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Asia Pulp & Paper/Sinar Mas Group Threatens Senepis Forest, Sumatran Tiger Habitat, and Global Climate


**Investigative Report
Eyes on the Forest**

October 2008

Eyes on the Forest (EoF) is a coalition of environmental NGOs in Riau, Sumatra: Friends of the Earth Riau Office, Jikalahari "Riau Forest Rescue Network" and WWF-Indonesia, Riau Program. EoF monitors the status of the remaining natural forests in Sumatra's Province of Riau and disseminates the information worldwide.

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Executive Summary

A new investigation by Eyes on the Forest has found that companies associated with Asia Pulp & Paper (APP)/Sinar Mas Group (SMG) are completing construction of a legally questionable logging highway through a peatland forest block in Riau Province that is important for the conservation of the critically endangered Sumatran tiger (*Panthera tigris sumatrae*). The highway project is part of a continuing pattern of forest destruction by APP/SMG and their associated companies in central Sumatra.

Field investigations by Eyes on the Forest (EoF) have found that APP/SMG-associated companies have completed a 45-kilometer highway and paved nearly half of it already. Construction of the road has resulted in a 50-meter-wide swath of opened forest along the 45 kilometers. The road splits the Senepis peat forest in two, releasing significant amounts of climate-altering carbon emissions from the clearing and drainage canals on both sides. In addition, the clearing that has already taken place in Senepis by the APP/SMG-associated companies has considerably shrunk the size of the forest, which has led to an increase in human-tiger conflict in the area and the deaths of nine people. Riau Province is a stronghold for the Sumatran tiger, of which fewer than 400 survive in the wild.

Legally questionable forest clearing by APP/SMG and their associated companies has been well-documented in Riau Province. This latest investigation suggests a continuing pattern of natural forest destruction and a high likelihood of violations of Indonesian laws by the group. As reported by various NGOs this year, APP/SMG and their associated companies are threatening an additional two important natural forest areas in Sumatra by opening new logging roads and clearing natural forest along them:

1. In a January 2008 ⁱ report, WARSI, Program Konservasi Harimau Sumatera/PKHS, Frankfurt Zoological Society, Zoological Society of London and WWF Indonesia called on APP/SMG and their associated companies to stop threatening Bukit Tigapuluh dry lowland forest block and Sumatran tigers, elephants, orangutans and the indigenous people, the Orang Rimba, who live in this threatened forest.
2. In March 2008 ⁱⁱ, Eyes on the Forest called on APP/SMG and their associated companies to stop threatening the Kampar peatland forest block and the Sumatran tigers it shelters, along with carbon stores whose release affects the world's climate.



Image 1. New logging road construction by APP/SMG-associated companies in peat swamp forest of Senepis (N. 1 57 12 E, 101 13 15). It involves the clearing of a 50-meter swath of little-disturbed natural forest -- 25 meters width for the road and 12.5 meters width on both sides for drainage canals.

APP/SMG Invades Proposed Sumatran Tiger National Park in Senepis

The Senepis forest block in the northeastern tip of Riau is important habitat for Sumatran tigers. Fortunately for the tigers, most of this forest block is inside a “selective logging concession” of PT. Diamond Raya Timber, certified by both Forest Stewardship Council (FSC) and the Indonesian Ecolabeling Institute (LEI) (*Map 1, thick brown boundary*). The remaining tiger forest to the south is licensed to four timber plantation concessions, in which natural forest will be clearcut and not selectively logged. At least three of those concessions are confirmed to be associated with APP/SMG: one concession of PT. Suntura Gajapati and two concessions of PT. Ruas Utama Jaya (*Map 1, red boundary*). These three concessions together contained 68,067 hectares of natural forests in 2005 (*light green shaded area*), 42,356 hectares of which were inside the PT. Suntura Gajapati concession.

Recognizing the importance of the Senepis forest for critically endangered Sumatran tigers, various types of protection for this forest have been proposed and endorsed by different levels of governments:

- A Sumatran Tiger Conservation Area of 60,000 hectares, which includes the whole PT. Suntura Gajapati’s concession, had been proposed many times by the Forestry and Plantation Agency, the Mayor of Dumai, the Riau BKSDA¹ and the Parliament of Dumaiⁱⁱⁱ up to 2004.
- On 23 August 2004, the Riau Forestry Agency suggested that the Ministry of Forestry change the land-use function of 57,472 hectares of still largely forested area from “permanent production forest” status to a national park^{iv} (*Map 1, thick green boundary*). This area included all of PT. Suntura Gajapati’s concession (46,908 hectares, *red boundary*) and a small area of PT. Diamond Raya Timber’s selective logging concession (*thick brown boundary*). This proposal was supported by Riau’s Governor on 18 October 2004^v.
- On 23 September 2004, the Ministry of Forestry agreed to conduct “an integrated field study comprehensively” to switch the production forest status of 60,000-ha Senepis-Buluhala production forest to Sumatran Tiger Conservation Area^{vi}.

