

Madagascar's logging crisis: Separating myth from fact

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[Erik Patel](http://www.simpona.org/) <http://www.simpona.org/> is a PhD candidate at Cornell University who has been studying the silky sifaka in [Madagascar](#) since 2001. Over the years he has become deeply familiar with Madagascar's last remnants of wilderness and the people and animals who depend on them. So he was in a front-row seat when there was a resurgence of illegal rosewood logging on the African island, especially after an unconstitutional change of government last year.



International conservation groups and governments that sponsor relief and conservation programs in Madagascar are [deeply concerned about the logging](#)

<http://blogs.nationalgeographic.com/blogs/news/chiefeditor/2009/03/conservation-groups-deplore-madagascar-plunder.html>

of Madagascar's protected forests, especially as so little of the island's natural habitat remains after generations of slash-and-burn agriculture. The last forests (the tiny bits of green in the NASA image of Madagascar on the right) are critical for the welfare and even survival of Madagascar's people, one of the world's most impoverished nations.

The new government recently said [it will again enforce a ban](#) on illegal logging of rosewood trees, but many observers are cynical. Previous bans have not been effective.

The issue is a complex story that starts with "rosewood mafia" criminals who exploit Madagascar's forests and people and often ends up in the homes of ordinary people all over the world who purchase expensive furniture and guitars made from precious wood ripped illegally from Madagascar's last patches of forest.

Erik Patel sets out the background and analyzes a range of solutions. Readers of his report will gain a thorough understanding of not only the rosewood issue, but also the many challenges involved in protecting any of the world's forests. Illegal logging is pandemic across the Earth, but there are solutions.

By Erik R. Patel

How sure are you that your favorite rosewood or ebony acoustic guitar was not made from rare illegally logged trees in Madagascar, an exceptional biodiversity hotspot with desperately little original forest remaining?

What is the origin of the wood within the expensive oriental-style rosewood furniture which is heavily advertised for sale on the Internet?

Unfinished rosewood boards from Madagascar are [sold openly](#) even in the United States. Can vendors prove that the rosewood was legally (and ethically) obtained? Usually the answer is "no."

These can be difficult questions for consumers to answer, but purchasing these products can prolong the ongoing logging crisis in northeastern Madagascar within some of the most unique and biologically diverse forests in the world. And when those forests are raided many other species suffer, including Madagascar's iconic lemurs that, if they're not being eaten as bush meat by tree poachers, are losing the last fragments of habitat.

Consumers should always be cautious about the origins of the wood in the products they buy, since none of the rapidly disappearing Madagascan rosewood and ebony species are yet protected under the Convention on International Trade in Endangered Species (CITES).

In November of last year one of the largest U.S. stringed-instrument companies came under federal investigation for allegedly using illegal rosewood from Madagascar.

A tremendous amount of illegally logged rosewood in Madagascar is constructed into furniture in China. Some of this is known to be sold within China as luxurious "Ming Dynasty style" furniture. Some may well be exported to western countries. China is the world's leading exporter of furniture. The United States imported U.S. \$16 billion of Chinese furniture in 2009, making it the USA's fifth largest import from China.

Illegal logging of rosewood (*Dalbergia spp.*) and ebony (*Diospyros spp.*), has emerged as the most severe threat to Madagascar's dwindling northeastern rain forests.



Photo of man standing on rosewood stump by [Kevin Schafer](#)

In 2009, a year of political upheaval in Madagascar due to an undemocratic change of power, approximately 100,000 of these trees were cut down illegally within the UNESCO World Heritage Sites of Masoala National Park and Marojejy National Park as well as the Makira Conservation Site and Mananara Biosphere Reserve (also a national park).

The wood is extremely valuable. Rosewood can sell for U.S. \$5,000 per cubic meter, more than double the price of mahogany. Several hundred million dollars of these precious hardwoods were cut in 2009 within protected areas.

The overwhelming majority of these profits are taken by a "rosewood mafia" of a few dozen organizing individuals, many of whose identities are well known. Few others benefit.

Harvesting these extremely heavy hardwoods is a labor-intensive activity requiring coordination between local residents who manually cut the trees, but who receive little profit (about \$5 per day), and a criminal network of exporters, domestic transporters, and corrupt officials who initiate the process and reap most of the enormous profits.

