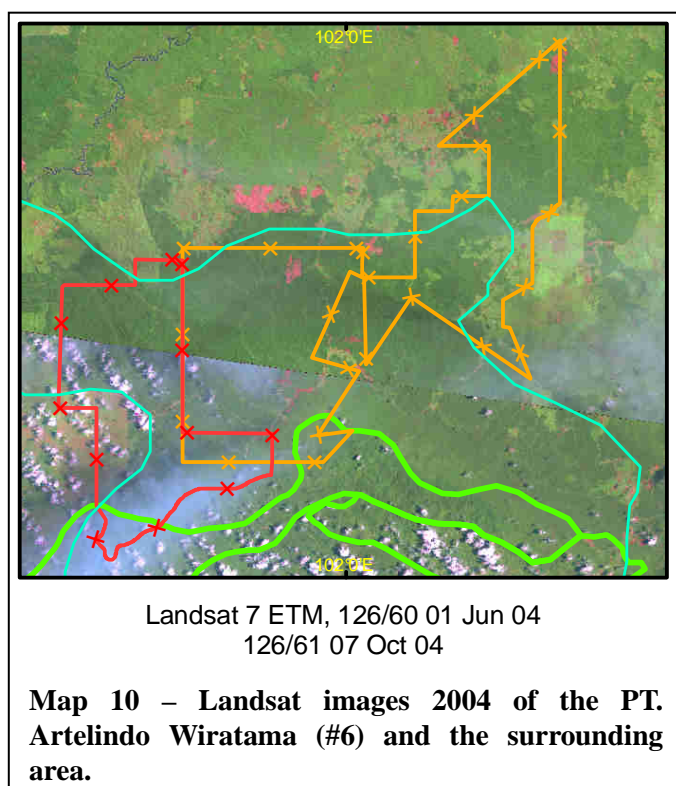
In the following pages, we provide two case studies – PT. Artelindo Wiratama (6) and PT. Tebo Multiagro Corporation (8) – which are both still clearing natural forest today.

Table 4 – Nine HTI concessions that have been operating in the Bukit Tigapuluh area.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
# in maps	Name	Affiliation	GIS Concession Size (ha)	The year when operation started	Natural forest clearance continues in 2010?	Natural forest when operation started in (5)		Natural forest in 2010		Natural forest loss since operation started until 2010	
						(ha)	(%)	(ha)	(%)	(ha)	(%)
1	PT. Arangan Lestari	APP/SMG	9,229	1996	NO	7,839	85%	227	2%	-7,612	-97%
2	PT. Wana Teladan (Transmigrasi) West	APP/SMG	1,381	1996	NO	928	67%	415	30%	-513	-55%
3	PT. Rimba Hutani Mas (Taman Raja)	APP/SMG	15,380	2004	NO	10,798	70%	6,744	44%	-4,054	-38%
4	PT. Bukit Batabuh Sei. Indah	APRIL/RGM	13,718	2004	YES	11,360	83%	40	0%	-11,320	-100%
5	PT. Citra Sumber Sejahtera	APRIL/RGM	16,489	2004	YES	16,028	97%	1,752	11%	-14,276	-89%
6	PT. Artelindo Wiratama	APP/SMG	15,719	2005	YES	12,920	82%	7,468	48%	-5,452	-42%
7	PT. Wirakarya Sakti (Distrik VIII)	APP/SMG	63,954	2005	NO	43,793	68%	9,171	14%	-34,622	-79%
8	PT Tebo Multiagro Corporation (Blok 2)	APP/SMG	18,333	2006	YES	14,408	79%	6,281	34%	-8,127	-56%
9	PT. Wanamukti Wisesa	APP/SMG	4,874	2009	NO	300	6%	202	4%	-98	-33%
					APP affiliated total	74,958	58%	22,475	17%	-60,478	-81%
					APRIL affiliated total	27388	91%	1792	6%	-25,596	-93%
					HTI total	102,346	64%	24,267	15%	-86,074	-84%

7.1. Investigation of PT. Artelindo Wiratama by Eyes on the Forest

In 2010, APP is still pulping natural forest from Bukit Tigapuluh. In Riau, APP's Indah Kiat pulp mill is sourcing mixed tropical hardwood (MTH) from PT. Artelindo Wiratama (concession # 6). In Jambi, APP's Lontar Papyrus pulp mill is sourcing MTH from PT. Tebo Multiagro Corporation (concession # 8).



The PT. Artelindo Wiratama concession originally received a legally questionable license issued by a district head in 2002⁶⁷, in violation of the Minister of Forestry Decree No. 10.1/Kpts-II/2000 (6 November 2000)⁶⁸, the Minister of Forestry Decree No. 21/Kpts-II/2001 (31 January 2001)⁶⁹ and the Government Regulation Number 34 Year 2002 (8 June 2002)⁷⁰.

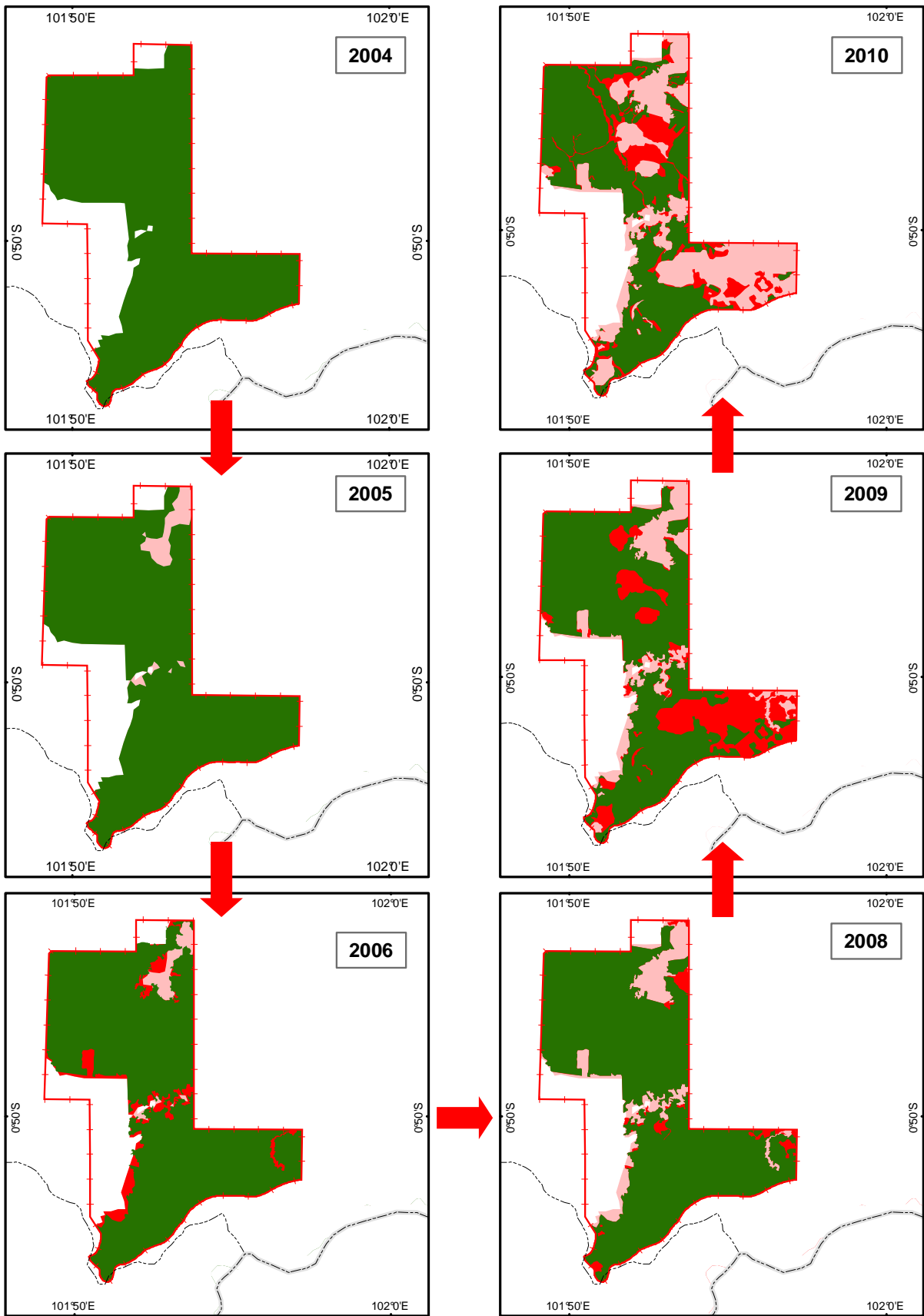
In 2004, the year before the company started clearance, this concession (red boundary) was almost fully covered by dense natural forest, of a similar quality to the forests in the protection forest (light green boundary) (Map 10). It is inside habitat range of a Sumatran elephant population (light blue boundary) and Sumatran tigers.