¹ Conservation Authority in the Riau Province

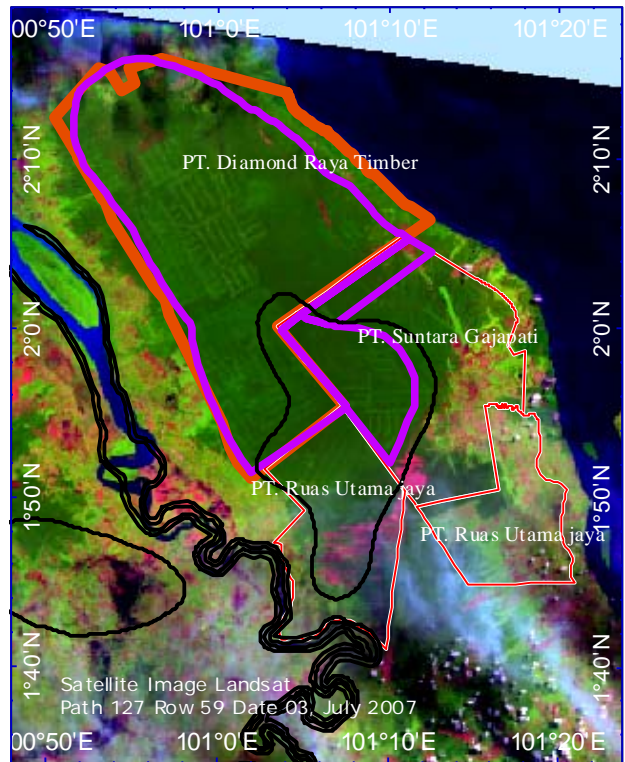
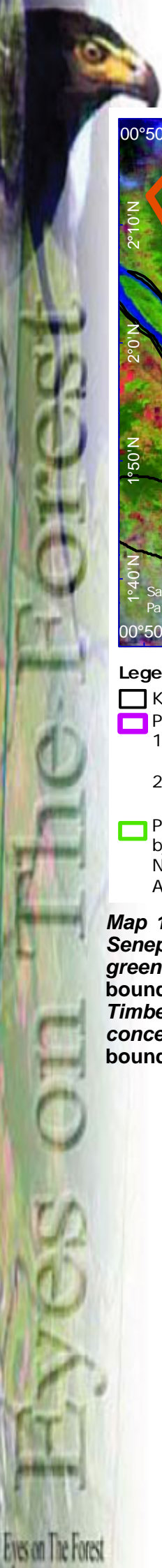


However, on 3 January 2006, the Minister of Forestry suddenly issued two letters giving a principal approval to establish the Senepis-Buluhala Tiger Conservation Area, a lower form of protection than a national park, with a size of 106,086 hectares (*thick purple boundary*)^{vii}. On 22 June 2006, PT. Suntura Gajapati (APP/SMG) submitted yet another proposal for a Conservation Area of 106,081 hectares with some boundary modifications to the original proposal by the Ministry of Forestry (*not shown on Map 1*).




On first impression, the fact that the new Tiger Conservation Area (106,086 ha) is around 40,000 ha larger than the originally proposed National Park (60,000 ha) might sound like good news. However, a deeper examination shows that Sumatran tiger is likely to be worse off:




- Of this new Tiger Conservation Area, 86% (90,956 hectares) lies within the PT. Diamond Raya Timber's selective logging concession, whose natural forests were already off limits for massive clearing. Therefore, there is no gain for tigers as a LEI- and FSC-managed selective logging concession is already something like a Tiger Conservation Area.
- Another 11% (11,275 hectares) lies within a Protection Area (Kawasan Lindung) that the currently active Riau Land Use Plan (RTRWP 1994) had set aside for protection (*Map 2, black outline*). According to existing regulation, natural forests inside Kawasan Lindung should not be converted; therefore, no new gain for tigers.
- Only 4% (3,850 hectares) lies within the PT. Suntura Gajapati's concession, but outside Kawasan Lindung, where the new Tiger Conservation Area overlaps with the concession. This is a radical departure from the originally proposed national park, which was supposed to protect all forest in the PT. Suntura Gajapati concession (46,908 hectares).

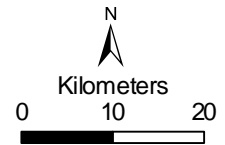
This means that up to 34,906 and 17,128 hectares of natural forest remaining inside PT. Suntura Gajapati and PT. Ruas Utama Jaya concessions respectively in 2007 are now in danger of being cleared to supply APP's pulp mill, which would significantly jeopardize tigers in the area.



Legend

-  Kawasan Lindung perda 10 1994
-  Proposed protected area Senepis by:
 1. MOF No S.04/Menhut-VII/2006 Januari 3th, 2006
 2. MOF No S.05/Menhut-VII/2006 Januari 3th, 2006
-  Proposed protected area Senepis by Riau Forestry Agency No 522.1/PR/7518 August 23, 2004 (57,472 Ha)

- logging concession
-  PT. Diamond Raya Timber
- Pulpwoods plantations
-  PT. Ruas Utama jaya
-  PT. Suntura Gajapati



Map 1. Two formal proposals for a Sumatra Tiger protected area in Senepis forest block: Senepis-Buluhala Sumatra Tiger National Park proposed by Riau Forestry Service (thick green boundary) and Conservation Area proposed by the Ministry of Forestry (purple boundary), shown with FSC certified selective logging concession of PT. Diamond Raya Timber (thick brown boundary on the north), APP/SMG-associated pulpwood plantation concessions, one of PT. Suntura Gajapati and two of PT. Ruas Utama Jaya (RUJ) (red boundary).