This is a "tragedy with villains," unlike disturbance of Madagascar's habitats from subsistence slash-and-burn

agriculture, which has been well described as a "tragedy without villains."



Photo of rosewood being cut by [Toby Smith](#)

Globally, illegal logging results in an estimated \$10 billion dollars lost per year to the economies of timber-producing countries.

In addition to depriving the government of Madagascar of millions of dollars of taxable revenue, illegal logging of precious wood has decimated tourism in northeastern Madagascar, which had become a growing source of local income.

Although selective logging results in less absolute forest loss than clear-cutting, it is often accompanied by substantial peripheral damage such as decreases in genetic diversity and increases in the susceptibility of the impacted areas to

burning and bush meat hunting.



Documented long-term ecological consequences of selective logging in Madagascar include invasion of persistent, dominant non-native plant species, impaired habitat for animals, and a diminution of endemic mammalian species richness.

Rosewood being loaded on to a ship in Madagascar. Photo by [Erik Patel](#)

Although this problem has received some media attention recently, confusion still remains regarding a number of key facts.

The aim of this report is to provide an update, dispel a few myths, discuss some of the possible solutions to this ongoing crisis, and present a comprehensive bibliography of articles, photos, films, and videos related to this topic.

update, dispel a few myths, discuss some of the possible solutions



Rosewood logs being switched from river to road transport photo by [Toby Smith](#)

I recently returned from northeastern Madagascar, where I have spent the better part of the last decade. Filmmaker Neil Shaw (who works for *Carte Blanche*, a South African investigative journalism television program) and I spent nearly two months trying to document the current logging situation.

These two short films, made in collaboration with WWF Madagascar, review the key aspects of this logging crisis.

[Carte Blanche: Madagascar Part 1](http://beta.mnet.co.za/carteblanche/Article.aspx?Id=3919&ShowId=1) : <http://beta.mnet.co.za/carteblanche/Article.aspx?Id=3919&ShowId=1>

[Carte Blanche: Madagascar Part 2](http://beta.mnet.co.za/mnetvideo/browseVideo.aspx?vid=25570) : <http://beta.mnet.co.za/mnetvideo/browseVideo.aspx?vid=25570>



Carte Blanche: Madagascar Part 1



Carte Blanche: Madagascar Part 2

Four Myths About Illegal Logging In Madagascar

Myth #1: Much of Madagascar's rosewood is harvested legally



"Plenty of Madagascar rosewood is harvested legally," says Bob Taylor, founder of [Taylor Guitars](#). Quote from Gill, C. (2010). Log Jam. [Guitar Aficionado](#). Spring Issue. P.68

This is not true. A vast amount of published evidence clearly shows that very, very little, if any, of the rosewood logging in Madagascar is legal.

Photo of Masoala logging camp by [Toby Smith](#)

The overwhelming majority of exported Madagascar rosewood is illegally logged within [Masoala National Park](#) and [Marojejy National Park](#) (which are part of the [Rainforests of the Atsinanana](#) UNESCO World Heritage Site) as well as [Mananara-Nord Biosphere Reserve](#) (also

a national park) and the vast Makira Conservation Site.

Myth #2: The current ban has stopped illegal logging

In late March, the government of Madagascar announced a new two to five-year ban on export and cutting of ebony and rosewood. Decree #2010-141 officially passed on April 14, 2010. Clearly this was an important and large step forward. ([Conservationists applaud renewed ban on Madagascar rosewood](#).)

However, the decree apparently does not include pallisandre, a precious hardwood in the same genus (*Dalbergia*) as rosewood. Illegal logging of pallisandre has heavily impacted some reserves such as [Betampona Natural Reserve](#).

Although there have been no new exports since the recent ban, illegal rosewood and ebony logging still continues inside Mananara Biosphere Reserve and the Makira Conservation Site, according to reliable anonymous informants. The clearest information has come from Mananara where at least several hundred, recently cut, rosewood logs were observed.

Myth #3: Illegal logging was never a big problem in Madagascar until the recent political crisis

Illegal logging within Madagascar of rosewood (*Dalbergia spp.*) and ebony (*Diospyros spp.*) did not begin with the culmination of the political crisis in March 2009.