Despite its legally shaky grounds, the company started to clear good natural forest in 2005 and continued to do so until early 2007 (Map 11). This company supplies MTH to APP's Indah Kiat

Pulp & Paper mill in Riau, as verified by Eyes on the Forest in September 2005⁷¹.

Between January 2007 and December 2008, this concession could not transport any MTH out of the concession nor clear natural forest because many concessions, including this one, which received licenses from district heads in Riau, were investigated by the Riau and National Police for alleged illegal logging. In April 2007, the then-Minister of Forestry issued a renewal license (SK. 122/Menhut-II/2007 dated 2 April 2007) to “legalize” this concession, even though this concession did not pass one crucial verification criteria stipulated by the Ministry of Forestry⁷², that “the area allowed to be converted into pulpwood plantation is only on areas containing barren land, grassland, shrubs or those determined by the Minister of Forestry Decree Number 10.1/Kpts-II/2000 in substitution with the Minister of Forestry Decree Number 21/Kpts-II/2001⁷³”.

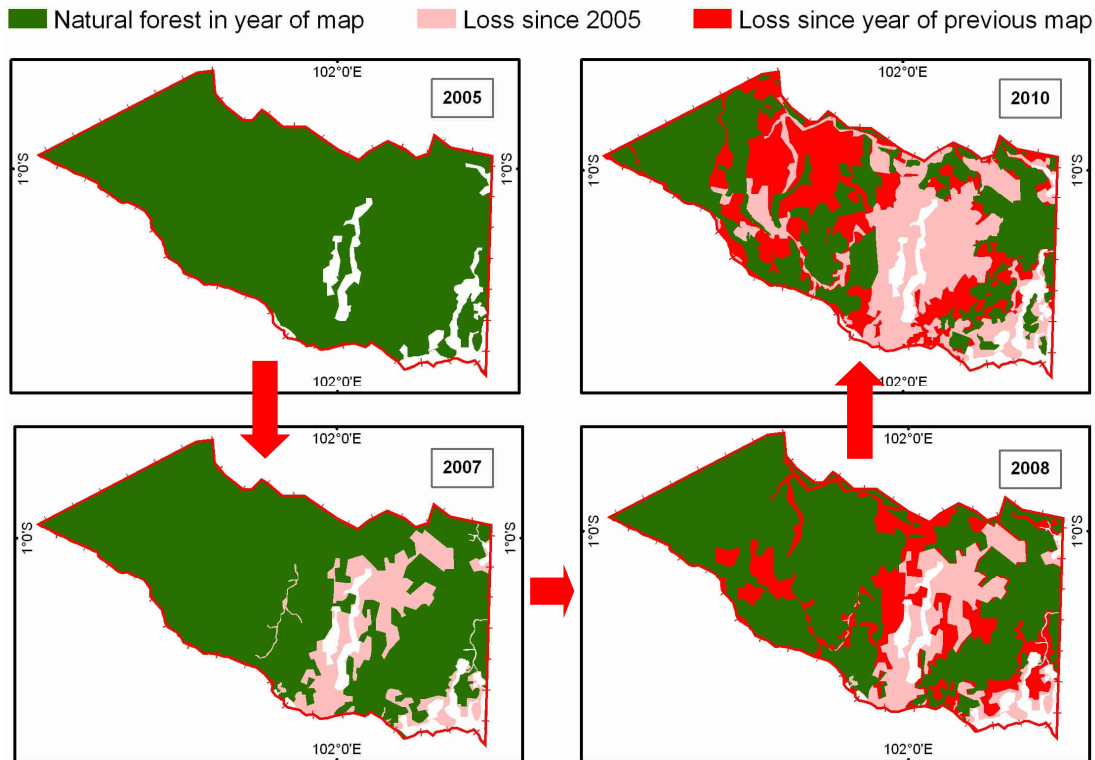
Historical Landsat image analysis and field surveys prove that the company restarted clearing good natural forest in 2009 (Map 11 and Photo Collection 1). By 2010, the concession has only a little more than 30 percent forest cover (Table 4). The clearance was allowed by the so-called “annual cutting licenses,” (RKT), issued by the Ministry of Forestry's Director of Forest Plantation Development on 15 April 2009^{74, 75} and on 25 March 2010⁷⁶. The planned clearcut area and MTH volume for the RKTs also prove that the forest to be cleared were good: up to 4,940 hectares to harvest 365,500 cubic meters of MTH at 74 m³/ha on average. In 2010, the company again received an RKT to allow clearance of additional 3,456 hectares of good natural forest remaining in fragments to harvest 378,910 cubic meters of MTH at 110 m³/ha on average⁷⁷.



Map 11 – Historical loss of natural forest inside PT. Artelindo Wiratama.