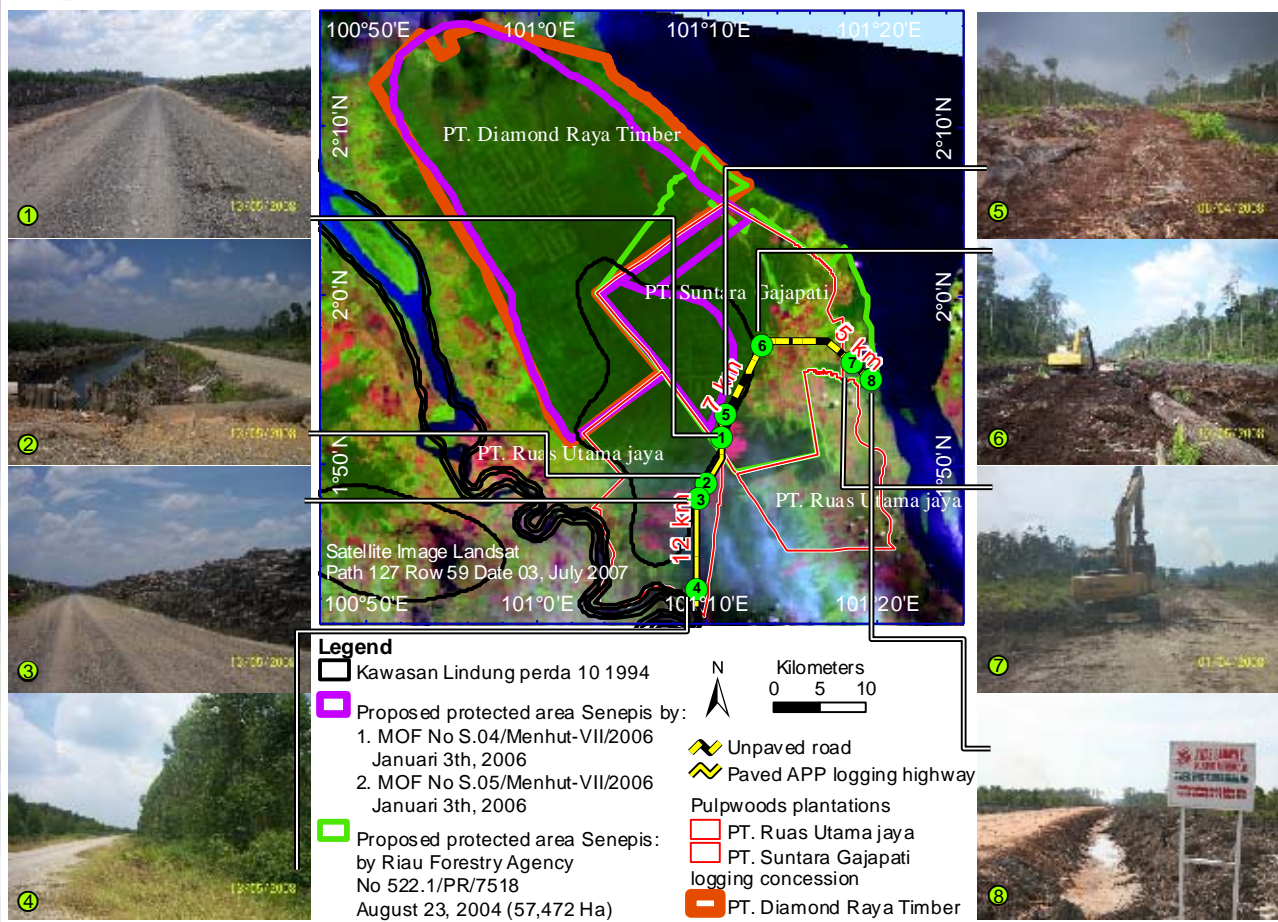
APP/SMG in Senepis - Investigation Findings

After securing the tiger forest for its business, APP/SMG-associated companies started to destroy Senepis. *Riau Pos Daily newspaper* on 25 January 2007 reported that PT Ruas Utama Jaya planned to develop a logging road of more than 45 kilometers in length from Ujung Tanjung village (Rokan Hilir District) to Buluhala village (Dumai Municipality).

When EoF investigated the road last year, 15 kilometers of this road had been constructed by July 2007, sometimes by clearing as much as a 100-meter swath of natural forest^{viii}. A series of EoF investigations conducted in April, May and June 2008 found that the logging road is already constructed for the full length of 45 kilometers, of which around 21 kilometers had already been paved and 24 kilometers remain unpaved or not feasible to operate (Map 2). Recent logging road construction has been conducted by clearing natural forest in a path as much as 50 meters wide, as the road is 25 meters wide and drainage canals are 12.5 meters wide on both sides.

There is a de facto moratorium on natural forest clearing in Riau Province at the moment, as police conduct an investigation into widespread illegal logging by the pulp & paper industry. But with this new road infrastructure in place, EoF expects APP/SMG-associated companies to begin logging in two of their concessions as soon as the de facto moratorium is lifted.

Yet EoF investigations confirm that this logging road construction and the natural forest clearance operations in this area by APP/SMG-associated companies are highly questionable legally. They also do not provide any benefit for the local communities. In addition, these operations would contribute not only to the local extinction of Sumatran tigers, but also significantly to global climate change. The peat the Senepis forest sits on holds deep stores of carbon that emit major greenhouse gases when disturbed. The destruction of peat forests in Riau is such a significant source of carbon emissions that they have helped make Indonesia -- a relatively small, developing country -- the world's third-largest emitter of greenhouse gases, behind only the United States and China.



Map 2 and Photos 1-8. New logging road crossing concessions of PT. Ruas Utama Jaya and PT. Suntura Gajapati (both APP/SMG associated); 21 kilometers have already been paved (yellow line) and 24 kilometers remain unpaved or not feasible to operate (zebra line).

Photos caption for Map 2

1. Paved logging road in PT. Suntura Gajapati, an APP/SMG-associated company, where acacia has been planted in peat swamp forest of Senepis block.
2. Drainage peat canal by APP/SMG-associated company potentially incites CO2 emission increase, which can affect climate change.
3. Paved logging road and 3.5-km confiscated logs piled on the edges of it. PT. Ruas Utama Jaya's logs seized by local police as the company is under probe of environmental and forest crime.
4. Logging road constructed by PT. Ruas Utama Jaya and close to Sungai Rokan river in Senepis block.
5. Drainage peat seen in PT. Suntura Gajapati pulpwood concession as logging road is constructed, which shows how the APP/SMG-associated company severely increases peat decomposition in Senepis.
6. An excavator is working to construct logging road on Senepis peatlands that should be protected. It is located in PT. Suntura Gajapati pulpwood plantation concession.
7. An excavator working to construct a logging road in Senepis peat block, where many trees were felled for the construction.
8. A billboard of PT. Ruas Utama Jaya to caution people about forest and land fires, while forest surrounding it has been cleared for the logging road construction. This is located at the end of a logging road close to a strait.