A major illegal logging crisis within World Heritage Sites (Masoala National Park and Marojejy National Park) took place during 2004-2005, a time of political stability. The earliest documented case of rosewood logging in Madagascar and foreign export dates to 1902.

Foreign exports of Madagascar rosewood occurred at "low" levels (1,000 to 5,000 tonnes) between 1998 and 2007. In 2008 exports jumped to 13,000 tonnes, and jumped again in 2009 to more than 35,000 tonnes.

Myth #4: There are 43 species of rosewood trees in Madagascar



Some recent reports had mistakenly made this statement. It is not entirely clear exactly how many rosewood species are found in Madagascar. More botanical research is needed. However, currently, there are believed to be 10 species of rosewood in Madagascar within the genus *Dalbergia*, which contains 48 total species.

The rosewood species are presumed to be *Dalbergia baronii* [VU], *D. bathiei* [EN], *D. davidii* [EN], *D. louvelii* [EN], *D. mollis* [NT], *D. monticola* [VU], *D. normandii* [EN], *D. purpurascens* [VU], *D. tsiandalana* [EN], and *D. viguieri* [VU].

Rosewood vase factory photo by [Erik Patel](#)

Rosewood stockpile solutions

Approximately 10,280 tonnes of illegally logged rosewood remains stockpiled in numerous locations in northeastern Madagascar, such as the ports of Vohemar and Antalaha as well as private residences in those cities and Sambava, Ampanifena, Ambohitralalana, and others.

Each 150-kilogram log has an approximate market value of U.S.\$1,300. As unfinished logs, the value of the current stockpile is therefore approximately \$90 million dollars.

Value increases dramatically, of course, after being constructed, for example, into high-end Ming Dynasty-style furniture in China. A single armoire composed of only a few logs can sell for \$20,000 or more. It's a horrid contrast to the annual income in Madagascar (about \$400) or the daily wage provided to loggers (\$5) for the dangerous and physically debilitating work.



Photo of rosewood stockpile by [Toby Smith](#)

If the export ban holds (numerous other bans did not), what should be done with these stockpiles?

Several ideas have been suggested:

- 1. The "Forest Counterpart Fund" (Wilme et al., 2009) aims to create a conservation and charitable works fund to assist local

communities and forests damaged by the illegal logging. The logs are not sold on the open market as in the second proposal below. Rather, philanthropists, conservation organizations, and international aid agencies pay to "adopt" a log.

Each log can be "adopted" for its market value (about \$1,300). The logs themselves are given to (carefully selected) local residents who are victims of the illegal logging. The logs would then be carved, engraved, and customized for public display as symbols. If sufficient donors can be found, this proposal offers a win-win solution for Madagascar's forests as well as people.

- 2. The "MCAR" program: Moratorium-Conservation-Amnesty-Reforestation (Butler, 2009). This is essentially a one-off actual sale with conservation benefits. Logs would be auctioned via a transparent market system in which the price and the log code would be recorded, publicly available, and digitally traceable.

Funds generated would mainly go towards conservation programs such as reforestation and forest monitoring. Criminal traders would receive amnesty from prosecution as well as a very small percentage of the funds.

An export moratorium would be required. There is always a danger that one-off sales can encourage further logging; a topic which has been extensively debated with respect to confiscated elephant ivory stockpiles. An impressive recent review paper in *Science* ([Wasser et al., 2010](#)) argued that no one-off ivory sales should be approved even if the funds go towards conservation.

- 3. Destroy the stockpile. This was recently reiterated by Global Witness (GW) and Environmental Investigation Agency (EIA).

Andrea Johnson, Director of Forest Campaigns at EIA, explained that, "To end the cycle of illegal harvest and corruption, the government should take the step of destroying all stocks that are not contained in the latest official inventories...Traders, who are currently stockpiling illegal timber, hoping for another 'exceptional' export authorization, must receive a clear signal that it will be impossible to profit from the illegal trade in the future."

Numerous examples can be found from around the world of simple and effective destruction of stockpiles of contraband such as small arms, drugs, and ivory.

Destruction also eliminates the not insignificant expense of storing and guarding the items.

Burning the rosewood stockpiles would create a lot of pollution, it has been argued, and might be dangerous given the high volume.