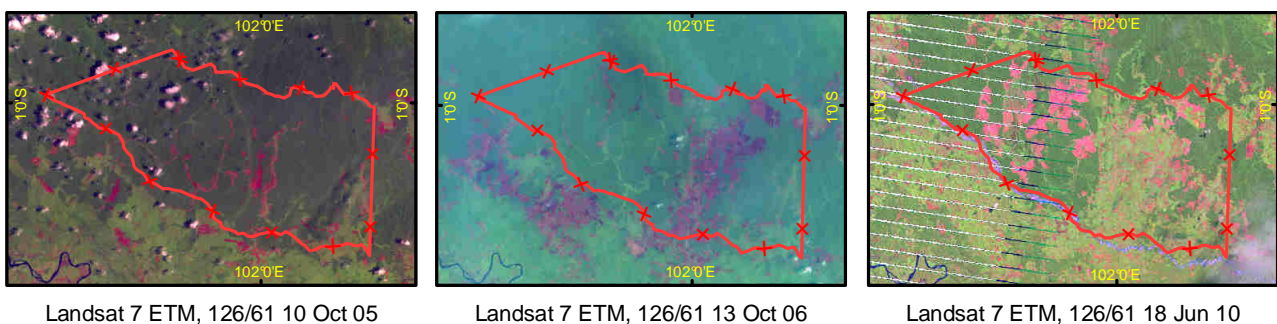
7.2. Investigation of PT. Tebo Multiagro Corporation by KKI Warsi and WWF-Indonesia

PT. Tebo Multiagro Corporation, with a concession of 18,333 hectares, started its operation in 2006 when the concession still had more than 70 percent forest cover (close to 13,000 hectares). Our 2007 investigations found that the forest the company was clearing was good forest with many large-diameter trees, in violation of legal requirements⁷⁸. In 2009 alone, it is estimated that PT. Tebo Multiagro Corporation cleared 2,000 hectares of tropical rainforest. By 2010, the concession has only a little more than 30 percent forest cover (Map 12 and Table 4).



Map 12 – Natural forest cover before the operation started in 2006 and loss until 2010 in the PT. Tebo Multiagro Corporation concession.

During field investigations in April and May 2010, the KKI Warsi and WWF-Indonesia investigation team traced the logged wood from forest to mill and confirmed that the wood felled in this concession was sent to the pulp mill of APP's PT. Lontar Papyrus Pulp & Paper in Jambi via APP's wood transportation road through PT. Lestari Asri Jaya concessions (Photo collection 2). The investigations also found stacks of MTH, proving that good natural forest with large-diameter trees had been cleared (Photo collection 2) Landsat satellite images from 2002-2008 (Map 13) also indicate that the tropical rain forest inside this concession was in very good condition before being clearcut by the company.



Landsat 7 ETM, 126/61 10 Oct 05

Landsat 7 ETM, 126/61 13 Oct 06

Landsat 7 ETM, 126/61 18 Jun 10

Map 13 – Historical Landsat images of PT. Tebo Multiagro Corporation (#8)/APP. The concession started to operate in 2006, the concession was still 79 percent covered by good natural forest (Table 4). Today, the company continues to clear the last remaining natural forest.

During our April 2010 field investigation, the team also met with a family of indigenous Orang Rimba who used to live inside natural forest which was converted into pulpwood plantation by the company (Photo collection 2). It is hard for the indigenous tribe to survive in plantations, they said, as their livelihoods depend heavily on natural resources from the forest and river.

There are some corruption and tax evasion allegations involving government official as well as APP-affiliated companies including this concession. In March 2008, an NGO Jarak filed a report to the Jambi Police over alleged graft involving the Tebo District Head, Madjid Muaz, accusing him of misusing the Provincial Budget for developing pulpwood plantation in this concession. Several NGOs urged the Jambi Prosecutors' Office to probe the Tebo District Head for alleged corruption related to the change of concession operation from what was described in the original joint venture partnership agreement signed by his District-owned company (teakwood plantation, fruit cultivation and cattle breeding) to pulpwood plantation development⁷⁹. The Indonesian Supreme Audit Agency (BPK) found in 2009 that APP pulpwood suppliers, including PT Tebo Multiagro Corporation, PT. Wira Karya Sakti and PT. Rimba Hutani Mas, had not paid their forest exploitation breach fine, amounting to Rp. 130.9 billion and Rp. 50.4 billion respectively, for not paying timber felling fees for 4.3 million cubic meters^{80, 81}.

7.3. Impacts of APP's wood transportation road

In addition to clearing good natural forest for pulp production, APP partners have constructed a logging and wood transportation road that split the Bukit Tigapuluh forest in two in 2007.

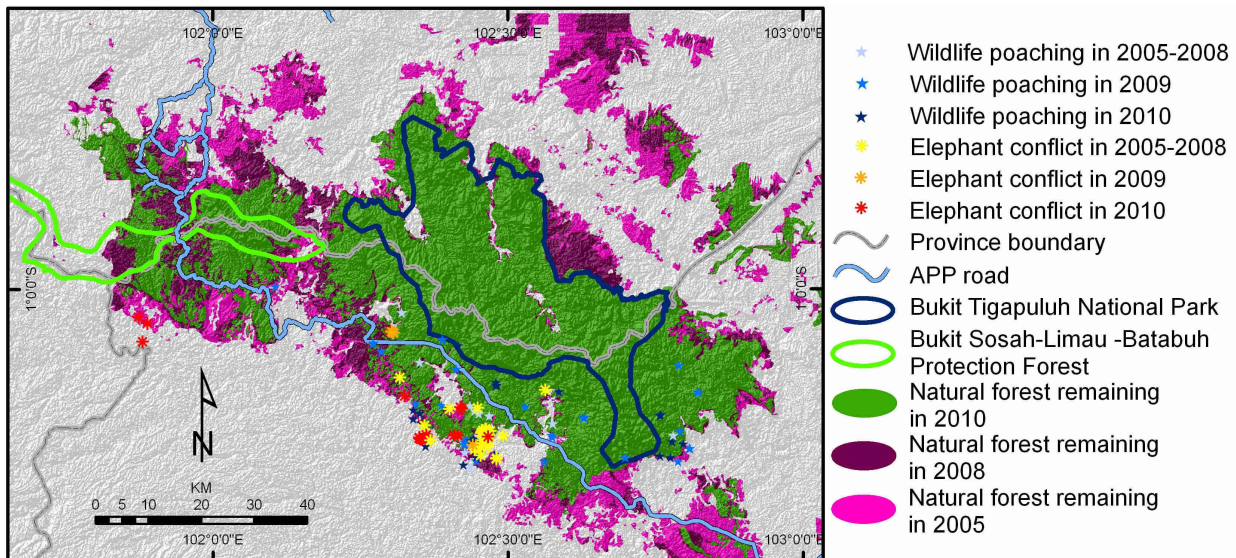
In January 2008, we reported on the construction of this road and called on APP to halt construction. We were concerned that it would cause devastating impacts on the landscape by allowing illegal encroachers to enter the natural forests, which otherwise are inaccessible, and clear them illegally⁸². The road in one area even passes as close as two kilometers from the national park's boundary. By 2010, our fears about the road had become reality (Map 8, Photo collection 3).

This highway construction involving natural forest clearance in some areas was considered likely illegal because:

- APP's partner had no license to construct this road in Riau Province.
- The APP logging road construction in Jambi Province began in July 2007, with Warsi and WWF-Indonesia confirming its construction activities in September 2007. However, the two definitive licenses for the road construction by the then-Jambi governor were not issued until October and November 2007 – almost when the job was complete.
- In the west, the road between the PT. Artelindo Wiratama and PT. Tebo Multiagro Corporation concessions was constructed through a protection area (Kawasan Lindung) in both Riau and Jambi provinces, in violation of Ministry of Forestry Decree Number SK.352/Menhut-II/2004.