1. Potential Illegalities

The construction of a new logging road and associated clearance of natural forest in Senepis has been occurring mainly inside two pulpwood plantation concessions of APP/SMG-associated companies, namely concessions of PT. Ruas Utama Jaya (44,610 ha)² and PT. Suntara Gajapati (46,908 ha)³.

These two pulpwood plantation companies are included in 14 companies probed by Riau Police for illegal logging accusations. This information was confirmed by a specific joint team to tackle Riau illegal logging set up by Indonesian President Susilo Bambang Yudhoyono^{ix}. The Riau Police investigation, underway since 2007, strongly indicates that the natural forest clearance operation by both PT. Ruas Utama Jaya and PT. Suntara Gajapati could be illegal. Key executives of these APP/SMG-associated companies were named suspects by the police over environmental destruction and forest crime allegations^x.



Photo 2. Mixed tropical hardwood, seized in 2007 by Rokan Hilir resort police, where the logs were sourced from clearing operation in natural forest by PT. Ruas Utama Jaya (N. 1 46 50 E. 101 9 24). Its executives were named suspects by the police. The police's banner reads "These logs/fiber chips on temporary case location of Kilometer 9.5 – 13 under confiscation by Rokan Hilir resort police in order to probe forestry crime."

It is difficult to understand how the two companies could continue road construction and forest clearance operations under such circumstances. In particular, some of the natural forest clearance for road construction happened since the de facto moratorium of natural forest clearance in the province started in February 2007. However, as the Table 1 and Map 3 shows, some of such forests were lost between 01 August 2006 and 03 July 2007.

In addition, Eyes on the Forest also has not identified any permit or AMDAL for such road construction despite searching for them. Some natural forest remaining in the two concessions should not have been converted, according to Indonesian regulations.

Map 3 shows that the total 45-kilometer road includes:

- 10 kilometers located inside Protection Area, based on Riau RTRWP 1994.
- An additional 9 kilometers situated on deep peat of over 4 meters depth, which is off-limits for conversion under Indonesian law.

² Minister of Forestry and Plantation Letter Number 1179/Menhutbun-VI/99 dated 19 August 1999

³ Minister of Forestry Decree Number 71/Kpts-II/2001 dated 15 March 2001

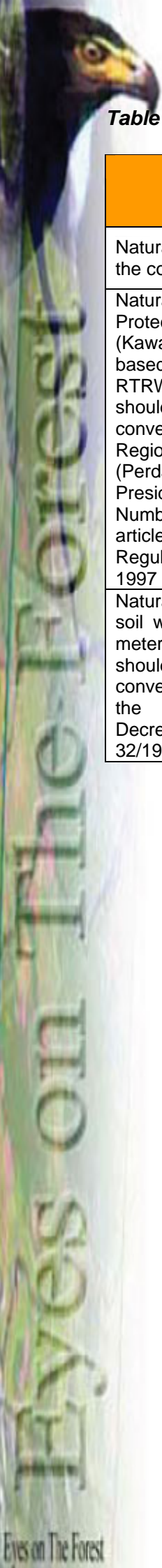
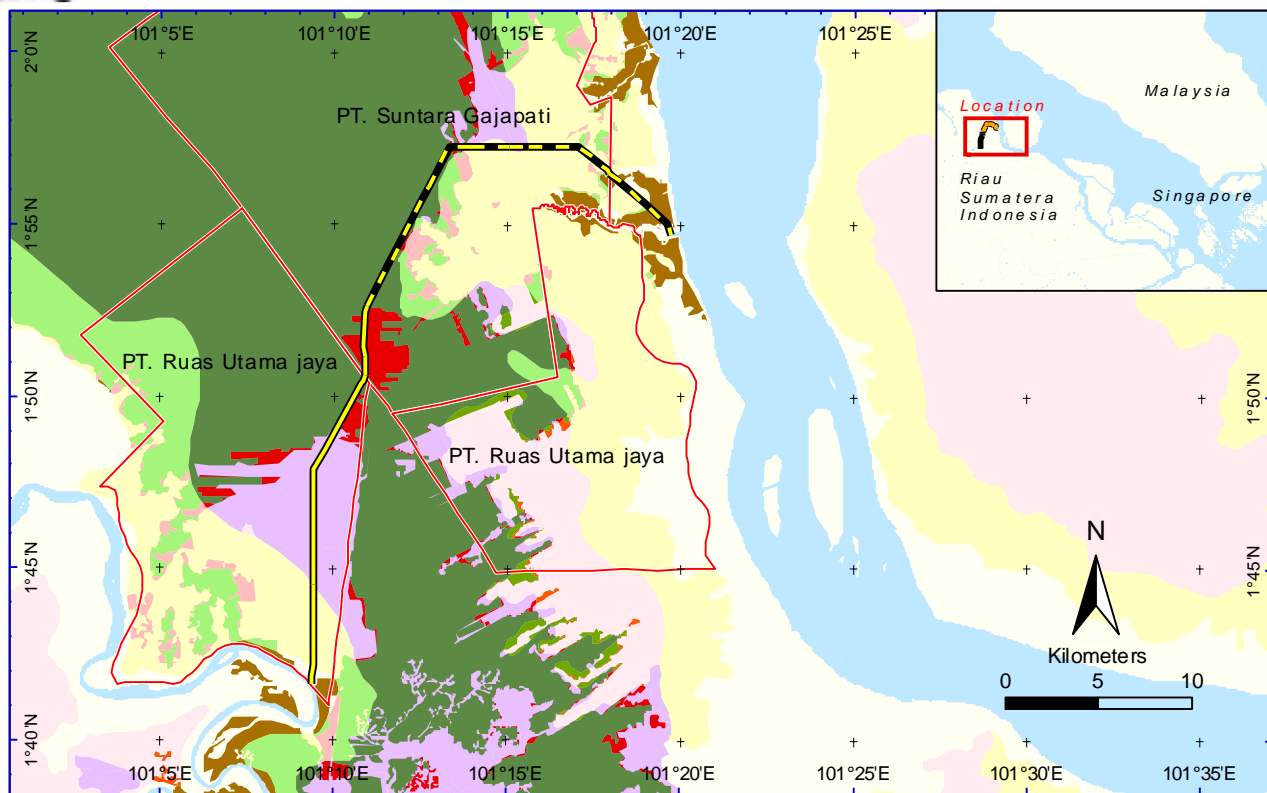
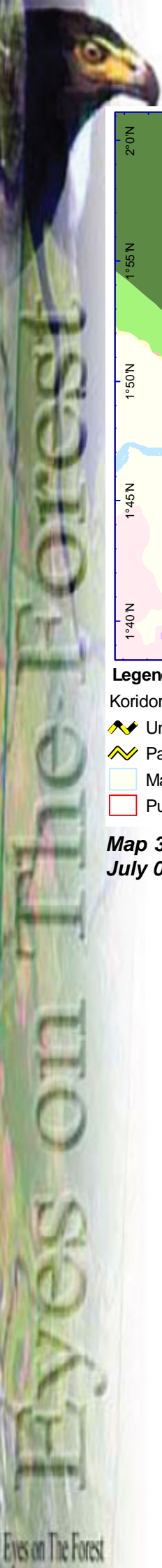