Other ways of destroying the wood are possible, however.



Photo of rosewood stockpile by [Erik Patel](#)

The wood could be hacked into tiny unusable pieces. This is already done sometimes by park rangers in Madagascar. This would take a very long time, but would be a fitting punishment of hard labor for members of the rich rosewood mafia!

Of course, destruction of the wood, whatever the method, would contribute no money for any conservation or community development funds.

Any of these possibilities are better than what has happened in the past: seized wood was auctioned off to the highest bidder.

Foreign export remains a possibility too, despite the ban. French shipping company CMA-CGM Delmas has exported rosewood from Madagascar several times in 2009 and 2010.

Longterm Solutions?

Thinking long-term, what can be done to prevent another illegal logging crisis in Madagascar?

Some may argue that so little rosewood and ebony remains, logging on this scale could never happen again. However, this had been claimed before 2009 too. More surveys are clearly needed.

One hopes that some of the more impenetrable regions of mountainous Marojejy National Park may still have rosewood. But because rosewood tends to be harvested at lower elevations, near rivers (where the largest individuals are found), it is less protected by the physical challenges of the massif than some other tree species.

It is encouraging that some *Dalbergia* and *Diospyros* species can form stump sprouts which can grow into a new tree over many many years. Unfortunately, some entire rosewood stumps are removed either to hide evidence of logging or for wood for small, locally made rosewood vases.

Rosewood trees are known to be some of the oldest trees in the eastern Malagasy humid forests. They can live to be more than 400 years old, according to local guides. Traders explain that they can be harvested after 50 years.

1. CITES

The surest way to reduce the likelihood of another illegal logging crisis in Madagascar, is to list all species within the genera of *Dalbergia* and *Diospyros* on CITES Appendix 1.

Currently none of Madagascar's ebony or rosewood species are protected under any appendices within the [Convention on International Trade in Endangered Species](#) (CITES). Globally, only one species of rosewood, Brazilian rosewood (*Dalbergia nigra*), is listed under CITES Appendix 1. This is the most stringent category, and prohibits all commercial trade of that wood from the date of listing. This has generally been effective.

Guitars in the United States made of Brazilian rosewood are known to have risen in price and are harder to find since Appendix 1 listing. Similarly, Appendix 1 listing of Alerce (*Fitzroya cupressoides*), a heavily logged South American conifer, has significantly reduced logging and trade.

A few other Brazilian and Central American rosewood species are listed under CITES Appendix 2 and 3. These lower appendices aim to regulate trade, not prohibit it.

Just this year, another species of Brazilian rosewood (*Aniba rosaeodora*), exported extensively as fragrant oil, was listed under CITES Appendix 2. Two additional species of Central American rosewood (*D. retusa* and *D. stevensonii*) are listed under Appendix 3.

Appendix 2, unlike Appendix 3, does require that the CITES authorities in the export nation determine that the species were legally obtained and that their export will not be detrimental to species survival. There seem to be few cases where Appendix 3 listing was sufficient, except as a means to Appendix 2 or higher listing.

The well examined case-studies of big-leaf mahogany (*Swietenia macrophylla*) and ramin (*Gonystylus spp.*) both began as Appendix 3 species (which only requires unilateral listing by a habitat country) and were later voted in as Appendix 2 species by the CITES parties.

To what degree can CITES regulations be implemented and enforced? The need for more officially trained import inspectors has been suggested numerous times. The agency chosen as the CITES management authority should be free of corruption and have experience in forest management.

Insufficient trained staff has also hindered the ability of export authorities to determine whether an Appendix 2 species was legally obtained and non-detrimental to species survival. Range countries often require assistance in this respect.

An unusually good example comes from Indonesia where biological data for ramin has been used in non-detriment findings to examine sustainability.

Missing "certificates of origin" have been a problem for some Appendix 3 species. While ramin and big-leaf mahogany were listed on Appendix 3, the required 'certificates of origin' were not consistently issued by exporting nations; while importing countries were not always diligent about confirming that shipments arrived with such certificates.

2. Independent Forest Monitoring (IFM)

In addition to CITES, actual improvements in forest monitoring on the ground are needed.