7.4. Impacts on wildlife

FZS has been surveying wildlife in Bukit Tigapuluh, particularly the southern and eastern part of the national park, since 2005, first using the name “Orangutan Protection Units” and later changing it to “Wildlife Protection Units” (Map 14). From the survey data taken from 2005 until August 2010, wildlife poaching was found either in the forest boundary or far inside the natural forest, mostly happening along small logging corridors left from past selective logging operations such as the former PT. Dalek Hutani Esa, former PT. Industries et Forest Asiatiques, and former PT. Hatma Hutani.



Map 14 – Historical natural forest loss, wildlife poaching and elephant conflict incidents in Bukit Tigapuluh 2005-2010.

Of the three Sumatran flagship species and the Malayan tapir that FZS monitors in Bukit Tigapuluh, the Sumatran elephants are the most vulnerable species because of their preference for natural forest in flat topographies, which are increasingly lost and fragmented, pushing them into closer contact and conflict with people. Today, we find human-elephant conflicts very commonly along the southern part of the Bukit Tigapuluh landscape, along the forest edges where interaction with humans cannot be avoided. The conflicts mostly occur in oil palm plantations, rubber plantations, and agricultural fields where elephants destroy both people’s huts and their crops; the encounters sometimes end in the deaths of elephants or people. Indonesia’s Elephant Conservation Forum last year warned that the resident elephant populations in Bukit Tigapuluh are threatened to extinction due to natural forest conversion by APP/SMG partners and the resulting human-elephant conflicts⁸³.

In 2010 alone, there have been at least two news reports about elephant poaching and elephant conflict in this area. In March 2010, a team composed of FZS WPU and Jambi BKSDA forest police found three skulls of Sumatran elephants near the confluence of the Lalo River and Pinang Belaian River, just inside what is now the PT. Lestari Asri Jaya Concession Block IV, which was then under consideration for clearing. Although at least two national Indonesian newspapers and one local newspaper had covered this story⁸⁴, the National Government proceeded with issuing the definitive license and annual cutting license (RKT) for the industrial timber plantation concession. The Government of Tebo regency has continued issuing Hutan Tanaman Rakyat (community timber plantation) licenses for natural forest areas surrounding the concession, thus causing the loss of these natural forests (for example, the Puding Sepakat Corporation Community Timber Plantation owned by a non-Bukit Tigapuluh Tebo community).

On 31 July 2010, a fatal conflict occurred inside the Arangan Hutan Lestari and Tebo Multiagro Corporation concessions when a herd of around 40 elephants killed a villager⁸⁵. The incident took place inside a production forest, based on Jambi Landuse Plan 1994, yet the Tebo Forestry Service refused to take on the issue and left it to the Jambi BKSDA to handle the matter.

7.5. Impacts on People

The government of Indonesia does not account for the traditional land rights of indigenous peoples when it leases logging concessions to industry. Some Orang Rimba are now forced to live part of the year on palm oil or pulpwood plantations because there isn't enough natural forest left.

The Orang Rimba have long practiced a system of forest resources management that protects their resources and has allowed them to survive on forest produce for generations. But as their forests disappear, the government's solution has been to provide them with pre-fabricated houses to live in, without shade, without water. It hasn't worked⁸⁶. The local government has not considered the existence of Orang Rimba in designating the land use planning, thus the tribe are marginalized⁸⁷.

As further forest clearance permits are issued by the government, the Orang Rimba in Bukit Tigapuluh stand to lose their home as the remaining forest in the landscape beyond the national park will be cleared for pulpwood plantations, either for PT Rimba Hutani Mas or PT Lestari Asri Jaya.

Conflict with communities

At least two incidents broke out in 2010 involving communities opposed to APP/Sinar Mas-associated companies in two villages surrounding the Bukit Tigapuluh landscape.

In May 2010, five residents of the VII Koto village were injured in an incident involving APP pulpwood supplier PT TMA, after the villagers rushed into the company's base camp to protest the clearing of forest for pulpwood plantation.⁸⁸

According to an eyewitness account in Pelayungan village, an incident in July occurred after security guards from PT TMA (Sinar Mas Forestry) insisted that villagers were working on land belonging to PT TMA. The villagers resisted. There were not any serious injuries in the 11 July incident despite two of seven PT TMA employees being beaten by the mob⁸⁹. The location is near where APP's PT Lestari Asri Jaya was granted a new license for converting tropical rainforest into a pulpwood plantation.

Residents surrounding the landscape, who have lived for generations in long-standing villages, report resentment toward the approach taken by the APP-affiliated companies, which often use force from police and security officers. The communities are not reaping any of the economic benefits of the massive conversion of natural forest by the pulpwood plantation companies in the landscape. The operation of PT LAJ will inevitably increase tension as the locals lose the forest and lose income from non-timber products they depend on collecting in the rain forest.

Several villages concerned about upcoming deforestation by PT LAJ include: Pelayungan, Semambu, Muaro Sekalo, Suo-suo (in Sumai sub-district) and Sungai Karang (VII Koto Ilir sub-district). Other villages dependent upon forests now being cleared by PT LAJ or PT TMA are: Teluk Kayu Putih, Sungai Abang, Aur Cino, Lembayo, Dusun Baru (VII Koto sub-district), Teluk Kepayang Pulau Indah, Balairajo, Paseban, Cermin Alam (VII Koto Ilir) and Tebo Ulu, Teluk Kual, Melako Intan, Pulau Temiang, Rantau Loyang, Tanjung Aur, and Rambahan.

There are five villages (Pelayungan, Semambu, Tuo Sumay, Muaro Sekalo, Suo-Suo) inside Blok I of the Lestari Asri Jaya concession, but they report no consultation with any of them during the environmental impact assessment, or AMDAL study. APP/SMG socialization seems to be restricted to distribution of flyers in schools.

According to an NGO alliance in Jambi, 29 villages report conflict with forestry and mining companies. The alliance, called AMPUH, said that six sub-water catchment areas in Jambi had been destroyed by industry sewage as well as 19 rivers polluted by industrial operations, including by PT Lontar Papyrus Pulp & Paper Indonesia, APP's pulp mill in Jambi.⁹⁰



June 2009 -- Husin and his family worry about being removed from their traditional rainforest home, which is now controlled by PT Rimba Hutan Mas, an APP-affiliated company (Photo by EoF, GPS location S01°08'17"; E102°25'19.00").

An Orang Rimba Family's Plight

In June 2010, Eyes on the Forest caught up again with Husin and his family in the Bukit Tigapuluh forest. They said they were concerned that the natural forest they live in could be converted into pulpwood plantation by PT Lestari Asri Jaya, which may be a APP/Sinar Mas-affiliated company. EoF met Husin in June 2009, when he reported being frustrated as his family's forest then had already been converted into pulpwood plantations

(http://eyesontheforest.or.id/index.php?option=com_content&task=view&id=244&Itemid=6).

"We know that our forest will be cleared soon by Sinar Mas company, and I don't know how to handle this problem," said Husin in June 2010, a year after he was first interviewed for the EoF website.

Husin and his family say that the company staff has pressured them to stay away from the forest that his family has been living in for generations. Husin still hopes that government officials can help them to remain in their forest and protect them from being marginalized by the pulpwood concessions. But how, he wondered, could Husin continue to find "jernang" (rattans that yield resins), resin torch and rattan if the forest is converted into pulpwood plantation?