Table 1. Loss of natural forest in two APP/SMG-associated concessions in Senepis.

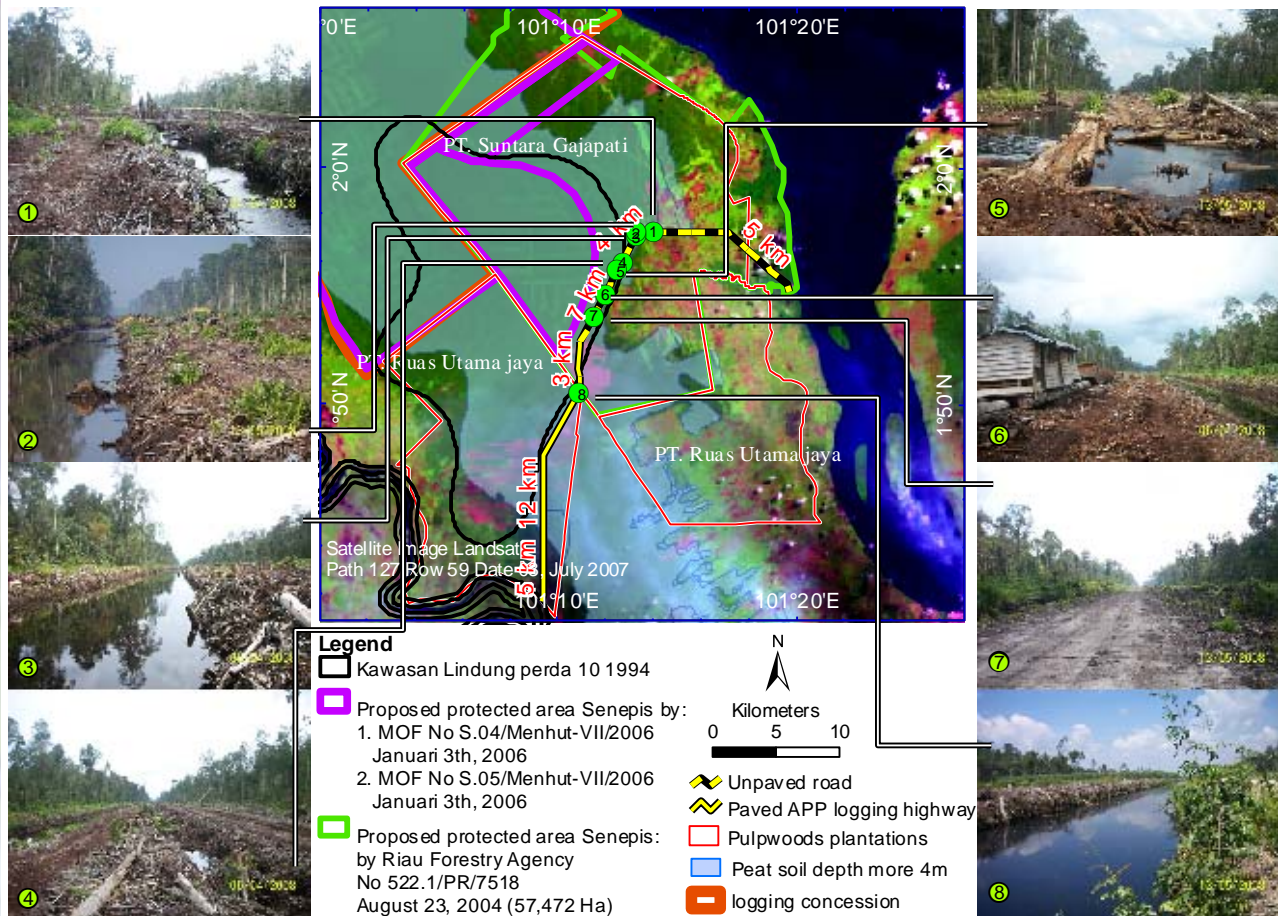
	PT. RUJ			PT. SGP		
	01 August 2006	03 July 2007	Forest loss	01 August 2006	03 July 2007	Forest loss
Natural forest inside the concession	18,721	17,128	1,593	37,698	34,906	2,792
Natural forest inside Protection Area (Kawasan Lindung) based on Riau RTRWP 1994, which should not be converted according to Regional Regulation (Perda) 10 1994, and Presidential Decree Number 32 1990 article 10, also Govt Regulation (PP) 47 1997 article 33 point 2.	12,760	12,172	588	16,232	15,835	397
Natural forest on peat soil with more than 4 meter depth ^{xi} , which should not be converted according to the Presidential Decree Number 32/1990.	12,512	11,856	656	28,182	26,697	1,485