A new system called [independent forest monitoring](#) (IFM) may be needed in order to stop illegal logging, monitor implementation of REDD (Reducing Emissions from Deforestation and Forest Destruction) programs, restore the confidence of international donors, and ultimately to save Madagascar's precious forests as well as attain social justice for Madagascar's impoverished population.

IFM has been defined as "the use of an independent third party that, by agreement with state authorities, provides an assessment of legal compliance, and observation of and guidance on official forest law enforcement systems" (Global Witness 2005).

IFM is similar in principle to unbiased international election observers. Local and international expertise is utilized, and monitoring teams operate independently but with the consent of the host government.

Independent forest monitors are strictly observers, law enforcement remains the responsibility of local officials and governments.

Of course other nations have been faced with similar forest monitoring problems. IFM has already been used successfully in several African and Central American nations seeking to improve the effectiveness of their forest monitoring.

Since it was first introduced in 1999, IFM has been established in Cameroon, Cambodia, and Honduras. Smaller scale feasibility and pilot studies have been conducted in Ghana, Peru, Mozambique, Republic of Congo, Tanzania, and Democratic Republic of Congo.

In Cambodia and Cameroon, donor countries have been the impetus behind IFM. Though in Honduras, the incentive for IFM was domestic, and hosted by the Honduran Commission for Human Rights (CONADEH).

Furones (2006) and Young (2007) reviewed the results of IFM in these nations, and consider them to be "broadly positive". Specific examples of the impact of IFM in these nations include: documentation of hundreds of forest crimes, cancellation of logging concessions, moratoriums on logging and timber transport, and creation of new "forest crimes monitoring units" within the forestry administrations.

In some cases, IFM has earned money for these governments by identifying violations which led to large fines against logging companies and individuals breaching the law and forest management regulations.

3. Update IUCN Red List Categories

The approximately ten Madagascar rosewood species listed above have not had their official conservation status evaluated by the IUCN since 1998. At that time, all were threatened except for *D. mollis*. Five of the ten were already classified as 'Endangered' at that time. Given the extreme logging since that time, it is likely that their [Red List](#) categories should be elevated.

4. UNESCO World Heritage Sites "In Danger"

The majority of the illegally logged rosewood in Madagascar comes from two UNESCO World Heritage Sites: Masoala National Park and Marojejy National Park. Why have Masoala and Marojejy not been placed on the [World Heritage Sites "In Danger" List](#)? After all, 2010 is the United Nations "International Year of Biodiversity".

Nine national parks and seven other protected natural areas are currently on this danger list, mainly for extensive anthropogenic disturbance such as poaching, logging, and war.

The extent of the logging damage in Masoala National Park, in particular, over the past five years, must rival that of some of the other national parks "in danger".

Placing a site on the UNESCO "danger list" is not utter de-listing. It is a reversible process meant to draw attention to and attract possible resources which can alleviate the crisis.

There are specific funds that can become available if a site is placed on the danger list. One can only speculate that the reasons for no change in status may well be political and practical. Perhaps it complicates

matters that eight different national parks (which include these two) comprise the single Atsinanana World Heritage Site Complex.

Perhaps there are fears of triggering an even greater loss of tourism.

Whatever the reasons may be, it is odd that UNESCO has not been more vocal or active in its support of these two national parks, which are the biodiversity jewels of the Atsinanana World Heritage Site Complex.

4. DNA Fingerprinting

DNA fingerprinting has recently been used on confiscated ivory to determine which populations of African elephants were slaughtered. Similar genetic techniques would be of great assistance in determining which populations of Madagascar rosewood are being logged the most, and in identifying species.

DNA testing has [already been used to track timber](#), but not yet in Madagascar. One of the biggest methodological challenges is extracting DNA from the heartwood of dead tree trunks (e.g. rosewood stockpiles) which consists of dead cells with partly degraded DNA.



In living trees, it is a routine process to obtain DNA from the cambium just beneath the bark or leaves or buds.

Nevertheless, several new techniques have successfully extracted DNA from dry wood of ramin (*Gonystylus spp.*) and other woods including 1000 year old beech (*Fagus spp.*).

[Erik R. Patel](#) (in the photo above, in Marojejy National Park, Madagascar, with a guide) has published articles and collaborated in several television documentaries on illegal precious wood logging in Madagascar, and is currently part of a team studying independent forest monitoring. A PhD candidate at Cornell University, with masters degree from the University of California at Berkeley, Patel spends much of his time in the field in Madagascar.