They have since been expelled by PT. Tebo Multi Agro security and have moved to PT. Lestari Asri Jaya. Husin now worries he will lose the forest in PT. Lestari Asri Jaya concession.

Syukur, whose family exists in the former PT. IFA concession, lamented the loss of forest that he believed led to the death of four children among his clan recently. The forest loss has threatened the survival of the Orang Rimba, as the medicinal plants and food they depend on have become extremely rare now. Syukur and his wife and three children try to survive by seeking rice aid from local villagers. (Media Indonesia, 27 June 2010 Suku Anak Rimba Terjepit Pembabatan Hutan di TNBT)

8. New battlegrounds: Can we save Bukit Tigapuluh?

We have repeatedly called on APP to stop pulping HCVFs in PT. Artelindo Wiratama and PT. Tebo Multiagro Corporation concessions and close the APP road. In 2010, the two concessions still have close to 14,000 hectares of natural forest, 8 percent of the remaining unprotected in Bukit Tigapuluh baseline area.

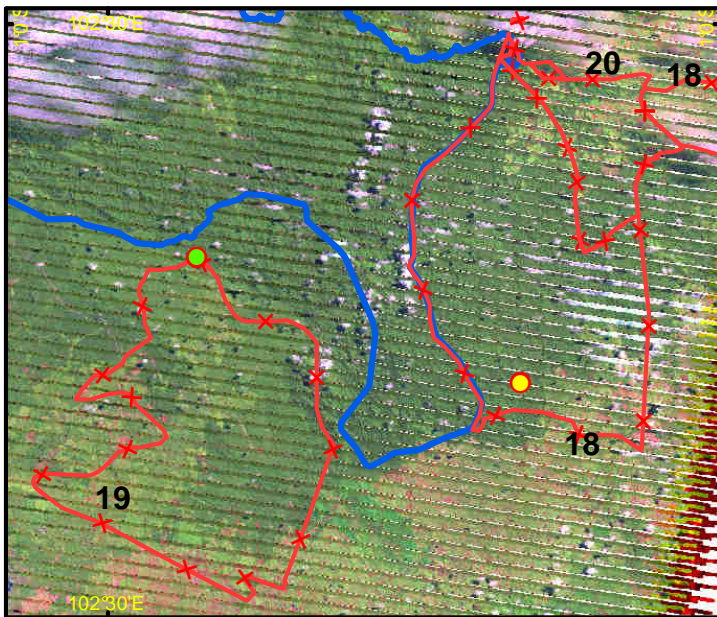
In addition, we have long been trying to stop the licensing of natural forest conversion in seven concession blocks of two companies, one affiliated with APP and the other likely to be affiliated with APP:

- PT. Rimba Hutani Mas of Sinar Mas Group (former Dalek Hutani Esa HPH concession: #19 and former PT. Hatma Hutani HPH concession: #18 and #20)
- PT. Lestari Asri Jaya of Barito Pacific Group (four blocks inside former PT. IFA HPH concession, #10-13)

Together, the concessions controlled by these two companies still have close to 83,000 hectares of natural forest, 48 percent of the remaining unprotected in Bukit Tigapuluh baseline area.

Another APP-affiliated concession, PT. Mapala Rabda (ex PT. SWS HPH concession: #17), already lost most of its natural forest cover to illegal encroachment and had less than 500 hectares of forest left in 2010, before it received natural forest conversion license.

8.1. Can we save HCVFs from PT. Rimba Hutani Mas?



Map 15 – PT. Rimba Hutani Mas has received Ministry of Forestry principal licenses for ex PT. Dalek Hutani Esa HPH concession area (19) and a part of ex PT. Hatma Hutani HPH concession area (20), but still not for the rest (18). Landsat 7 ETM images 126/61 of 22 November 2009 and 18 June 2010 show there is still good natural forest in these areas.

Sinar Mas Group's PT. Rimba Hutani Mas has long been trying to have the status of two expired selective logging (HPH) concessions (the former PT. Dalek Hutani Esa and former PT. Hatma Hutani) switched to HTL.

The two concessions together contain close to 40,000 hectares of natural forest, still dense in many areas (Map 15). They are considered High Conservation Value Forest, critical habitat of Sumatran tigers and orangutans and home to indigenous Orang Rimba and Talang Mamak tribes.

The former PT. Dalek Hutani Esa concession is said to be on the Ministry of Forestry list of candidate concessions to become "Ecosystem Restoration HPHs." The majority of the former PT. Hatma Hutani concession area, except block number 20, is inside "Limited Production Forest" zoning by the currently active Padu Serasi land use plan; therefore, natural forest conversion would not be permitted.

FZS, based on a memorandum of understanding with the Ministry of Forestry and in cooperation with the Ministry of Forestry's Natural Resources Conservation Agency in Jambi and the Bukit Tigapuluh National Park Office, built one field station (the Sumatran Orangutan Reintroduction Centre) in the former PT. Dalek Hutani Esa concession in 2001 and two more (Open Orangutan Sanctuary and Joint FZS & Tanjung Jabung Barat Regency Forestry Office Forest Protection Base Camp) in the former PT. Hatma Hutani concession in 2009 and 2010.

In 2008, PT. Rimba Hutani Mas received a “principal license” (Forestry Minister Decree No. 777/Menhut-IV/2008) for the whole of the former PT. Dalek Hutani Esa (#19) and a part of the ex-PT. Hatma Hutani (#20) and is getting closer to being allowed to clear the forest. The remaining area of the former PT. Hatma Hutani (#18) has only a recommendation letter of the local Tanjung Jabung Barat District head and most of the area is designated Limited Production Forest.

The AMDAL, or environmental impact assessment, required by law prior to a definitive license issuance, was conducted in 2009 for the former PT. Dalek Hutani Esa concession area by a consultancy company appointed by PT. Rimba Hutani Mas. Detailed evaluation of this AMDAL discovered two major flaws:

- (1) It stated that the natural forest cover in the concession was around 25 percent, while a Landsat image of January 2009 showed 50 percent forest cover with high standing tree volume, and
- (2) It failed to mention the existence of the Sumatran Orangutan Reintroduction Center in the concession, a substantial omission.

In May 2009, FZS, KKI-Warsi, PKHS, ZSL and WWF-Indonesia sent a joint letter to the Ministry of Forestry opposing a change in concession status that would allow them to be cleared and converted, and asking it to declare that the natural forest in the Bukit Tigapuluh Ecosystem and beyond is off-limits to plantation conversion^{91, 92}.

On 22 June, APP published a statement to inform concerned stakeholders and wrote that a multi-stakeholder meeting was conducted on 17 June by the Ministry of Forestry, in which the Ministry decided that “a credible independent multi-stakeholder team will be set up to assess the ecological and social condition of the surrounding areas of BTNP. In addition to the two Directorate Generals and Rimba Hutani Mas (one of APP’s pulpwood suppliers), the multi-stakeholder team will consist of a number of concerned stakeholders who attended the meeting including WARSI, WWF and the Frankfurt Zoological Society.”⁹³

On 3 August 2009, the “credible independent multi-stakeholder team” arrived in the field. However, the team consisted only of Ministry of Forestry staff. WARSI, WWF, Frankfurt Zoological Society, Zoological Society of London and Yayasan PKHS had not been invited to be part of the team, although upon arrival in the field, the Ministry of Forestry team invited FZS and WARSI to join the team.