Legend

Koridor APP Senepis	Forest cover 2007 on:	Forest Loss 2006-2007 on:	Non Forest on:
Unpaved road	Non Peat soil	Peat soil depth --> 4m	Peat soil depth --> 4m
Paved APP logging highway	Peat soil depth --> 4m	Peat soil depth 2m-4m	Peat soil depth 2m-4m
Mainland	Peat soil depth 2m-4m	Peat soil depth <-- 2m	Peat soil depth <-- 2m
Pulpwoods plantations	Peat soil depth <-- 2m		

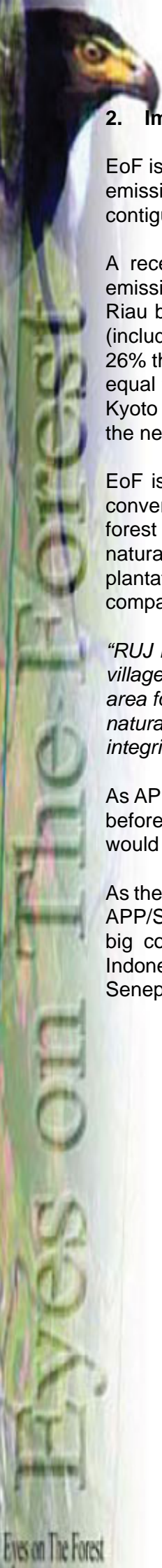
Map 3. Logging road through Senepis and natural forest lost between August 01, 2006 and July 03, 2007.



Map 4. Three APP/SMG-affiliated concessions (red boundaries) and new logging road (yellow section is already paved, zebra section is not yet paved) in Senepis, in relation to area of peat depth more than 4 meters (half transparent area) and Protection Area (RTRWP 1994, black boundary).

Photos on Map 4

1. Forest cleared and peat drained in PT, Suntura Gajapati pulpwood plantation concession for logging road construction, which can be expected to drive peat decomposition as well as exacerbate climate change.
2. Forest cleared and peat drained in PT, Suntura Gajapati pulpwood concession for logging road construction despite forestry regulations to protect peatlands.
3. Forest cleared and peat drained in PT, Suntura Gajapati pulpwood plantation concession for logging road construction, which can be expected to drive peat decomposition as well as exacerbate climate change.
4. Forest cleared in PT. Suntura Gajapati pulpwood plantation concession for logging road construction, showing how the pulp company contributes to climate change. Moreover, operations conducted by the company obviously threaten proposed Senepis Sumatran Tiger Conservation Area as planned by the Ministry of Forestry as well as Riau Province Government.
5. Peat decomposed in PT. Suntura Gajapati pulpwood plantation concession for logging road construction likely shows poor water table management in the area.
6. Camp of logging road construction workers in PT. Suntura Gajapati pulpwood plantation concession where the project is underway.
7. Logging road is unpaved in this location (PT. Suntura Gajapati's concession) where the construction clearly splits the natural forest. Moreover, operations conducted by the company likely threaten the proposed Senepis Sumatran Tiger Conservation Area as planned by the Ministry of Forestry as well as Riau Province Government.
8. Peat decomposed in PT Suntura Gajapati pulpwood plantation concession shows poor water table management by the company.



2. Impact on the whole Senepis peat ecosystem and global climate

EoF is concerned that the new logging road splits Senepis peat forest into two, thus facilitating CO₂ emissions not only from their road and drainage canals on both sides, but also by impacting this contiguous peat ecosystem.