Photo by [Rachel Kramer](#)

Resources

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Rosewood Logging Photos

Photographer [Toby Smith](#)

Photographer [Chris Maluszynsk](#)

Rosewood Logging Films

Dan Rather Reports: Treasure Island. Episode 437

A detailed investigation of the impact of the recent political crisis in Madagascar on the unique biodiversity of this island continent. Filmed in high-definition, active rosewood logging camps are shown. The impact of such habitat disturbance on the silky sifaka and the World Heritage Sites of Marojejy NP and Masoala NP are discussed. The debates surrounding the Ambatovy nickel mine adjacent to Andasibe-Mantadia NP are also discussed. The mine may be endangering one of the rarest animals on earth, the greater bamboo lemur (*Prolemur simus*) which is being protected there by the NGO Mitsinjo. Aired on HD-NET cable television November 2009. Purchasable and downloadable on I-Tunes in the United States.

DVDs can be [purchased online](http://hdnet-store.stores.yahoo.net/danrare437.html) <http://hdnet-store.stores.yahoo.net/danrare437.html>

[Sample Clip 1](#)

[Sample Clip 2](#)

Carte Blanche: Madagascar (Part 1 and Part 2)

Two short films examining illegal rosewood logging in Madagascar and the impact on the critically endangered silky sifaka. They were produced by Neil Shaw and commissioned and funded by Carte Blanche which is one of the most respected television news programs in the Southern Hemisphere. Aired on South African Television in April, 2010 and streams freely online here:

[Carte Blanche: Madagascar Part 1](http://beta.mnet.co.za/carteblanche/Article.aspx?Id=3919&ShowId=1) <http://beta.mnet.co.za/carteblanche/Article.aspx?Id=3919&ShowId=1>

[Carte Blanche: Madagascar Part 2](http://beta.mnet.co.za/mnetvideo/browseVideo.aspx?vid=25570) <http://beta.mnet.co.za/mnetvideo/browseVideo.aspx?vid=25570>

Bois de Rose. A Documentary Film by Joseph Areddy. 2003. RSI, Comano/Signe, Genve/GAP, Antananarivo.

Rosewood Logging Videos

[Madagascar Rainforest Massacre](http://www.youtube.com/watch?v=FzWNPBHRrAc) (English) <http://www.youtube.com/watch?v=FzWNPBHRrAc>

[Madagascar Rainforest Massacre](http://www.youtube.com/watch?v=KtjmFWpGNKs&feature=related) (French): <http://www.youtube.com/watch?v=KtjmFWpGNKs&feature=related>

[Madagascar Rainforest Massacre](http://www.youtube.com/watch?v=rHYyhLHeQw&feature=related) (Malagasy): <http://www.youtube.com/watch?v=rHYyhLHeQw&feature=related>

Global Witness - Environmental Investigation Agency -

[Illegal logging in Madagascar - Part 1](http://www.youtube.com/watch?v=T1hPviSbRcU) - <http://www.youtube.com/watch?v=T1hPviSbRcU>

Global Witness - Environmental Investigation Agency

- [Illegal logging in Madagascar - Part 2](http://www.youtube.com/watch?v=LBtsNBpWW0E) - <http://www.youtube.com/watch?v=LBtsNBpWW0E>

Global Witness - Environmental Investigation Agency

- [Illegal logging in Madagascar - Part 3](http://www.youtube.com/watch?v=payUUJed0dc) - <http://www.youtube.com/watch?v=payUUJed0dc>

Global Witness - Environmental Investigation Agency

- [Illegal logging in Madagascar - Part 4](http://www.youtube.com/watch?v=lm6a6Hrat3o) - <http://www.youtube.com/watch?v=lm6a6Hrat3o>

Rosewood Logging Radio Programs

[BBC World Service - Africa. September 17, 2009.](#)

- http://www.bbc.co.uk/worldservice/africa/2009/09/090917_madge_rosewood2.shtml

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Source : <http://blogs.nationalgeographic.com/blogs/news/chiefeditor/2010/05/madagascar-logging-crisis.html>

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