On 27 July 2009, APP published a press release saying that PT. Rimba Hutani Mas (RHM) signed a joint declaration to establish the “Taman Raja Nature Reserve” with the Jambi provincial government, the Department of Forestry, a number of local NGOs and public figures from the local community. “RHM with the support of APP has set aside 9,687 hectares of its government appointed concession area to ensure the conservation of this important area.”

Our GIS analysis shows that this was a meaningless public relations exercise by APP, along the lines of its green claims about the Giam Siak Kecil-Bukit Batu UNESCO Biosphere Reserve and Senepis-Buluhala Tiger Conservation Area in Riau Province, because:

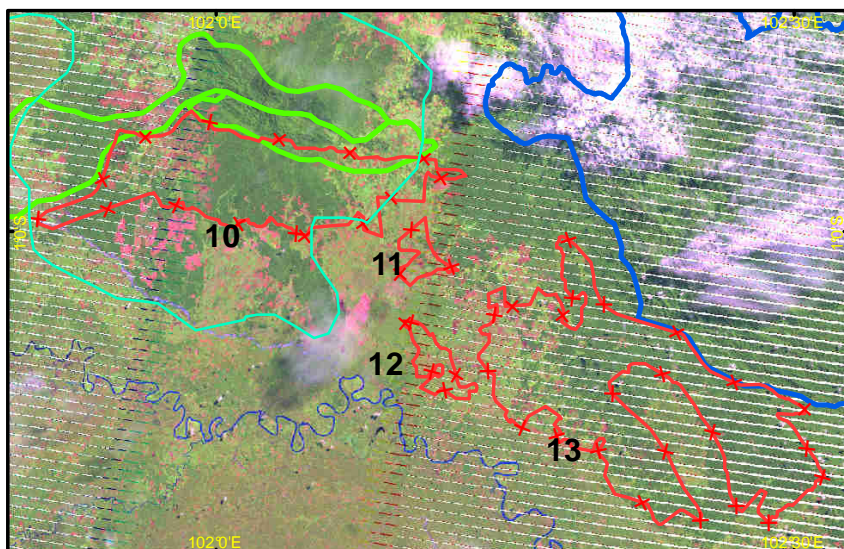
- PT. Rimba Hutani Mas had actually started to operate in this small HTI concession (#3) in 2004 (Maps 7-8, Table 2, 4), despite the fact a lot of the natural forest remaining in the concession in 2004 was inside the “limited production forest” zoning by the Padu Serasi land-use plan and therefore should not have been clear-cut.
- This concession lost around 4,000 hectares of natural forest between 2004 and 2010 (a 38 percent loss) (Table 4). APP is in truth committing to protect only around 6,700 hectares of natural forest in this concession as the Taman Raja Nature Reserve (Map 8 and Table 4), while still trying to clear up to 97,000 hectares of natural forest -- 57 percent of the remaining unprotected natural forests -- in its associated concessions (Chapter 6).
- Most of the natural forest APP committed to protect as the reserve is on a slope of more than 40 degrees and some is inside the “limited production forest.” By Indonesian regulation, APP should protect this forest in any case – its contribution to this reserve is no extra gain for conservation.
- APP says: “The declaration marks a commitment by all of the stakeholders involved to maintain and develop a “wildlife corridor” connecting the TRNP and the 144,223 ha Bukit Tigapuluh National Park. TRNP and the wildlife corridor will provide additional protection for the animals and ensure they have uninhibited access to and from the national park. To ensure the preservation of the Taman Raja area,

RHM and APP's other pulpwood suppliers also develop sustainable forest plantations around the conservation area.” We do not understand APP's argument regarding "wildlife corridor". The reserve area contains small fraction of the contiguous forest of Bukit Tigapuluh landscape on the outer edge, separated from the national park by the ex PT. Rimba Hutani Mas concession where PT. Rimba Hutani Mas/APP would probably try to convert and pulp a lot of the still good natural forest in this concession, as well as other concessions, and replace with “*sustainable forest plantations*” consists of just one species, acacia trees. In the process of natural forest clearance and acacia harvest of every 6 years or so, operational roads, etc. would all contribute to the loss of biodiversity, more conflicts between animals and people, carbon emissions, damage to water catchment area, etc.

- APP says it is a multi-stakeholder collaboration and that the joint declaration on 25 June was signed by many, including "a number of local NGOs", though none of the 5 NGOs - WWF Indonesia, Frankfurt Zoological Society, Warsi, PKHS, and Zoological Society of London - signed it since this is far from good enough.

As of late 2010, we fear that PT. Rimba Hutani Mas is still trying to clear natural forest in the four concession blocks.

8.2. Can we save HCVPs from PT. Lestari Asri Jaya?



Map 16 – PT. Lestari Asri Jaya concession (four blocks #10 – 13) received a MoF definitive license on 29 April 2010. Landsat 7 ETM 126/61 of 18 June 2010 show still dense natural forest to be cleared when the government issues permits.

Since April 2010, NGOs fear that PT. Lestari Asri Jaya of Barito Pacific Group will be allowed to start clearing the dense canopy HCVPs in the south of Bukit Tigapuluh (Map 16), home to one of the two local Sumatran elephant populations, as well as Sumatran tigers and reintroduced orangutans (Map 2). The wood buyer is expected to be APP.

Since the Ministry of Forestry auctioned the former PT. IFA selective logging concession in Jambi in January 2007⁹⁴, APP and APRIL have been competing for the forest in this concession⁹⁵.

In 2009, a consultancy company appointed by PT. Lestari Asri Jaya

finalized an AMDAL study for the four concession blocks, which is necessary prior to a definitive license issuance by the Ministry of Forestry. However, a quick review revealed that some of the signatures of at least five local village representatives have been falsified in the list of attendants to an “AMDAL socialization meeting” in September 2009, as these representatives did not attend the meeting. This violates procedure of community participation in giving inputs for AMDAL consultancy.

In April 2010, PT. Lestari Asri Jaya, a company from outside Jambi, received a definitive license (Decree of Forestry Minister No. 141/Menhut-II/2010 dated 29 April 2010) for the four HTI concession blocks and we are concerned that the company can start natural forest conversion soon. Blocks #10 and 13 have close to 36,000 hectares of natural forest in 2010, 21 percent of the remaining unprotected natural forest in the baseline area (Table 3). To prepare for the development of these concession blocks, APP had already opened a logging road through these concessions, which has started to facilitate illegal encroachments even into the national park (Map 8).