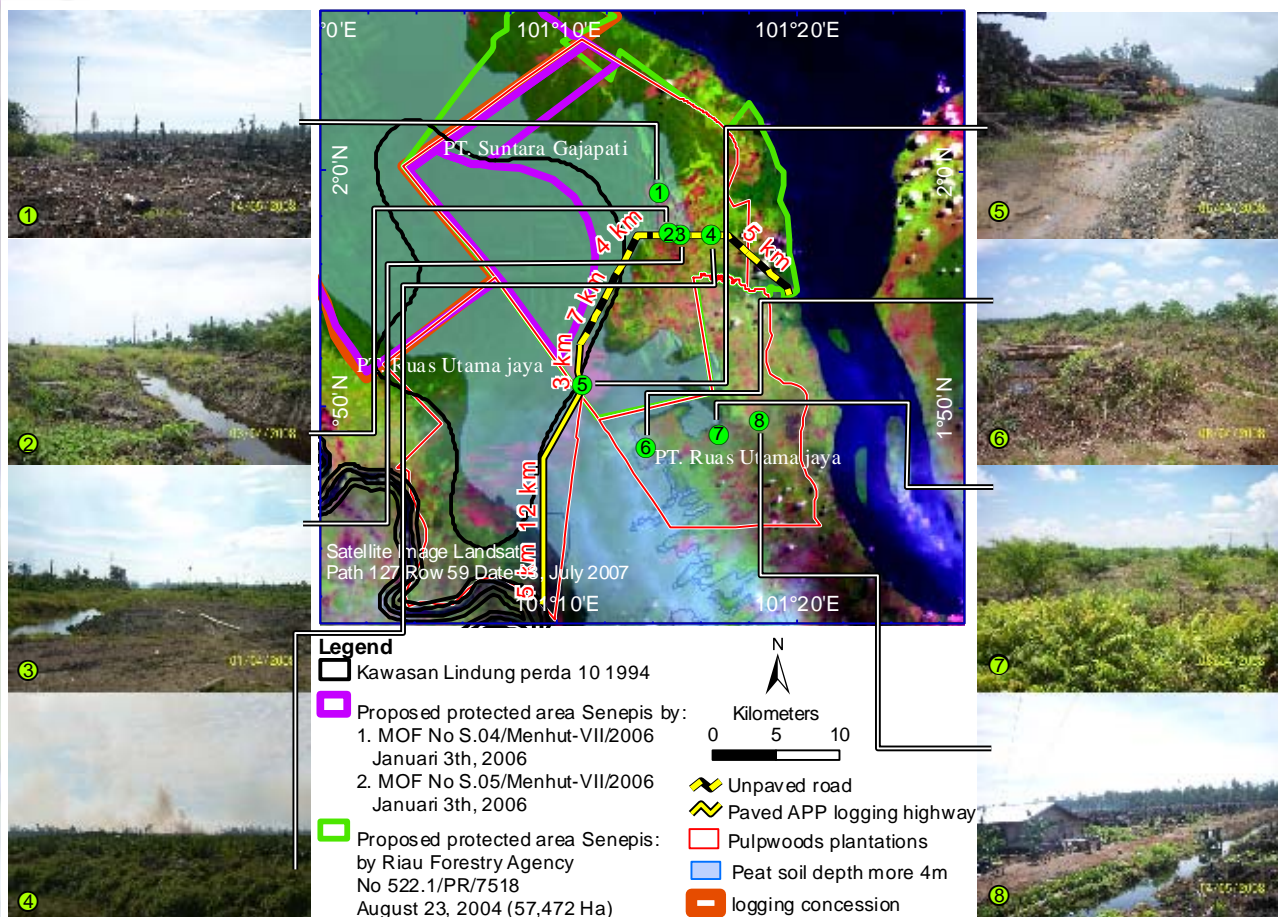
A recent report by WWF-Indonesia and peat scientists^{xii} concluded that average annual CO₂ emissions from deforestation, forest degradation and associated peat decomposition and fires in Riau between 1990 and 2007 was equal to 122% of the Netherlands' total CO₂ annual emissions (including emissions/removals from LULUCF, in 2005), 58% that of Australia, 39% that of the UK and 26% that of Germany. Future emissions from Riau until 2015 are expected to increase and could be equal to or even more than a quarter of the collective annual greenhouse gas emissions reduction Kyoto target for the Annex I countries in the first commitment period of 2008-2012, because most of the new deforestation would happen on peat soil, such as Senepis.

EoF is also concerned that the new road will facilitate deforestation of Senepis not only through conversion activities by the APP/SMG-associated companies, but also through illegal logging and forest encroachment practices by local people. EoF investigations already confirm that quite a lot of natural forest inside PT. Ruas Utama Jaya (RUJ) has been encroached and converted into oil palm plantations by people. On its website, APP responded to EoF investigation report in 2007^{xiii} on the company's activities in Senepis, saying:

"RUJ has a total concession area (HTI) of 44,330 hectares, of which 50% is already occupied by villagers, and is subject to continued land encroachment by local communities and migrants to the area for agricultural development. In fact, the development of the pulpwood plantation will buffer the natural forest from further encroachment and forest depletion, and at the same time maintaining the integrity of the area as production forest land."^{xiv}

As APP/SMG-associated companies have not been successful in protecting these encroached areas before, Eyes on the Forest is concerned that neither PT. Ruas Utama Jaya and PT. Suntura Gajapati would be able to protect the remaining forest from people using the new road to encroach.

As the forest continues to shrink, suffering of both local people and Sumatran tigers increases. These APP/SMG-associated companies started to clear natural forest in Senepis in 1999. There is no other big company clearing natural forest in the area. Human-tiger conflict data recorded by WWF Indonesia shows that during 2002-2004 there were 12 occurrences of human-tiger conflicts around Senepis forest block, claiming 8 human lives and injuring 5 people^{xv}.



Map 5. Three APP/SMG-affiliated concessions (red boundaries) and new logging road (yellow section is already paved, zebra section is not yet paved) in Senepis, in relation to area of peat depth more than 4 meters (half transparent area) and Protection Area (RTRWP 1994, black boundary). Destruction of forest takes place driven by the logging road construction.

Photos in Map 5:

1. Natural forest in pulpwood plantation concession of PT. Suntara Gajapati, an APP/SMG-associated company, likely hit by encroachment and ravaged by fires, showing a connection between the logging road built by APP/SMG-associated company and expansion of illegal practices.
2. Natural forest in pulpwood plantation concession of PT. Suntara Gajapati, an APP/SMG-associated company, likely hit by encroachment.
3. Natural forest in pulpwood plantation concession of PT. Suntara Gajapati, an APP/SMG-associated company, likely hit by encroachment. I
4. Smoke of forest fires seen inside PT. Suntara Gajapati pulpwood concession. Forest and land fires in peatland are very hazardous for the ecosystem due to the severe pollution.
5. Piles of mixed tropical hardwood confiscated by the police in PT Suntara Gajapati's concession, where the logging road is paved. The construction clearly threatens forest of proposed Sumatran Tiger Conservation Area in the peat-rich Senepis block.
6. Natural forest in pulpwood plantation concession of PT Ruas Utama Jaya, an APP/SMG-associated company, likely hit by encroachment.
7. Natural forest in pulpwood plantation concession of PT Ruas Utama Jaya, an APP/SMG-associated company, likely hit by encroachment.
8. Peat drained by APP/SMG-associated company. Natural forest in pulpwood plantation concession of PT Ruas Utama Jaya was likely hit by encroachment, highlighting how the logging road built by the APP/SMG-associated company allows for easy acces by others intent on illegal activities.



3. Community development?

APP/SMG also claimed in media that “Roads construction is to connect remote villages bridging Ujung Tanjung Village (Rokan Hilir District) to Buluhala village of Dumai city^{xvi}”. However, the EoF investigation in Ujung Tanjung village shows that to reach this logging road, people would have to follow the Sungai Rokan river. The community of Ujung Tanjung village already has better access to reach Dumai city or Bagan Siapi-api (Rokan Hilir District’s capital town), which had been developed by the government before this new road by APP/SMG-associated company. Another village mentioned by APP/SMG, Buluhala, also already has access to Dumai. Therefore, this road does not provide any additional value and the claim of benefits to villagers made by APP appears invalid.