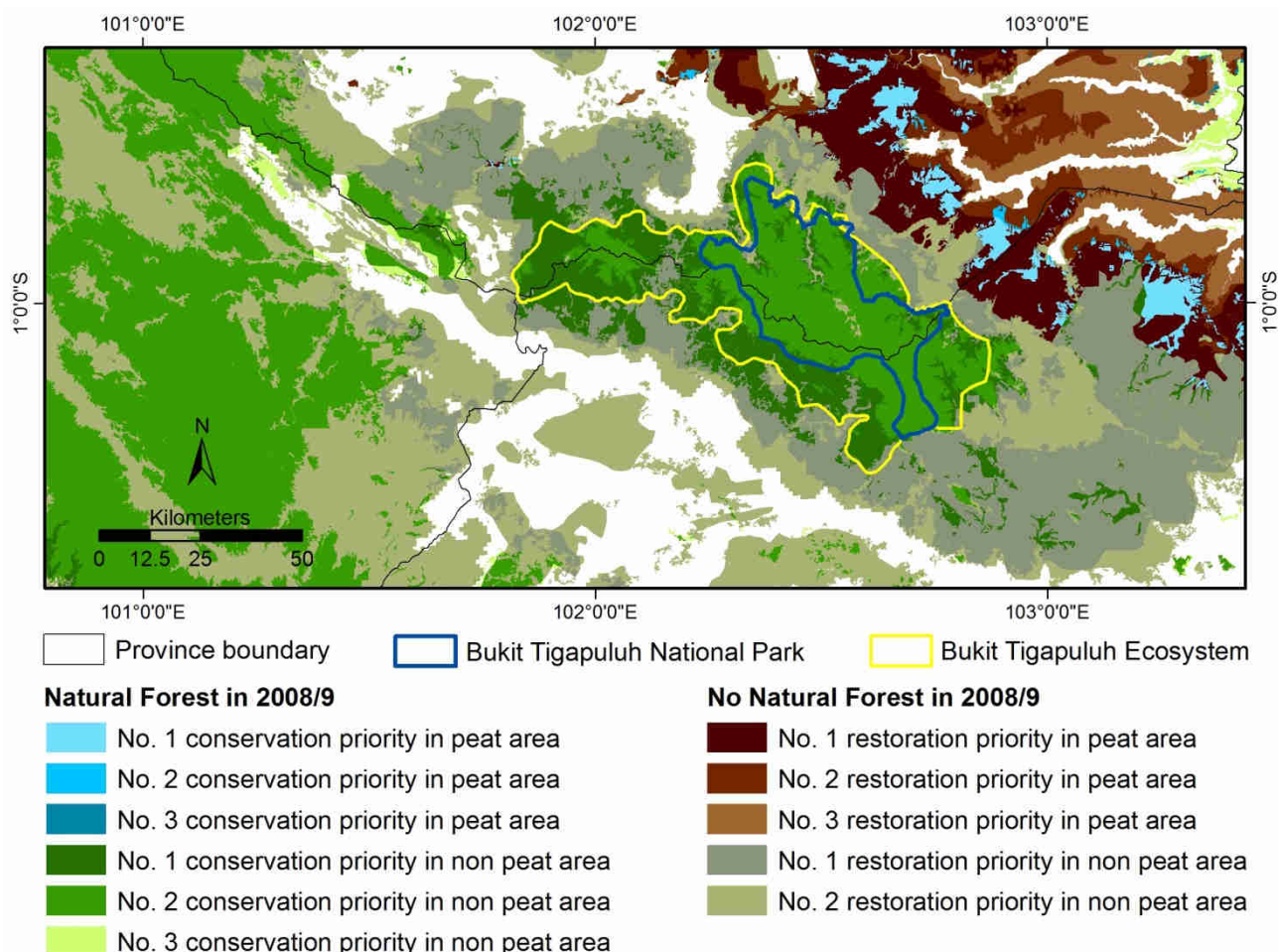
In May and July 2010, villagers from Pelayungan village, who have tenure rights inside the PT. Lestari Asri Jaya concession, came to protest at the PT. Tebo Multiagro Corporation concession's security post (Chapter 7.5).



APP logging road through logger-over but still dense natural forest in PT. Lestari Asri Jaya concession, block #13 © WWF-Indonesia, 1 June 2010 at S1°12'34.78"; E102°29'59.83".

9. Recommendations by the local NGOs

WWF's historical analysis of Sumatra's natural forest, biodiversity and carbon values between 1985 and 2009⁹⁶ identified some of the Bukit Tigapuluh natural forest remaining in 2008-09 as the number one conservation priority areas on Sumatran non-peat soil (darkest green areas in Map 17). Most of this forest lies outside the national park (blue boundary). The analysis also identified some of the already-deforested areas as the number one restoration priority areas on Sumatran non-peat soil (grey areas in Map 17). By 2010, some of the top conservation priority forests were lost and had become top restoration priority area.



Map 17 – WWF prioritization of biodiversity and carbon conservation & restoration in Sumatra. This map shows the snapshot of 2008-09, distribution of natural forest in relation to four values (forest carbon, peat carbon, eco-floristic diversity and mega-fauna diversity) and also deforested areas in relation to three values (peat carbon, eco-floristic diversity and mega-fauna diversity) – to prioritize conservation and restoration areas. The ranking is given in the order of number of values present in the area.

Considering the globally important High Conservation Values of Bukit Tigapuluh, the increasingly threatened survival of the local Sumatran tigers, orangutans, elephants and indigenous people, the Government of Indonesia's strong commitment to protect biodiversity and reduce forest emissions, today's strong global demand for environmentally and socially sustainable products, we strongly recommend the following:

We propose the Ministry of Forestry:

- Expand the national park to protect as much remaining natural forest in the landscape as possible. If not, amend the licenses of concessions of the former PT. Dalek Hutani Esa, PT. Lestari Asri Jaya, PT. Tebo Multiagro Corporation, former PT. Hatma Hutani, PT. Artelindo Wiratama and any other HTI or HPH

concessions in this ecosystem into “Ecosystem Restoration Concessions”¹ and allow regeneration of the remaining natural forest; and

- Stop issuing licenses for natural forest conversion, development of industrial timber plantations that open natural forest, and road expansion in order to protect the Bukit Tigapuluh Ecosystem.

We propose the Government of Indonesia:

- Expand the moratorium on natural forest and peat conversion in its agreement with Norway to apply to all existing concessions.
- Declare Riau and Jambi as pilot REDD+ provinces so protection of natural forest can be financed through REDD+ credits.
- Accept our support to help monitor the REDD+ implementation.
- Enforce the laws to protect Bukit Tigapuluh’s natural forest from illegal encroachers.

We call on APP/SMG and also APRIL/RGM to:

- Stop undermining the reputation of our President by halting their legally and ethically questionable “business as usual” practices in their forestry operations.
- Immediately stop using any timber associated with the conversion of tropical rainforest and draining of peatlands.
- Exclusively develop new plantations on so-called “wastelands,” long-deforested and not commercially used areas, after solving all tenure issues and obtaining clean land titles.
- Stop expanding mills or building new ones until a mature plantation wood supply is ensured for which no tropical forests have been converted and for which no peat soil is drained.
- Protect the land rights of local communities and indigenous people, do not destroy their crops and natural forests, rivers and their natural resources including non timber forest products which support their livelihoods, and apply the “Free Prior Informed Consent Principle” in negotiations to make sure their cultural heritage and values are well protected and their standard of living and health is well maintained or enhanced.

We call on the global buyers and business partners of APP/SMG and APRIL/RGM to:

- Closely scrutinize APP/SMG’s advertisements and not believe their claims of sustainability, including certification of their plantations or mills.
- Ensure that products purchased use fiber from recycled fiber or a sustainable wood supply managed to the standards of Forest Stewardship Council.