In addition, in Rokan Hilir District, the existence of PT. Ruas Utama Jaya resulted in protests by the local communities, as the company is not transparent to the communities about its operation. The company also dug a canal on land belonging to a community of Rimbamelintang sub-district^{xvii}, further escalating opposition by local people.

Eyes on the Forest’s Call to APP/SMG and APP/SMG’s Stakeholders

EoF calls on Asia Pulp & Paper/Sinar Mas Group to stop further clearance of natural forest in Senepis block, due to its negative impacts on climate change, survival of critically endangered Sumatran tigers and questionable legality of its activities. In addition, APP/SMG and their associated companies should halt its forestry activities until the Riau Police conclude their investigation into the involvement of the two companies (RUJ and SGP) in possible illegal logging.

In particular, EoF calls on APP/SMG and their associated companies to immediately:

1. Dismantle the logging road, to prevent further illegal logging, encroachment and wildlife poaching that could soon occur in Senepis.
2. Dismantle the drainage canals to stop further draining of Senepis peat area.
3. Agree to protect the remaining natural forest in Senepis and return the two concessions of PT. Ruas Utama Jaya and PT. Suntara Gajapati to support the establishment of the originally proposed Senepis-Buluhala National Park for Sumatran tiger conservation.

EoF also calls on APP/SMG stakeholders, including national and global companies as well as financial institutions, to not do any business with a major driver of deforestation in Riau as well as of global climate change: APP/SMG. Every company that buys APP product or supports its operations is contributing to the loss of natural forest in Riau and other provinces where APP/SMG and their associated companies operate or plan to operate as well as contributing to the population decline of already endangered wildlife and to climate change.



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- ⁱⁱ Eyes on the Forest Press Release (26 March 2008) New APP Logging Road Threatens One of World's Biggest Carbon-Storing Forests, Tigers. (http://eyesontheforest.or.id/index.php?option=com_content&task=view&id=174&Itemid=6&lang=english) Eyes on the Forest (26 March 2008) Eyes on the Forest to Asia Pulp & Paper: Cease all destruction of one of the world's largest tropical peatland forests – Kampar peninsula in Riau, Sumatra, Indonesia. (http://www.eyesontheforest.or.id/index.php?option=com_docman&task=doc_download&gid=100&Itemid=20)
- ⁱⁱⁱ Proposals for Sumatran Tiger Conservation Area were submitted by: Forestry and Plantation Agency of Dumai (Letter No. 050/Prog-DKP/8.37 on 26 June 2003), Mayor of Dumai (Letter No. 266/Hutbun/VIII/2003 on 15 August 2003, 500/EK/XI/2003/1688 on 22 November 2003, 500/EK/TV/2004/403 on 31 March 2004), BKSDA Riau (Letter No. 2232/BKSDA-2/V-6/2003 on 8 October 2003), Parliamentary of Dumai (Letter No. 170/2003/1551 on 16 October 2003),
- ^{iv} Riau Forestry Agency Letter No. 522.1/PR/7518 on 23 August 2004
- ^v Riau Governor Letter No. 500/EKBANG/63.18 on 18 October 2004.
- ^{vi} Letter of Forestry's Planology Agency Number S.599/VII-PW/2004, dated 23 September 2004, concerning to implementation of integrated field survey in order to propose forest production status shifted to Senepis-Buluhala Sumatran Tiger Conservation Area in Dumai city of Riau Province.
- ^{vii} Minister of Forestry Letters S.04/Menhut-VII/2006 and S.05/Menhut-VII/2006 on 3 January 2006.
- ^{viii} EoF [Investigative Report March, April and June 2007](#). (http://eyesontheforest.or.id/index.php?option=com_docman&task=doc_download&gid=91&Itemid=20&lang=english)
- ^{ix} SCTV Liputan 6, November 2007 (www.sctv.com)
- ^x EoF News (3 July 2007) More APP subsidiary's executives named suspects (http://eyesontheforest.or.id/index.php?option=com_content&task=view&id=133&Itemid=6&lang=english)
- ^{xi} Wahyunto, S. Ritung dan H. Subagjo (2003). Peta Luas Sebaran Lahan Gambut dan Kandungan Karbon di Pulau Sumatera / *Maps of Area of Peatland Distribution and Carbon Content in Sumatera*, 1990 – 2002. Wetlands International - Indonesia Programme & Wildlife Habitat Canada (WHC).
- ^{xii} Uryu *et al.* 2008. Deforestation, Forest Degradation, Biodiversity Loss and CO2 Emissions in Riau, Sumatra, Indonesia. WWF Indonesia Technical Report, Jakarta, Indonesia. Published at: <http://www.worldwildlife.org/wildplaces/borneo/updates/disappearingforest.cfm>
- ^{xiii} Eyes on the Forest (July 2007) EoF Investigative Report March/April/June 2007. (http://eyesontheforest.or.id/index.php?option=com_docman&task=doc_download&gid=91&Itemid=20&lang=english)
- ^{xiv} Official Statement APP Refutes Allegations by Eyes on the Forest, 5 July 2007. (http://www.asiapulppaper.com/portal/APP_Portal.nsf/c5d55c89778dd4cb472570bb002ebda6/361f9243f452e7684725739b00232e6b?OpenDocument)
- ^{xv} WWF Indonesia, unpublished data for 2002-2004
- ^{xvi} Riau Pos daily, 25 January 2007
- ^{xvii} EoF News (15 May 2007) Villagers protest APP's company logging operation. (http://eyesontheforest.or.id/index.php?option=com_content&task=view&id=116&Itemid=6&lang=english)