We call on Indonesian palm oil producers in the area to:

- Stop sourcing oil palm fruits produced by destroying natural forest, to honor a resolution on the moratorium on land clearance in the Bukit Tigapuluh Ecosystem⁹⁷ adopted in November 2009, at the 6th General Assembly of the Roundtable on Sustainable Palm Oil.
- Work with small-holders to develop high-yield oil palm plantations in already-deforested, low value areas with low risk of causing human-wildlife conflict.

¹ The Ministry’s Ecosystem Restoration Concession concept was created so the country’s concession holders could generate profits in the fast-developing global emissions trading markets by avoiding the clearing of natural forests and rehabilitating degraded areas and thus restoring Indonesia’s greatest resource: its natural forests.

10. References

¹ A “High Conservation Value Area” (HCVA) is an area that possesses one or more of six high conservation values (HCV) defined by Indonesian stakeholders as environmental, social or cultural attributes of exceptional importance at the local, regional or global level. High Conservation Value Forest (HCVF) is a forested HCVA. The “Toolkit for Identification of High Conservation Values in Indonesia” defines three biodiversity HCVs, one ecosystem services HCV and two social and cultural HCVs and methods for identifying them. The process requires full input of local stakeholders and assessments can easily be conducted by professional, independent auditors in a transparent manner. The HCVA protection principle was established by the Forest Stewardship Council (FSC) and has been adopted by the Roundtable for Sustainable Palm Oil (RSPO) – both of which define how the two key drivers of natural forest loss in Indonesia, the pulp & paper and the palm oil industry could operate responsibly.

² Departemen Kehutanan (2007) Strategi dan Rencana Aksi Konservasi Harimau Sumatera (*Panthera tigris sumatrae*) 2007-2017. Departemen Kehutanan (2007) Strategi dan Rencana Aksi Konservasi Orangutan Indonesia 2007-2017. Departemen Kehutanan (2007) Strategi dan Rencana Aksi Konservasi Gajah Sumatera dan Gajah Kalimantan 2007-2017.

³ WWF (September 2008), “Saving Sumatra: Indonesia Reaches Historic Agreement to Protect World’s Most Endangered Tropical Forests.” <http://www.savesumatra.org/index.php/newspublications/pressdetail/2> Joint Agreement of All Sumatra Governors to Save the Sumatra Island Ecosystem, signed by Governors of Nangroe Aceh Darusalam, Bangka Belitung Islands, North Sumatra, Jambi, West Sumatra, South Sumatra, Riau, Bengkulu, Riau Islands and Lampung, acknowledged by Minister of Interior, Minister of Environment, Minister of Public Works and Minister of Forestry. (in Bahasa Indonesia and English translation) <http://www.savesumatra.org/app/webroot/upload/pdf/Kesepakatan%20Gubernur%20Sumatera%2009%20n%20tr%20translation.pdf>

⁴ The Jakarta Globe (24 November 2010) Indonesia Joins World Forum Vowing to Save Tigers. <http://www.thejakartaglobe.com/nvironment/indonesia-joins-world-forum-vowing-to-save-tigers/408341>

⁵ Governor of Riau (13 December 2007) Press Release: Province of Riau Supports REDD to Save our Climate.

⁶ President of the Republic of Indonesia (17 December 2009) Speech at the UNFCCC Copenhagen. <http://www.presidentri.go.id/index.php/eng/pidato/2009/12/17/1274.html>

⁷ Component 2 on “Sustainable Forest Management” of the Government of Jambi’s suggestion for reducing its carbon emissions to the President of Indonesia on 1 February 2010.

⁸ Office of the Prime Minister, Norway (26 May 2010) Norway and Indonesia in partnership to reduce emissions from

deforestation. (<http://www.regjeringen.no/en/dep/smk/press-center/Press-releases/2010/Norway-and-Indonesia-in-partnership-to-reduce-emissions-from-deforestation.html?id=605709>), Letter of Intent between the Government of the Kingdom of Norway and the Government of the Republic of Indonesia on “Cooperation on reducing greenhouse gas

emissions from deforestation and forest degradation.” http://www.regjeringen.no/upload/SMK/Vedlegg/2010/Indonesia_avtale.pdf

⁹ 9,508 signatures as of 24 August 2010 at <http://www.gopetition.com/petitions/orangutan.html>

¹⁰

<http://www.orangutan.org.au/assets/repository/unfccc/07.03.09%20-%20AOP%20to%20Asia%20Pulp%20and%20Paper%20letter.pdf>

¹¹ <http://www.orangutan.org.au/assets/repository/unfccc/08.04.09%20Perth%20Zoo%20to%20APP%20letter.pdf>

¹²

<http://www.orangutan.org.au/assets/repository/unfccc/Joint%20Press%20Release%20-%20Bukit%20Tigapuluh%20May%2007.pdf>

¹³ <http://www.orangutan.org.au/assets/repository/unfccc/APP%20Response%20letter%20June%202010.pdf>

¹⁴ <http://www.orangutan.org.au/assets/repository/unfccc/GRASP%20AU%20letter%20to%20APP.pdf>

¹⁵

<http://www.orangutan.org.au/assets/repository/unfccc/IUCN%20SSC%20%2803Jul09%29%20letter%20on%20BTP%20to%20APP.pdf>

¹⁶

<http://www.orangutan.org.au/assets/repository/unfccc/IUCN%20SSC%20%2803Jul09%29%20letter%20on%20BTP%20to%20MoF.pdf>

¹⁷

<http://www.orangutan.org.au/assets/repository/unfccc/IUCN%20PSG%20%2816Jun09%29%20letter%20on%20BTP%20to%20MoF%20&%20APP.pdf>

<http://www.orangutan.org.au/assets/repository/unfccc/WAZA%20%2824Jul09%29%20Letter%20to%20MoF%20&%20APP.pdf>

¹⁹ Sitompul, A. & P. Pratje (2009) Resource Base Inventory, Implementation of Conservation in the Bukit Tigapuluh Ecosystem

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²¹ Balai Taman Nasional Bukit Tigapuluh, Kabupaten Tebo, Kabupaten Tanjajar, Kabupaten INHIL, Kabupaten INHU, Frankfurt Zoological Society, WWF, Warsi, ZSL, PKHS (2009) The Bukit Tigapuluh Ecosystem Conservation Implementation Plan.

²² Indonesian Ministry of Forestry (2007) Strategi dan Rencana Aksi Konservasi Gajah Sumatera dan Gajah Kalimantan 2007-2017. Moßbrucker, A. M. (2009) Zum Status des Sumatra Elefanten (*Elephas maximus sumatranus*) im Landschaftsraum Bukit Tigapuluh, Sumatra, Indonesien: Verbreitung, Abundanz, Altersstruktur und Gefährdung. Diplomarbeit. Fakultät für Biologie, Institut für Biologie I (Zoologie). Albert Ludwigs-Universität Freiburg im Breisgau, Germany.

²³ Frankfurt Zoological Society, as of 1 September 2010.

²⁴ <http://www.zgf.de/?id=65&projectId=62&language=en> Frankfurt Zoological Society Indonesia Programme, Annual Report 2009 http://www.zgf.de/download/825/annual+report+2008_09.pdf

²⁵ Orangutan Population and Habitat Viability Assessment. 2004. Final Report. Jakarta Indonesia. Cited in Balai Taman Nasional Bukit Tigapuluh *et al.* (2009)

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